

# Knowledge Taxonomy Model for Determining Indicators of Natural Tourism Potential

Artamevia Salsabila Rizaldi, Luciana Andrawina, and Augustina Asih Rumanti

**Abstract**—At this time, knowledge becomes a competitive advantage for companies. The importance of knowledge dissemination so that missing knowledge does not occur in the organization. The object of this research is natural tourism in determining indicators of natural tourism potential to assist the Tourism and Culture Office of Rembang Regency. This organization requires knowledge management to achieve its goals. The purpose of this research is to design a taxonomic model which is part of knowledge management in helping organizations deal with the problems they are facing by managing and using information and knowledge in the form of indicators to determine the potential for nature tourism in Rembang Regency.

**Index Terms**—knowledge management, knowledge taxonomy model, nature tourism

## I. INTRODUCTION

Knowledge Management in organizations creates business value that will generate competitive advantage for organizations or companies. Knowledge management also enables the creation, communication and application of all kinds of knowledge to maintain and create more excellent value than core business competencies [1]. Knowledge is critical in the organization. Knowledge is a complex concept. Knowledge in the organization refers to the organization's memory of all the activities it has carried out. An organization's knowledge acts as data that can become an organization's brain. Not only memory about the operational activities of the organization but also memory about the culture and style of the organization [2].

Knowledge Management provides a unique opportunity to help people work more effectively and smartly in support of the companies in which they invest their own money and businesses. Sharper competition between companies, countries, and continents creates requirements for greater operational effectiveness and service to customers and the creation of new products and services. There is increasing understanding and agreement that the main driving force in this new environment is knowledge, i.e., both personal and structural knowledge and other forms of intellectual capital assets [3]. Today knowledge is the key to competitive advantage. We need to know how to create and use knowledge assets. Knowledge assets are created when an individual's knowledge or experience can be used by people other than those involved in making it [4].

There are two types of knowledge, namely tacit knowledge and explicit knowledge [5]. Tacit knowledge is the

knowledge that has not been documented, and in the heads of a person or experts, this knowledge is usually in the form of experience, learning, tips and tricks, and so on. Explicit knowledge can be easily accessed, articulated, and verbalized, traditionally found in physical documents or hard copies, such as books, manuscripts, archives, etc. [5]. The application of knowledge management is important for the company because knowledge is the company's added value that is used, maintained and transferred [6].

The object of this research is natural tourism in Rembang Regency. It is known that Rembang Regency has experienced a decrease in tourist visits, namely by looking at 2017 foreign tourists visiting to carry out tourism activities. There were 23 people and 987,193 domestic tourists. In 2018 there was an increase for domestic tourists by 1,530,245 and 530 for foreign tourists. In 2019 the number of tourists decreased. This decline is one of the impacts of the Covid-19 pandemic, which began to enter Indonesia at the end of 2019 to 2021. In 2021 it began to improve even though it only received 25% of visits, totaling 871,136 domestic tourist visits. However, foreign tourists can be seen that in 2021 there will be no visits due to a policy of temporarily limiting the entry of foreigners into Indonesian territory as stated in circular letter Number: IMI-0103.GR.01.01 of 2021 [7]. So the Tourism and Culture Office of Rembang Regency wants to develop tourism potential so that tourists return to visit, especially nature tourism, because COVID-19 shows a real improvement in air pollution in big cities, although it cannot completely disappear. Nature-based tourism will become the new prima donna after the pandemic ends [8]. However, there are problems faced by the Tourism Office and Rembang Regency in determining tourism potential as the party in charge of managing tourism in Rembang Regency, namely 1) current conditions for developing natural tourism potential in Rembang Regency, planning to support tourism potential in Rembang Regency Rembang has a problem, namely the management of tourism potential has not been based on indicators due to difficulties in its implementation, namely the difficulty in placing the dissemination of knowledge or knowledge about indicators, this is seen based on many indicators to determine natural tourism potential so that the staff who carry out work to develop tourism potential feel difficulties, especially since the knowledge is not documented; 2) There is a continuous renewal of information and knowledge in determining natural tourism potential, so missing knowledge often occurs. In this case, conditions such as COVID-19 require the addition or development of indicators because COVID-19 will impact regulations for tourist areas.

