

Ecotourism, past, current and future perspectives: A bibliometric review between 2001 to 2018

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Abstract

Ecotourism is natural based travel that conserves the environment, sustains the well-being of the local communities, and involves environmental interpretation and education. A number of literature reviews have been published focusing on specific aspects of the ecotourism market segmentation, ecological impacts of wildlife viewing, and community-based ecotourism, but there has been minimal attention to critical areas such as quality control, the industry, external environments or institutions. In order to further promote related studies, it is important to conduct a comprehensive review on ecotourism so that recent research progresses can be summarized and future research directions can be identified. Accordingly, this paper aims to conduct a bibliometric review on ecotourism to glean the past, current and future perspectives on ecotourism. Based on 1,889 articles published from 2001 to 2018 and searched from Web of Science, a systematic method combining bibliometric analysis and network analysis is applied to uncover the dynamic trends, academic collaboration and research hotspots. Results show that the overall publication quantity had been gradually improved. The key journals include Journal of Hospitality and Tourism Management, Annals of Tourism Research, Conservation Biology and Biological Conservation. Authors from USA have the most publications and international co-authorships, followed by Australia and England, while the most influential institution is the Chinese Academy of Science followed by Griffith University. Moreover, research keywords have been identified, including ecotourism, management, biodiversity, national park, sustainability and sustainable tourism. In order to further improve research in this field, it is crucial to combine different methods so that more innovative perspectives can be presented. Research findings from this study will provide limitations, and suggestions for future research.

Keywords: ecotourism, green travel, low carbon tourism, bibliometric review method, network analysis

1. Introduction

Ecotourism dates back in 1973 when the word “ecotour” was first recorded and lately followed by “ecotourism” in 1982 according to *The Oxford English Dictionary*. Ecotourism is natural based travel that conserves the environment, sustains the well-being of the local communities, and involves interpretation and education (Bjork, 2000; Ceballos-Lascurain, 1996; Epler Wood et al., 1991; Similarly, Wight 1993; TIES, 1990 & 2015; Valentine, 1993). Climate change is currently a topical environmental issue throughout the world and it has raised awareness about environmental protection and the maintenance of the ecology, giving rise to ecotourism as a new niche within the tourism industry (Jamal and Watt, 2011; Maslin, 2013; Scott, Hall and Gössling, 2012; Strokes, Wike and Carle, 2015). Ecotourism focuses on experiencing natural sites, the appeal of environmental conservation and it provides satisfaction with experiences for tourists attracted to natural sites (Webb, 2003). Therefore, tourists are required to obey local regulations, avoid harm of natural environment and be environmental friendly.

Wight (1993) lists important criteria for ecotourism that states that ecotourism should not degrade the resource, it should be first-hand, participatory and enlightening, educational it, include recognition for the value of the local resources, involve acceptance of the resource, be characterized by mutual understanding and collaboration of many players, promote moral and ethical responsibilities, and lead to long-term benefits. Similarly, Sirakaya, Sasidharan and Sonmez (1999), suggest that ecotourism can be defined by the following five criteria, minimal negative impact on the host community, evolving commitment to environmental protection, generation of financial means to protect resources, active involvement of local residents, and social benefits to the host community. The ecotourism development objectives are to protect natural areas, production of revenue, education and local involvement and capacity building (Pedersen, 1991; Ross & Wall, 1999). It is based on the notion that the ecological environment constitutes a local resource which creates economic value by attracting tourists.

The concept of ecotourism emphasizes on sustainable development as well as responsible behavior towards the environment as nature conservation systems (Handriana and Ambara, 2016). Through responsible behavior towards the environment, tourists are anticipated to be able to restrict damage to the environment (Chiu et al., 2014b). Tourists’ perception on responsible behavior towards environment is strongly influenced by their experience prior and

during visit on a destination (Chiu et al., 2014b) and that will indirectly increase the tourist destination arrivals. Ecotourism has positive and negative issues, however if issues are taken seriously and properly there will be positive results of ecotourism

Tourist's behavior towards sustainable ecotourism development is crucial. Previous research studies has shown that tourist behavior such as disregard for local culture and environmental impact may have a negative on local residents (Ng, Chia, Ho, and Ramachandran 2017). Tourists that appreciate the physical environment of a destination through the interpretation services that they perceived (Lee et al., 2013). An experience received in a destination would affect tourist's attitude and environmental behavior, however not all tourist's will act positively towards environment (Chiu et al., 2014a). Tourists travel to ecological sites because they are attracted to natural resources (Chiu et al., 2014a), thus it is essential to sustain the ecological site.

The aim of this research study is evaluate the global trend of research literature related to ecotourism from 2001 to 2018. Using bibliometric analysis method, various publication characteristics will be obtained such as publication types, the subject categories, institutions, countries, citation patterns as well as content analysis of keywords and titles. In addition, focus is placed on the development patterns of, e.g. agro-tourism, to enable participation from the local community, particularly in terms of the development and operations of tourism, pro-poor tourism which is a type that is set up in developing countries as a means to basically improve the local economy and assist people as best as possible in different countries.

