

A Bibliometric Analysis of Information Technology Research in Tourism And Hospitality Journals in the SSCI

SSCI Turizm ve Ağırılama Dergilerinde Bulunan Bilgi Teknolojileri Araştırmalarının Bibliyometrik Analizi

Zafer TÜRK MENDAĞ, Atatürk University, Turkey, zafer.turkمندag@gmail.com

Orcid No: 0000-0002-7712-1500

Abstract: This study provides a bibliometric review on the information technology (IT) related articles published in tourism and hospitality (T&H) journals which are indexed in Social Science Citation Index (SSCI). A database with detailed information was created through the Web of Science (WoS) using 5070 articles from 32 journals. Frequency tables of the publications were given and co-occurrence, co-citation, co-authors, and keyword analysis were conducted. Findings indicate that Structural Equation Modelling and Venkatesh's Unified Theory of Acceptance and Use of Technology was mostly used in studies on IT in T&H. Additionally, some trend topics have been specified according to study findings. This paper gives a deep understanding of IT researches in T&H through bibliometric analysis.

Keywords: Bibliometric, Information Technology, Web of Science, Co-Citation, Co-Occurrence

JEL Classification: L83, O30, D83

Öz: Bu çalışma, Social Science Citation Index'te (SSCI) bulunan turizm ve ağırılama (T&H) dergilerinde yayınlanan bilgi teknolojisi (BT) ile ilgili makalelerin bibliyometrik bir incelemesini sağlamaktadır. Web of Science (WoS) aracılığıyla 32 dergiden 5070 makale kullanılarak ayrıntılı bilgi içeren bir veritabanı oluşturulmuştur. Yayınların frekans tabloları verilerek birlikte oluşum, ortak alıntılanma, ortak yazarlar ve anahtar kelime analizi yapılmıştır. Bulgular, turizm ve ağırılamada bilgi teknolojileri üzerine yapılan çalışmalarda daha çok Yapısal Eşitlik Modellemesi ve Venkatesh'in Birleşik Teknoloji Kabulü ve Kullanımı Teorisi'nin kullanıldığını göstermektedir. Ayrıca, çalışma bulgularına göre bazı trend konular belirlenmiştir. Bu makale, bibliyometrik analiz yoluyla turizm ve ağırılamadaki bilgi teknolojileri araştırmalarının derinlemesine anlaşılmasını sağlamaktadır.

Anahtar Kelimeler: Bibliyometrik, Bilgi Teknolojisi, Web of Science, Ortak Alıntılanma, Ortak Oluşum

JEL Sınıflandırması: L83, O30, D83

1. Introduction

Tourism, due to its intangible and knowledge-intensive form, has many things in common with IT. Thus, changes in information and communication technology have led to many new developments in processes and structures in tourism (Law, Buhalis, & Cobanoglu, 2014). Besides, new developments in IT and their social effects in tourism have attracted the attention of researchers. Tourism researches, especially those who were established academics, try to publish their works in mainstream journals (Law, Leung, & Buhalis, 2009).

Information technologies enabled the information to be shared and stored faster with new techniques. In the field of tourism, information technologies ensure the spread of tourism information on a global scale and radically change the travel behavior (Law et al., 2014). However, tourism can be easily digitalized due to its abstract structure. For example, thanks to

Makale Geçmişi / Article History

Başvuru Tarihi / Date of Application

: 1 Ekim / October 2020

Kabul Tarihi / Acceptance Date

: 9 Aralık / December 2020

virtual reality applications, tourists can visit a destination in a virtual environment without physical displacement. Besides, with the new applications such as Airbnb, which is a part of the new sharing economy, people have changed the traditional accommodation style for non-locals, causing the accommodation phenomenon to go beyond the known.

This study aims to present bibliometrically the studies on IT in T&H and it is organized into 4 parts. At the beginning, a literature review on the connection between tourism and IT, and bibliometric studies provided. In the next part, research method, data construction and analyzing process are explained. Finally, results are discussed and concluded in the light of literature.

2. Literature Review

New order tourists need to know virtually the destination before they travel as IT as the ever-growing context has changed all processes in tourism. They usually search on the internet, read recommendations, look at the photos, watch videos and sometimes create a virtual world through virtual reality (VR) in the planning stage of travel. Virtual reality has the potential to communicate with targeted markets and create destination awareness (Xiang & Gretzel, 2010) by offering a rich environment for potential visitors (Huang, Backman, Backman, & Chang, 2016). Also at the destination, smart cities have many effects on the consuming behavior of tourists (Jin, Gubbi, Marusic, & Palaniswami, 2014). Nevertheless, robots also are discussed in literature due to their impact on consumers (Ivanov, Webster, & Seyyedi, 2018). So technological developments virtually and physically got inside the life of not only the travelers but also the tourism businesses. The increasing number of internet users and developments in the infrastructure of information communication technology opened new ways to tourism firms to sell their products and services online. In the line with these developments, websites play important role in the marketing of tourism (Law et al., 2009) and tourism service providers have interfaced with new intermediaries, especially the Online Travel Agencies (Digiorgio, 2016).

IT-enabled service systems increase customer preference at the learning phase of the service personalization which translates into higher customer service evaluations and value perceptions of the hotel (Piccoli, Lui, & Grun, 2017). For example, a recommender system can offer services to a confused customer (Al-Ghossein, Abdessalem, & Barre, 2018). So, the tourism markets and actors both shape and are shaped by technology and tourism actors interact from a linear supply chain tourism 'industry' to a complex socio-technical smart tourism ecosystem (Sigala, 2018). Understanding smart tourism in the light of tourism information services accelerates the development of smart tourism and helps organizations or institutes grasp its direction (Li, Hu, Huang, & Duan, 2017). On the other hand, surely there is a change

in the perspective of researchers from marketing to the knowledge-creating tool (Xiang, 2018).

