

## A DECADE OF ECOTOURISM RESEARCH IN PROTECTED AREAS: A BIBLIOMETRIC ANALYSIS

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### ABSTRACT

*The previous progress and future trends of ecotourism research are undergoing a significant paradigm shift in tourism research following the recent COVID-19 pandemic. The present study introduces a bibliometric review investigating ten years publication between 2010 and 2020 in journal and proceeding documents. By adopting a bibliometric approach, this article addressed five key information of journal and proceeding paper publications: (a) years and volume of publications (b) affiliation contribution (c) source and document type (d) the topic covers and (e) publication and intellectual knowledge. 37 relevant publications in the journal and proceeding paper were included in the study after excluding books, books series, chapter in book, thesis, citation document and several parameters. The trend of research on ecotourism has found a downward trend of productions produced per year, except in 2012. Moreover, marketing is the highest main topic of study. Such bibliometric analysis findings can be useful to find an opportunity for future study within the ecotourism setting, especially in protected areas such as national parks.*

**Keywords:** *bibliometric, ecotourism, national park, protected areas, Taman Negara,*



## **INTRODUCTION**

Globally, the tourism industry is one of the fastest-growing economic sectors, and a key driver for socio-economic progress with one of the flourishing sub-sectors of tourism is ecotourism (Nasir, Mohamad, Ghani & Afthanorhan, 2020). Ecotourism has become a burgeoning sector of the tourism industry across the world (Carvache, Segarra & Carrascosa, 2019; Oviedo, Segarra & Carrascosa, 2016; She, Tian, Lu, Eimontaite, Xie & Sun, 2019; Vinaya & Binoy, 2020).

Likewise, a core tourism product that is highly promoted by the government of Malaysia is ecotourism (Abdurahman, Ali, Khedif, Bohari Ahmad & Kiblat, 2016). Subsequently, Malaysia has taken a severe effort in marketing the country's uniqueness of ecotourism in the Visit Malaysia 2020 campaign (Ching, Lo, Suaidi, Azlan & Chin, 2019). However, apart from providing the ecotourism attractions, there is also a crucial need to understand what makes ecotourism destinations demand increased.

According to Oh, Kim, Choi and Pratt (2019), the undesirable outcome from mass tourism has arisen out of an alternative form of tourism that requires all stakeholders take responsibility on social and environmental; thus, ecotourism will slow down the impacts of mass tourism (Dimitriou, 2017; Fang, 2020). Moreover, all the alternative patterns of tourism pursue synchronisation with the preservation of nature and local culture. Whereas, ecotourism aims to strike a balance between its economic benefits and socio-environmental impact (Kalpita, 2018).

Researchers argued that ecotourism with the contribution of nature-based environments gives some of the most intense and valuable experiences to the fulfillment of holistic wellness outcomes that makes these tourism segments are one of the fastest developing in the world (Brymer & Lacaze, 2013). Hence, the ecotourist will travel to improve or enhance their wellness with more specific activities for specific health outcomes.

Ecotourism has developed from these efforts and embraces a range of concepts such tourism in nature, adventure tourism, sustainable tourism, green tourism, rural tourism, wilderness tourism, responsible tourism (Ionel, 2019) and wellness (Brymer & Lacaze, 2013; Shanahan, Astell, Barber,

Brymer, Cox, Dean, & Jones, 2019). Among those diverse dimensions, Taman Negara National Park (TNNP), a tropical rainforest, is the most popular ecotourism site visited in Malaysia, which offered tourist as one of the world oldest rainforests (Tan, Aziz, Khairil & Zaiton, 2015).

Even though TNNP is a popular ecotourism destination visited by the ecotourist, however, over the past three years, the popularity is facing a progressive outflow trend on the arrival of visitors to TNNP between 2016-2018 (see Table 1). The data by the Department of Statistics Malaysia (2019) showed a reduction of 3% in the total visitor arrivals to TNNP from 2016-2017 and further reduced to 4% in the following year. Zooming to each national park in the country, for the year 2016-2018, Taman Negara Kelantan recorded the highest phase down up to 37% drop in the year 2017 from the previous year, followed by Taman Negara Terengganu, 15% reduction and Taman Negara Pahang 9% reduction. In 2020 there has been a great concern by Tourism Pahang when the statistics showed that from January to September 2019, Taman Negara Pahang recorded a significant decline of 22.8% from the previous year.