2. Methodology data collection and treatment

2.1. Methods

In this research study a combination of hybrid method namely bibliometric analysis and network analysis was adopted. Bibliometric analysis technique was defined as the application of mathematical and statistical methods to books and other means of communication (Pritchard, 1969). Bibliometric analysis is a quantitative study of literature that provides evolutionary models of science, technology and scholarship (Bellis 2009, Hou et al 2015, Persson et al 2004, Tsay 2008, White and McCain 1989; Zhang et al 2015). Bibliometric analysis has been extended from the field of library and information scienceto other areas to evaluate scientific progress and

direct young researchers to identify future research directions (Fu et al 2010; Liu et al 2011) . The advantage of bibliometric analysis is that it provides time series evaluation of research topics within certain rules and recognizes the knowledge intensive nature of scientific research (Van 2005).

The Impact factor (IF) and Hirsch index known as h-index are indicators that closely relate with bibliometric analysis. The impact factor is a standardized indicator to evaluate the quality of journal, which is created by the Institute of Scientific Information (ISI) according to journal's citations and publications (Buela-Casal and Zych 2012; Garfield 2006) . with a higher indicator reflects higher quality of a journal though some arguments exist on this indicator.

The h-index “gives an estimate of the importance, significance, and broad impact of a scientist’s cumulative research contributions”. H-index means that h of one's total articles are cited at least h times (Hirsch, 2005; Hirsch and Buela-Casal, 2014). The h-index is a frequently-used indicator to assess both the quantity and quality of one author’ academic publications (Alonso et al., 2009). It is defined as the total papers published by one scholar which have been cited at least h times (Bornmann and Daniel, 2007).

2.2 Social network analysis (SNA)

Social network analysis

is a quantitative driven approach that evaluate relationship between social actors (Carrington et al. 2005; Chen et al. 2017). It provide valuable insights into complicated social relationships among different actors, which comprise authors, institutions, regions and keywords (Newman, 2001; Scott, 2017; Wasserman and Faust, 1994). Network analysis can help clarify the relations among different items by underlying a network of nodes and links through which information or social relationships travel.

2.2. Data collection and treatment

Web of Science is an online academic citation index and database. It is also known as one of the most important databases that offer standardized and high-quality academic information. [Fig. 1](#). Shows the review flowchart. Level 1 filters data containing ecotourism, green travel and low carbon tourism. Publications related with climate change were then searched at level 2, which represents the key context of this review.

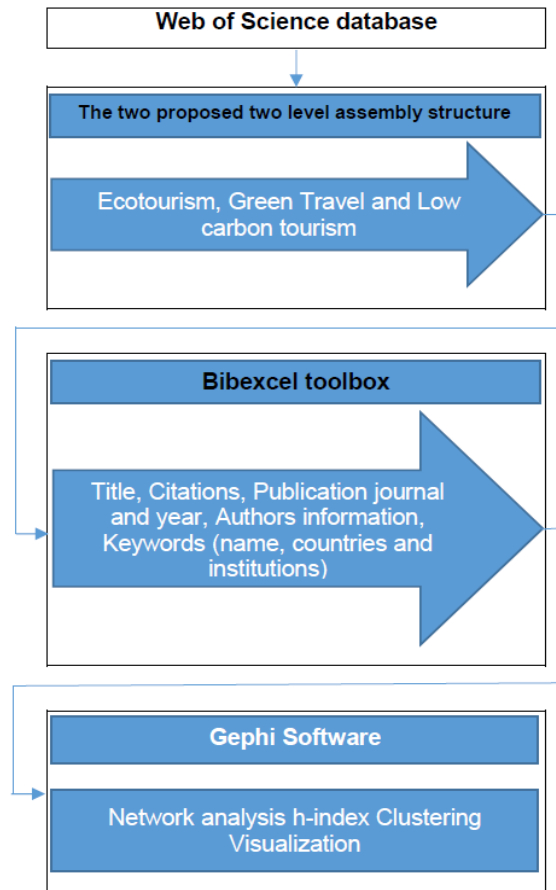


Fig. 1. A flowchart of systematic bibliometric review

Keywords (ecotourism, green travel and low carbon tourism) was used to search the related published publications during the period of 2001-2018. The search was conducted in November 2018, and 1771 documents were found. Of all publications retrieve from Web of Science, research articles account for (56.30%), proceeding papers (28.05%), book review (7.53%), and others (e.g. book chapters, review papers, corrections, records review, meetings, letter, news items, meeting abstracts, editor material). Similarly, English (94.47%) is the most frequently used language for such search, followed by Spanish (2.25%), Portuguese (1.51%) and others. In order to provide an international perspective, only research articles published in English are further analyzed in this paper. Finally, a total of 1 771 documents were reserved for further analysis after removing irrelevant publications manual screening and BibExcel software.

3. Results and discussions

3.1. The performance of related publications

The annual numbers of publications and average citations per year were presented in Fig. 2. It is clear that both annual number of publication and annual total citation increased dramatically, indicating the growing academic interest in ecotourism. During 2001 and 2004, both annual number of publication and annual total citation were few due to the lack of concerns on climate change, environmental problems and tourism. However the gradual increase show from 2005 to 2017 in both annual number of publication and annual total citation. The annual number of publication total citation of 2012 were doubled in 2017. Brundtland Report published in 1987 made ecotourism known internationally as a sign of environmental awareness through that publication United Nations Commission on Environment and Development also called ecotourism Our Common Future and there were no much research publication. Nevertheless, since United Nation has celebrated the “International Year of Tourism” in 2002, ecotourism attracted a number of researchers, philosophers and related institutions who had interest in the new emerging niche market.