Judging from the problems of this research, it will use a taxonomy model, and knowledge mapping will be carried out using a taxonomy knowledge model. The taxonomy knowledge model introduced by Patrick Lambe (2007) with

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Enterprise Taxonomies is expected to create a consistent way for employees to use and complete information and knowledge so that it will facilitate sharing and access to information in the Department of Culture and Tourism of Rembang Regency [9]. In this study, the taxonomic model was built from indicators determining natural tourism potentials such as tourism development components, namely Attraction, Accessibilities, Amenities, Activities, Accommodation, Ancillary services, Environment tourism, and HR competence. The knowledge model is used in this study so that organizations can use knowledge easily so that no knowledge is lost and in determining the potential for natural tourism to comply with existing standard indicators by using the knowledge taxonomy model, namely grouping information and knowledge into specific categories in such a way that more accessible [9]. Taxonomy is an umbrella term that refers to any classification or controlled vocabulary [10]. The taxonomic classification model in proposing a taxonomy of tourism products. A taxonomy is a special classification scheme that expresses the overall similarity among organisms, entities and things in a hierarchical manner [11]. The knowledge taxonomy focuses on enabling the efficient capture and sharing of knowledge, information, and data across organizations by building the taxonomy around workflows and knowledge requirements in an intuitive structure [12]. In Fig. 1. Is the preparation stage of knowledge planning [9].

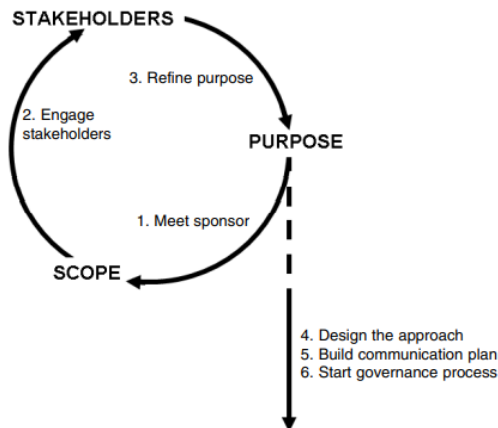


Fig. 1. Knowledge taxonomy design preparation stage

After the preparation stage for making the taxonomy is carried out, the taxonomy preparation stage will be continued in Fig. 2 [9].