As technology affects radically the tourism, hotel managers or workers should have the ability to respond when their customers make negative online reviews on the web (Lui, Bartosiak, Piccoli, & Sadhya, 2018). However, there is little understanding throughout managers about IT, so they and their teams should have more skills in IT-related issues (Law et al., 2009). People take care of the quality of touristic places as before but there is a new phenomenon named e-services which is a key to succeed in competing due to its effect on purchasing decisions (Kourtesopoulou, Kehagias, & Papaioannou, 2018). Perceived benefits and obstacles of e-business, technology readiness, competitive pressure, and trading partner collaboration are the drivers that are important for the tourism industry (Oliveira & Martins, 2010). But there are some cases of fault IT implementation in firms which caused by some postpositivist beliefs (Alford & Clarke, 2009). However, Kocak (2007) identified some effects of e-commerce on tourism, which are:

- Reduced communication costs,
- Time-consuming in buying a travel ticket,
- Flexible customer services,
- Increase in employee productivity,
- Employment opportunities and jobs.

For the reasons listed below, researchers worked on many subjects like technology acceptance (Lim, 2009), task-technology fit, social media (Xiang & Gretzel, 2010), virtual reality (Huang et al., 2016), intelligence, smartness, systems, etc. in T&H but there is a need to understand in-depth the ongoing studies in this field. So, the perspective which meets this need should be bibliometric analysis.

In their research on information communication technology (ICT) related to 288 journal articles between 2014-2017, Law, Leung, and Chan (2019), found a growing significance of ICT in the T&H setting which creates a great opportunity. In the research on 92 mobile technology usage articles between 2002 and 2017, they divided literature into two-part as suppliers' and consumers' perspective studies (Law, Chan, & Wang, 2018). Besides, in a research on the conceptual ties between co-creation and tourism it has found five perspectives in literature as firm-inspired, technology-based, and cultural-based experience; customer satisfaction and participation, and innovation-based experience (Tregua, D'Auria, & Costin, 2020). However much other bibliometric analysis on tourism used different approaches. This has included co-citation (Benckendorff & Zehrer, 2013; Cheng, Edwards, Darcy, & Redfern, 2018; Ko-

seoglu, Rahimi, Okumus, & Liu, 2016; Koseoglu, Sehitoglu, & Craft, 2015; Leung, Sun, & Bai, 2017), co-authorship (Koseoglu et al., 2016), co-word (de la Hoz-Correa, Munoz-Leiva, & Bakucz, 2018; Leung et al., 2017), co-occurrence (Johnson & Samakovlis, 2019; Mulet-Forteza, Genovart-Balaguer, Merigo, & Mauleon-Mendez, 2019) analysis.

3. Method

In this research, a bibliometric analysis conducted to obtain a detailed review of the IT context in T&H. Bibliometric analysis is the most popular method for giving an abstract for a field, analyzing complex structures and networks of publications and citations, and finally, it is possible to make inferences for the future studies. Thanks to the bibliometric studies, a large literature database can be created and thus hidden trends for a specific area can be analyzed and further information can be presented to researchers (Nerur, Rasheed, & Pandey, 2016).

3.1. Data Collection

Web of Science (WOS) was used as the main data source which is the largest platform with more than 12000 journals worldwide. Furthermore, the Social Science Citation Index (SSCI) was selected as the data source for more comprehensive results. While SSCI journals are the most popular for researches in T&H. The process is explained to visualize how data were analyzed by utilizing VosViewer on the aspects of research method Data were obtained in two steps. Firstly, to include more relevant interdisciplinary publications as possible, technology, smart, mobile, virtual reality, augmented reality, ICT, robotics, wireless, wifi, wi-fi, artificial intelligence, big data, communication, etourism, e-tourism, social media, facebook, twitter, instagram, tripadvisor, airbnb, e-commerce, online, tablet, app, application, intelligent, internet, website, ewom, electronic, smartphone, system, nfc, cyberspace keywords in the Hospitality, Leisure, Sport & Tourism category of WOS SSCI, articles related to IT in T&H which were published between 2000 and 2019 were searched and listed (data retrieved January 23, 2020).

Table 1. Journals Selected in Hospitality, Leisure, Sport & Tourism Category of SSCI Index

Journal Name	Total Number of Articles
Tourism Management	723
International Journal of Hospitality Management	466
International Journal of Contemporary Hospitality Management	428
Journal of Sustainable Tourism	293
Current Issues in Tourism	279
Journal of Travel Tourism Marketing	267

Annals of Tourism Research	240
Journal of Travel Research	234
Tourism Economics	186
Asia Pacific Journal of Tourism Research	173
Tourism Geographies	149
Cornell Hospitality Quarterly	149
International Journal of Tourism Research	148
Journal of Destination Marketing Management	130
Journal of Hospitality Tourism Research	116
Leisure Studies	109
Tourism Management Perspectives	105
Journal of Hospitality Marketing Management	102
Journal of Hospitality Leisure Sport Tourism Education	94
Journal of Leisure Research	92
Leisure Sciences	86
Scandinavian Journal of Hospitality and Tourism	77
Journal of Hospitality and Tourism Technology	72
Journal of Hospitality and Tourism Management	62
Journal of Vacation Marketing	61
Journal of Tourism and Cultural Change	52
Tourist Studies	47
Journal of Outdoor Recreation and Tourism Research Planning and Management	44
Tourism Review	42
Journal of Quality Assurance in Hospitality Tourism	22
Loisir Societe Society and Leisure	14
Cornell Hotel and Restaurant Administration Quarterly	8