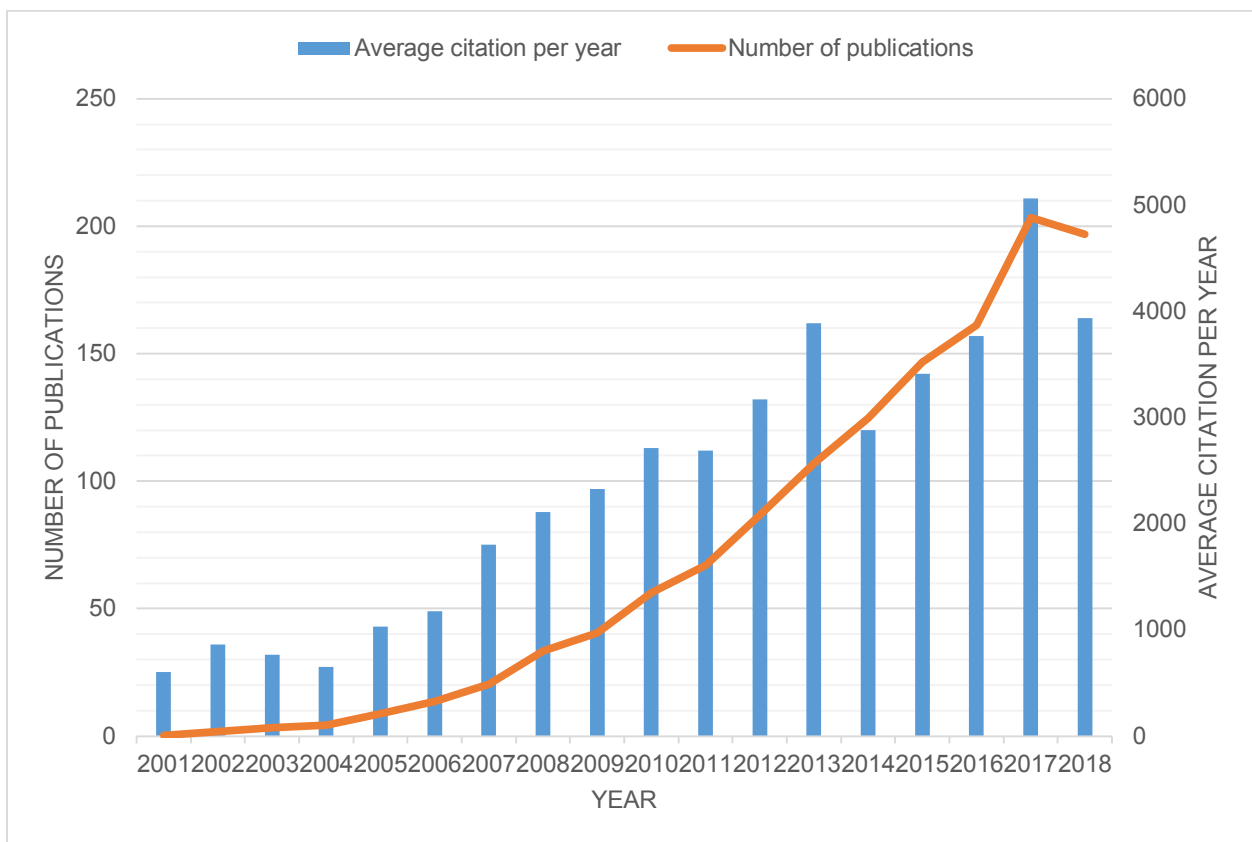


Fig. 2. General trends of selected publications from 2001 to 2018 on ecotourism

3.2. Journals' performances

Table 1 lists the top 10 most productive journals, including the detailed publications in different journals, as well as the percentages and impact factors. Journal of Sustainable Tourism is the most productive journal with over (6.26%) of the total publications. The second most productive journal is Journal of Hospitality and Tourism Management (3.63%), followed by Biological conservation (2.515%) Annals of Tourism Research (1.733%) Journal of Environmental Management (1.621%) Biodiversity Conservation (1.509%) Ecological Economics (1.397%) Environmental conservation (1.397%) and Conservation Biology (1.23%). The majority of top 10 productive journals belong to Elsevier, one of the most famous academic publishing companies in the world.

Table 1

Top 10 productive journals in the field of ecotourism from 2001 to 2018.

| Journal name ^a | Publications (Rank) ^b | % ^c | IF (2017) ^d |
|---|----------------------------------|----------------|------------------------|
| Journal of Hospitality and Tourism Management | 65(2) | 3.633 | 5.921 |
| Annals of Tourism Research | 31(4) | 1.733 | 5.086 |
| Conservation Biology | 22(9) | 1.23 | 4.660 |
| Biological Conservation | 45(3) | 2.515 | 6.660 |
| Journal of Sustainable Tourism | 112(1) | 6.26 | 3.329 |
| Ecological Economics | 25(7) | 1.397 | 3.895 |
| Environmental Conservation | 24(8) | 1.397 | 2.293 |
| Science Journal | - | - | 37.205 |
| Biodiversity Conservation | 27(6) | 1.509 | 2.828 |
| Journal of Environmental Management | 29(5) | 1.621 | 4.005 |

^a Conferences or Meetings organized for specific research issues.

