Education Quality and Tourism Faculty: A Bibliometric Analysis

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Received: 22 July 2022. Revision received: 17 September 2022. Accepted: 11 October 2022

Abstract
Education quality and tourism faculties have a crucial role as qualified personnel is essential in the tourism industry; however, few studies have investigated this field using the bibliometric visualization method. The main aim of this study is to understand the trends in scientific publications about "education quality" and "tourism faculties" and how authors, institutions, and countries interact in these studies. To be able to understand that bibliometric methods within scientometrics were used via Citespace to merge two terms from 2002 to 2021. Data were obtained from the WoS database in January 2022. After the extraction process, a total of 711 publications were found that were linked to education quality and tourism faculties, and a set of co-occurrence, co-cited, and high-frequency word analyses were used. Basic 5 conclusions are derived based on the analysis method. When the five conclusions are examined, the methodology of this study, which is new for educational sciences and tourism, will contribute to the increase of knowledge and epistemology cumulatively in the field. Also, it will lead to the emergence of more publications on related subjects by directing the researchers to the less studied areas. And additional scholarly collaborations may be able to improve the depth of this research.

Key Words: Education quality, Tourism faculty, Bibliometric analysis, Citespace.

JEL Classification: I2


1. Introduction

Tourism education, which is very well known nowadays, has an almost fifty-year history. As tourism education has a long history, many higher tourism education institutes can be seen, especially in Europe, such as the Universities of Rome in 1925, Vienna in 1936, and St. Gallen and Berne in 1941 (Medlik, 1965). But it was after 60s when tourism started to be accepted as a part of higher education in the academy. (Airey, Dredge & Gross, 2015, p. 6). After that time, tourism was accepted as a discipline and became a subject of teaching and research at the higher education institutes such as colleges and universities throughout the World (Airey, 2016, p.9). Tourism faculties where teaching and research about tourism are organized in universities provide specific education according to the needs of the tourism industry. These faculties play a very crucial role in the future development of tourism education to overcome the difficulties of the lack of qualified staff, which is one of the main problems of the tourism industry of countries where tourism has great importance in their economy (Pimar, 2014). According to Perman & Mikinac (2014), the general quality of the hospitality and tourism sectors mainly depends on education and training where tourism faculties and education quality intersect.
When the tourism literature is searched, many bibliometric studies have been found (Evren, & Kozak, 2014; Ruhanen et al., 2015; Gursoy & Sandstrom, 2016; Koseoglu et al., 2016; Güzeller, & Çeliker, 2018; Yılmaz, 2019; Ergün & Kalıpçı, 2020; Mavric et al., 2021; López-Bonilla & López-Bonilla, 2021; Şimşek, 2021). However, none of them was about the two important terms for tourism education, "education quality" and "tourism faculty" which was the starting point for authors to fill this gap in the literature. Because most of the studies only attempt to compare and contrast the perspectives of various stakeholders such as students, graduates, educators, and so forth (Gross et al., 2017).

As a result, the current study will be of great interest to tourism and hospitality academics and administrators. The primary topics and present dynamics of "education quality" and "tourism faculty" in hospitality and tourism are identified in this study and future research directions. To conclude the study, we will examine at publication tendencies, leading journals that publish research on the topic, the most important authors and institutions, and the countries that place special emphasis on research about "education quality" and "tourism faculty" in the hospitality industry. Future scholars will benefit from the summary since they will be better able to discover the most relevant sources and publications. Furthermore, finding a pattern of shared knowledge (and, if applicable, a network) will assist the researchers in determining where to seek additional financial or research assistance. Using themes to develop a coherent structure will aid in identifying potential research gaps in past studies. It aids to identify the prevalent theories, traits, context, and approaches in the theme. Finally, researchers will be able to identify future study goals by grouping and clustering similar tendencies in the literature.

It would be almost impossible to provide a main frame for the stable development of any academic discipline for next generations without understanding its past and how it can evolve. Studying and understanding the historical background of any discipline can create a bridge between past and future (Kozak & Kozak, 2016). This paper's primary goal is to illustrate how a body of information about the quality of education and tourism faculties has developed through bibliometric analysis. So, the historical development of tourism education and tourism faculties were presented in chronological order, dating back to its origins which is the early twentieth century in the literature review. Also, the importance of tourism faculties was discussed. And examples have been given from other countries to be able to illustrate the situation. Finally, the education quality was discussed. Data sources were obtained from WoS including journals, articles, and proceeding. Then, the bibliometric analysis was given to enlighten the relations between two terms via Citespace.

2. Literature review

2.1. History of Tourism as a Discipline

The study of tourism as a discipline stretches back to the end of World War II. As the majority of academicians were economists and the majority of them were German and Swiss. Due to those reasons, the majority of research on tourism at this time focused on the economics, such as how leisure travel affected the balance of payments. After the 1950s, other academic fields like geography and sociology began to contribute to the study of tourism. As a result of the rapid liberalization of the global economy and the effects of globalization that created worldwide tourist movements, the number of tourism schools and academic papers has rapidly expanded since the 1980s during the 2000s (from 20 million people in the 1950s to almost 1.1 billion arrivals in 2014) (Kozak & Kozak, 2016).