The aim of using these words is to involve all IT related studies. In this manner articles including at least one word mentioned below, will be counted in the study's database. Words were extracted from abstracts of recent articles which were published in Tourism Management, International Journal of Contemporary Hospitality Management and Journal of Hospitality and Tourism Technology. Then, 32 journals in the index which are Tourism Management, Tourism Geographies, Journal of Hospitality and Tourism Technology, International Journal of Hospitality Management, International Journal of Tourism Research, Journal of Hospitality and Tourism Management, International Journal of Contemporary Hospitality Management, Journal of Destination Marketing Management, Journal of Vacation Marketing, Journal of Sustainable Tourism, Journal of Hospitality Tourism Research, Journal of Tourism and Cultural Change, Current Issues In Tourism, Leisure Studies, Tourist Studies, Journal of Travel Tourism Marketing, Tourism Management Perspectives, Journal of Outdoor Recreation and Tourism Research Planning and Management, Annals of Tourism Research, Journal of Hospitality Marketing Management, Tourism Review, Journal of Travel Research, Journal of Hospitality Leisure Sport Tourism Education, Journal of Quality Assurance In Hospitality Tourism, Tourism Economics, Journal of Leisure Research, Loisir Societe Society and Leisure, Asia Pacific Journal of Tourism Research, Leisure Sciences, Cornell Hotel and Restaurant Administration Quarterly, Cornell Hospitality Quarterly, Scandinavian Journal of

Hospitality and Tourism were selected (Table 1). Finally a database of 5070 articles obtained with their title, abstract, keywords, and references.

3.2. Analysis

Using the database obtained from 32 T&H journals, frequency analysis was used for publication numbers and Citespace 5.6.R2 (Chen, 2006) and VosViewer 1.6.14 (Van Eck & Waltman, 2010) software were used for the classification and visualization. In order to understand trends and links between authors and citations, and have a better objective overview of the field, quantitative methods as co-author, co-citation and co-occurrence (keyword) analysis were used.

4. Results

According to the results of frequency by year analysis, IT studies in tourism and leisure have increased since 2006 (Figure 1). The number of studies reached from 665 in 2018 to 1008 in 2019. Although this is a very important increase in the meaning that it shows the importance given to studies on ITs. Furthermore, these articles were published mostly in Tourism Management (723), followed by the International Journal of Hospitality Management (466), and International Journal of Contemporary Hospitality Management (428) (Table 1). Another point for this finding is that top journals in SSCI have strategies to publish in IT related articles due to its effect on impact factor. Also, researchers can access more publications because of developments in ICT, so it has the nature of increasing itself.

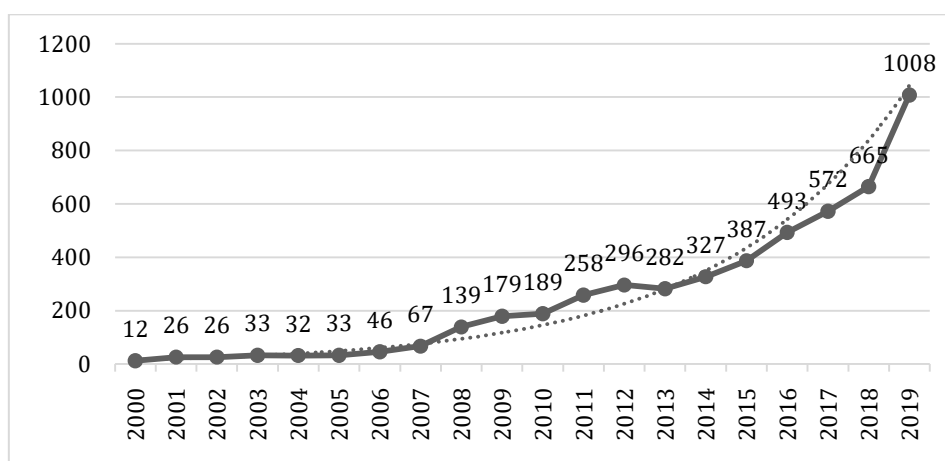


Figure 1. Total Number of Publication by Year

Many studies on IT in T&H (1615) were produced in the USA (Figure 2). This is followed by China (818), Australia (604) and the UK (561). This finding is as expected because the USA and China have a high interest in technology and innovation in tourism.

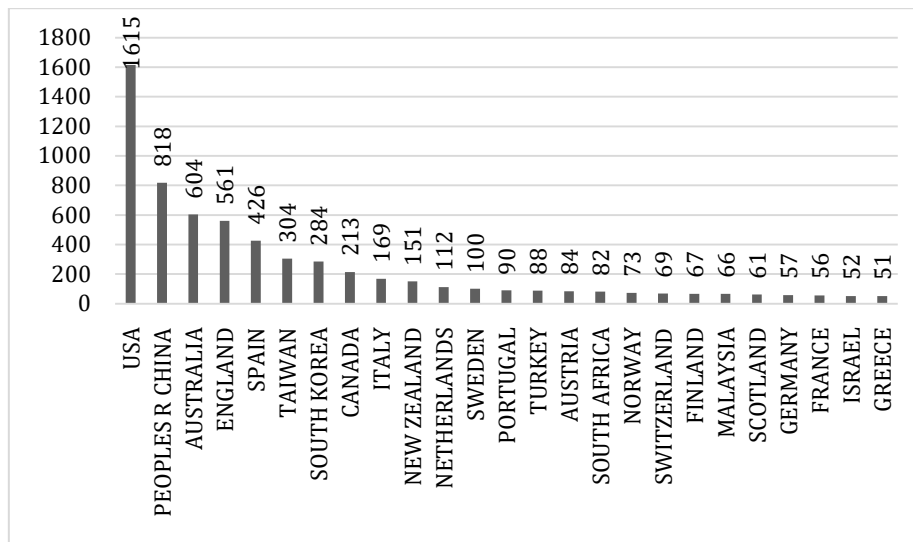


Figure 2. Total Number of Publications by Country

The reason why the USA and China are on the top for publication is might be they had better adapted organizations in IT. The USA has many organizations like the University of Central Florida working on this issue and Hong Kong Polytechnic University in China is at the top for the publications in IT and tourism (Figure 3). Robert Law's Progress in information technology and tourism management: 20 years on and 10 years after the Internet—The state of eTourism research article which was published in 2008 cited 3467 times till 2019 (Scholar, 2020), is the most influencing in the field.