^b The total publications in that journal during 2001–2018.

^c The percentage of the related publications in that journal.

^d The journal's impact factor for 2017.

3.3. Countries' characteristics

3.3.1. Countries' international cooperation on eco-tourism

Fig. 3. show the top 6 most productive countries (e.g. USA, Australia, England, China, South Africa and Canada) in international cooperation on ecotourism. The USA is the most active country for ecotourism-related international cooperation, especially with China, Malaysia, Taiwan, Japan, Australia, India, Greece, Canada, South Africa and Italy. As the most productive country, China also actively cooperated with other countries, such as Italy, Taiwan, England, Turkey, Japan and Canada. The only African country, South Africa actively cooperated with other countries, such as England, Scotland, France, Australia, Spain and Netherlands. It is common that countries with high academic publications usually tend to have close cooperation

with each other since scholars can easily find potential research partners from these countries due to their similar research interests. Essentially, such international cooperation enhanced their research abilities and improved the development of ecotourism studies.

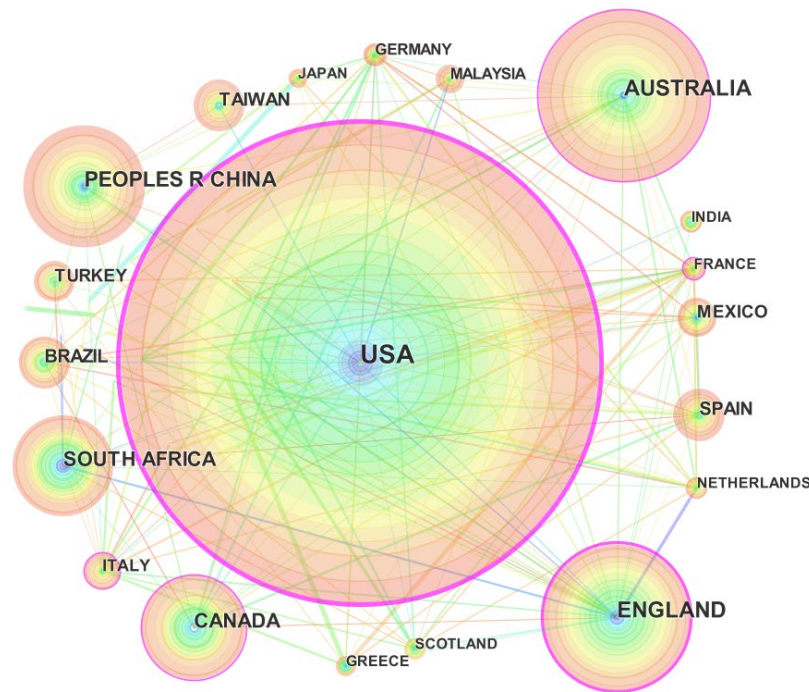


Fig. 3. The cooperation network of the top 20 most productive countries

3.3.2. Countries' performances

The number of publications from one country reflects the attention and overall strength of this country in the related research fields. Fig. 4. shows the top 15 most productive countries the situation that only the first author's nationality is considered. The USA, accounting for 30% of all the publications was the most productive country with respect to total publications, publications without international collaborations, publications with international collaborations, and the first-author country followed by Australia is the second most productive country by (11%) of total publications but with big gap to USA. Other productive countries include England (10.6%), China (8%), South Africa (7%), Canada (7%), Brazil (4%), Taiwan (4%), Spain (4%), Turkey (3%), Mexico (3%), Italy (3%), Malaysia (2%), Germany (2%) and India (2%) indicating a global attention on this research topic.

It is not surprising that USA is the most productive country in ecotourism publications. The ecotourism industry in the USA is predominantly privately owned and locally managed.

However, the USA government has several major land and water management agencies that support and promote ecotourism, including the National Park Service (NPS), National Forest Service, U.S. Fish and Wildlife Service (FWS), Bureau of Land Management (BLM) and National Marine Fisheries Service (NMFS). A number of ecotourism destinations are also managed by state and local government (US State Department Web Site). Ecotourism in USA represents a large proportion of the tourism industry and USA is the most productive, reflecting its leadership in the field of ecotourism.

Australia ranked 2nd of the most productive countries in ecotourism. It is well known because of its native grasslands, its wetlands, and the diversity of its wildlife. Ecotourism Australia (EA) officially formed in 1991 as the first national ecotourism body in the world committed to assist tourism operations to adapt environmentally sustainable, economically viable and socially and culturally responsible practices (Source). EA works with a number of industry sectors that include, ecotourism operators, protected area managers and other government agencies, local and regional tourism associations, tourism, environmental, interpretation and training consultants, tourism planners, students and travelers, to ensure the protection and vitality of not only the environment but the economic well-being of the indigenous population (source).