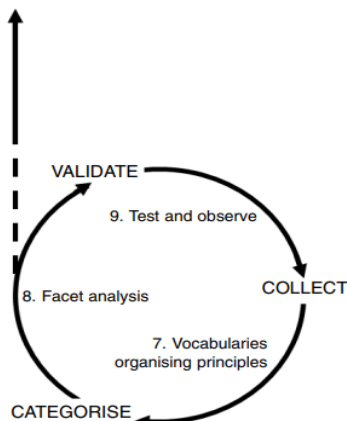


Fig. 2. Knowledge taxonomy design stage

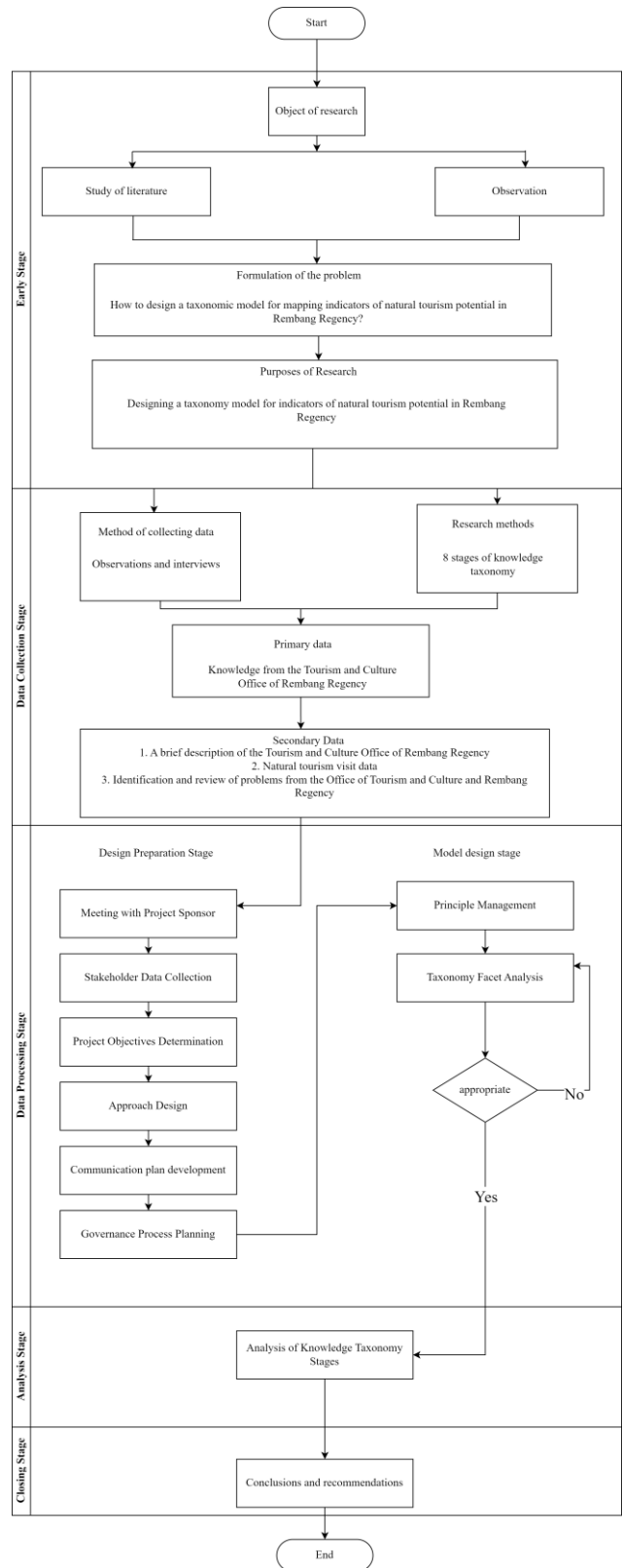


Fig. 3. Research methodology

## II. RESEARCH METHODOLOGY

The following in Fig. 3. are the stages of the research carried out, namely, there are initial stages by conducting literature studies and observations. The second stage is data collection from primary and secondary data. The third stage is data processing, with eight stages described according to Patrick Lambe (2007). The fourth stage is the analysis of the taxonomic model that has been designed, and the last stage is

closing for drawing conclusions and suggestions from the design that has been done.

### III. RESULT AND REVIEW

There are twenty pieces of knowledge for determining natural tourism potential in Rembang Regency, namely:

1. The uniqueness of tourist attractions
2. Cleanliness
3. Convenience
4. Variety of activities
5. Event
6. Facility
7. Infrastructure
8. Transportation
9. Road Conditions
10. Ease of tourist access
11. Distance
12. Lodging in the area around tourism
13. Information Services
14. Tour guide
15. Security posts
16. Direction Sign
17. Land ownership status
18. AMDAL Tourism Area
19. HR Competence
20. Level of education

This knowledge is important in implementing tourism development components, namely attraction, accessibilities, amenities, activities, accommodation, ancillary services, environment tourism and HR competence.

At the taxonomy design stage, the most important stage is facet analysis. At this stage, knowledge will be grouped into appropriate classes [9]. Straits knowledge is used because it is by the existing conditions can be seen in Table I.

TABLE I: BASIC SELECTION OF FACET ANALYSIS MODEL DESIGN

Ranganathan	Straits Knowledge	Rosenfeld and Morville	Tiwana	Wurman
Personality	People and organization	Audience	-	-
Matter	Things and Parts	Product; document type	Form; type; products and service	Category
Energy	Activity cycles	-	Activities	-
Space	Locations	Geography	Location	Location
Time	Time Sequences	-	Time	Time
-	-	Topic	Domain	-
-	-	Price	-	-
-	-	-	-	Alphabet
-	-	-	-	Hierarchy

Fig. 4. The components will be the initial data analysis material for determining the potential for nature tourism in Rembang Regency.