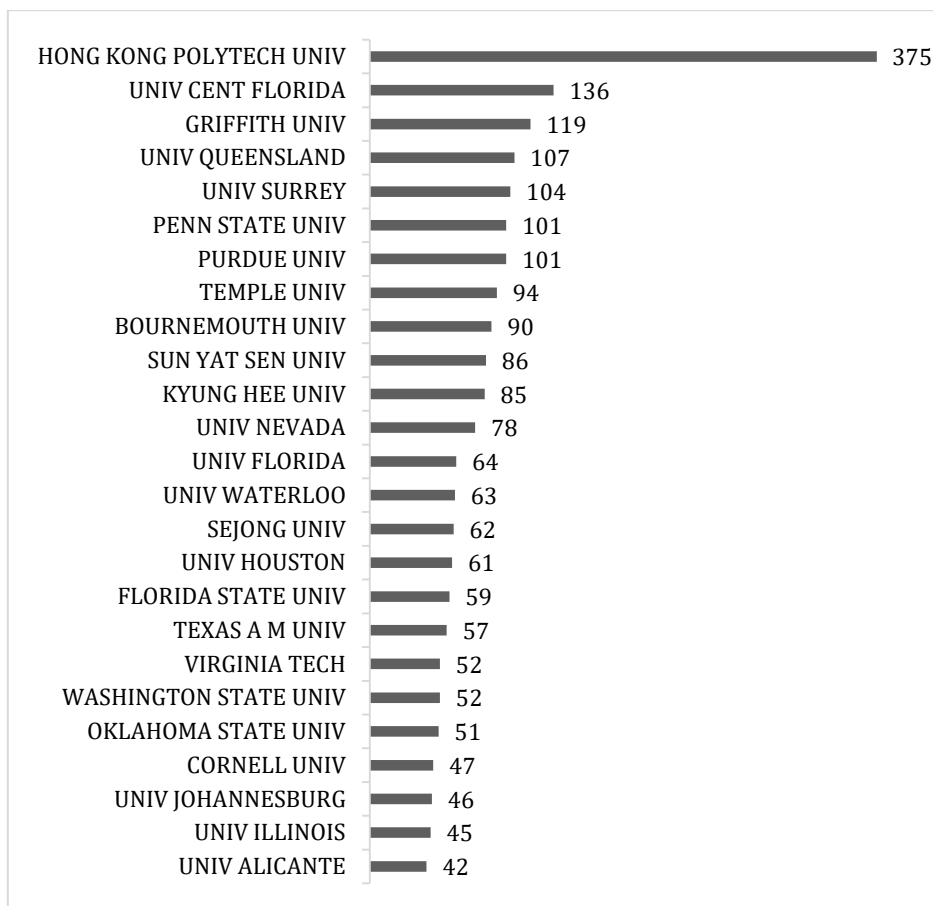


Figure 3. Total Number of Publications by Organizations

4.1. Co-author Analysis

With co-author analysis, it is possible to see authors working on IT in T&H (Figure 4) and working networks between the authors which are grouped in different colors in Figure 5. When the links in the figure are followed, the co-authors' networks burst out. Besides, the number of publications belonging to the authors is shown in bubble sizes. Rob Law from Honk Kong Polytechnic University, has more connections with other authors in different colors means that he has been working and collaborating on different topics of IT in T&H.

