

## LIBRARY SERVICE QUALITY: A BIBLIOMETRIC ANALYSIS

Mr Dixit Amar Rangnath  
Dr Gavali Vandana S.

### Mr. Dixit Amar Rangnath

Research Scholar,  
Library and Information  
Science, Faculty of  
interdisciplinary studies,  
Punyashlok Ahilya Devi  
Holkar Solapur University,  
Solapur.Maharashtra-  
413001(India)  
[amardixit491@gmail.com](mailto:amardixit491@gmail.com)  
Mob.9850821108

### Dr. Gavali Vandana S.

Research Guide,  
Library and Information  
Science, Faculty of  
interdisciplinary studies,  
Punyashlok Ahilya Devi  
Holkar Solapur University,  
Solapur. Maharashtra-  
413001(India)  
[vandanagavali@gmail.com](mailto:vandanagavali@gmail.com)  
Mob. -9881553199

### ABSTRACT -

This research article intends to provide a bibliometric study of the publications on the quality of library services from 1989 to 2021.

A total of 2665 publications were searched from the Web of Science database through search String i.e., quality\_ (Title) OR \_Quality of Services\_ (Title) OR \_SERVQUAL\_ (Title) AND \_college library\_ (Abstract). These publications are analysed by VOSviewer software and MS Excel.

The growth in library service quality publications have been observed from 2007 to 2021. Business Economics subject emerged as a top research field with the largest number of research, De, Ona and Juan were observed as the most prolific authors with a contribution of 14 articles during the study period, and the USA has emerged as the top country with highest 664 publications and total 46189(69.56%) citations. *'The behavioural consequences of service quality by Zeithaml, VA et al.'* is observed as the highest cited publication with 4988 citations (184.74 AC/Y). As well as all extracted publications are analysed by co-authorship networks, intercountry co-authorship networks and keyword occurrence networks. Service quality is increasingly being applied as a modern management technique in libraries hence this study will help the researcher to understand the expansion of the subject.

**Keywords:** Service Quality; Library Service Quality; Bibliometric Analysis; VOSviewer.

### INTRODUCTION

Service quality is key to success in modern times. Quality of services plays a major role in any professional development. The library always incorporates concepts from various other disciplines to improve quality in its day-to-day operations.

Library and information services provided by the library have always been popular among readers. These services can be made more efficient by using modern management concepts like SERVQUAL, LIBQUAL etc. Libraries have been with us for a long time, providing collections and services of various reading materials. Libraries have helped people a lot in their pursuit of all kinds of knowledge. (Curran et al., 2006) Libraries and information centres have performed a very responsible role in providing quality services to India's rapid progress in all fields since independence and to maintain this momentum in the future. In India, research has become an essential component of library and information science (LIS) in order to address new problems, identify workable answers, and explore the unexplored territory. (Rana, 2011). Hence, it is necessary to review and analyse the published research at the national and international levels in library service quality for aspirant researchers.

### **Service Quality**

Assessing the quality of services in higher education is important for bringing in and maintaining tuition-based revenues. (Angell et al., 2008). In simple terms service quality can be defined as it should be according to the users' requirements and satisfy their different needs. (Edvardsson, 1998). In the manufacturing industry, service quality is rated higher than product quality. High service quality is essential for business success (Ograjenšek, 2008)

### **Service Quality in the Library**

With the changing times, libraries have also incorporated new techniques and technologies in its day-to-day operations and services. The usefulness of libraries depends on the satisfaction

of the users. Users are happy when the library fulfils their needs and expectations. A quality service is regarded as one that meets users' expectations and produces a positive experiences (Thakuria, 2007) Service quality of libraries is the difference between readers' expectations and perceptions of services and the service actually received by them. Providing services according to the needs of users is considered excellent service. (Sahu, 2007)

### **Bibliometric Analysis**

Bibliometric analysis is a widely used technique to study and analyse vast amounts of scientific data. It allows to explore the subtleties of a particular field's evolutionary history while illuminating its frontiers. (Donthu et al.) The quantitative analysis of bibliographic data is known as bibliometric analysis. It gives a broad overview of a study area that is classified by articles, authors, and journals. (Merigó & Yang, 2017) . Bibliometric technique reviews the research output of researchers, journals, research institutes and countries and measure collaboration pattern among them (Li & Zhao, 2015).

