



## BEER TOURISM POTENTIALS: BIBLIOMETRIC AND TEXT MINING BASED CONTENT ANALYSIS

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**Abstract:** *Beer is a popular beverage globally and has excellent potential to attract tourists. Unlike beer tourism, wine tourism has long since occupied a special place in tourism literature and already presents a standard part of the tourist offer of many destinations. A literature review on beer tourism has not been conducted so far, and it would provide a basis for comparison with the research interest in wine tourism, for which such works already exist. This paper aims to establish the structure of the published works on beer tourism in the most crucial world journals in tourism and hospitality. Beer-related terms were searched in the titles, keywords, and abstracts of 27 tourism and hospitality journals indexed in Web of Science Journal Citation Reports Clarivate Analytics. The existence of 35 research papers in the field of beer tourism was determined, and their further bibliometric analysis and content analysis based on text mining was carried out.*

**Keywords:** *beer tourism, wine tourism, literature review, JCR list, Voyant Tools*

### 1. INTRODUCTION

In the age of growing interest in tourism, its numerous unique forms based on special interests appear. One of these forms is beer tourism. As the very name suggests, this form of tourism positions beer and other elements of the tourist offer associated with it as a central determining factor.

Beer is an 'alcoholic beverage produced by extracting raw materials with water, boiling (usually with hops), and fermenting' [1]. It is 'a carbonated, fermented alcoholic beverage that is usually made from malted cereal grain (especially barley), is flavored with hops, and typically contains less than a 5% alcohol content' [2]. Historically, beer has existed since Ancient Egypt, Ancient Near East, and other Ancient beer-drinking people, the British Isles, and Europe, from the Norman Conquest to the End of the Tudors [3]. Some beer styles are porter, Bavarian beer, potato beer, heather ale, pale ale, Devonshire white ale, and gruit [3]. It is essential to emphasize the difference between industrial and craft brewing [4, 5, 6]. DeSalle & Tattersall [7] also emphasize different beer-drinking cultures (Australia, Japan, and Europe).

The importance of beer and brewing is indicated in many review papers with topics related to the subject area: demand [8], rice beer – Indian contribution [9], brewing/beer [10], craft beer [11]. As a whole, Pallotino et al. [10] indicate a growing interest in brewing and beer science during the 1940-2018 period. According to the research mentioned above, the most important countries in terms of the number of scientific papers were: 1) the UK, the USA, and Japan in the period 1940-1979 (more than one hundred papers); 2) the USA, the UK, China, Germany, and Japan in the period 1980-2018 (more than thousand papers). In recent years, there has been a noticeable growing interest in the field of craft brewing, confirmed by the number of publications, which has significantly increased since 2015, with the main areas of research: 'CB industry and market, marketing and branding, consumer behavior and sustainability' [11].

China, the USA, Brazil, Mexico, and Germany are the top five countries with the most extensive number of beer producers. 'In 2019, the global beer consumption was 189.05 million kiloliters' [12]. The largest beer consumer countries are China and the USA (with a double-digit global market share), then countries in Asia, Europe, Central and South America, and North America (with a double-digit global market share). At the same time, the Czech Republic, Austria, and Romania have the highest consumption per capita. (three-digit number of liters) [12].

According to Bujdosó & Szűcs [13], when we consider the system of beer tourism, it is necessary to emphasize the existence of 'beer as primary motivation' and 'place as primary motivation' (p. 105). If the main motivation is beer, beer tourism may include: 'beer routes', 'beer weekends', 'beer-themed lunch', 'beer tasting', and 'other' [13]. If the primary motivation is the place, beer tourism can include: 1) 'festivals and events'; 2) 'beer museums'; 3) 'visiting breweries, brew houses'; 4) 'obtaining beer-related products'; 5) 'visiting brasseries'; 6) 'other' [13]. Based on the above, it is concluded that beer tourism can be seen as a part of gastronomic tourism, more precisely, drinking tourism, but its scope is much broader depending on the angle of observation.

Based on the data mentioned above and the data presented by Anđelić et al. [14], it is concluded that approximately eight times more beer is consumed annually in the world than wine, which shows that beer-based tourism can have significant potential for development. It is also concluded that review literature on beer tourism has not been done so far, unlike wine tourism. Carrying out such an analysis is the initial step in determining the position of beer concerning wine in the research literature in the field of tourism and hospitality. Thus, the subject of this paper is the analysis of literature on beer tourism in selected scientific journals in tourism and hospitality indexed in Web of Science Journal Citation Reports Clarivate Analytics. This paper aims to establish the structure of published works on beer tourism using available text-mining tools.