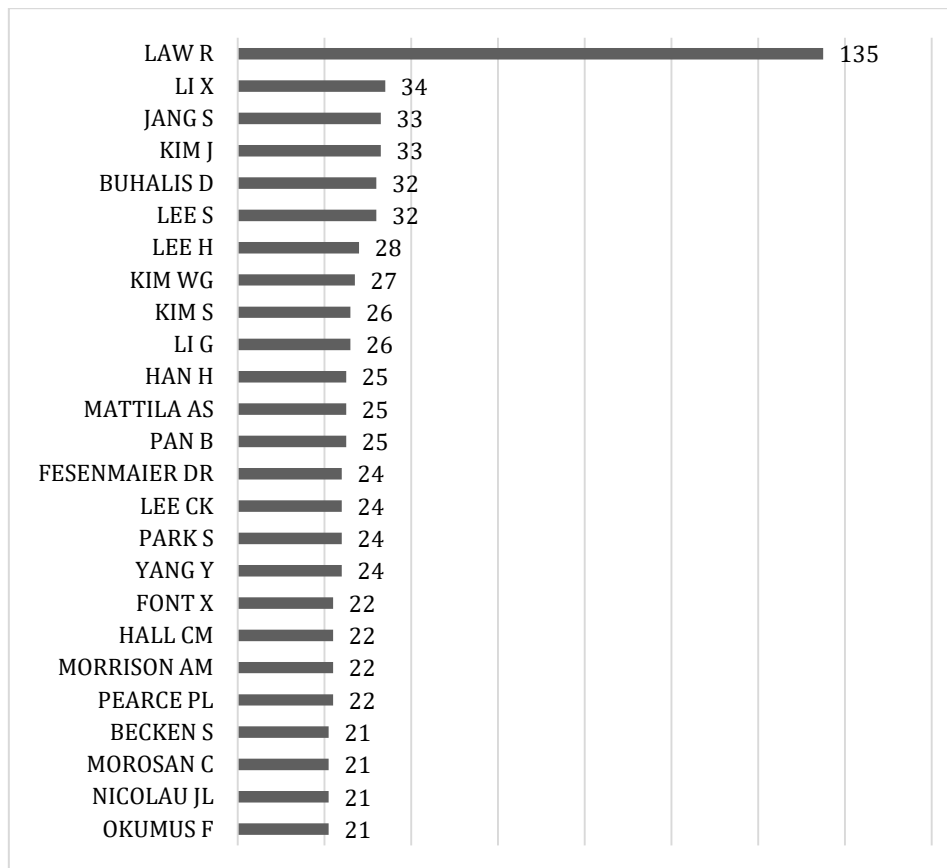


Figure 4. Total Number of Publications by Author

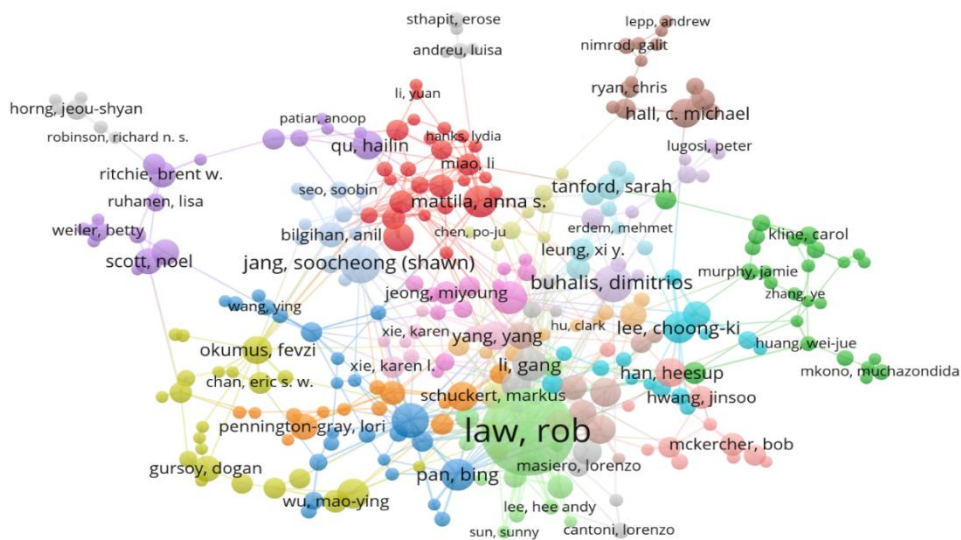


Figure 5. Co-author Analysis

4.2. Co-citation Analysis

This analysis was carried out through CiteSpace and Vosviewer programs, which use references from articles in the database of study, and a total of 171104 citations were found out for all articles. The VosViewer program has been categorized the literature in six different cate-

gories and Evaluating structural equation models with unobservable variables and measurement error paper of Fornell and Larcker (1981) as the most cited among all.

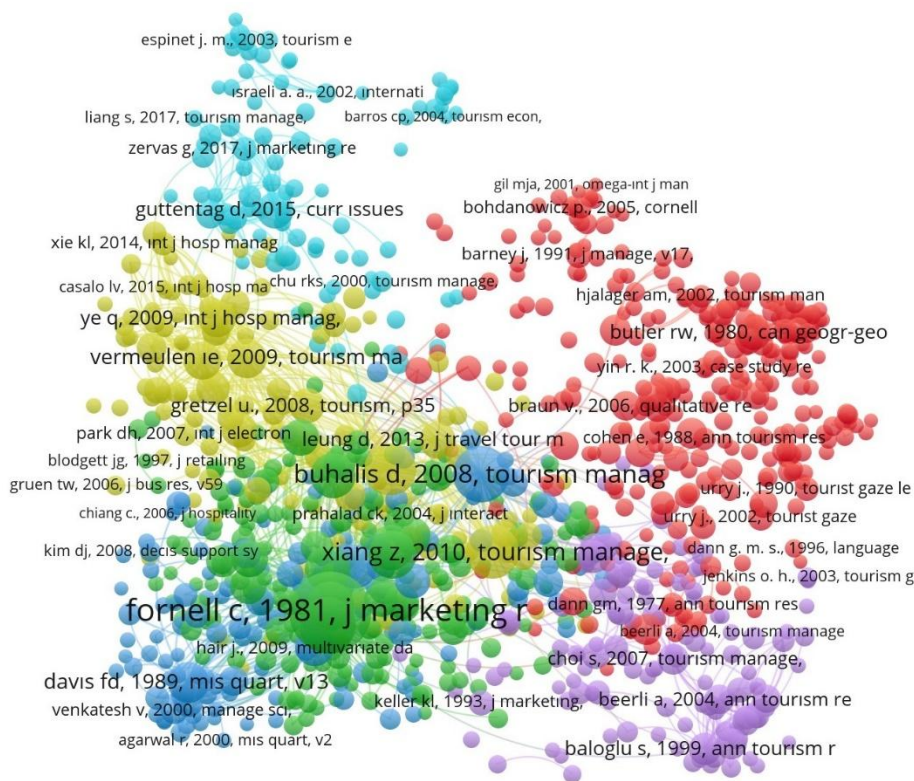


Figure 6. Co-citation Analysis

As a result of the co-citation analysis, the CiteSpace program has determined the 12 most cited categories which are trend topics: #0 online review, #1 purchase intention, #2 experience co-creation, #3 sharing economy, #4 environmental management, #5 sustainable tourism, #6 mobile device, #7 lodging properties, #8 brand love, #9 crisis planning, #10 tourist activities, #11 advance booking and #12 balanced scorecard. Clusters were determined based on the major references cited them which were published between 2000 and 2019. According to the analysis, the most cited article with 387 in the database is the article Airbnb: disruptive innovation and the rise of an informal tourism accommodation sector of Guttentag (2015) which is recent and influential in the field of sharing economy (see Table 2).

Table 2. Most Cited Articles and Their Clusters

Author	Year	Source	DOI	Frq	Cluster
Guttentag D	2015	Current Issues in Tourism	10.1080/13683500.2013.827159	387	#3 sharing economy
Xiang Z	2010	Tourism Management	10.1016/j.tourman.2009.02.016	355	#0 online review
Sparks BA	2011	Tourism Management	10.1016/j.tourman.2010.12.011	267	#0 online review
Buhalis D	2008	Tourism Management	10.1016/j.tourman.2008.02.001	252	#1 purchase inten-