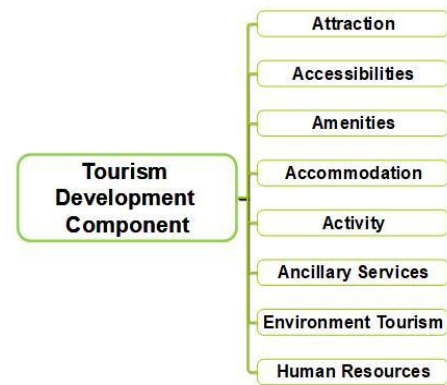


Fig. 4. Initial facet analysis material for determining natural tourism potential

As previously described, the design of the taxonomic model that will be carried out focuses on indicators for determining the natural tourism potential of Rembang Regency. Therefore, this section will focus on and detail the flow of the facet analysis carried out in designing the knowledge taxonomy model, which can be seen in Fig 5.

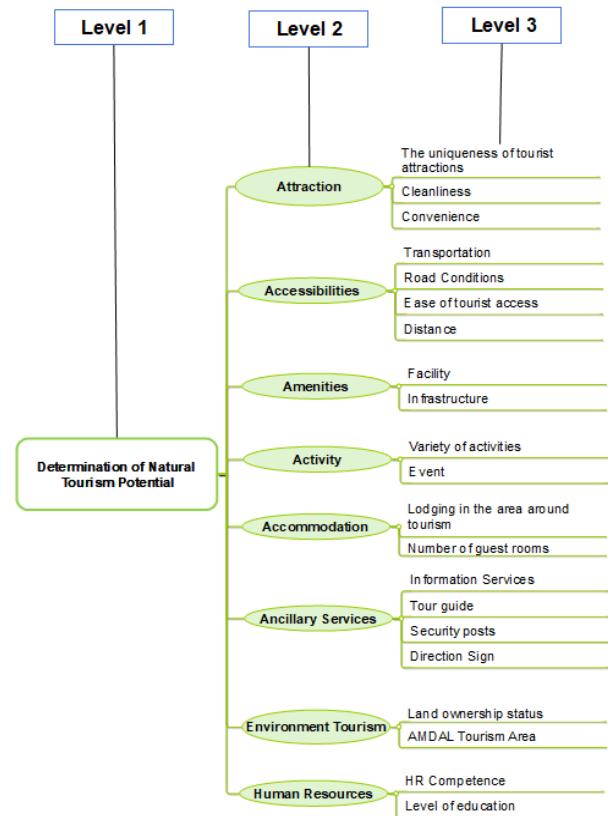


Fig. 5. Taxonomy of knowledge determining indicators of natural tourism potential

To simplify the explanation, it will be described in the form of a basic table of facet analysis carried out in determining natural tourism potential. The basis for determining facets in determining the natural tourism potential of Rembang Regency can be seen in Table II.

TABLE II: BASED ON THE DETERMINATION OF FACET TOURISM POTENTIAL

Level	Base of Facet
1	Nature tourism is the object of study
2	The main components of tourism development
3	Activities undertaken to determine tourism potential

The next design will describe the results of the facet analysis in more detail. In Fig. 6, the facet analysis results of the attraction component are described based on discussions

with supervisors and input from related parties (companies) as follows.

