

## Service Quality in Maritime Businesses: Bibliometric View

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**Abstract** – Service quality is crucial in the maritime sector, as it is in all sectors. Service quality research in maritime businesses continues due to technological developments, changing environment and human profile. The study aims to current a holistic perspective to research evaluating service quality in maritime businesses with visual mapping and bibliometric analysis method. Therefore, 122 article were identified in the Web of Science database. It was analyses with the VOSviewer program. It was determined that scientists from 41 countries, especially China, were study. It is possible to say that the number of research carried out in 2022 represents approximately 20% of the total scientific production. This indicates that production will continue to increase.

**Keywords** – Service Quality, Service Marketing, Visual Mapping, Bibliometric Analysis, Maritime Businesses.

### I. INTRODUCTION

Service is defined as the application of knowledge and skills through processes and performances [1]. Services began to evolve with the idea that it required new approaches, tools, and ideas [2]. In today's environment where customer-oriented understanding is dominant, service marketing is intensively researched in the literature. It can be said that service marketing, which contributes to the emergence of the process or performance in the best way, is essential activity for businesses, especially in today's competitive environment. It is stated that services depend on the gap between expectations and reality [3]. Production, delivery, and consumption of services are simultaneous processes [4]. The efficiency of these processes is a result of the relationship between the service provider and the consumer. Service quality is essential in the maritime sector, as it is in all sectors. Service quality is extremely critical for liner shipping, which provides door-to-door service maritime container terminals, ports [5, 6, 7]. It is also very important for the safe and secure navigation of the ships and for the onshore organizations of the sector. Human resources in the

maritime sector, which is an important part of world trade, is the most basic of service quality. For this reason, the current study focuses on service quality research in maritime businesses and makes a bibliometric review to explore the information in the field in a holistic way. In this context, primarily service quality studies in the maritime sector were determined. Then, it was aimed to determine the research themes that emerged in the literature within the scope of the research. The current study answers the following research questions:

1. What is the basic bibliometrics of research published in the Web of Science (WoS) on service quality in maritime businesses? In this context, metrics are used to identify effective research topics and scientific field [8].

2. What are the themes emerging in the literature on service quality in maritime businesses around the world?

### II. MATERIALS AND METHOD

The bibliometric analysis method, which expresses quantitative research on a specific theme and allows statistical analysis of many articles [9],

helps to better understand the information and intellectual framework [10]. For this reason, bibliometric analysis methodology was used to examine research questions and provide quantitative analysis of publications. Therefore, co-citation analysis and text mining provided by VOSviewer were used in the study to document and analyze the research patterns and topics in the articles published in the WoS database.

#### A. Research Data

WoS, the largest multidisciplinary database of scientific literature, was used in the research. The Boolean operator “or” and “and” search method, which combines the keywords “maritime business”, “maritime organizations” and “service quality”, was used to reach the relevant literature in the database. Thus, the study is limited to related keywords. Also, there is no time limit as search criteria. In the search, 122 articles to be included in the compilation were found after the words "maritime business" and "maritime organizations" were determined as "the all field" and service quality as "author's keywords".

#### B. Analysis of Data

There are software programs to perform keyword analysis in visual mapping methods. In this context, distance and graphic-based map types draw attention in scientific mapping techniques. In the distance-based mapping technique, distance and proximity between the items reveal the strength of the relationship, while graphic-based maps reveal the relationships of the items [11]. VOSviewer is a comprehensive program that allows to reveal the strength of distance and relationships between elements [12]. In this context, the bibliometric indicators obtained were analysed with the VOSviewer package program.

### III. RESULTS

In the research, descriptive statistical analysis of the number of publications by country was made. First, the data on the origin of the publications were processed according to the information of the first author. According to the geographical distribution of the publications determined in the study, the country with the highest number of publications in the relevant field was determined as China (20). This is followed by Spain (10), England (9), Germany (8) and Turkey (7), respectively. The WoS categories of the articles

and the number of publications is shown in Figure 1.