			008.01.005		tion
Hair J F	2010	Multivariate Data Analysis		246	#6 mobile device
Zervas G	2017	J of Marketing Research	10.1509/jmr.15.0204	242	#3 sharing economy
Leung D	2013	J of Travel & Tourism Marketing	10.1080/10548408.2013.750919	236	#0 online review
Hair JF	2011	J Marketing Theory & Practice	10.2753/MTP1069-6679190202	235	#6 mobile device
Munar AM	2014	Tourism Management	10.1016/j.tourman.2014.01.012	203	#0 online review
Litvin SW	2008	Tourism Management	10.1016/j.tourman.2007.05.011	194	#0 online review
Henseler J	2015	J Academic Marketing Sciences	10.1007/s11747-014-0403-8	188	#6 mobile device
Ayeh JK	2013	J of Travel Research	10.1177/0047287512475217	183	#0 online review
Tussyadiah IP	2016	Int J of Hospitality Management	10.1016/j.ijhm.2016.03.005	181	#3 sharing economy
Vermeulen IE	2009	Tourism Management	10.1016/j.tourman.2008.04.008	178	#0 online review
Hays S	2013	Current Issues in Tourism	10.1080/13683500.2012.662215	169	#7 lodging properties
Ert E	2016	Tourism Management	10.1016/j.tourman.2016.01.013	167	#3 sharing economy
Gutierrez J	2017	Tourism Management	10.1016/j.tourman.2017.05.003	164	#3 sharing economy
Podsakoff PM	2003	J of Applied Psychology	10.1037/0021-9010.88.5.879	162	#6 mobile device
Zeng BX	2014	Tourism Management Perspectives	10.1016/j.tmp.2014.01.001	159	#7 lodging properties
So KKF	2014	J of Hospitality Tourism Research	10.1177/1096348012451456	156	#8 brand love
Lu WL	2015	J of Hospitality Marketing & Man.	10.1080/19368623.2014.907758	148	#0 online review
van Doorn J	2010	J of Service Research	10.1177/1094670510375599	147	#8 brand love
Tussyadiah IP	2016	J of Travel & Tourism Marketing	10.1080/10548408.2015.1068263	143	#3 sharing economy
Venkatesh V	2012	Mis Quarterly		141	#6 mobile device
Xiang Z	2015	J of Retailing & Consumer Services	10.1016/j.jretconser.2014.08.005	140	#2 experience co-creation

Citation burst is important for those who want to identify more resources and to learn more in a field. In this study, the studies that were referred to attract attention between 2000 and 2019 were determined with citation burst. High burst shows that it is a hotspot for a certain discipline in a certain time interval (Chen, Hu, Liu, & Tseng, 2012). According to Table 3, Venkatesh, Morris, Davis, and Davis (2003) Unified theory of acceptance and use of technology (UTAUT) model attracted intensive attention between 2000 and 2019. This article which was created by bringing together eight old theories in user acceptance of technology is very popular also for other IT studies.

the literature in different ways. Furthermore from the network map, 6 clusters of research areas have been defined: 1. Social media and online reviews, 2. Hotels, 3. China and sustainable tourism, 4. Airbnb and sharing economy, 5. Destination image and destination marketing, and 6. Satisfaction.

Table 4. Co-occurrence of Keywords

Rank	Term	Frq	Rank	Term	Frq
1	social media	229	14	content analysis	71
2	hotels	141	15	destination marketing	62
3	China	128	16	climate change	62
4	airbnb	115	17	internet	60
5	sharing economy	100	18	trust	59
6	destination image	92	19	marketing	56
7	sustainable tourism	92	20	revenue management	54
8	hotel industry	84	21	service quality	51
9	satisfaction	82	22	ewom	49
10	sustainability	81	23	Hong Kong	46
11	online reviews	75	24	rural tourism	46
12	hotel	74	25	gender	46
13	customer satisfaction	72			