2.2. History of Tourism Faculties and Current Situation

In the early 1900s, Germany, Austria, and Switzerland—then known as the University for Tourism and Traffic—had the first examples of organized tourism research. The Research Institute of
Tourism (Forschungsinstitut fuer den Fremdenverkehr), the Institute for Tourism Research (Institut fuer Fremdenverkehrsforchung), the Institute for Tourism Economics (Deutsches Wirtschaftswissenschaftisches Institut fuer Fremdenverkehr), and the Institute for Tourism Economics were all founded in 1931. The first and the third school were founded in Germany, the second one was founded in Austria. Research Institute for Tourism was a six-semester school. In Switzerland, the first attempt was the Research Institute for Tourism [Forschungsinstitut fuer Fremdenverkehr] whose establishment year was 1941 at the University of Berne (Bernecker et al., 1984).

When the literature is reviewed many examples can be seen as tourism institutions in Europe. According to Medlik (1965) some of those higher education institutions and colleges in tourism were established at the University of Rome in 1925; the University of Munich, Germany in 1949; the International Academy of Tourism in Monaco in 1951 (which published not only an international tourist dictionary in 1953 and 1960 but also a quarterly review); Tourism Research Institute at Goethe University in Frankfurt, Germany in 1952; Centre of Higher Studies in Tourism at Institute of Geography, University of Paris, France in 1961; and the Centre of Tourist Studies, University of Aix Marseille, France in 1961.

Airey (2016) has emphasized that tourism come a long way and become one of the most respected disciplines since the 60s. According to Airey et al. (2015) there were only 20 tourism students in the UK at the beginning in 1972. When the year was 2011, there were 9,000 students who study tourism. On the other hand, once the first program was introduced in 1978, there were just 61 tourism students in Australia. When it comes to China, more than 967 institutions offer tourism programs and curriculums to over five hundred thousand students by 2010. Additionally, from one in the 1970s to at least 150 today, the number of academic journals with a focus on tourism has increased dramatically. The other concern raised by this growth is if it has improved the standard of education as well.

2.3. Education, Quality Assurance, and Higher Education

Quality in education is a very complex subject, as it includes a lot of ideologies which may not be related with each other. The relationships might change based on circumstances which are termed as variables of time and context. So, it can be inferred that there is a strict relationship between quality assurance and quality enhancement. More than that, those two are the most important ideologies within the scope of quality in education (Kılıç, 2013).

According to Wahlen (1998), the primary objective of quality assurance in higher education is to maintain a high standard of instruction across all phases of the learning process, including research, analysis, assessment, and the use of various mechanisms and systems. Higher standards and quality are provided through quality assurance in higher education at colleges and universities so that they can satisfy the needs of all stakeholders, including students, employers, and financiers (Lomas, 2002). For instance, education stimulates the entrepreneurial abilities of individuals by motivating their start-up (Štefko et al., 2021), innovation (Ključnikov et al., 2021), exporting activities (Ključnikov et al., 2022a) since more educated individuals less intensively perceive business, market and legal risk factors comparing to less educated people (Ključnikov et al., 2022b). Quality assurance can be categorized as internal and external quality assurance (Parri, 2002). On the other hand, according to Harvey (1998), the three primary tenets of quality assurance are improvement, accountability, and control.

2.4. Approaches to the Higher Education Quality Concept

According to Parri (2002), the term "quality" has a universal definition that may be utilized in nearly any discipline. Additionally, Parri asserts that there are numerous approaches to the idea of higher education excellence that can be grouped into a few key categories. According to "Quality as fitness for purpose" concept, in higher education the quality of teaching is a term which is bound to the effectiveness
and efficiency in teaching. Effectiveness is related to the objectives of the course. On the other hand, efficiency is linked to the resources which are used as tools to be able to meet the objectives. The major consumer of higher education quality, according to the "Quality as transformation, reshaping" approach, is a student whose talents, perceptions, attitudes, and aims change and advance throughout the study process. The more successfully a certain higher education institution has fulfilled its goals, the better the output of the higher education will be able to manage in the future career with the aid of the knowledge, experience, and talents obtained at the higher education institute. According to "Quality as threshold", units or curriculum at the universities should exceed minimum standards and they should add the goals and increase quality by meeting these goals (Westerheijden et al., 1998). The mentality of "Quality as enhancement" is especially about the continuous development and increasing the quality which is primarily the duty of the academic staff. The given concept points out that freedom of the academicians and autonomy of the higher education institute in quality assurance (Parri, 2002). According to "Quality as value for Money" states that the quality of education and its monetary value mostly via demands for efficiency (Harvey & Green, 1993). In addition, Heyneman (2004) divides educational quality into four categories: level A, level B, level C, and level D based on the various amounts spent on non-salary things like chalk, blackboards, furniture, reading materials, and so on.

According to Vroeijenstijn (1995), the concept of quality has been a long discussed topic which has a place in the literature of education. He states that the higher education has a connection with society, whose structure is extremely dynamic.

As the students are not only a part of this society but also those higher education students are young and dynamic, they place great importance to the quality in education.