**Table 1: Statistic of Visitor Arrival to Taman Negara National Park, Malaysia**

STATISTIC OF VISITOR ARRIVAL TO TAMAN NEGARA NATIONAL PARK MALAYSIA FOR YEAR 2016-2018						
Year	Taman Negara Pahang, Kuala Tahan	Taman Negara Kelantan, Kuala Koh	Taman Negara Terengganu, Tanjung Mentong	Taman Negara Pulau Pinang	Total Tourist Arrival	
2016	91385	4,279	9,093	147,840	252,597	
2017	83440	2,693	8,568	157,232	251,933	
2018	91695	3,758	7,747	147,740	250,940	
2019 (Jan –Sept)	64333	-	2	-	-	

The result shared similarity with another study by Matthew Shuib, Ramachandaran, Afandi & Kunjuraman (2019) towards Endau Rompin National Park, whereby there is significant decreasing pattern arrival of visitors from three consecutive years. This dwindling scenario is expected to turn worse when the global encountered outbreak novel coronavirus pandemic (COVID-19). The pandemic is creating a significant impact on the arrival of all world tourist destinations, especially the national park this year and the future.

Therefore, the main purpose of the study is to analyse the progress of ecotourism research in TNNP and offer future research opportunities. It is crucial to investigate the progress and pattern of ecotourism research in the last decade and to discover if any scholar has looked into the area of wellness benefits with regards to visiting TNNP. Segmenting TNNP with untapped market segments and hidden potential benefits is considered a double-edged-sword as the focus is not only on sustainability, conservation, preservation and appreciation of culture (Gani, Awang, Mohamad & Samdin, 2015; Noorizan, Manohar & Nazri, 2010) but more to “eco wellness” (Brymer & Marie Lacaze, 2013; Ferrari & Gilli, 2017).

This article aims to advance previous reviews on ecotourism in TNNP that considers the previous research progress and pattern in connection with future directions of protected areas. The study was carried out by adhering a bibliometric methodology and ran by three research questions:

- RQ 1: What is publication evolution, authors, years, source, and type of document and worldwide dispersion of research publications on ecotourism in TNNP?
- RQ 2: What research topic and issues on ecotourism in TNNP literature have been researched most frequently and cited?
- RQ 3: What is the future direction on ecotourism research opportunities in TNNP, Malaysia?

This paper contributes three-partitions, first, the recent study analyses the academic literature on the progress of ecotourism research in Malaysia, specifically in protected areas of TNNP. Second, this paper addresses post-COVID19 future direction of ecotourism research. Third, methodologically, this article resorts to a bibliometric method, which is more integrated and

systematic review of the literature. This method is beneficial in presenting the leading trends of research field in term of number of publications, authors, affiliation, citation in a journal or proceeding and suggests future opportunities on research studies (Martínez, Merigó, Valenzuela, & Nicolás 2018).

## **THE TAMAN NEGARA NATIONAL PARK**

In the Malay language, Taman Negara means a national park, a protected tropical space provide place for leisure and outdoor recreation for visitors (Ghazvini, Kian & Sarmento, 2016). The Taman Negara National Park (TNNP), well known as one of the world oldest rainforests and popular for its tropical rainforest amongst the tourist (Tan et al., 2015). Moreover, Taman Negara is Malaysia's largest and the oldest protected area, which spreads over the state of Pahang, Terengganu, and Kelantan. In addition, Taman Negara Penang is one of Taman Negara located in the West of Peninsular Malaysia. As one of Malaysia's first ecotourism destinations, Taman Negara is fast becoming a famous universal destination (Barkhordari, Yusof & Geok, 2014).

TNNP protects 434,300 hectares of a 130 million years old tropical rainforest, Pahang (covers an area of 247,700 hectares), Kelantan (101,300 hectares) and Terengganu (85300 hectares) (Ismail, Jaafar, Mohamad, Amirul & Pajjo, 2016) covers the border of Tahan Mountain, which the highest peak in peninsular Malaysia's at 2,187 meters above the sea level (Mihanyar, Rahman & Aminudin, 2016). Penang National Park was newly gazetted as Malaysia's National Park in 2013 and covered about 1,265 hectares (Abdullah, Weng, Afif & Fatah, 2018).

TNNP is home to much wildlife and rich biodiversity (Gani *et al.*, 2015). TNNP is substantially considered as one of the most complex ecosystems in the world and enriched by its abundance and diversity. The Department of Wildlife and National Park (DWNP), Ministry of Water, Land and Natural Resources is responsible in managing and protecting the natural rainforest as one of the valuable resources of the country.

Among DWNP's responsibility is their enforcement task which to ensure protection of the park's wildlife and biodiversity resources by ensuring that they are well sustainably controlled and managed (Chui, Rahim, Hassan, Musa, Yusof & Hashim, 2010). Being one of the country's most visited nature-based tourism destination, it is also home to the local aboriginal community of Malaysia. Furthermore, visitor can observe the wildlife from the canopy walkway or stay overnight in the forest at trees top hut that built high above the ground, river excursion, water rafting, kayaking, jungle trekking, hill and mountain hiking, fishing and angling, bird watching and visit local aboriginal (Batek community) villages.