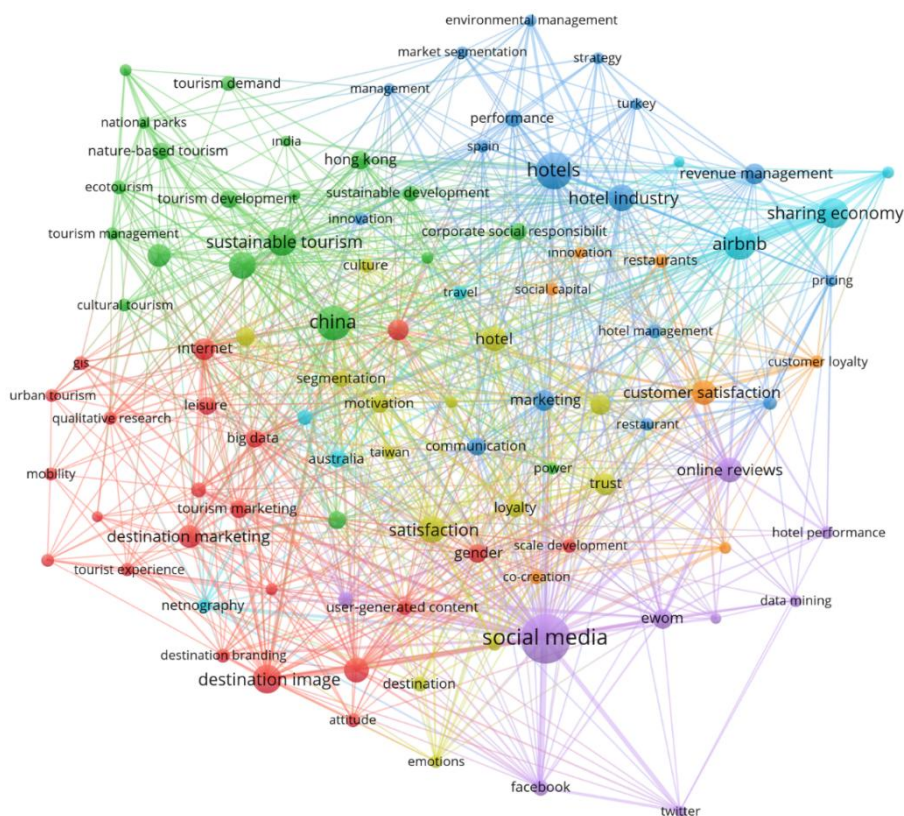


Figure 7. Keywords Co-occurrence Network

5. Discussion & Conclusion

This study provides a scientometric review of the IT-related studies in T&H. For this purpose, a database were created by searching IT related studies in the journals of tourism and hospitality which are SSCI indexed. Thanks to this database, publication statistics were obtained and citation analyses were carried out. As a result of the findings obtained from the study, it has been observed that IT studies have increased intensively in T&H journals since 2006. The reason for this development is the ever-growing hedonic use of technology (Venkatesh, Thong, & Xu, 2012), offering a competitive advantage to tourism businesses (Bilgihan, Okumus, & Kwun, 2011) and disruptive feature of innovation which force to use new technologies (Christensen, 2006). Globally 49.7% of the world population uses the internet (Bank, 2017) and they participate also in tourism processes and make businesses oblige to be effective in IT. Therefore these developments engaged the attention of the researchers and directed the IT-related issues to be analyzed with new models.

While some researchers continuing on the much-debated topics, others which are especially from the USA and China are almost aware of the importance of IT. Even though Law et al. (2009) tried to warn researchers about the importance, but there were some challenges for researchers like non-assimilation due to imperceptions, absence of infrastructure, disinvestment in public and private sector, and problem observation failure were arisen. Rob Law in Hong Kong Polytechnic University, was found to be the hardworking and most influential person for the field. Authors generally studied specific areas and have some working groups for certain topics.

Table 5. Summary of Clusters

	Most Studied	Trend
1	Social media and online reviews	Online review
2	Hotels	Purchase intention
3	China and sustainable tourism	Experience co-creation
4	Airbnb and sharing economy	Sharing economy
5	Destination image and destination marketing	Environmental management
6	Satisfaction	Sustainable tourism
7		Mobile device
8		Lodging properties
9		Brand love
10		Crisis planning
11		Tourist activities
12		Advance booking
13		Balanced scorecard

According to findings of co-citation analysis, two important conclusions arose: (1) structural equation modeling is mostly used as a method and (2) UTAUT model has a stronger citation burst for IT studies in T&H. Besides, as a result of co-citation and co-occurrence analysis most studied and trend clusters were listed in Table 5. Finally, it was found out that

online reviews are most studied and still a trend and subsequently researchers usually studied IT in hotels, China, and for sustainable tourism, sharing economy, destination marketing and image, and satisfaction. Some of the most studied clusters are still trending in literature but there also new clusters like purchase intention, experience co-creation, mobile device, etc.

Tourism has a complex domain and has many common points with technology because semantically both have many intangibles to exchange as information. So many processes in T&H transformed into e-processes like reservation, check-in, orders, etc. That is to say that technology changes tourism and vice versa. Researches should continue to do their researches on IT in T&H but with more computational power and sophisticated algorithms to be able to resolve future problems (Gretzel, 2011).

6. Limitations & Future Research

There are some limitations regarding the keywords used in citation analysis. All keywords related to information technologies have been tried to be added to the research. Some articles that do not contain these keywords but related to the field of technology may not be included in the analysis. Expanding the keywords by adding to include innovation, entrepreneurship and different fields may give an extensive view to the field. For example, some studies in the field of innovation can be related to information technology.

Future researches may include detailed methodology analysis and the use of statistical methods. Co-citation analysis is a very good start for new researchers before starting to study IT in T&H. Additionally, researchers may focus on the reasons why the USA and China have more publications than other countries.