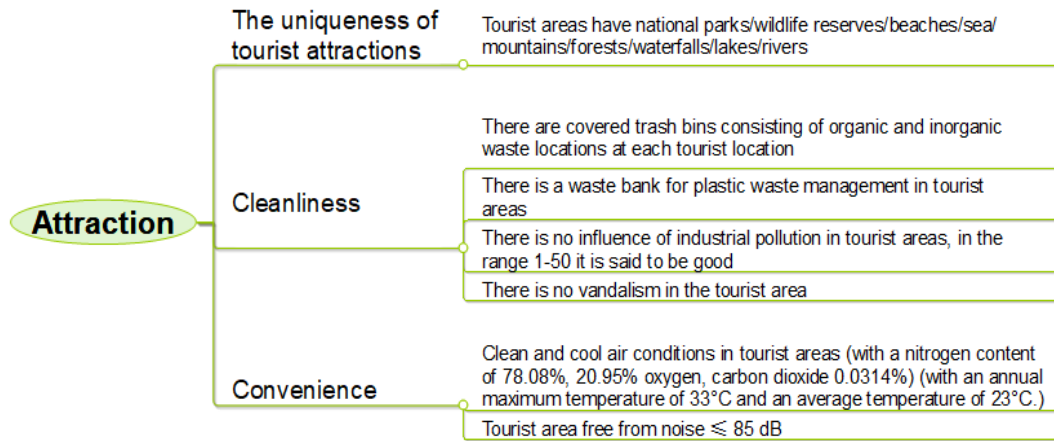


Fig. 6. Taxonomy of attraction indicator

After conducting facet analysis, the overall taxonomy of knowledge will be mapped if implemented at the Tourism and Culture Office of Rembang Regency. Fig. 7. Demonstrate the knowledge taxonomy mapping. The taxonomic model is tailored to users' needs to overcome their problems. If companies can use this model, they can improve the quality of knowledge management by applying it in a

structured manner. The results obtained in this study are the mapping of the taxonomic model based on the classification of knowledge contained in the Tourism and Culture Office of Rembang Regency in determining the potential for natural tourism using the stages of making a taxonomic model based on the theory of Patrick Lambe (2007) by adopting a hierarchy tree and facet.