## **METHODS**

This study adhered the guidelines for conducting systematic research review introduced by Moher, Liberati, Tetlaff & Altman (2009), which is known as the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). Publication guidelines are usually expected to provide writers with the relevant and appropriate details that will allow them to evaluate and analyse the quality and rigour of a review. Thus, to identifying and extracting information for bibliometric review, PRISMA suggested four steps to follow.

## **RESOURCES**

Thus far, it remains unclear which search systems are most suited for synthesis of evidence and why. Gusenbauer & Haddaway (2019), argued that advice on which search engines and bibliographic databases for systematic search are still limited and less systematically in empirical performance assessment. Thus, the data for this study was retrieved from three electronic databases using a generic search string that was adapted to the individual electronic databases (for the generic search string, see Table 2). These included the Web of Science, Scopus and Google Scholar as a supplementary source of evidence.

While the Web of Science (WoS) citation database is a popular choice among scholars conducting bibliometric reviews, the Scopus citation database has wider social science coverage, particularly in the years since 1996 (Thananusak, 2019; Zheng & Kouwenberg, 2019). Mohamed Shaffril (2019) argued that it is unviable for researcher to find the perfect and comprehensive database, including WoS and Scopus, thus it is recommended to using more databased to increase the chance to achieving the relevant articles.

Although the preferred databases encompassed most of the international peer-reviewed journals, there may be other publications that were not included in these databases, and so this study (Bamford & Xystouri, 2005). Therefore, the present study considered Google Scholar as a supplementary resource to strengthen rigorous of the searching database. (So, Li & Kim, 2020) claimed that Google scholar was the four largest and most popular online academic database/ search engine. Google scholar has also emerged as the number one academic search engine for most academic users because of its great ease of use and success in analytical and exploratory searches (Gusenbauer & Haddaway, 2019).

## **THE SYSTEMATIC REVIEW PROCESS**

### **Identification**

The systematic review process consisted of three key stages in selecting some of relevant papers for the present analysis. The first stage is keyword identification, followed by the search process for related and similar terms based on the thesaurus, dictionaries, and past research. Accordingly, search strings were developed in January 2020 on the Scopus, Web of Science, and Google Scholar database (see Table 2) after all relevant keywords were determined. Most importantly, in the first stage of the systematic review process, the current research work successfully retrieved a total of 4333 articles from these three databases.

**Table 2: The Search Strings**

Database Search String	
Scopus	TITLE-ABS-KEY (“taman negara” OR “taman negara national park* “ OR “taman negara national park TNNP” OR “Taman Negara Pahang” OR “Taman Negara Malaysia” OR “national park malaysia” OR “Taman Negara Terengganu” OR “Taman Negara Kelantan” OR “Taman Negara Penang”)
WoS	TI= (“taman negara” OR “taman negara national park*” OR “taman negara national park TNNP” OR “Taman Negara Pahang” OR “Taman Negara Malaysia” OR “national park malaysia” OR “Taman Negara Terengganu” OR “Taman Negara Kelantan” OR “Taman Negara Penang”)
Google Scholar	“taman negara” OR “taman negara national parks” OR “taman negara national park TNNP” OR “Taman Negara Pahang” OR “Taman Negara Malaysia” OR “national park malaysia” OR “Taman Negara Terengganu” OR “Taman Negara Kelantan” OR “Taman Negara Penang”

## Screening

In the first stage, the literature search against the three databases yielded 4333 records. In the second stage, these records needed screening to remove duplicate documents. The screening process consisted of two main stages. Removing duplication article is the main purpose of the first stage of screening process. As a result, a number of 54 articles were excluded, while in the second stage the researchers screened of 4279 articles based on inclusion and exclusion criteria that already established earlier.

Based on the determined criteria, firstly on document type, researchers only focus on the journal (research article) and proceeding paper as main source of empirical data. Thus, for the recent study, other form of publication such as books, books series, chapter in book, thesis, and citation document were excluded. Secondly, other parameter that were only considered for reviewing process is article published in English.

Thirdly, the researcher only focused on a decade timeline which is ten years (2010-2020) publications. Lastly, to achieve the objective of the analysis, only studies conducted in the Taman Negara National Park (TNNP), Malaysia were selected. Hence, based on the determined criteria, a total of 4169 articles were excluded (see Table 3).

**Table 3: The Inclusion and Exclusion Criteria**

<b>Criterion</b>	<b>Eligibility</b>	<b>Exclusion</b>
Document type	Journal (research article), Proceeding paper	book series, book, chapter in a book, thesis and citation document
Language	English	Non-English
Timeline	2010 - 2020	<2010
Location and Country	Taman Negara National Park, Malaysia	Others national park not gazetted as Malaysia's National Park

## **ELIGIBILITY**

In the third stage called eligibility, researchers analysed of 110 articles. At this stage, it is crucial to examined all the articles thoroughly based on the titles; abstracts and the main contents to fulfilled the inclusion criteria and ensure it fitted to be deployed in the current study and achieved the objectives. Thus, based on a determined criterion, a total of 73 articles do not comply due to the scarcity of empirical data and applied sciences articles which were not focusing on ecotourism. Finally, a total of 37 remaining articles were ready to be analysed (Figure 1).