As a result, the study will use bibliometric to answer the following research questions:

RQ1. What is the recent research trend in hospitality and tourism in terms of "education quality" and "tourism faculty"?
RQ2. Which sources and contributors to the existing literature are the most influential and impactful?
RQ3. Which articles have the most impact in this field of study?
RQ4. What are the most common themes and keywords in this field of study?
RQ5. How has the theme's research progressed over time?
RQ6. What are the chances for further study in this field?

3. Methods

In order to examine the development of knowledge in the fields of "education quality" and "tourism faculty" relevant material was compiled from the Web of Science core collection database in January 2022. Art and Humanities Index (A&HCI), Scientific Citation Index Expanded (SCIE), Social Science Citation Index (SSCI), and Emerging Sources Citation Index (ESCI) are only a few of the indexes available in the database. Web of Science's core collection database was chosen because it is a widely accepted benchmark for assessing the international influence of academic disciplines and publications (Gonzalez et al., 2020). Although using multiple databases has its advantages, the Web of Science database used in this study allows researchers to focus on significant research achievements in a particular field, explore co-citation networks in greater detail, and identify research directions that are of interest to leading academics (Khoo-Lattimore et al., 2019; Thakur et al., 2021; La et al., 2021).

Three different categories of bibliometric indicators exist: Quantitative indicators assess the output of a certain researcher or research team. Performance indicators assess a publication, a researcher, or a research team's level of excellence. The links between publications, authors, or research fields are measured by structural indicators (Durieux & Gevenois, 2010). Only quantitative and structural indicators were discussed in this study.
"Education quality" and "tourism faculty" were entered as search terms. Because Citespace's algorithm may not give us all of the publications about these terms that was one of the reasons for authors to choose the key words carefully. The terms "education quality" and "tourism faculty" were chosen in this study because the number of the studies with the other terms such as "teach", "learn" etc. which can be related to this subject were very few and number of these studies were not enough for Citespace to illustrate. Including other terms and synonymous related to "education quality" and "tourism faculty" were believed to lose focus of the study. Also, publications were chosen as sources in the WoS by searching with alternative key words before starting the study. The term "faculty" was chosen as the other terms such as "institutions", "universities" might cause to include other studies which may not be related to our topic. Finally, using the terms such as "hotel" or "hospitality" would not help inducing. Moreover, not all countries have hospitality nor hotel departments at the universities due to the different higher education systems. So, the term "tourism" was chosen before the term "faculty" in this study. The study period was selected as 2002–2021 because the first publication that fit the inclusion criteria was released in 2002 and bibliometric frequently use data from the whole year (e.g., Prayag & Ozanne, 2018; Sánchez-Perez et al., 2021; La et al., 2021). After removing extraneous documents (246 proceedings papers, 37 review articles, 23 early access, 9 book chapters, and others), 711 articles were found. The review strategy is depicted in Figure 1. The acquired literature data (countries/regions, organizations, journals, authors, keywords, and categories) are analysed for the study using knowledge mapping analysis. In order to perform visual knowledge mapping, CiteSpace software is employed because of its strength and effectiveness, as shown by prior studies (Wang et al., 2020; Zhang et al., 2020; La et al., 2021).

This study seeks to give an in-depth review of "education quality" and "tourism faculty" phrases relating to the themes, authors, institutions, the effect of its published journals, and keywords using a variety of bibliometric approaches.

4. Results

Figure 2 depicts the progression of papers published on "education quality" and "tourism faculty" over a 19-year period from 2002 to 2021. From 2002 to 2006, just a few publications were published, as seen in Figure 2.

The next section outlines the bibliometric analysis of the "education quality" and "tourism faculty" research in terms of country, institution, and author collaboration networks, co-citation analysis, and recent trends were the study's main focus (keywords and categories).

4.1. Collaboration networks

Collaboration is one of the key components of transdisciplinary research (Su et al., 2019). Research collaboration was described by Katz & Martin (1997) as the process of researchers working together to generate new scientific truths. In order to better comprehend academic communication and
knowledge exchange, it is vital to examine collaboration in this regard (Chen, 2006). Collaboration analysis is used to identify productive writers, institutions, and countries as well as to identify the pattern of academic knowledge transfer between writers, institutions, and nations (Zhang et al., 2020; Şahin & Yılmaz, 2021).

Figure 2. The number of published papers

4.1.1. Author collaboration networks

Collaboration between academics on a certain issue is crucial for the growth and improvement of research fields (Li et al., 2017; Şahin & Yılmaz, 2021). Author collaboration analysis exposes the relationships between significant writers as well as the significance of the authors (Zhang et al., 2020). In this study, the author collaboration network has 114 nodes and 514 links (Figure 3). Each node represents a single author, and the author's name's font size reflects that author's standing in the community. The size of the nodes represents the number of articles written by a specific author, and the thickness of the linkages represents the level of author collaboration (Liu et al., 2019). The multidisciplinary nature of the field is demonstrated by an author cooperation network with a significant number of members and a diverse range of partnerships (Fang et al., 2018; Şahin & Yılmaz, 2021).