## **REVIEW OF LITERATURE**

Garg et al. (Garg et al., 2020).evaluated the growth pattern, geographical distribution, and productivity of the articles; identified the most productive writers and institutions; and found the authors who are most frequently cited. Their data show that the years 2012 to 2015 and then 2016 to 2019 saw the greatest number of publications published. According to the breakdown of output by nations, 39 nations including India contributed 1,698 articles. The USA, which had the greatest

CPP and RCI values, and India both are at top position with 86.1% of publications. Delhi-based authors made the largest contributions of 30.7% and the authors from Karnataka (13.1%) and Maharashtra contributed 13.1% and 10.5%. The top two organisations were DRDO-DESIDOC and CSIR-NISTADS. B.M. Gupta from CSIR-NISTADS, is one of the 26 most prolific writers, published the most works. (Chen & Naga, 2020). Number of publications, their keywords, authors, institutions, publishers are five factors Chen and Naga used to study the skills of library professional of Mainland China. The findings indicated that throughout the previous ten years, the number of papers in this sector has been gradually rising. In this research area, the author noticed that there is a major lack of collaboration between writers and institutions. Furthermore, the primary authors' cooperative groupings are only mentioned to a relatively limited extent.

### **OBJECTIVES OF THE STUDY**

The following objectives have been set for the present research

Q1. To Study the publication graph of research in library service quality.

Q2. Which subject area has more research on service quality?

Q3. Who are the most prominent authors?

Q5. Which are the top 10 prominent countries?

Q4. Which are the most cited papers?

Q6. Which author has collaborated with the greatest number of other authors?

Q7. Which country's author has collaborated the greatest number of times with other country's authors?

Q8. To find the Which keywords appears the most frequently?

### **METHODOLOGY**

To conduct this bibliometric analysis, journal articles and review papers that are indexed in the Web of Science were chosen. The time frame for this study was 1989 to 2021. Service quality\_ (Title) OR \_Quality of Services\_ (Title) OR \_SERVQUAL\_ (Title) AND \_college library\_ (Abstract) were the search terms used to find the items. Meetings abstract, proceedings, review articles and early access are among the records used for this study. Articles published in 2022 and the articles other than in English language are excluded in this study. For the present research Excel office 2019 and VOSviewer, 1.6.18 software is used for the database analysis.

The following types of analysis has performed.

### **DATA ANALYSIS**

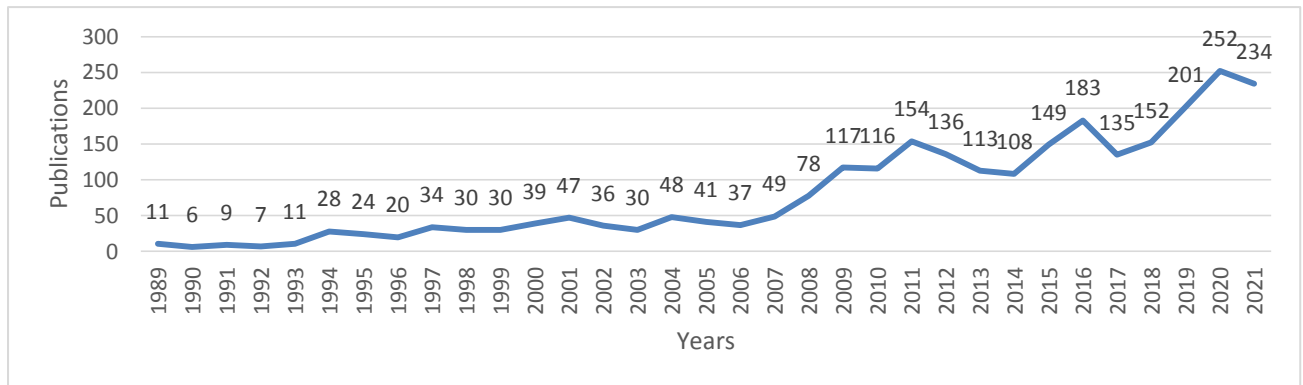
#### **Performance Analysis**

##### ***Publication by year***

Through the search string, it was discovered that 2,665 research articles (figure 1) on the subject of the quality of college library services had been published from 1989 to 2021 in the Web of Science. The oldest entries in this collection on service quality date from 1989 with 11 publications. Since 2007, there has been observed growth in the number of publications, reflecting how widely accepted the idea of college library service quality is. It might be as a consequence of the invention of SERVQUAL by Parasuraman,

Zeithaml, and Berry, a widely used measuring model of service quality. The majority of 252 research articles were published in the year 2020; this trend will continue to rise in the future. These

articles have affiliations with 2522 institutions and are from 112 different countries published in 837 research journals.