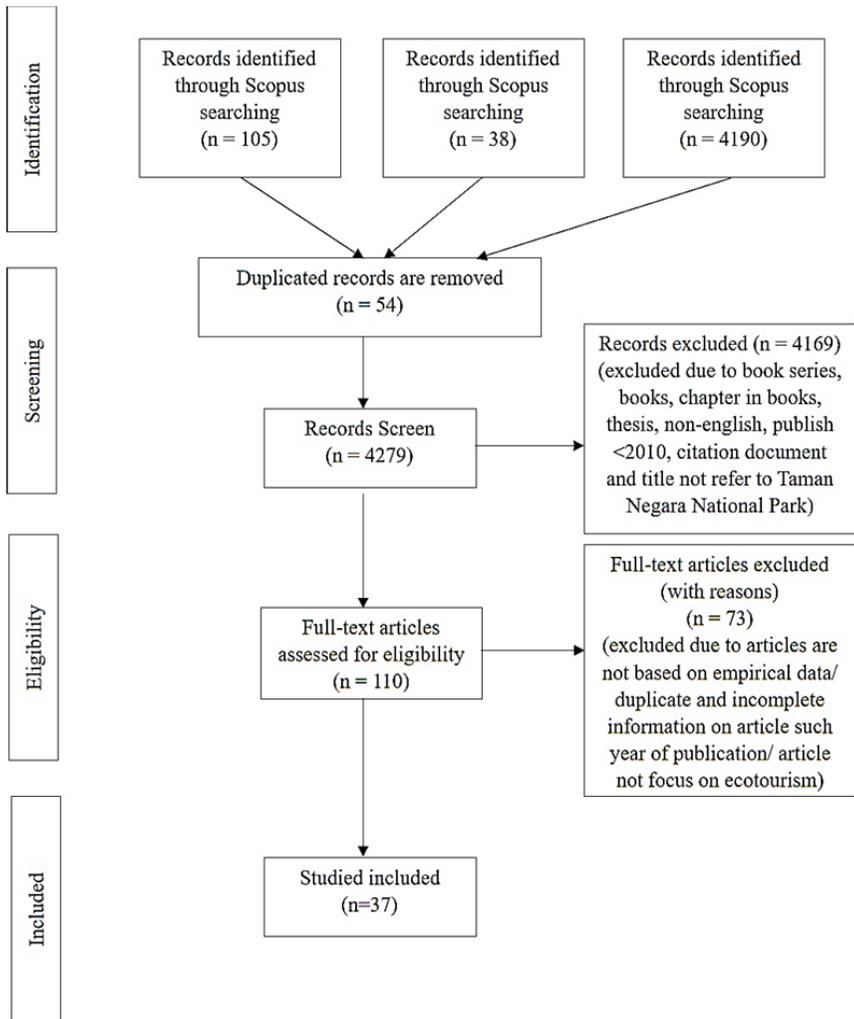


Figure 1: Flow Diagram of the Study (Adapted from Moher *et al.*, 2009)

## **DATA EXTRACTION AND ANALYSIS**

To determine the frequency of the studies, a quantitative systematic bibliometric review approach was undertaken. A quantitative systematic review is a relatively new method developed by Pickering and Byrne (2014) for quantitative surveying of the literature.

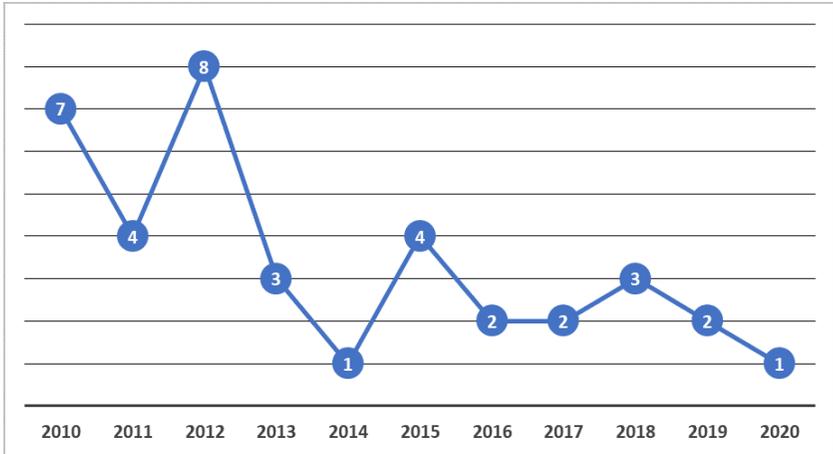
We independently performed data extraction. The details of bibliometric papers were exported into a Microsoft Excel (Excel) spreadsheet for analysis. Figures and tables were prepared with Excel. The following data was extracted from each study: first author, years of publication, author affiliation, country, total citation, source of documents, source type, type of document, research field, research area, the title of the article, and location of study. The extracted data was input into standardized MS word files.