The tourism industry in China continues to grow and is accounting for a significant portion of the national economy. China ranked 4th is the most productive countries in ecotourism. China has a high potential for ecotourism since it has vast reserves (Ministry of Environmental Protection or the MEP, year). However, ecotourism in China still has a long way before it can call itself a complete ecotourism due to lack of regulation enforcement and education complicates the development. Ecotourism growth in South Africa is particularly exceptional because of natural geographical beauty, an abundance of wildlife and exotic vegetation (Lindsey et al, 2007). South Africa ranked 5th of the most productive countries in ecotourism. In support of ecotourism South Africa became the first in the world to adopt responsible tourism as an official policy in the 1996, and the 2002 Cape Town Declaration, on basis for the International World Responsible Tourism awards that was formulated in accordance with this policy. South Africa is also the only country in the world to have a "fair trade" label for its tourism products.

Furthermore among top 15 most productive countries, 5 countries are from Asia, 4 countries are from Europe, indicating that Asia and Europe are actively supporting ecotourism.

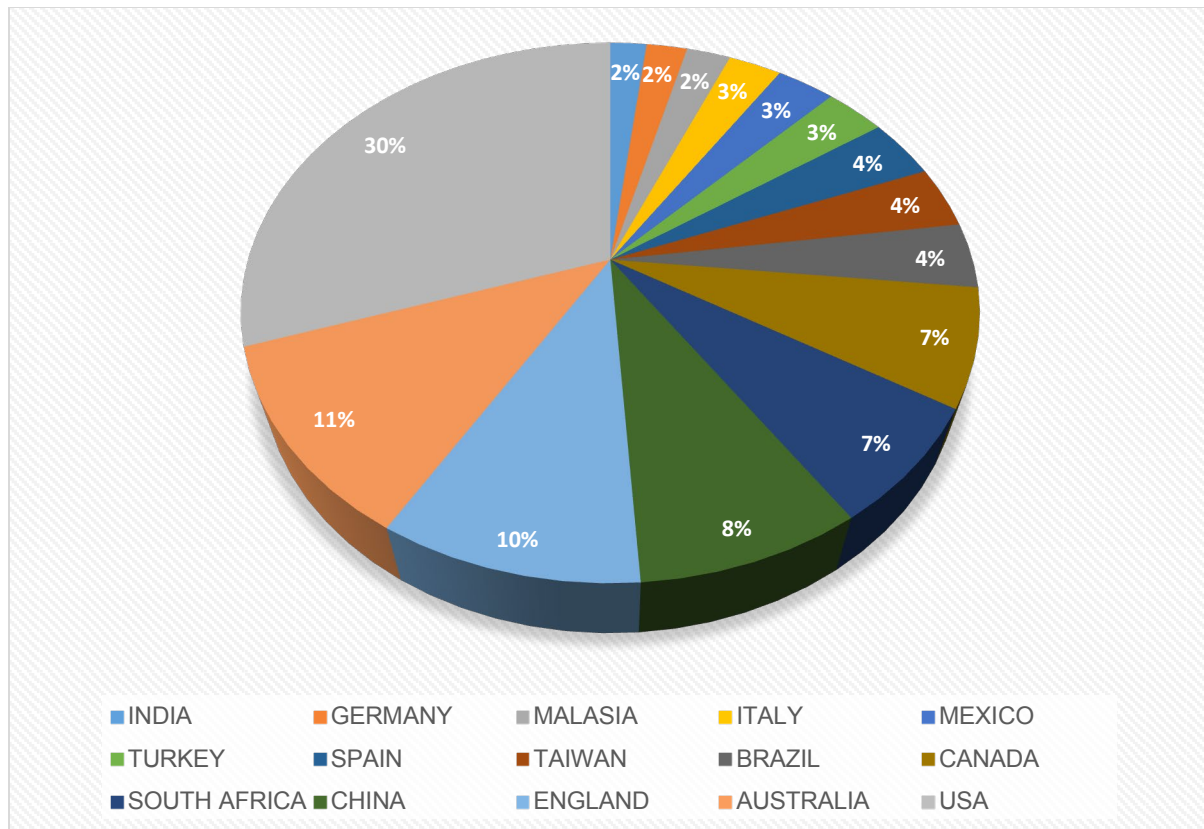


Fig. 4. The top 15 most productive countries.

3.3.3. Academic cooperation

Academic cooperation among different countries is of significance. On one hand, they can communicate with each other to enhance their understanding and seek innovative solutions. On the other hand, developing countries with less developed technologies can learn from developed countries through international collaboration. Fig. 5. illustrates the academic collaborative relationships among various countries during the period of 2001–2018. It indicates that the top 5 countries with more international collaborations are the USA, Australia, England, China, South Africa, Canada, . Major European countries, including France, Germany, Greece, Italy, Spain, Scotland and England, have more mutual collaboration due to their geographical proximity, common culture and active promotion of ecotourism. South Africa is the only African country in this field and South African scholars have collaboration with the U.S, England, Australia, Italy, Brazil, Canada, Spain, Scotland and France. The results also show that South Africa does not have international collaboration with the Asian countries for example China, Japan, Taiwan, Turkey, India and Malaysia. Interestingly there is no cooperation among African countries. Asian countries are increasingly promoting ecotourism for example China and

Taiwan, but ecotourism has been developed to distinct levels because of the use of dissimilar political systems.