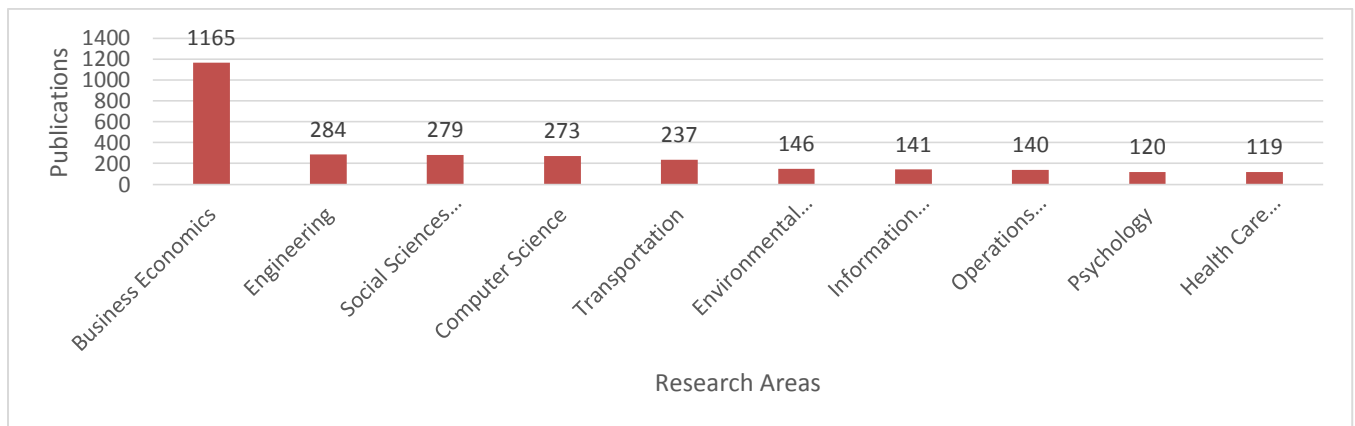


**Fig. 1. Year wise publications on the quality of college library services in the Web of Science database.**

**Publications by subjects**

the following chart shows how research in several fields is increasingly focused on service quality. The figure no.2 shows the top ten main subjects

out of it. A 43.71% of research is concerned with business economics, 10.65 % of research is concerned with engineering 10.46% and 10.24% of research concern with social science and computer science respectively.



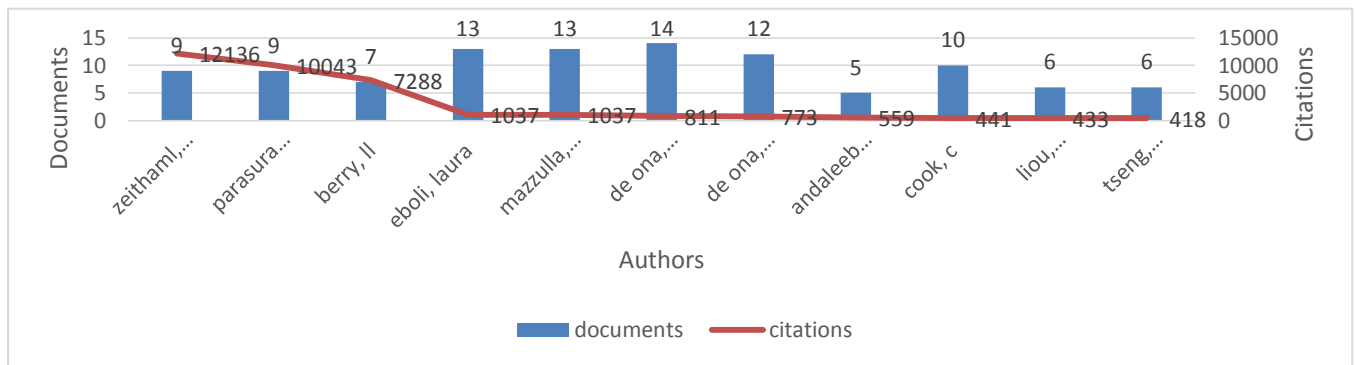
**Fig. 2. Top ten popular subject fields of research.**

**Most prolific authors**

It is observed that total of 6784 authors contributed to the library service quality extracted from the database. below fig no.3 lists top ten

prolific authors whose research articles have been cited the most. 2665 research articles have received a total of 99257 citations among them Zeithamal, Parasuraman and Berry are pioneer

researchers whose research articles have received the most citations.



**Fig.3. Most prolific authors**

**Publications by Country.**

Out of 112 countries publishing research on the topic of library service quality, 66 countries have at least 5 publications and 5 citations for it, which is the minimum threshold. The top 10 countries

with the most citations are shown in the table below. The USA occupied top position with maximum 664 publications. The total 2665 publications are cited 99257 times. The average citations per publication was 37.24, and the H-Index was 123.