## **RESULTS**

The results of the review are presented and discussed in the following subsection. Five analyses were employed to obtain the required information. Thus, the numbers of publications per year, countries and affiliation be analysed. Moreover, researchers also carried out analyses on source and document types, main research topics, and summaries of citation ranking and titles of the studies.

### **Years and Volume of Publication**

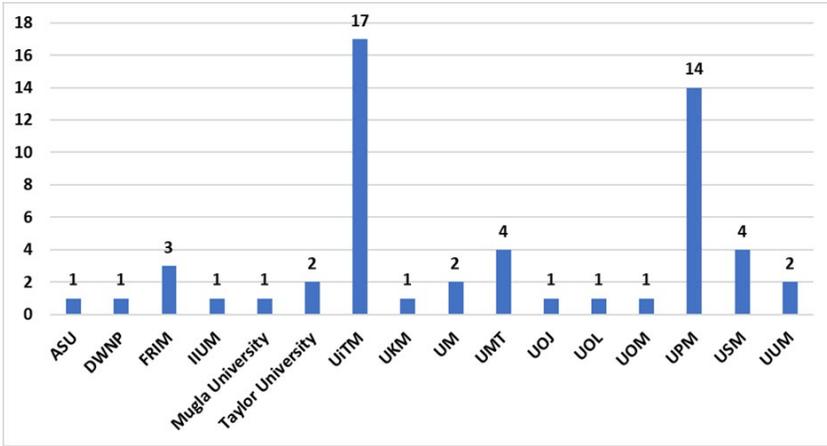
Figure 2 shows the total number of publications within the scope of study for the period of a decade. The result shows that the pattern is consistent in a descending trend on publication number per year in ecotourism setting, notably, exception in year 2012, where it jumped to 8 from 4 items previous year. As the matter of fact, it is undeniable that there are three years that achieve upward trend (2012, 2015, 2018) along the timeline. Most importantly, the difference among those three years is still small in number for ecotourism studies conducted in most popular destination.



**Figure 2: Number of Articles Published by Years**

### **Analysis of Institutions and Countries**

This section outlines the general overview of the prolific authors' institutions and countries. The objective is to observe the most productive institutions. Figure 3 shows the results according to the number of publications in the ecotourism setting. Universiti Teknologi MARA (UiTM), Malaysia is the most productive institution in conducting research at TNNP, followed by Universiti Putra Malaysia (UPM). An expected results of both institutions are among the highest because UiTM established its research centre in 2006 to facilitate several disciplines of study for TNNP. Whereas, UPM's establishment was likely closed to the nature of TNNP, as it supports the research diversity of TNNPW. Additionally, it should be considered that there are Government Agencies, Department of Wildlife and National Park (DWNP), and Forest Research Institute of Malaysia (FRIM), which has collaborated with UPM and five international institutions have collaborated with the local institution.



**Figure 3: Number of Articles Published by Institutions**

This section summarises and discusses the results of countries involved in articles publication and the most productive countries across the study. Figure 4 presents the most productive countries. As expected, Malaysia is the highest productive country conducting research at TNNP. This shows significant indication that TNNP truly has a strong attraction to Malaysian researchers, probably because it is the most famous ecotourism site in the world. Additionally, there is collaboration from countries such as the US, Turkey, South Africa, and Portugal with the corresponding authors from Malaysia.

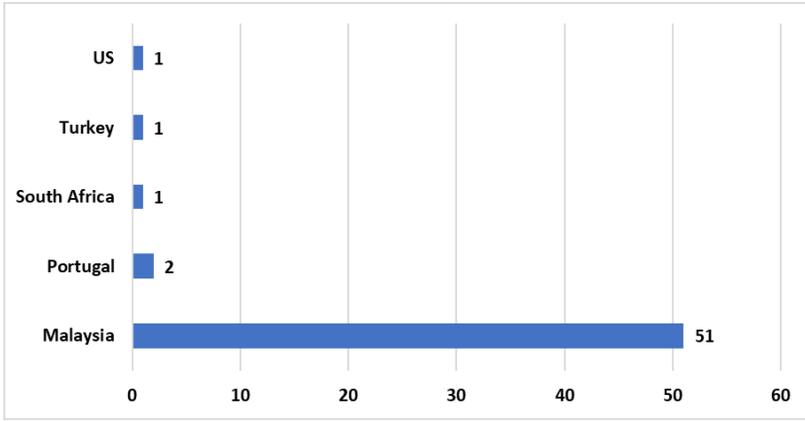


Figure 4: Number of Countries Involved in Articles Published

### Source and Document Type Analysis

The 37 documents (Figure 5) related to ecotourism were vetted under journal articles and conference proceedings. The examination of articles in this study indicates that 23 of related articles were published in the journal, while another 14 sources were from conference papers in proceedings.