As a result, the multidisciplinary nature of "education quality" and "tourism faculty" is demonstrated by the presence of numerous authors and partnerships in our research findings. The most prolific authors on "education quality" and "tourism faculty" are Jeou Shyan Horng & Chih Ching Teng, followed by Tom Baum, Zeki Akinci, & Yury Andrea Becerra. Because they focus on themes like education quality, tourism faculty, natural science, business, quality assurance, and tourism and hospitality based on their expertise, these authors are the most productive. Here are several examples: Horng & Lee (2006) tourism and hospitality higher education in Taiwan, Liu et al. (2017) analysis of tourism and hospitality sustainability education, Horng (2004) curriculum analysis of foods and beverage management of technological and vocational education, Horng & Tsai (2012) constructing indicators of culinary tourism strategy, Horng et al. (2009) evaluating the quality of undergraduate hospitality, tourism and leisure programmes, Teng et al. (2013) academic perceptions of quality and quality assurance in undergraduate hospitality, tourism and leisure programmes, Teng (2008) the effects of personality traits and attitudes on student uptake in hospitality employment. Table 1 contains further information about the authors.
Table 1. Authors in collaboration

<table>
<thead>
<tr>
<th>Rank</th>
<th>Author</th>
<th>Freq.</th>
<th>Year</th>
<th>Rank</th>
<th>Author</th>
<th>Freq.</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>JEOU SHYAN HORNG</td>
<td>4</td>
<td>2009</td>
<td>6</td>
<td>YUKSEL OZTURK</td>
<td>1</td>
<td>2010</td>
</tr>
<tr>
<td>2</td>
<td>CHIH CHING TENG</td>
<td>3</td>
<td>2009</td>
<td>7</td>
<td>YUANAN ANNA LIU</td>
<td>1</td>
<td>2010</td>
</tr>
<tr>
<td>3</td>
<td>TOM BAUM</td>
<td>2</td>
<td>2009</td>
<td>8</td>
<td>YU CONG</td>
<td>1</td>
<td>2007</td>
</tr>
<tr>
<td>4</td>
<td>ZEKI AKINCI</td>
<td>1</td>
<td>2018</td>
<td>9</td>
<td>VICENTE GOMEZ ENCINAS</td>
<td>1</td>
<td>2016</td>
</tr>
<tr>
<td>5</td>
<td>YURY ANDREA BECERRA</td>
<td>1</td>
<td>2008</td>
<td>10</td>
<td>VANESSA PRIER JACKSON</td>
<td>1</td>
<td>2017</td>
</tr>
</tbody>
</table>

Source: own research

4.1.2. Country collaboration networks

The country collaboration analysis shows the relationships between cooperating countries as well as the distribution of the influential countries in that region (Liu et al., 2019; Şaşhin & Yılmaz, 2021). In the current study, there were 30 nodes and 17 links in the analysis of collaborating countries (Figure 4). Table 2 also shows the number of publications and frequencies of publications for the top ten most productive countries. The thickness and number of links connecting the different nodes suggest that the US, Turkey, and other countries worked together more closely. First place went to the United States and
Turkey, which had much more publications (n=6) than the rest of all countries. China and Taiwan are the two main contributors after the US and Turkey. According to Fang et al. (2018), the quantity of output is related to the number of research institutes and the availability of research findings.

Figure 4. Country collaboration network

Table 2. Countries in collaboration

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Freq.</th>
<th>Year</th>
<th>Rank</th>
<th>Country</th>
<th>Freq.</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>USA</td>
<td>6</td>
<td>2007</td>
<td>6</td>
<td>MALAYSIA</td>
<td>3</td>
<td>2007</td>
</tr>
<tr>
<td>2</td>
<td>TURKEY</td>
<td>6</td>
<td>2010</td>
<td>7</td>
<td>EGYPT</td>
<td>3</td>
<td>2010</td>
</tr>
<tr>
<td>3</td>
<td>PEOPLES R CHINA</td>
<td>5</td>
<td>2007</td>
<td>8</td>
<td>SCOTLAND</td>
<td>2</td>
<td>2009</td>
</tr>
<tr>
<td>4</td>
<td>TAIWAN</td>
<td>4</td>
<td>2009</td>
<td>9</td>
<td>SPAIN</td>
<td>2</td>
<td>2016</td>
</tr>
<tr>
<td>5</td>
<td>ENGLAND</td>
<td>4</td>
<td>2007</td>
<td>10</td>
<td>SERBIA</td>
<td>2</td>
<td>2019</td>
</tr>
</tbody>
</table>

Source: own research
4.1.3. Institution collaboration networks

The network of prominent institutions working together is used to demonstrate the ties involved in their collaboration and to determine their influence. The size of each node in the collaboration network corresponds to the number of publications that institution has published (Liu et al., 2019; Zhang et al., 2020; Şahin & Yılmaz, 2021).