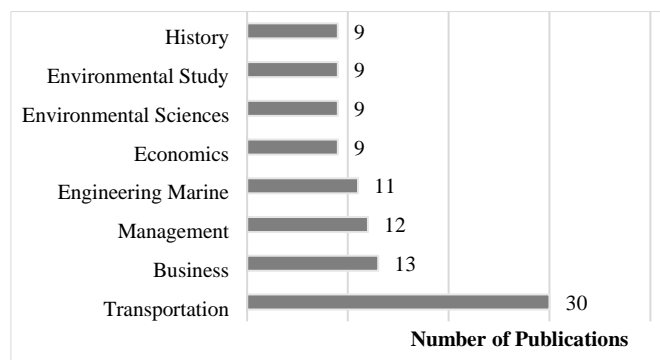


Fig. 1 Web of Science category and Number of publications

In Figure 1, it is seen that most of the studies investigating service quality in maritime business are in the transportation category. This is followed by business, management, engineering marine, economics, environmental and history, respectively. It has been determined that 112 of these publications are in English. Other publications appear to be in Croatian, Spanish, Russian, Polish, and Ukrainian. In addition, 54 of them are "Emerging Sources Citation Index" (ESCI), 44 are "Social Sciences Citation Index" (SSCI), 38 are "Science Citation Index Expanded (SCI-EXPANDED)" and 1 is Arts & Humanities Citation Index (A&HCI). The distribution of articles by years is given in Figure 2.

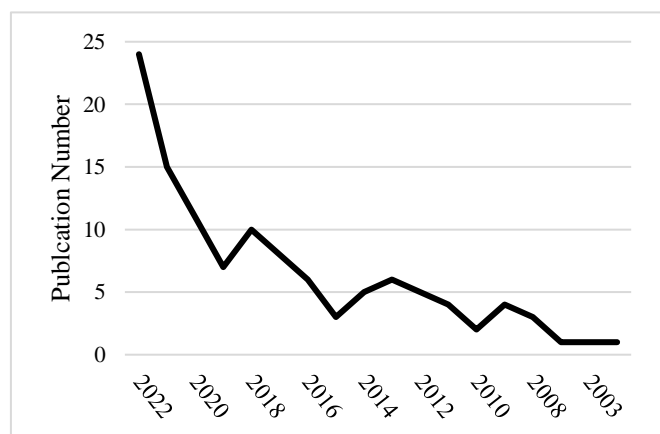


Fig 2. Number of Publications Annually

According to Figure 2, it is possible to say that the interest in studies evaluating the service quality in maritime business started as of 1991. It is seen that the studies in the related field have increased especially since 2007, and there has been an increase every day since 2015. Especially the increases after 2019 draw attention. It is possible to say that the number of studies carried out only in

2022 represents approximately 20% of the total scientific production in 17 years. The important of the service sector is increasing. This shows that production will continue to increase in the next years. The distribution showing which publisher group most of the studies carried out in this context were carried out is given in Figure 3.

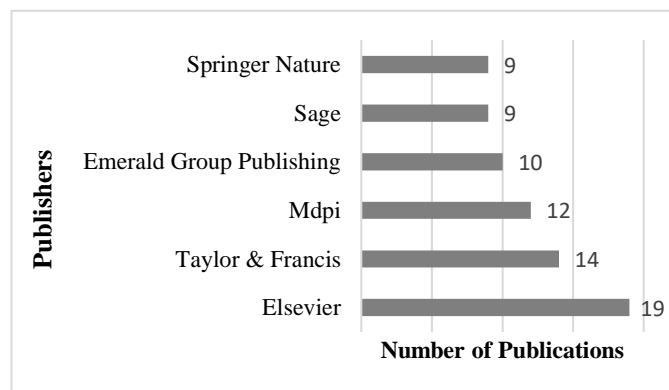


Fig. 3 Publisher and Publication Numbers

Figure 3 shows the publisher groups with the most publications in the relevant field. In this context, the publisher who the most was determined as “Elsevier” (19). “Taylor & Francis” (14) ranks second. The journals in which studies in the related field are published are shown in Table 1.