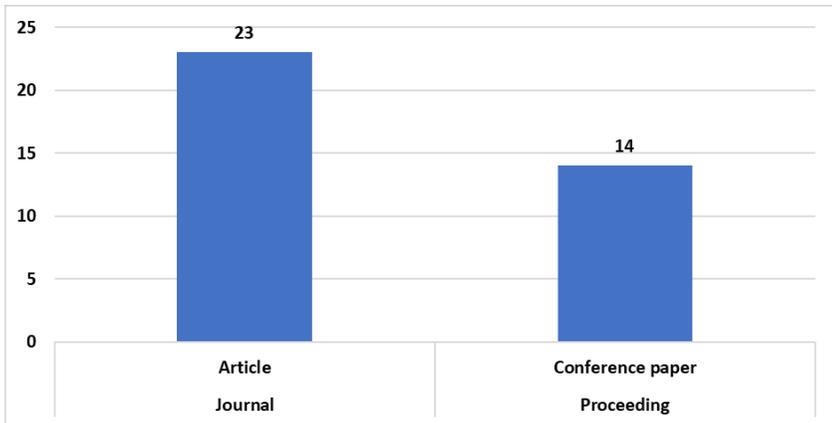


Figure 5: Number of Sources and Document Type

### The Main Research Topic of Articles

This section reported the results of the main research topic of selected articles. A thorough read of each abstract was performed, to eliminate doubts, if any. We have analysed 37 articles and we introduced 7 of the 29 disciplines of study that established by (Cheng, Li, Petrick & O’Leary, 2011). In this regard, the highest ecotourism research topic being conducted at TNNP is marketing, followed by management and sociology, while a few on the environment, law, technology, and economics. Therefore, the analysis helps in answering the second research question and will suggest the future direction on untapped research disciplines at TNNP.

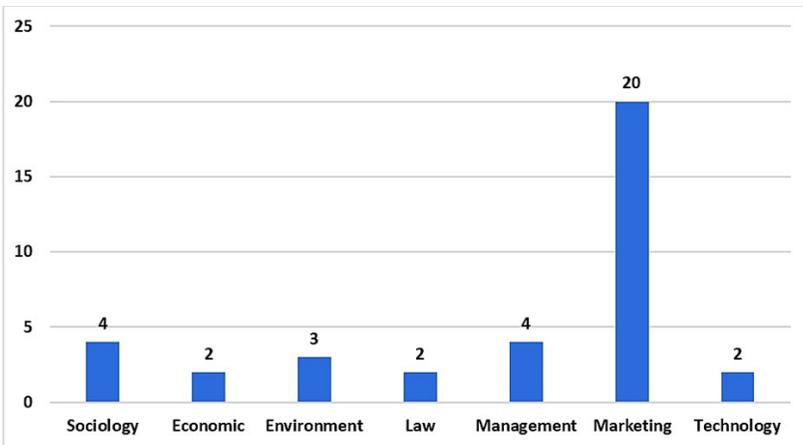


Figure 6: Number of Articles Published by Research Topic

### Publication and Intellectual Knowledge

Table 4 briefly shows the findings of most-cited authors, source, and title of research from previous studies that investigated ecotourism in TNNP, Malaysia. Based on the table, it indicates that the top-ranking paper was published in the International Journal of Trade, Economics and Finance in 2010, with 23 citations, and the authors are from UiTM. The second-ranking paper was also from UiTM and published in 2010 in Management Science and Engineering Research with 20 citations. Since the earlier published year, a citation score per year was also calculated to provide a different index for

comparison and the longer the duration that an article has an opportunity to be quoted. In addition, these papers were found to rank in the same position based on the citation number obtained from Google Scholar.

Among the top ten most cited papers, two are from conference proceedings with six citations, respectively. The analysis of the research topics (refer Figure 6) and Table 4 proved that there is an untapped research topic that should be conducted at TNNP. By addressing the unseen benefits of TNNP towards tourist wellness, the governing body can take the opportunity in revamping the segmentation image of TNNP, from conventional benefits such as observation and enjoyment of nature and wildlife and traditional culture to hybrid benefit by adding wellness outcomes from visiting the park.