Figure 5. Institutions collaboration network

<table>
<thead>
<tr>
<th>Rank</th>
<th>Institutions</th>
<th>Freq.</th>
<th>Year</th>
<th>Rank</th>
<th>Institutions</th>
<th>Freq.</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>National Taiwan Normal University</td>
<td>3</td>
<td>2007</td>
<td>6</td>
<td>Purdue University</td>
<td>2</td>
<td>2007</td>
</tr>
<tr>
<td>2</td>
<td>Fu Jen Catholic University</td>
<td>3</td>
<td>2009</td>
<td>7</td>
<td>Universidade de Coimbra</td>
<td>2</td>
<td>2018</td>
</tr>
<tr>
<td>3</td>
<td>University of Strathclyde</td>
<td>2</td>
<td>2009</td>
<td>8</td>
<td>Near East University</td>
<td>2</td>
<td>2011</td>
</tr>
<tr>
<td>4</td>
<td>De Lin Institute of Technology</td>
<td>2</td>
<td>2010</td>
<td>9</td>
<td>Helwan University</td>
<td>2</td>
<td>2010</td>
</tr>
<tr>
<td>5</td>
<td>Bournemouth University</td>
<td>2</td>
<td>2010</td>
<td>10</td>
<td>Polytech Institute</td>
<td>2</td>
<td>2018</td>
</tr>
</tbody>
</table>

Source: own research

The network's connections are strong, indicating that these institutions work closely together. For the years 2002–2021, the network of cooperating institutions had 82 nodes and 74 links, as shown in Figure 5. The average years in which the top 10 universities are rated are shown in Table 3. National
Taiwan Normal University and Fu Jen Catholic University rank first and second, respectively, in terms of partnering institutions in "education quality" and "tourist faculty" research, with 3 publications for each one. The University of Strathclyde, De Lin Institute of Technology, and Bournemouth University are among the other major contributors.

4.2. Co-citation analysis

Comparing two publications that include the same information (such as a document, journal, or author) is the process of co-citation (Small, 1973). In order to outline a scientific field's conceptual framework from a big body of literature, co-citation analysis is a useful technique (Ramos-Rodriguez & Ruiz-Navarro, 2004; Şahin & Yılmaz, 2021). This study includes co-citation analyses for publications, authors, and journals.

4.2.1. Article co-citation network

The size of the node documents is considered as their co-citation frequency and their first year of citation (Yu et al., 2019). However, larger nodes display documents with a high number of research citations (Zhang et al., 2020; Şahin & Yılmaz, 2021). Each connection symbolizes the co-citation relationship between the two papers.

Figure 6. Co-citation articles links

Source: own research
Also, each node represents a document which is tagged with the name of the initial author and the year of publication. The frequency exhibited by the node sizes in this study was used to identify several of the most cited papers about "education quality" and "tourism faculty" in the field. Between 2002 and 2021, the article co-citation network had 50 nodes (references cited) and 20 links (co-citation links), as shown in Figure 6. Table 4 lists ten papers with the most citations. More specifically, Andrades & Dimanche (2017) had received 68, Hsu et al. (2017) had received 23, Horng et al. (2009) had received 21 citations, and they were in the top three rankings, respectively.

Table 4. Top 10 most cited articles

<table>
<thead>
<tr>
<th>Rank</th>
<th>Articles</th>
<th>Total Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Andrades, L., &amp; Dimanche, F. (2017). Destination competitiveness and tourism development in Russia: Issues and challenges</td>
<td>68</td>
</tr>
<tr>
<td>3</td>
<td>Horng, J. S., Teng, C. C., &amp; Baum, T. G. (2009). Evaluating the quality of undergraduate hospitality, tourism and leisure programmes.</td>
<td>21</td>
</tr>
<tr>
<td>4</td>
<td>Afifi, G. M. (2011). E-Learning as an alternative strategy for tourism higher education in Egypt</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>Wesley, S. C., Jackson, V. P., &amp; Lee, M. (2017). The perceived importance of core soft skills between retailing and tourism management students, faculty and businesses</td>
<td>15</td>
</tr>
<tr>
<td>10</td>
<td>Sokhanvar, A., Aghaei, I., &amp; Aker, Ş. (2018). The effect of prosperity on international tourism expenditure</td>
<td>8</td>
</tr>
</tbody>
</table>

Source: own research

4.2.2. Author co-citation network
To be able to understand the relationships among authors, figure out whose publications were discussed by the same articles, and demonstrate whose publications were cited by the same papers, author co-citation analysis is used to analyze the evolution of a study issue. Not only this method can be applied to determine the impact of scholars on the subject but also to determine the distribution of highly cited authors (Yu et al., 2019). However, author co-citation analysis only considers the first author because it merges all of an author's publications into one (Fang et al., 2018; Şahin & Yılmaz, 2021).

Studies related to "education quality" and "tourism faculty" have been expanding, and this is heavily reliant on multidisciplinary academic collaboration (Zhang et al., 2020). Figure 7 shows the author co-citation network that contributes to the literature on "education quality" and "tourism faculty" which has 362 nodes and 802 co-citation links. The links between different authors represent indirect collaborative relationships based on the frequencies of co-citations, and the node size represents each author's frequency of co-citations (Yu et al., 2019; Şahin & Yılmaz, 2021). The first three authors, Fornel, Airey, & [Anonymous] were the most referenced, and they have made significant contributions to "education quality" and "tourism faculty". In this regard, there is a high correlation between the top ten most referenced authors and their prolific output (Table 5).