## 2. METHODOLOGY

The tasks conducted during this research implied activities grouped into three steps: 1) Research preparation, 2) Research implementation and 3) Data processing and analysis.

The preparation of the research included defining the journal sample. The research sample consists of journals on the Web of Science Journal Citation Reports Clarivate Analytics with their names directly related to tourism and hospitality. This method of determining journals is also presented in previous literature [14, 15]. The journals search revealed the existence of 27 journals. Then the search terms were determined – beer(s), brewer(s), brewing, brewery/ies. The research was conducted at the end of February 2022. Advanced search options for the titles and keywords of the papers' abstracts on the journal publishers' websites were used. The 35 research articles were considered, and each paper was carefully read. The following activity was the coding stage: entering data about the papers into the database. For each paper, the following information was entered: title, journal, year of publication, authors, citations, subject of analysis, and keywords. Citation data was downloaded from the Google Scholar service on February 28, 2022. Using Google Scholar to determine citations is justified in the literature [16, 17, 18, 19]. Data on the subject of the analysis (the analyzed destination, the topic of the analysis) were established by reading the papers by the author. As seen in the introduction, review papers on beer are presented in the previous literature [8, 9, 10, 11]. The importance and actuality of conducting bibliometric analysis were pointed out by [20], giving an overview of review papers in the field of tourism. Based on the previous data, it is justified to analyze the literature in the field of beer tourism.

## 3. RESULTS AND DISCUSSION

The total number of research articles on beer tourism in journals from the JCR list is 35. This number was obtained based on 27 analyzed journals. It can be compared with 91 papers on wine tourism analyzed from only 15 journals (identical search method - title, abstract, keywords) whose search was conducted at the beginning of July 2019 [14]. A significantly greater orientation of researchers towards wine tourism, when compared to beer tourism, is evident since almost three times the number of papers on wine tourism were published in 12 journals less and a period shorter than two and a half years.

### 3.1. Papers by journals

The presence of papers on beer tourism was found in most of the analyzed journals (16 out of 27, i.e., 59.26%), and their distribution is shown in the following table (Table 1).

**Table 1:** Papers on beer tourism published in journals

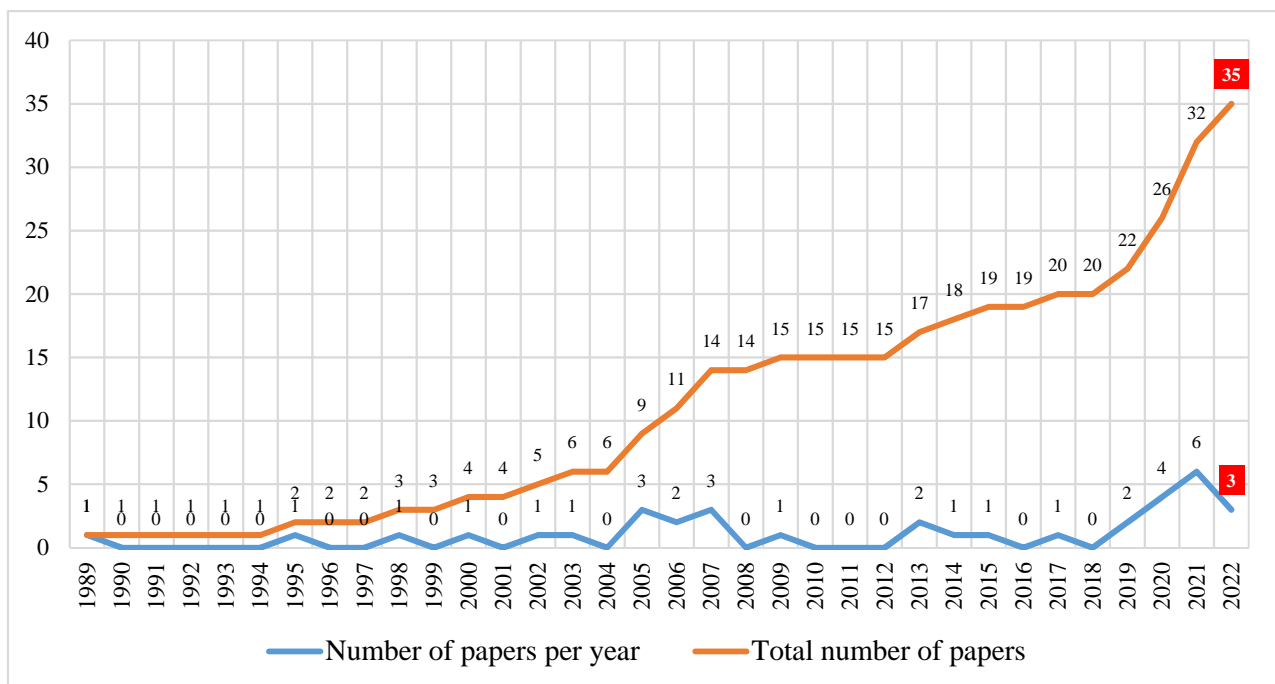
Ord. No.	Journal name	No. of papers	Percentage
1	International journal of contemporary hospitality management	11	31.43
2	International journal of hospitality management	3	8.57
3	International journal of tourism research	3	8.57
4	Tourism management perspectives	2	5.71
5	Tourism management	2	5.71
6	Cornell hospitality quarterly	2	5.71
7	Tourism review	2	5.71
9	Journal of destination marketing and management	2	5.71
13	Journal of hospitality and tourism research	1	2.86
8	Annals of tourism research	1	2.86
10	Current issues in tourism	1	2.86
11	Journal of hospitality marketing and management	1	2.86
12	Journal of sustainable tourism	1	2.86
14	Tourism economics	1	2.86
15	Tourist studies	1	2.86
16	Journal of hospitality, leisure, sport and tourism education	1	2.86
<b>TOTAL NUMBER OF PAPERS</b>		<b>35</b>	<b>100.00</b>