**Table 1: The top 10 countries with the most citations.**

#	Country	Documents	TC	AC/Y
1	USA	664	46189	69.56
2	Peoples R China	375	7974	21.26
3	Taiwan	349	11557	33.11
4	England	181	5110	28.23
5	South Korea	161	3496	21.71
6	Australia	157	5842	37.21
7	Spain	131	3475	26.53
8	India	97	2492	25.69
9	Turkey	93	2688	28.90
10	Canada	73	3398	46.55

**Most Cited Publications**

The number of citations is better measurement for identifying the articles that have had the greatest

impact on researchers in domains relevant to library service quality (Merigo et al., 2015).

Table 2 lists the top 10 documents from the studied dataset that had the most impact. The yearly average of citations received (TC/Y) and the total number of citations received that may be searched in the Web of Science are shown

**Table 2: Top 10 documents which have received most citations (TC).**

#	Title	Authors	Source Title	Year	TC	AC / Y
1	The behavioural consequences of service quality	Zeithaml, VA et al.	Journal of Marketing	1996	4988	184.74
2	Measuring Service Quality- A Re-examination and Extension	Cronin, JJ et al.	Journal of Marketing	1992	3888	125.42
3	E-S-QUAL - A multiple-item scale for assessing electronic service quality	Parasuraman, A et al.	Journal of Service Research	2005	1638	91.00
4	A Dynamic Process Model of Service Quality - From Expectation to Behavioural Intention.	Boulding, W et al.	Journal of Marketing Research	1993	1488	49.60
5	Some new thoughts on conceptualizing perceived service quality: A hierarchical approach	Brady, MK et al.	Journal of Marketing	2001	1471	66.86
6	A Multistage Model of Customers Assessments of Service Quality and Value.	Bolton, RN et al.	Journal of Consumer Research	1991	1332	41.63
7	Reassessment of Expectations as a Comparison Standard in Measuring Service Quality – Implication for further Research.	Parasuraman, A et al.	Journal of Marketing	1994	1206	41.59
8	SERVPERF Versus` SERVQUAL – Reconciling Performance-Based and Perceptions-Minus-Expectation Measurement of Service Quality.	Cronin, JJ et.al	Journal of Marketing	1994	1139	39.28
9	Consumer Perception of SERVICE QUALITY - An Assessment of the SERVQUAL Dimensions.	Carman, JM	Journal of Retailing	1990	1125	34.09
10	Service quality delivery through Web sites: A critical review of extant knowledge	Zeithaml, VA et al.	Journal of the Academy of Marketing Science.	2002	1117	53.19

Source: Authors' elaboration.

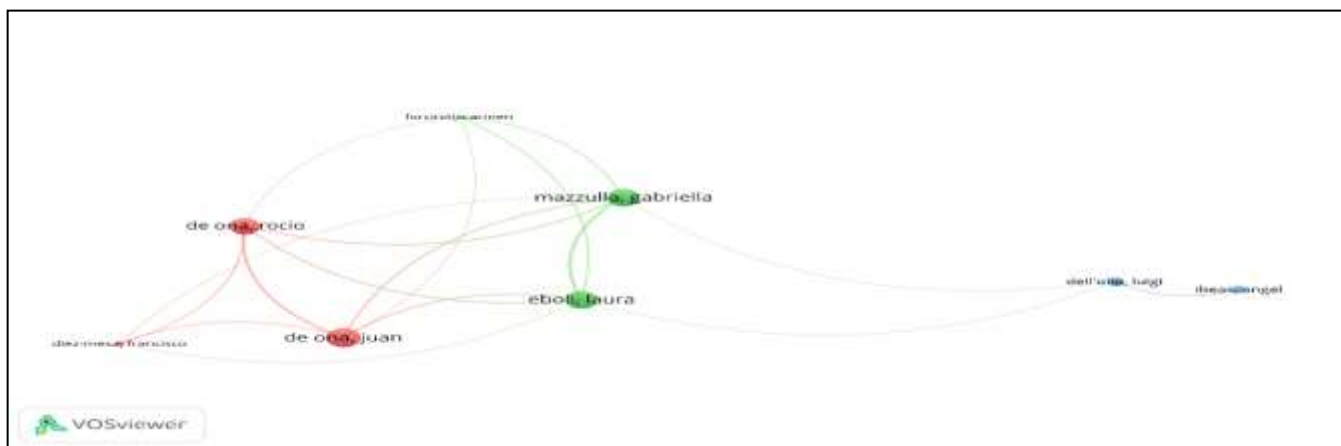
### Science Mapping

#### Co-authorship network analysis

The VOSviewer software is used to analyse the co-authorship network. The co-authorship network analysis visualise the co-authorship