Figure 7. Co-citation authors links

Source: own research
Table 5. Most cited authors

<table>
<thead>
<tr>
<th>Rank</th>
<th>Most Cited Authors</th>
<th>Freq.</th>
<th>Year</th>
<th>Rank</th>
<th>Most Cited Authors</th>
<th>Freq.</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FORNELL C.</td>
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<td>2009</td>
<td>6</td>
<td>BECKET N.</td>
<td>4</td>
<td>2009</td>
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<td>2</td>
<td>AIREY D.</td>
<td>8</td>
<td>2009</td>
<td>7</td>
<td>BADRI MA.</td>
<td>3</td>
<td>2009</td>
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<td>3</td>
<td>[ANONYMOUS]</td>
<td>6</td>
<td>2005</td>
<td>8</td>
<td>DALE C.</td>
<td>3</td>
<td>2012</td>
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<td>GURSOY D.</td>
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<td>2017</td>
<td>9</td>
<td>CATON K.</td>
<td>3</td>
<td>2019</td>
</tr>
<tr>
<td>5</td>
<td>BAUM T.</td>
<td>5</td>
<td>2011</td>
<td>10</td>
<td>AFIFI GMH.</td>
<td>3</td>
<td>2011</td>
</tr>
</tbody>
</table>

Source: own research

4.2.3. Journal co-citation network

The most frequently cited journals and their relative influence are discovered by using journal co-citation analysis (Zhang et al., 2020). Figure 8 displays the journal co-citation network, which consists of 382 nodes and 931 linkages. Table 6 shows that Annals of Tourism Research got the most citations, followed by Tourism Management and Journal of Teaching in Travel and Tourism. Journals in the fields of tourism, education, and hospitality play an important role in the theoretical foundations of "education quality" and "tourism faculty".

Table 6. Most cited journals

<table>
<thead>
<tr>
<th>Rank</th>
<th>Most Cited Journals</th>
<th>Freq.</th>
<th>Year</th>
<th>Quartile</th>
<th>Rank</th>
<th>Most Cited Journals</th>
<th>Freq.</th>
<th>Year</th>
<th>Quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ANNALS OF TOURISM RESEARCH</td>
<td>23</td>
<td>2007</td>
<td>Q1</td>
<td>6</td>
<td>JOURNAL OF TRAVEL RESEARCH</td>
<td>7</td>
<td>2017</td>
<td>Q1</td>
</tr>
<tr>
<td>2</td>
<td>TOURISM MANAGEMENT</td>
<td>22</td>
<td>2013</td>
<td>Q1</td>
<td>7</td>
<td>JOURNAL OF HOSPITALITY MANAGEMENT</td>
<td>7</td>
<td>2014</td>
<td>Q1</td>
</tr>
<tr>
<td>3</td>
<td>JOURNAL OF TEACHING IN TRAVEL &amp; TOURISM</td>
<td>17</td>
<td>2009</td>
<td>Q3</td>
<td>8</td>
<td>HIGHER EDUCATION</td>
<td>7</td>
<td>2011</td>
<td>Q1</td>
</tr>
<tr>
<td>4</td>
<td>INT. JOURNAL OF CONTEMPORARY HOSPITALITY MANAGEMENT</td>
<td>11</td>
<td>2007</td>
<td>Q1</td>
<td>9</td>
<td>THESIS</td>
<td>7</td>
<td>2010</td>
<td>N/A</td>
</tr>
</tbody>
</table>
For understanding how publications have changed over time, keyword and category analysis are essential (Fang et al., 2018; Zhang et al., 2020; Şahin & Yılmaz, 2021). To achieve this goal, the keywords and categories of the current survey were examined to ascertain the development of current concerns and fresh patterns in "education quality" and "tourism faculty".

4.3.1. Keywords co-occurrence network

A key indicator of an article's content concentration is its usage of keywords (Liu et al., 2019). The frontier of a study topic can be identified using keyword co-occurrence analysis, which can highlight developing trends over time (Zhang et al., 2020; Şahin & Yılmaz, 2021).
In the network of frequently occurring keywords, there were 357 links and 163 nodes (Fig. 9). The size of the nodes indicates how frequently a keyword appeared in the WoS dataset (Yu et al., 2019). The three most popular high-frequency terms were higher education, satisfaction, and model. These results demonstrate that these keywords have a significant influence on the growth of research on "education quality" and "tourism faculty" and they are connected to a wide range of research topics (Table 7).

Table 7. Most cited journals

<table>
<thead>
<tr>
<th>Rank</th>
<th>Top 10 Keywords</th>
<th>Freq.</th>
<th>Year</th>
<th>Rank</th>
<th>Top 10 Keywords</th>
<th>Freq.</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Higher Education</td>
<td>10</td>
<td>2007</td>
<td>6</td>
<td>Innovation</td>
<td>3</td>
<td>2018</td>
</tr>
<tr>
<td>2</td>
<td>Satisfaction</td>
<td>4</td>
<td>2017</td>
<td>7</td>
<td>University</td>
<td>3</td>
<td>2013</td>
</tr>
<tr>
<td>3</td>
<td>Model</td>
<td>4</td>
<td>2009</td>
<td>8</td>
<td>Motivation</td>
<td>3</td>
<td>2019</td>
</tr>
<tr>
<td>4</td>
<td>Tourism Education</td>
<td>3</td>
<td>2010</td>
<td>9</td>
<td>Education</td>
<td>3</td>
<td>2018</td>
</tr>
<tr>
<td>5</td>
<td>Service Quality</td>
<td>3</td>
<td>2007</td>
<td>10</td>
<td>Hospitality</td>
<td>3</td>
<td>2017</td>
</tr>
</tbody>
</table>

Source: own research

4.3.2. Category co-occurrence network

In addition to keyword analysis, category co-occurrence analysis is a vital tool for determining the primary content of publications. Analysing category evolution maps can help you to find the research on developing patterns in a study subject.
A network of category co-occurrences is shown in Figure 10. In this graph, there are 25 nodes and 69 linkages, which represents the 25 keywords and the 69 lines connecting them.