Source: Authors' research

If all 27 journals are considered, the maximum number of papers per journal is 11, the minimum is 0 (the median - is 11 journals), and the average number of papers per journal is 1.30. Suppose only journals with papers published on beer tourism are taken into consideration. In that case, the minimum number of papers is 1 (the median - is 8 journals), while the average is 2.19. It is necessary to highlight the contribution of the International Journal of Contemporary Hospitality Management as a journal with a share in almost a third of the published papers (11 papers; 31.43%).

### 3.2. Papers by time periods

The following figure shows an overview of the publication of papers by year (Figure 1). The first paper on beer tourism was published in 1989 in a journal by Noorman Poole - Poole (1989).



**Figure 1:** Papers on beer tourism by years (Source: Authors' research)

Based on the presented data, further intensification of the publication of papers on beer tourism can be expected in the future since interest in this topic is continuously increasing.

### 3.3. Papers by authors and countries

The total number of authorships (including multiple repetitions of the same authors) is 92. The average number of authors per paper is 2.63, while the maximum number of authors per paper is 5. The most significant number of papers has two authors each (Table 2).

**Table 2:** Number of authors per paper

Number of authors per paper	Number of papers	Percentage of papers (N=35)
5	5	14.29
4	3	8.57
3	9	25.71
2	10	28.57
1	8	22.86

Source: Authors' research

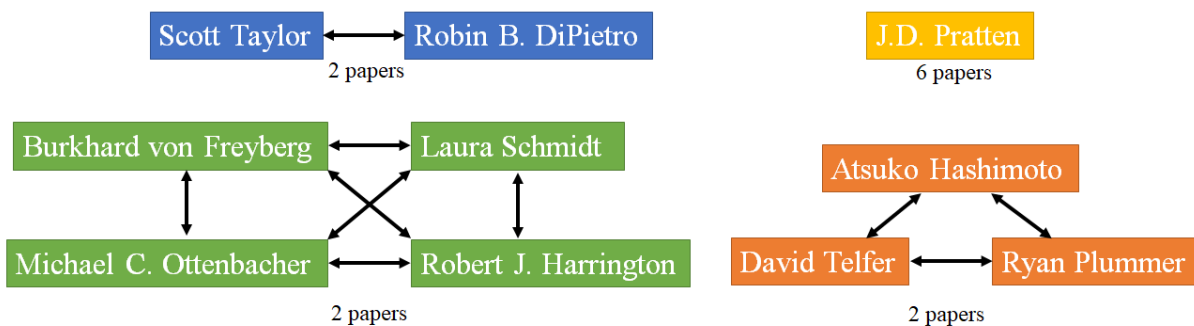
The total number of authors who participated in writing the research papers is 78. Ten authors (12.82%) have two or more papers (Table 3).