REFERENCES

- Al-Ghossein, M., Abdessalem, T., & Barre, A. (2018). Open data in the hotel industry: leveraging forthcoming events for hotel recommendation. *Information Technology & Tourism*, 20(1-4), 191-216. doi:10.1007/s40558-018-0119-6
- Alford, P., & Clarke, S. (2009). Information technology and tourism a theoretical critique. *Technovation*, 29(9), 580-587. doi:10.1016/j.technovation.2009.05.006
- Bank, T. W. (2017). Individuals using the Internet (% of population). Retrieved from <https://data.worldbank.org/indicator/IT.NET.USER.ZS?end=2018&start=1960&view=chart>
- Benckendorff, P., & Zehrer, A. (2013). A NETWORK ANALYSIS OF TOURISM RESEARCH. *Annals of Tourism Research*, 43, 121-149. doi:<https://doi.org/10.1016/j.annals.2013.04.005>
- Bilgihan, A., Okumus, F., & Kwun, D. J. W. (2011). Information technology applications and competitive advantage in hotel companies. *Journal of Hospitality and Tourism Technology*.
- Chen, C. (2006). CiteSpace II: Detecting and visualizing emerging trends and transient patterns in scientific literature. *Journal of the American Society for information Science and Technology*, 57(3), 359-377.
- Chen, C., Hu, Z., Liu, S., & Tseng, H. (2012). Emerging trends in regenerative medicine: a scientometric analysis in CiteSpace. *Expert opinion on biological therapy*, 12(5), 593-608.
- Cheng, M. M., Edwards, D., Darcy, S., & Redfern, K. (2018). A Tri-Method Approach to a Review of Adventure Tourism Literature: Bibliometric Analysis, Content Analysis, and a Quantitative Systematic Literature Review. *Journal of Hospitality & Tourism Research*, 42(6), 997-1020. doi:10.1177/1096348016640588
- Christensen, C. M. (2006). The ongoing process of building a theory of disruption. *Journal of Product innovation management*, 23(1), 39-55.
- de la Hoz-Correa, A., Munoz-Leiva, F., & Bakucz, M. (2018). Past themes and future trends in medical tourism research: A co-word analysis. *Tourism Management*, 65, 200-211. doi:10.1016/j.tourman.2017.10.001
- Digiorgio, V. (2016). Impact of promotional tools on reservation channels management: a descriptive model of Italian accommodation facilities. *Information Technology & Tourism*, 16(4), 347-373. doi:10.1007/s40558-016-0069-9
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 18(1), 39-50.
- Gretzel, U. (2011). Intelligent systems in tourism. *Annals of Tourism Research*, 38(3), 757-779. doi:10.1016/j.annals.2011.04.014
- Guttentag, D. (2015). Airbnb: disruptive innovation and the rise of an informal tourism accommodation sector. *Current Issues in Tourism*, 18(12), 1192-1217.
- Huang, Y. C., Backman, K. F., Backman, S. J., & Chang, L. L. (2016). Exploring the implications of virtual reality technology in tourism marketing: An integrated research framework. *International Journal of Tourism Research*, 18(2), 116-128.
- Ivanov, S., Webster, C., & Seyyedi, P. (2018). Consumers' attitudes towards the introduction of robots in accommodation establishments. *Tourism*, 66(3), 302-317. Retrieved from <Go to ISI>://WOS:000445952700004
- Jin, J., Gubbi, J., Marusic, S., & Palaniswami, M. (2014). An information framework for creating a smart city through internet of things. *IEEE Internet of Things journal*, 1(2), 112-121.
- Johnson, A. G., & Samakovlis, I. (2019). A bibliometric analysis of knowledge development in smart tourism research. *Journal of Hospitality and Tourism Technology*, 10(4), 600-623. doi:10.1108/jhtt-07-2018-0065
- Kocak, O. (2007). E-commerce opportunities in the tourism sector and it's employment effect. *Changes in Social and Business Environment, Proceedings*, 120-127. Retrieved from <Go to ISI>://WOS:000251604200020
- Koseoglu, M. A., Rahimi, R., Okumus, F., & Liu, J. (2016). Bibliometric studies in tourism. *Annals of Tourism Research*, 61, 180-198. doi:10.1016/j.annals.2016.10.006
- Koseoglu, M. A., Sehitoglu, Y., & Craft, J. (2015). Academic foundations of hospitality management research with an emerging country focus: A citation and co-citation analysis. *International Journal of Hospitality Management*, 45, 130-144. doi:10.1016/j.ijhm.2014.12.004
- Kourtesopoulou, A., Kehagias, J., & Papaioannou, A. (2018). Evaluation of E-Service Quality in the Hotel Sector: A Systematic Literature Review. *Innovative Approaches to Tourism and Leisure*, 173-191. doi:10.1007/978-3-319-67603-6_13
- Law, R., Buhalis, D., & Cobanoglu, C. (2014). Progress on information and communication technologies in hospitality and tourism. *International Journal of Contemporary Hospitality Management*, 26(5), 727-750.
- Law, R., Chan, I. C. C., & Wang, L. (2018). A comprehensive review of mobile technology use in hospitality and tourism. *Journal of Hospitality Marketing & Management*, 27(6), 626-648.

- Law, R., Leung, D., & Chan, I. C. C. (2019). Progression and development of information and communication technology research in hospitality and tourism. *International Journal of Contemporary Hospitality Management*.
- Law, R., Leung, R., & Buhalis, D. (2009). Information Technology Applications in Hospitality and Tourism: A Review of Publications from 2005 to 2007. *Journal of Travel & Tourism Marketing*, 26(5-6), 599-623. doi:10.1080/10548400903163160
- Leung, X. Y., Sun, J., & Bai, B. (2017). Bibliometrics of social media research: A co-citation and co-word analysis. *International Journal of Hospitality Management*, 66, 35-45. doi:10.1016/j.ijhm.2017.06.012
- Li, Y., Hu, C., Huang, C., & Duan, L. (2017). The concept of smart tourism in the context of tourism information services. *Tourism Management*, 58, 293-300.
- Lim, W. M. (2009). Alternative models framing UK independent hoteliers' adoption of technology. *International Journal of Contemporary Hospitality Management*, 21(4-5), 610-618. doi:10.1108/09596110910967836
- Lui, T. W., Bartosiak, M., Piccoli, G., & Sadhya, V. (2018). Online review response strategy and its effects on competitive performance. *Tourism Management*, 67, 180-190. doi:10.1016/j.tourman.2018.01.014
- Mulet-Forteza, C., Genovart-Balaguer, J., Merigo, J. M., & Mauleon-Mendez, E. (2019). Bibliometric structure of IJCHM in its 30 years. *International Journal of Contemporary Hospitality Management*, 31(12), 4574-4604. doi:10.1108/ijchm-10-2018-0828
- Nerur, S., Rasheed, A. A., & Pandey, A. (2016). Citation footprints on the sands of time: An analysis of idea migrations in strategic management. *Strategic management journal*, 37(6), 1065-1084. doi:10.1002/smj.2377
- Oliveira, T., & Martins, M. F. (2010). Understanding e-business adoption across industries in European countries. *Industrial Management & Data Systems*, 110(8-9), 1337-1354. doi:10.1108/02635571011087428
- Piccoli, G., Lui, T. W., & Grun, B. (2017). The impact of IT-enabled customer service systems on service personalization, customer service perceptions, and hotel performance. *Tourism Management*, 59, 349-362. doi:10.1016/j.tourman.2016.08.015
- Scholar, G. (2020). Rob Law Personal Page. Retrieved from <https://scholar.google.com/citations?user=mRMgTLsAAAAJ&hl=en&oi=ao>
- Sigala, M. (2018). New technologies in tourism: From multi-disciplinary to anti-disciplinary advances and trajectories. *Tourism Management Perspectives*, 25, 151-155.
- Tregua, M., D'Auria, A., & Costin, H. (2020). #10yearschallenge: how co-creation permeated tourism research. A bibliometric analysis. *European Journal of Tourism Research*, 24. Retrieved from <Go to ISI>://WOS:000508829000009
- Van Eck, N., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84(2), 523-538.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 27(3), 425-478.
- Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS quarterly*, 157-178.
- Xiang, Z. (2018). From digitization to the age of acceleration: On information technology and tourism. *Tourism Management Perspectives*, 25, 147-150.
- Xiang, Z., & Gretzel, U. (2010). Role of social media in online travel information search. *Tourism Management*, 31(2), 179-188.