USA led the international academic cooperation on ecotourism, other countries, such as China, Japan, Taiwan, Turkey, India and Malaysia, should further collaborate with other countries out of Asia so that more productive and innovative research outcomes can be presented. The Global Eco Asia-Pacific Tourism Conference attract the world's best ecotourism operators and tourism professionals. It has been hosted in different countries of Asia addressing ecotourism sustainability and responsible tourism. However, less academic cooperation between Asian countries and Africa, Australia, Europe and USA was conducted. Therefore, it is critical to further promote academic collaboration between China and leading USA, Australia and Europe so that more technology transfers can occur. In this regard, research funding agencies from different countries should work together to provide more joint research opportunities.

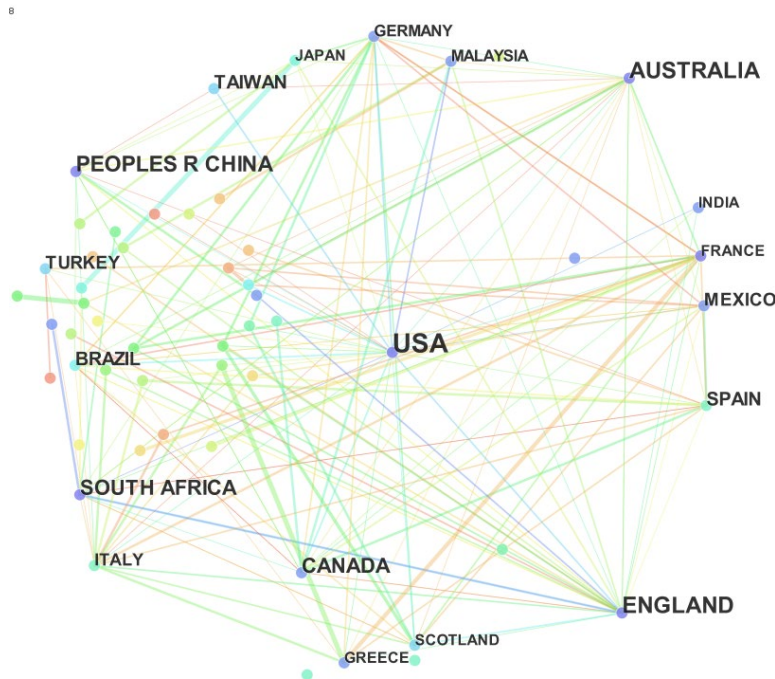


Fig. 5. The academic collaborative relationships among countries

3.4. Institutions' performances

Table 2 illustrates the primary performance of the top 15 most productive institutions in ecotourism related research from 1997 to 2018. Among all of them, 4 institutions are located in the USA indicating that the American research institutions are more active in such a field than other countries. Luo and Zheng (2008) mention that since ecotourism was introduced in China

most tourist (international and domestic) visit state forest parks, state nature reserves, major scenery areas, global geological parks and global cultural relics. Chinese Academy of Science in China is the most productive institution with the largest amount of total publications, followed by Griffith University and James Cook University both from Australia. Another institutions from developing country are University of Cape Town, University of Pretoria and University of Johannesburg in South Africa indicating that the developing countries need to further support the related studies.

Table 2

The top 15 most productive institutions on ecotourism during the period of 2001–2018.

| Rank | Institutions | Country | Articles |
|------|--------------------------------|--------------|----------|
| 1 | Chinese Academy of Sciences | China | 35 |
| 2 | Griffith University | Australia | 34 |
| 3 | University of Florida | USA | 27 |
| 4 | James Cook University | Australia | 26 |
| 5 | University of Cape Town | South Africa | 26 |
| 6 | Texas A&M University | USA | 22 |
| 7 | University of British Columbia | Canada | 18 |
| 8 | University of Oxford | UK | 14 |
| 9 | University of Pretoria | South Africa | 13 |
| 10 | University of Queensland | Australia | 12 |
| 11 | Clemson University | USA | 12 |
| 12 | University of Johannesburg | South Africa | 12 |
| 13 | Aristotle University | Greece | 12 |
| 14 | Thessaloniki | Greece | 12 |
| 15 | Stanford University | USA | 11 |

3.5. The most cited articles

The variation of annual citations could be used to track the impact of the publication. Although miscounting citations may occur occasionally, the main patterns and the trace of research hot spots remain in data. Fig. 6. displays the most frequently cited articles, average annual citations, article's title and the country of origin in each year from 2001- 2018 (Weaver and Lawton, 2007; Krüger, 2005; Kiss, 2004; Honey, 2008; Gallagher and Hammerschlag, 2011; Stronza and Gordillo, 2008; Balmford et al. 2009; Fitzpatrick et al. 2011; Weaver, 2005; Müllner at el. 2004; Clua et al. 2010; Vianna et al. 2012; West and Carrier, 2012; Jones, 2005; Gallagherat el. 2015; Coria and Calfucura, 2012; Ballantyne and Packer, 2011; Hammerschlag et al. 2012).