**Table 4: Publication and Intellectual Knowledge**

Rank	Author	Source	Title	Total Citation
1	Chui, Rahim, Hassan, Musa, Yusof & Hashim	<i>International Journal of Trade, Economics and Finance</i>	Exploring tourist experiencescape and servicescape at taman negara (national park malaysia).	23
2	Zainuddin	<i>Management Science and Engineering</i>	Using photo elicitation in identifying tourist motivational attributes for visiting Taman Negara, Malaysia.	20
3	Ling, Abidin, Nair, Ramachandran, Shuib,	<i>Malaysian Forester</i>	Developing criteria and indicators for responsible rural tourism in Taman Negara National Park (TNNP)	17
4	Saandin, AZIZ, Radam, Yacob,	<i>International Journal of Business and Society</i>	Sustainability of ecotourism resources at taman negara national park: Contingent valuation method	12
5	Barkhordari, Yusof, Geok,	<i>Journal of Physical Education and Sport</i>	Understanding tourists' motives for visiting Malaysia's national park	9
6	Ibrahim & Hassan	<i>Journal of Ritsumeikan Social Sciences and Humanities</i>	Tourism management at Taman Negara (National Park), Pahang, Malaysia: conflict and synergy.	8
7	Tan, AZIZ, Khairil, Zaiton	<i>Pertanika Journal of Social Science and Humanities</i>	Linking servicescape, tourist satisfaction and overall tour guiding experience: The case of Taman Negara National Park, Malaysia	7
8	AZIZ, Ramlan, Tasci, Johari	<i>Malaysian Forester</i>	Local community ecotourism business experiences in Kuala Tahan, Malaysia	7
9	Fatimah, Omar & Daim	<i>Procedia-Social and Behavioral Sciences</i>	Lawad, Ye'yo and Tun Yup: The Manifestation of Forest in the Lives of the Bateks in Taman Negara National Park	6
10	Chui, Rahim, Hassan, Musa, Yusof, & Hashim	<i>Proceeding of international conference on business, economic and tourism management</i>	Segmenting Nature-based tourism and perception of servicescape at Taman Negara (National Park Malaysia)	6

Rank	Author	Source	Title	Total Citation
11	Dahan, Ahmad & Ho	<i>Proceeding of international conference on business, economic and tourism management</i>	Crisis Management at Taman Negara National Park, Kuala Tahan, Pahang, Malaysia.	6
12	Musa & Kassim	<i>Int J Econ Bus Eng</i>	Factorial structure and psychometric validation of ecotourism experiential value construct: insights from taman negara national park, Malaysia.	5
13	Musa, Rosidah, Yusof, Jamaliah, Chui, Carol	<i>Proceeding of European conference on research methodology for business and management studies</i>	Factorial Validation of ecotourism destination image and ecotourist motivation: empirical analysis of Taman Negara National Park (TNNP), Malaysia	4
14	Aelizam, Syed-Alias, Mazlina, Idris & Manohar	<i>Journal of Wildlife and Parks</i>	The attractiveness of Taman Negara National Park, Malaysia as perceived by local visitors.	3
15	Shantha, & Ali	<i>Sabaragamuwa University Journal</i>	Pricing ecological beauty under Dichotomous choice framework: the case of Taman Negara national park in Malaysia.	3
16	Mihanyar, Rahman & Aminudin	<i>Proceeding of International Conference on Marketing and Retailing</i>	The effect of national park mobile apps on national park behavioural intention: Taman Negara national park.	2
17	Samdin & Aziz	<i>Proceedings of International Research Symposium in Service Management Yogyakarta, Indonesia</i>	The role of socio-demographic and economics on ecotourism activities at the Penang National Park, Malaysia: A services marketing perspective.	2
18	Hassan & Azhar	<i>Asian Journal of Water, Environment and Pollution</i>	The Impact of Ecotourism in Taman Negara National Park, Malaysia: Tourist Perception on Its Environmental Issues	1
19	Azman & Isa	<i>Adventure and Ecotourism In Malaysia</i>	Tourist-host interface as perceived by local community at an ecotourism destination: A case study on Taman Negara National Park (Kuala Tahan).	1
20	KY & NH	<i>Health and the Environment Journal</i>	Local Communities' Perspectives towards Nature Conservation: A Study of Taman Negara Pahang, Kuala Tahan Malaysia.	1

Rank	Author	Source	Title	Cit
31	Sam Shor & Shukri	<i>Malaysian Forester</i>	Characteristics of climbers of Gunung Tahan, Taman Negara National Park, Pahang, Malaysia	
32	Chew, Goh, Roslawati & Phang	<i>Proceeding of International Conference of Innovation and Management</i>	Measuring Tourist Satisfaction at Taman Negara Pahang: A Preliminary Study.	
33	Milhanayar, Rahman & Aminudin	<i>Proceeding of international hospitality and tourism conference</i>	The influence of generic and specific features of destination attractiveness on behavioural intentions: Taman Negara National Park	
34	Huda Farhana, Vivien, Zaman & Noor Aini	<i>Proceedings of the International Hospitality and Tourism Conference</i>	Assessment of the socio-cultural impacts of ecotourism development in Penang National Park, Malaysia	
35	Shantha & Ali	<i>Proceedings of the International Symposium on Agriculture and Environment</i>	Pricing nature-based activities at Taman Negara National Park in Malaysia: a contingent valuation method.	
36	Ghazvini, Lim & Sarmento	<i>Proceeding of Asia-Euro Conference 2012 in Tourism, Hospitality &amp; Gastronomy</i>	Value orientations and environmental concern among tourists in taman negara national park, malaysia.	
37	Hassan & Ibrahim	<i>Recreation, tourism and nature in a changing world</i>	Monitoring and management of visitor flows in recreational and protected areas: use and abuse of nature areas in Taman Negara (National Park) Pahang, Malaysia.	