**Table 3:** The most significant authors (two or more papers published)

Name of author	Number of papers	Percentage of total number of papers
J.D. Pratten	6	17.14
Atsuko Hashimoto	2	5.71
Burkhard von Freybery	2	5.71
David Telfer	2	5.71
Laura Schmidt	2	5.71
Michael C. Ottenbacher	2	5.71
Robert J. Harrington	2	5.71
Robin B. DiPietro	2	5.71
Ryan Plummer	2	5.71
Scott Taylor Jr.	2	5.71

Source: Authors' research

As seen in the previous table, the most significant author is J.D. Pratten, with six published papers accounting for 17.14% of papers on beer tourism. The following picture (Figure 2) shows the cooperation of the most influential authors.



**Figure 2:** Collaboration of the most influential authors (Source: Authors' research)

As noted, J.D. Pratten only collaborated with other authors who wrote one paper. It should be emphasized that J.D. Pratten wrote all his works on beer tourism on his own (single author).

Thirty papers were written by authors from the same country (85.71%), while authors from two or more countries wrote five papers (14.29%). The following table (Table 4) shows the representation of papers from individual countries.

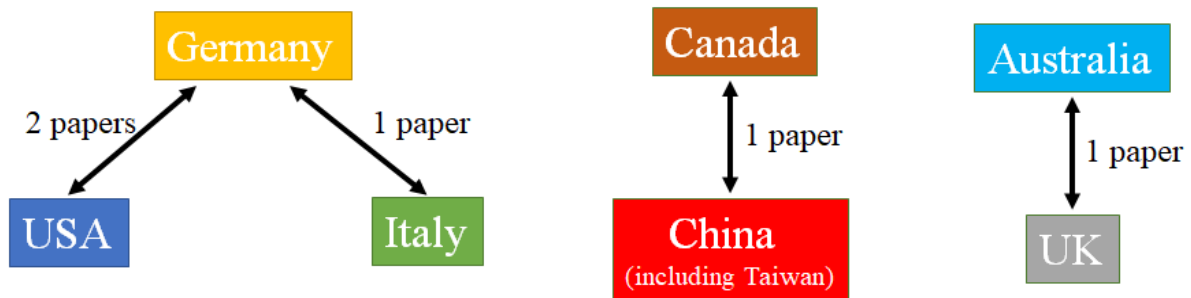
**Table 4:** Paper by countries

Ord. No.	Country	All authors from the single country	Collaboration with authors from other countries	Total number of papers	%
1	UK	12	1	13	37.14
2	USA	11	2	13	37.14
3	Canada	3	1	4	11.43
4	Germany	1	3	4	11.43
5	Italy	1	1	2	5.71
6	South Korea	1	0	1	2.86
7	Thailand	1	0	1	2.86
8	China (including Taiwan)	0	1	1	2.86
9	Australia	0	1	1	2.86

Source: Authors' research

As the previous table shows, authors from nine countries wrote the papers. The UK and the USA are the most important countries regarding the number of papers on beer tourism.

In the following picture (Figure 3), you can see the cooperation of authors from different countries. The most significant collaboration occurs between authors from Germany and the USA (2 papers).



**Figure 3:** Collaboration between authors from different countries (Source: Authors' research)

### 3.4. Papers by citations

The following table (Table 5) provides an overview of papers by citations.

**Table 5:** An overview of papers by citations

	Quote range	Number of papers	Percentage
<b>Quote range (calculated by 10)</b>	from 1 to 10	16	45.71
	from 11 to 20	4	11.43
	from 51 to 60	3	8.57
	from 21 to 30	3	8.57
	no quotes	2	5.71
	from 31 to 40	2	5.71
	from 71 to 80	2	5.71
	from 311 to 320	1	2.86
	from 191 to 200	1	2.86
	from 131 to 140	1	2.86
<b>Quote range (calculated by 50)</b>	from 1 to 50	25	71.43
	from 51 to 100	5	14.29
	no quotes	2	5.71

	from 301 to 350	1	2.86
	from 151 to 200	1	2.86
	from 101 to 150	1	2.86

Source: Authors' calculations based on GoogleScholar

The paper by Plummer & Telfer [21] has the largest number of citations (311). With over a hundred citations, we should also point out the paper by Murray et al. [22] – 191 citations and Kraftchick et al. [23] – 133 citations. The most significant number of papers has a range of citations from 1 to 10 (45.71%), and from 1 to 50 (71.43%). The total number of citations is 1240, while the average number per paper is 35.43.