Table 3 show the most frequently cited article during the last two decades was “Is Community-Based Ecotourism a Good Use of Biodiversity Conservation Funds?” published on Trends in Ecology and Evolution in 2004 and has been cited 301 until 2018. This paper focus on identifying conditions under which community-based ecotourism is or not, likely to be effective, efficient and sustainable compared with alternative approaches for conserving biodiversity. The results show that biodiversity conservation, ecotourism is a fairly good land use, but not as good as (effective) pure protection. Ecotourism can generate income and contribute to community development, but only within limits and considerable investment of support and time. It can also decrease the need for long term external financing for conservation under some circumstances, but will rarely eliminate it entirely (Kiss, 2004). However the most average citations a year was “A Global Perspective on Trends in Nature-Based Tourism” with 24 citations a year followed by “Twenty years on: The state of contemporary ecotourism research” 23 citations a year (Balmford et al. 2009; Weaver and Lawton, 2007). The high number of citation of these 3 articles indicate that much attention has been drawn in the field of ecotourism.

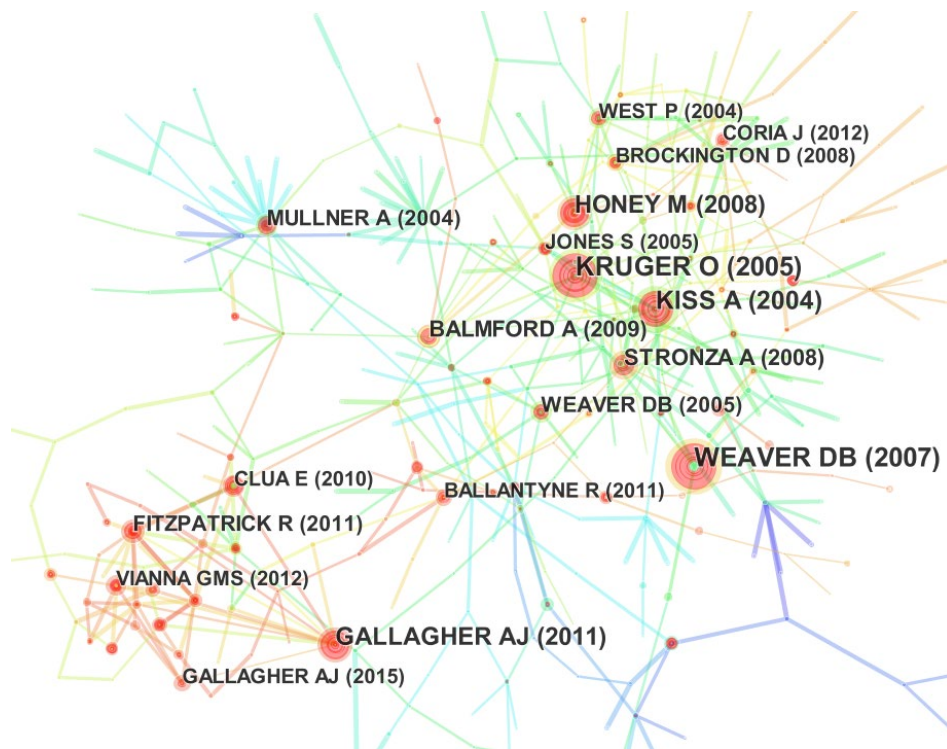


Fig. 6. The performances of top 20 most productive authors.

Table 3

Top 20 most cited articles in each year 2001 to 2018

| Year ^a | TC ^b | C/Y ^c | Article/Journal | Author ^d | Country ^e |
|-------------------|-----------------|------------------|--|---------------------|----------------------|
| 2007 | 256 | 23 | Twenty years on: The state of contemporary ecotourism research | Weaver, DB | USA |
| 2005 | 197 | 14 | The role of ecotourism in conservation: panacea or Pandora's Box? | Kruger, O | UK |
| 2004 | 301 | 22 | Is Community-Based Ecotourism a Good Use of Biodiversity Conservation Funds? | Kiss, A | USA |
| 2008 | - | - | Ecotourism and Sustainable Development: Who Owns Paradise? | Honey, M | USA |
| 2011 | 101 | 14 | Global shark currency: the distribution, frequency, and economic value of shark ecotourism | Gallagher, AJ | USA |
| 2008 | 152 | 15 | Community Views of Ecotourism | Stronza, A | USA |
| 2009 | 212 | 24 | A Global Perspective on Trends in Nature-Based Tourism | Balmford, A | UK |
| 2011 | 55 | 8 | Variation in depth of whitetip reef sharks: does provisioning ecotourism change their behaviour? | Fitzpatrick, R | Australia |
| 2005 | 148 | 11 | Comprehensive and Minimalist Dimensions of Ecotourism | Weaver, DB | Australia |
| 2004 | 190 | 14 | Exposure to ecotourism reduces survival and affects stress response in hoatzin chicks | Müllner, A | Ecuador |
| 2010 | 109 | 14 | Behavioural response of sickle fin lemon sharks <i>Negaprion acutidens</i> to underwater feeding for ecotourism purposes | Clua, E | Australia |
| 2012 | 96 | 16 | Socio-economic value and community benefits from shark-diving tourism in Palau: A sustainable use of reef shark populations | Vianna, GMS | USA |
| 2004 | 190 | 14 | Ecotourism and Authenticity: Getting Away from It All? | West, P | USA |
| 2005 | 175 | 13 | Community-based ecotourism. The Significance of Social Capital | Jones, S | UK |
| 2008 | 49 | 5 | Powerful environmentalisms: conservation, celebrity and capitalism | Brockington, D | England UK |
| 2015 | 39 | 13 | Biological effects, conservation potential, and research priorities of shark diving tourism | Gallagher, AJ | USA |
| 2012 | 80 | 13 | Ecotourism and the Development of Indigenous Communities | Coria, J | Sweden |
| 2011 | 62 | 9 | Using tourism free-choice learning experiences to promote environmentally sustainable behaviour: the role of post-visit 'action resources' | Ballantyne, R | Australia |
| 2012 | 61 | 10 | Don't bite the hand that feeds: assessing ecological impacts of provisioning ecotourism on an apex marine predator | Hammerschlag, N | USA |
| 1999 | - | - | Ecotourism and Sustainable Development: Who Owns Paradise? | Honey, M | USA |