Table 1. Journals and Publication Numbers (n ≥ 4)

Journal	Publication Numbers (n)
Maritime Policy Management	8
Sustainability	7
International Journal of Maritime History	6
Pomorstvo Scientific Journal of Maritime Research	5
WMU Journal of Maritime Affairs	4

Table 1 shows the 5 journals with the most publications (n ≥ 4) in WoS. It is seen that the journal in which the studies in the related field are published the most is "Maritime Policy Management". One of the essential processes to define the structure of the field and clarify the studies on the subject is keyword analysis. Within the scope of the research, data visualization technique was used for keyword common asset analysis, which allows the evaluation of the studies on service quality in maritime business in terms of their content. In this context, a network structure

that shows the map of their power and research tendencies by giving the same colors together in the relationships between the keywords was created with the VOSviewer program. The results are shown in Figure 4.

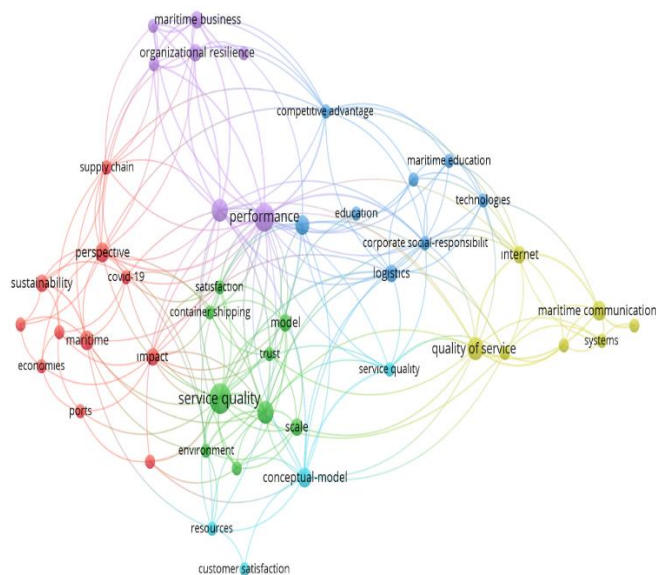


Fig. 4 Keywords Network Visualization

A total of 356 keywords related to the subject were found. However, to define the structure of the field and to clarify the studies, the minimum number of occurrences of keywords has been determined as 2. As a result, 50 keywords were identified. Also, country names etc. keywords have been eliminated. Therefore, 46 keywords were included in the analysis. The size of the circle in Figure 4 shows the most discussed issue. According to the size of the circle and the number of connections, it is seen that many keywords such as performance, service quality, management, customer satisfaction, logistics, competitive advantage, corporate social responsibility, and supply chain are frequently used. Especially in maritime businesses, service quality keywords are a concept that has been studied together with other clusters.

#### IV. CONCLUSION

Human resources in the maritime sector, which is essential part of world trade, is the most basic element of service quality. Service quality is vital for both ships, ports, and onshore organizations of the sector. For this reason, service quality should be considered in all areas of the maritime industry. The current study offers a holistic perspective to research evaluating service quality in maritime businesses with visual mapping and bibliometric

analysis method. In this context, among the many research indexed in WoS, studies evaluating service quality in maritime business (122) were determined. As a result of the analysis, it has been seen that the studies evaluating the service quality in maritime business are increasing each day. It was determined that scientists from 41 countries were studying. It has been determined that the country with the most studies is China. They are European and Asian countries in general, including Turkey. Most of them are in the transportation WoS category. A It is also seen that it is indexed in business, economy, and management categories. The group that makes the most publications in the related field draws attention as “Elsevier”. As a result of the common asset keyword analysis, it is seen that many keywords such as performance, service quality, management, customer satisfaction, logistics, competitive advantage, corporate social responsibility, and supply chain are frequently used. Service quality keywords in maritime businesses are a concept that has been studied together with other clusters. It is possible to say that the number of research carried out in 2022 represents approximately 20% of the total scientific production. This shows that if the trend continues, will continue to increase in the coming years.

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