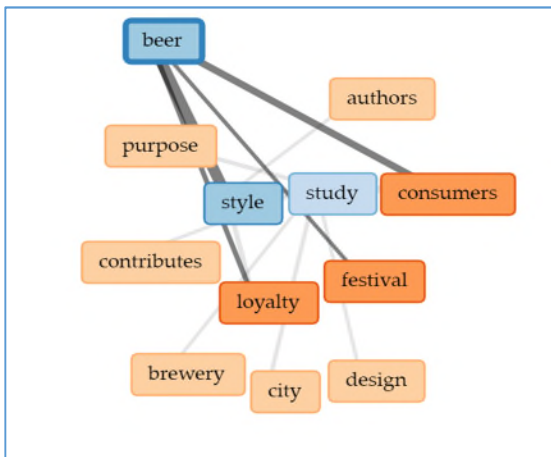
### 3.5. Papers by subject of analysis

The papers' content analysis was performed using the web application for text mining Voyant Tools. The following word cloud (Figure 4) depicts the most frequent keywords in the analyzed papers. In conclusion, the most frequent words used are beer and study, followed by style, craft, and satisfaction. These data conclude that most papers refer to case studies and consumer (craft) beer satisfaction surveys.

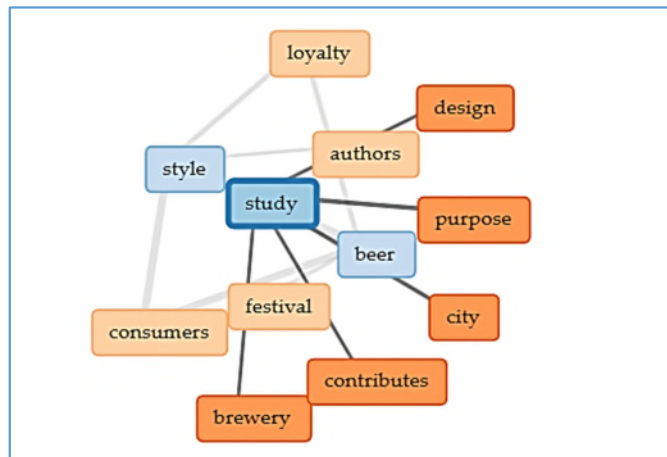


**Figure 4:** Keyword frequency analysis  
 Source: Authors' research

For the most frequent words (beer and study), collocates (words connected with them) were then analyzed. The results show that for the key term beer (Figure 5), the most typical collocations are loyalty, festival, and consumer, which leads to the conclusion that the papers focused on beer festivals, their consumers, and what is most important - on their satisfaction. The key term study's collocations are: design, purpose, city, contribute, and brewery (Figure 6).



**Figure 5:** Collocations – connected with the term *Beer*



**Figure 6:** Collocations – connected with the term *Study*

Source: Authors' research

#### 4. CONCLUSION

As a globally popular beverage, beer represents the tourists' interest when visiting many destinations. Since a literature review on beer tourism has yet to be conducted, the research carried out in this paper will uniquely provide a particular scientific contribution to beer tourism. This paper aims to analyze the structure of the papers published so far in the most renowned world journals in tourism and hospitality. In addition, further bibliometric analysis and content analysis based on text mining was carried out. The first paper on beer tourism was published in 1989. The obtained results showed that the number of papers on beer tourism has continuously increased over the years, as has the interest in this topic. The UK and the USA are the most significant countries in terms of the number of papers published on beer tourism. Nevertheless, the most significant collaboration occurs between authors from Germany and the USA. It should be noted that the analysis of the papers' content led to the conclusion that the largest number of papers refer to case studies and the survey of beer consumers' satisfaction. The papers focused on beer festivals, their consumers, and what is most important - their satisfaction.

Based on the facts presented in this paper, the subject and goal of this work have been achieved. Further research could be directed towards the analysis of literature in beer tourism. The authors should focus on further monitoring of the literature, supplementing the formed database and content analysis through the application of text mining techniques and new tools for the same, in order to obtain a complete picture of the role of beer and beer tourism in complete economic trends. As beer tourism will continue to attract people and be a sphere of their interest, further study will be necessary for using the potential of beer tourism as entirely as possible.

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