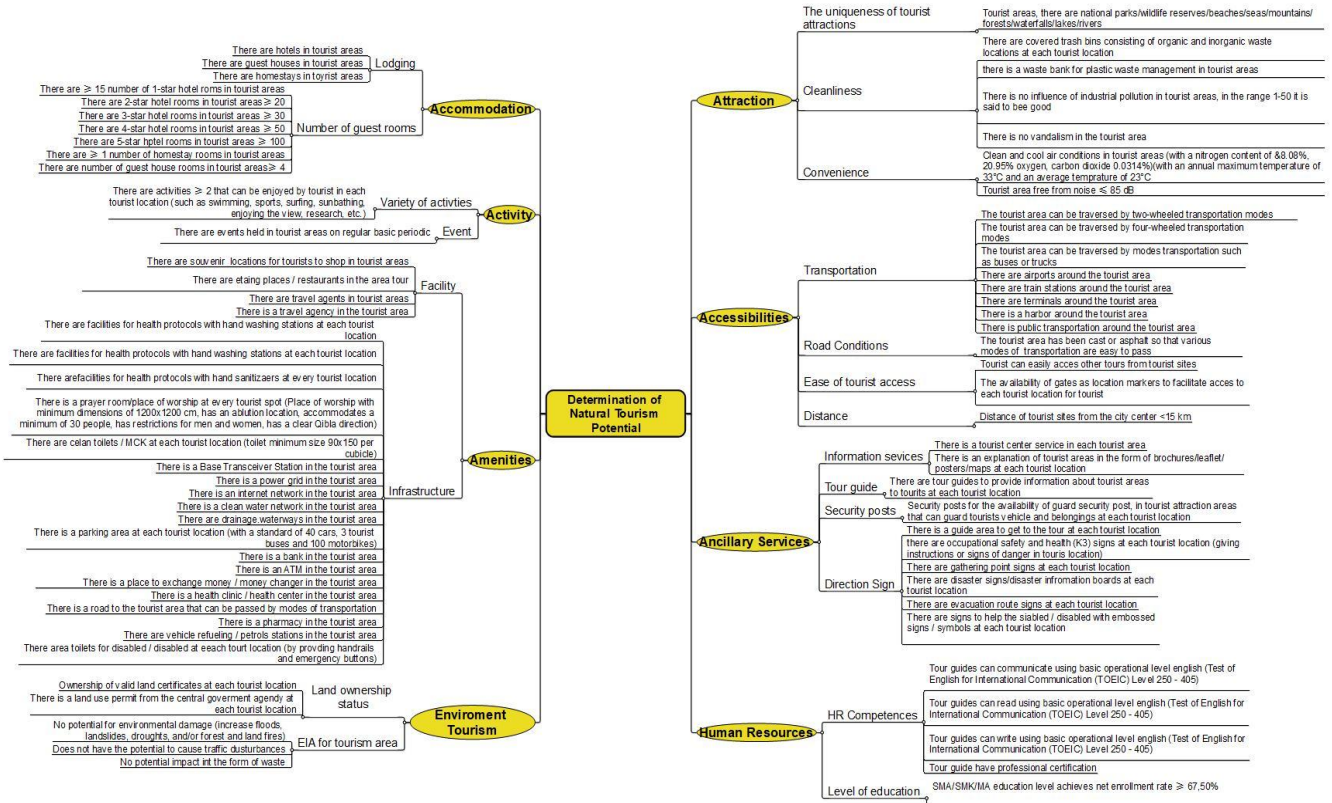


Fig. 7. Knowledge taxonomy mapping

In this study, the design includes the stages of knowledge capture, knowledge codification, knowledge transfer and knowledge sharing. According to its development cycle and management, there are various important stages starting from creating knowledge, capturing and storing knowledge, disseminating knowledge, using and creating new knowledge again can be seen in Fig. 8 [6]. Therefore, if a company uses

this model, it can improve the quality of knowledge management because it has applied a structured knowledge management framework. This can guarantee the continuity of knowledge in the organization because it can prevent the loss of information and knowledge, which can prevent the loss of opportunities to utilize their knowledge.

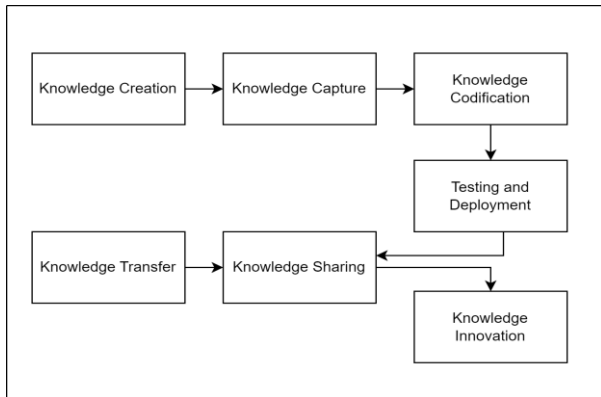


Fig. 8. The process of building knowledge in the knowledge management system (Sharing Vision)

#### IV. CONCLUSION

The following conclusions are drawn from the results and discussion of the research. Identification of knowledge has been carried out to determine natural tourism potential. First, there are eight indicators for determining natural tourism potential: Attraction, Accessibility, Amenities, Accommodation, Activity, Ancillary Services, Environmental Tourism, and Human Resources. Second, there are sources of knowledge from eight indicators for determining tourism potential, namely The uniqueness of tourist attractions, Cleanliness, Convenience, Variety of activities, Events, Facilities, Infrastructure, Transportation, Road Conditions, Ease of tourist access Distance, Lodging in the area around tourism Information Services, Tour guide, Security posts, Direction Sign, Land ownership status, AMDAL Tourism Area, HR Competence, and Level of education.

The results of the mapping and classification of knowledge indicators to determine natural tourism potential in Rembang Regency that mapping and classification of knowledge have been carried out to carry out a taxonomy of indicators for determining natural tourism potential in Rembang Regency, which can assist the Tourism and Culture Office of Rembang Regency in determining tourism potential, especially natural tourism. In this study, mapping and classification of knowledge were carried out based on aspect analysis adapted from discussions and interviews with the Tourism and Culture Office of Rembang Regency. The research was carried out using the principle of hierarchy and terms by using basic categories adapted to the user's needs. The taxonomic design that has been carried out in this study is in the form of classification and taxonomy as a knowledge map. With the knowledge concept model created, it can be known which components of tourism in a tourist location have met the standards or have not met them so that later they can become a reference for the development of nature tourism in Rembang Regency.

The suggestions for implementing this research are that in using the taxonomic model design, the organization should

communicate to employees or parties involved the benefits and importance of taxonomic knowledge as a determinant of natural tourism potential. Future research is expected to be able to use the taxonomic model to develop not only limited to determining natural tourism potential but also for cultural, artificial and other tourism.

#### CONFLICT OF INTEREST

The authors declare no conflict of interest.

#### AUTHOR CONTRIBUTIONS

Conceptualization, A.S.R., and A.A.R.; methodology, A.S.R.,; validation A.S.R, ; analysis A.S.R.; writingg—original draft preparation A.S.R.; writing—review and editing A.S.R., L.A., and A.A.R.; project administration, A.S.R., L.A., and A.A.R.

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