According to Table 8, the top five core categories for "education quality" and "tourism faculty" are social sciences, education and educational research, hospitality, leisure, sport, and tourism, business and economics, and science and technology. These findings suggest that social science is more actively involved in the research fields of "education quality" and "tourism faculty".

Figure 10. Category co-occurrence network

Table 8. Top 5 categories

<table>
<thead>
<tr>
<th>Rank</th>
<th>Top 5 Categories</th>
<th>Freq.</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Social Sciences</td>
<td>28</td>
<td>2007</td>
</tr>
<tr>
<td>2</td>
<td>Education &amp; Educational Research</td>
<td>19</td>
<td>2005</td>
</tr>
<tr>
<td>3</td>
<td>Hospitality, Leisure, Sport &amp; Tourism</td>
<td>12</td>
<td>2007</td>
</tr>
<tr>
<td>4</td>
<td>Business &amp; Economics</td>
<td>8</td>
<td>2011</td>
</tr>
<tr>
<td>5</td>
<td>Science &amp; Technology</td>
<td>3</td>
<td>2018</td>
</tr>
</tbody>
</table>

5. Discussion

This research proposes a scientific visualization analysis framework to represent the 711 publications. Co-citation analysis, collaboration network analysis, and emerging trends analysis were all combined with scientometric analysis (i.e., CiteSpace) to generate an integrated knowledge map of the tourism demand forecasting industry and to capture hot themes with developing trends.
Five basic conclusions are derived based on the analysis framework.

First, since 2007, research on "education quality" and "tourism faculty" has increased significantly, according to statistical data from 2002 to 2021. As a result, studies demonstrate that pre-2007 papers created the theoretical groundwork for research on "education quality" and "tourism faculty".

Second, country collaboration networks, the United States, Turkey, the People's Republic of China, Taiwan, and England lead study on "education quality" and "tourism faculty" with each country having the most productive writers and institutions.

Third, institutions' collaboration networks, based on the publications reviewed, National Taiwan Normal University, Fu Jen Catholic University, and the University of Strathclyde contributed the most to demand forecasting in the fields of "education quality" and "tourism faculty".

Fourth, article co-citation network, in terms of cited articles, the most cited contributors in this discipline were Andrades and Dimanche (2017) had received 68, Hsu et al. (2017) had received 23 and Horng et al. (2009) had received 21 citations.

Fifth, in terms of rising trend analysis, the most commonly used keywords in the "education quality" and "tourism faculty" fields are higher education, satisfaction, and model. In addition, it is clear that in this profession, subjects such as innovation, motivation, and hospitality have gained a lot of attention in the last five years. Furthermore, studies on "education quality" and "tourism faculty" are most commonly found in the categories of social science, education and educational research, hospitality, leisure, sport and tourism, business and economics, and science and technology, according to category co-occurrence. One of the interesting findings about "Most cited journals" is that top ten articles are mostly from Q1 journals which has similar ranking results with the Ergün et al.'s study (2020) about Q1 journals in tourism.

Kılıç (2013) states that the findings of her thesis titled as "Comparative Analysis of European Internal Quality Standards with Tourism Faculty/EMU Applications" proves that Tourism Faculty and the European University Association are comparatively compatible with each other within the scope of quality assurance processes during the educational activities. One of the other findings that the Tourism Faculty management is insufficient about the tracking of the assessment techniques and methods. Furthermore, Kılıç states that the faculty management should give information to the students concerning the internal quality assurance procedures and the quality culture, as there is little interest among the students about that issue. Education cannot be thought without the existence of students in the system and due to that reason, the improvement of quality education cannot be thought without students' existence. And the faculty management should find solutions to increase the capacity and performance of learning resources and create new methods to use them more efficiently on behalf of students. When the statements of Kılıç are compared with the findings of this study in "Table 4. Top 10 most cited articles", it can be seen that the emphasis on education quality is mostly related with the educational activities, management, and students. Those findings partially confirm Kılıç's statements in her study.

As McKercher (2007) noted, title or rank of the authors has been an attractive issue for bibliometric analysis. Such as Evren & Kozak's (2014) and Yilmaz's (2019) studies, there is an academic title-based author ranking in the papers where professors are mainly the first authors, associate professors and assistant professors are subsequent authors in the most cited articles. When "Table 4. Top 10 most cited articles" is examined, it is true in the 2nd article where first author Hsu, C. H. is a professor and third author Chen, N. is Assistant Professor. But, in the article titled as "The effect of prosperity on international tourism expenditure" Aker, Ş. is a professor, and she is the third author in the article. Also, findings of this study proves that most cited authors are mostly professors.