^a PY: The year. ^b TC: The total citations of the article. ^c C/Y: The average citations of the article. ^d Author: The first author. ^e Country: The country of all the authors including the corresponding author.

3.6. Research key points

3.6.1. Keywords' performances

Keywords are concepts and topics that describe the research content. They represent the main research emphases of an article and can help readers recognize the key research contents of an article. Keywords analysis was conducted to reveal the topical issues and trending research topics. There was a total of 5947 keywords in 1772 publications. Fig. 7. show the most frequently used keyword. So many keywords indicate diversified studies on ecotourism and most focus on research objects. Ecotourism is the most common keyword that appears (991 times). Ecotourism is seeks to conserve resources, especially biological diversity, and maintain sustainable use of resources, which bring an ecological experience to travelers, conserve the ecological environment and gain economic benefit. Other key words that are prominent include, conservation (444 times), tourism (344 times), management (277 times), protected area (200 times), biodiversity (167 times), community (160 times), national park (145 times), impact (143 times), biodiversity conservation (124 times), attitude (118 times), behavior (110 times) and sustainability (110 times). Other keywords mainly present the research orientation, such as indicators, sustainability, sustainable tourism, community participation, economic benefits, community development etc. These keywords can help readers better understand the key topics of an article.



Fig. 7. Frequency of keywords.

The key words show that the emerging research areas on eco-tourism are environmental impacts, community, cultural landscapes, responsible behavior, biodiversity conservation, profit leakage, herbivore community/ limits, direct driver/ tourism growth, institutional capacity building/ social capacity and community development/ social change as the future directions. It is important to discuss the selected key research areas and provide possible solutions.

4. Discussion

4.1 Policy recommendations

Government institutions, private companies and individuals involved in the ecotourism sector as well as those concerned more broadly with the environmental, social and economic sustainability of tourism organizations must establish basic policies on promoting ecotourism based on ecotourism principles. Those policies must be implemented, periodically monitored, its progress assessed and revised when it's advisable. The published literature review shows that a little has been done on the local level to implement innovative policies, many published research studies on ecotourism recommend ecotourism principles, including: to minimize impact, to build environmental and cultural awareness and respect, to provide positive experiences for both visitors and hosts, to provide direct financial benefits for conservation, to provide financial benefits and empowerment for local people, to raise sensitivity to host countries' political and social climate, and to support international human rights and labor agreement (TIES, 1990). The research study can be used to further improve ecotourism policies. In addition, international and regional cooperation is crucial. International cooperation can help transfer the advanced policies from developed countries to developing countries, while regional cooperation can help cities with geographical proximity to work together for addressing the significance of ecotourism.

4.2 Limitations

In this research study, publications outside of the Web of Science database and citations outside the Web of Science were excluded, which eliminates some influential articles. Research based on other databases, such as Research Gate, Google Scholar, Scopus, Science Direct, to further validate findings of this research study will be worthwhile in the further studies.

5. Conclusions

Ecotourism is contributing to the economic development and the conservation of protected areas by creating jobs for locals and community ownership while generating revenue that will sustain manage protected areas. However cautious planning and management is required to avoid adverse impacts and balance ecological, social, and economic objectives. In conclusion bibliometric analysis techniques was used in this study to investigate ecotourism related literature from 2001 to 2018. The aim was to review the existing outcomes and provide future research directions. The results show that the overall publication quantity had been gradually improved. The key journals include Journal of Hospitality and Tourism Management, Annals of Tourism Research, Conservation Biology and Biological Conservation. Furthermore the leading ecotourism contributors (i.e., USA, Australia, England, China, and South Africa) have close academic collaboration. Particularly, Chinese Academy of Science in China, Griffith University, University of Queensland and James Cook University in Australia contributed greatly to the development of ecotourism; University of Cape Town, University of Pretoria, and university of Johannesburg are the major South African ecotourism research institutions; and University of Florida, Texas A&M University, Clemson University and Stanford University are the key US emergy research institutions. This provides a holistic picture of ecotourism related literature and future research directions, such as the combination of ecotourism and other methods, as well as the combination of ecotourism with some innovation tools. These results will provide future ecotourism related research studies.

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