## **DISCUSSION AND CONCLUSION**

To the best of our knowledge, this is the first bibliometric analysis of ecotourism research at TNNP, Malaysia. Prolific authors, most cited journals and proceedings, and ecotourism research topic in the past decade were recognised. To construct a complete overview of the study, over a decade (2010 – 2020) of publications in this topic has been analysed. As the result, a systematic overview of productivity and visibility of research work in ecotourism been provided. The findings will lead in organising and prioritising future research efforts in ecotourism research.

The current study provides some insights that offer implications toward academicians and practitioners. From an academic perspective, the study contributes to answers some important questions that researchers should take into consideration in their study on ecotourism. The bibliometric analysis led the researcher to comprehend and recognised the emerging trends in ecotourism topic, prolific affiliation, the reputable journals that support the study, as well as the availability of reference source, potential and respective shortcoming.

Moreover, the recent study shows there is a big opportunity to reposition TNNP as an innovative tourist destination for eco-wellness, by investigating the effect of nature on human health and the role of that national park in enhancement ecotourist quality of life and wellbeing, after COVID-19 crisis. In other words, connecting to nature to improve visitors' psycho-physical health level while still enjoying real contact with nature, community, and destination (Ferrari & Gilli, 2017). However, there is substantial of studies in this area emphasis on the relationship of quality of life or the subjective well-being of residents of tourism destinations, with few studies attempt to investigate the contribution of specific tourism activities to tourists' subjective well-being (Kim, Lee, Uysal, Kim & Ahn, 2016; Su, Swanson & Chen, 2016). Their statement supports the results in Table 4 had shown the evident of absent quality of life or the subjective wellbeing study at TNNP.

In the future, TNNP could play a role in the improved public health and wellness level, at the same time, help to rejuvenate the visitation on

post COVID-19 and near future. According to Wen, Kozak, Yang & Liu (2020), nature-based activity (hiking, trekking, wild-life observation or nature interpretation) such in protected park could be an opportunity to be promoted to the post COVID-19 tourists to breath the fresh air, connected to nature and rejuvenate themselves after overwhelmed stressful with the outbreak period. Likewise, in 2003 after SARS crisis, new spurs to travel to nature-based areas became evident (Hong, Cai, Mo, Gao, Xu, Jiang& Jiang, 2020). Nature-based areas were likely to be target destination by post-crisis tourist. Thus, there was a potential marketing reinforce that nature-based tourism types could be revitalized and expanded after the COVID-19 crisis. This is in line with the Sustainable Development Goals 2030 Agenda which emphasis on people's quality of life and well-being (Ramkissoon, Mavondo, & Uysal, 2018).

Based on practical view, the results suggest that practitioners in the field of ecotourism should take into consideration on findings from the research conducted by integrating their business operation with the findings, so that it could help to enhance their business performance as well as supporting the sustainable development goals to mitigate the potential negative consequences from the mass tourism and thus could remain preserve the nature and culture. Moreover, findings from future studies to this particular area could provide insight for tourism practitioners or destination management on the strengthening the marketing strategies to promoting visiting natural setting such TNNP to heighten their well-being and enhanced quality of life.

## **LIMITATION**

It crucial to be highlight that, the data was collected from Scopus, Web of Science and Google Scholar databases. Therefore, there are potential limitations applied to this study. With regards to the collection of the articles from one to another database on ecotourism study, it is understandable that different database utilises had different criteria; thus, we have elucidated that this variability may establish a limitation of our study. Indeed, Google Scholar had advantage and gained more popularity, and over time more scientific rigor is being systematised and realised. Meanwhile, the Scopus

and WoS offered guaranteed quality and quantity of articles in the world's best scientific journals.

Other limitations could be considered in the study. The purpose of this study was to investigate all the ecotourism-related articles published between 2010 and 2020. As this study only covered a decade, future research could, therefore, be extended to cover other periods. In addition, the sampling method, statistical techniques, results, and recommendation of the study could also be examined. Additionally, other aspects will be studied in the next article, such as the impact factor, the quartile within which the different journals lie.

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