According to Yilmaz (2019), the majority of the authors of the papers were academics who held positions in university departments that dealt with tourism, particularly in the faculties of tourism, which indicates that the multidisciplinary perspective is not highly valued in the field of tourism, as many authors have also stated (Tribe, 2000; 2004; 2010; Park & Jang, 2014; Koseoglu et al., 2016). The findings of this
study proves that fact. That was one of the reasons of this study which is to combine tourism as a discipline with educational sciences. Because results of category co-occurrence network show us that journals in Hospitality, Leisure, Sport & Tourism ranked third in the top 5 categories surprisingly. This might be explained as tourism education is one of the less underrated topics within the tourism discipline.

Similar to findings of Güzeller & Çeliker (2018), countries which are famous for its tourism such as England and Spain are ranked after Taiwan, Egypt, and Malaysia in this study as well. On the other hand, there are parallel findings in country collaboration network and author collaboration network. For instance, Turkey is ranked as the second country in country collaboration network, there are 2 authors from Turkey in author collaboration network.

Nguyen and Chaisawat (2011) recommend that teaching staff quality should be improved, developing a new curriculum is a need, and there is a need to boost the relationship between the industry and the institutions for the future development of hospitality and tourism higher education in Vietnam. The implementation of these recommendations may be useful to be able to improve education quality at tourism faculties. When the "Figure 9. Keywords links" is examined the emphasis on "curriculum" and "higher education" can be clearly seen. Also, Horng's study (2004) titled as "Curriculum analysis of foods and beverage management of technological and vocational education" and Horng & Lee’s study (2006) titled as "Tourism and hospitality higher education in Taiwan" were 2 of the findings in author collaboration network containing that emphasis stated in the "Figure 9. Keywords links".

Conclusion

Despite a surge in papers relating to "education quality" and "tourism faculty" there are still significant gaps in this subject. The scientific and technology sector has received little attention in "education quality" and "tourism faculty" studies. More empirical and bibliometric studies related to these two terms are required for further research.

The state must establish appropriate mechanisms for fostering innovation and financial incentives for companies to invest in research and development. Additionally, it is crucial to link the corporate and academic worlds, reinforce the educational system, and promote the growth of human resources, among other things (Ivanová & Čepel, 2018).

Universities have reorganized their management as a result of the competitiveness in higher education and recently emerging difficulties. Higher education now frequently adopts business practices from other sectors, such as management techniques, leadership, profitability standards, investment, and marketing tactics. To keep up with the demands of globalization, all faculties are now required to update their internal management and employ cutting-edge management techniques (Bileviciute et al., 2019). According to Avila et al. (2017), high poverty levels are an important factor in the education system’s quality.

According to Šimić and Štimac (2012), the overall opinion of the quality of higher education services is significantly influenced by the quality of work produced by both teaching and non-teaching employees. In order to maintain and enhance the quality of the higher education service, it is also important to keep up with market trends and environmental changes. The institution's higher education service quality needs to be continuously assessed and modified to meet the needs of both students and the labor market.

Cabrera and Le Renard (2015) examined the association between the competitiveness of nations (competitiveness index taken from The World Economic Forum’s Global Competitiveness Report 2012-2013) and higher education as evaluated by the quality of universities (as indicated by the Shanghai Jiao Tong rankings). Their findings show a significant relationship between a nation’s level of competitiveness and the proportion of premier research universities it has per resident.

Krawczyk (2014) states that the "Internal system of education quality assurance" is one of the instruments for higher education adjustment to labor market needs which is important for tourism.
According to Ulewicz (2013), using an ISO 9001-based model at the faculty for a better quality in education gives great implementing potential in higher education. The results of Constantin's (2013) research stress that higher education institutions must improve their quality because the education market becomes smaller each year due to demographic changes. In this regard, the European Foundation for Quality Management's (EFQM) Excellence Model, which was created in the early 1990s, might be applied to create higher education institutions' Quality Management Systems.

The student serves as a link between the input and output of university activities, in fact, it evaluates their effectiveness and efficiency (Ulewicz, 2014). As a result, tourism faculties are still seeking answers to the questions about stakeholders' genuine expectations—students and business—in terms of collaboration with the university and what services are needed to meet those demands. A high ranking in the rankings of colleges and quality is possible if stakeholders' needs are correctly identified. And you can adapt to market demands by keeping up with their changes quickly.

This study did not include any keywords or search items about students. Due to that reason, no study about students was found in the results. In future research, the academics may include students in their bibliometric studies, including the other terms in education quality and tourism faculties. Therefore, future scholars will benefit from the summary since they will be better able to discover the most relevant sources and publications.

This study, like others, has its own set of limitations. First, the paper's sample only included papers that were indexed in the WoS database. Future research should incorporate other databases such as Scopus and others because it is probable that more studies about "education quality" and "tourism faculty" will be published in other databases. Second, only publications in journals were included in this study's sample. Third, because bibliometric analysis may be applied to any bibliometric unit, future studies may include books, conference proceedings, book chapters, theses, and a number of other bibliometric units. Therefore, future research may widen the scope of the current study to create a more detailed knowledge map for the fields of "education quality" and "tourism faculty" by combining more databases and documents. Finally, researchers can cluster, analyse, and display data using various analytic and visualization applications, such as VOSviewer and others.

References


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