linkage among the various researchers which shows the co-operation between the authors in the dataset. The data set for the current study contained a total of 6784 authors. The threshold was three documents and three citations for each document the researcher selected to produce a network map. A total of 226 authors meets this condition. The image below is composed of large

and small circles connected by links. The bigger circle indicates authors who have co-authored with a greater number of authors. The names of the top 10 authors with the maximum number of co-authors in the data set are listed in Table II. "Eboli, Laura." have contributed with highest no of co-authors.



**Figure 4. Co-Authorship network map.**

**Table 3: The top ten authors who collaborated with other Co-authors.**

#	Author	Documents	N.C.
1	Eboli, Laura	13	28
2	Mazzulla, Gabriella	13	28
3	De Ona, Juan	14	25
4	De Ona, Rocio	12	25
5	Gupta, Digant	10	24
6	Lis, Christopher g.	10	24
7	Rodeghier, mark	8	20
8	Cook, c	10	14
9	De man, s	5	14
10	Gemmel, p	5	14

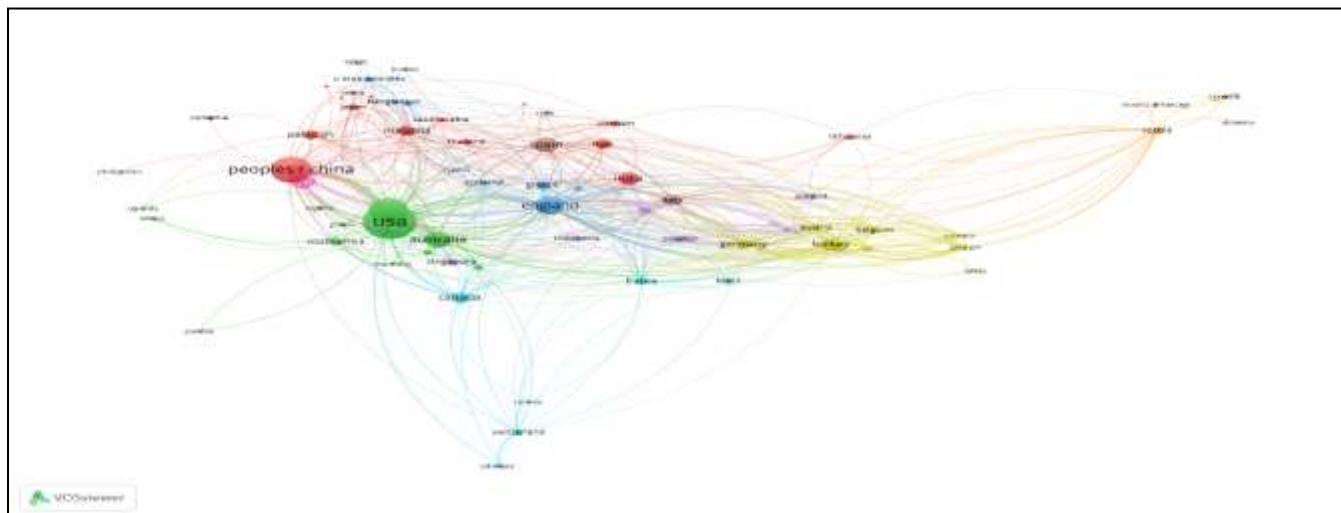
**Analysis of the international co-authorship network**

This analysis shows which authors have collaborated with the most authors of other

nations. Figure 5 displays international co-authorships network map. The data set included a total of 112 nations. Out of these numerous nations, the VOSviewer program discovered that 76 have connections with one another as a co-

author. This analysis shows that, the authors from the United States of America, Peoples R China, Taiwan, and England have collaborated with authors from other countries the most. The circle labelled "united states" in Figure 5 has the

greatest number of lines connecting to it. The lines are thicker for the nations that have worked on more papers. The Top 10 countries, whose authors collaborated most with authors from other countries, are listed in Table 4.



**Figure 5. Countrywise co-authorship network map of authors, who researched Library Service Quality.**

**Table.4: Inter-country co-authorship.**

#	Country	Documents	oNo. of Countries
1	USA	664	306
2	Peoples r China	375	202
3	Taiwan	349	85
4	England	181	217
5	South Korea	161	95
6	Australia	157	110
7	Spain	131	80
8	India	97	38
9	Turkey	93	72
10	Canada	73	63

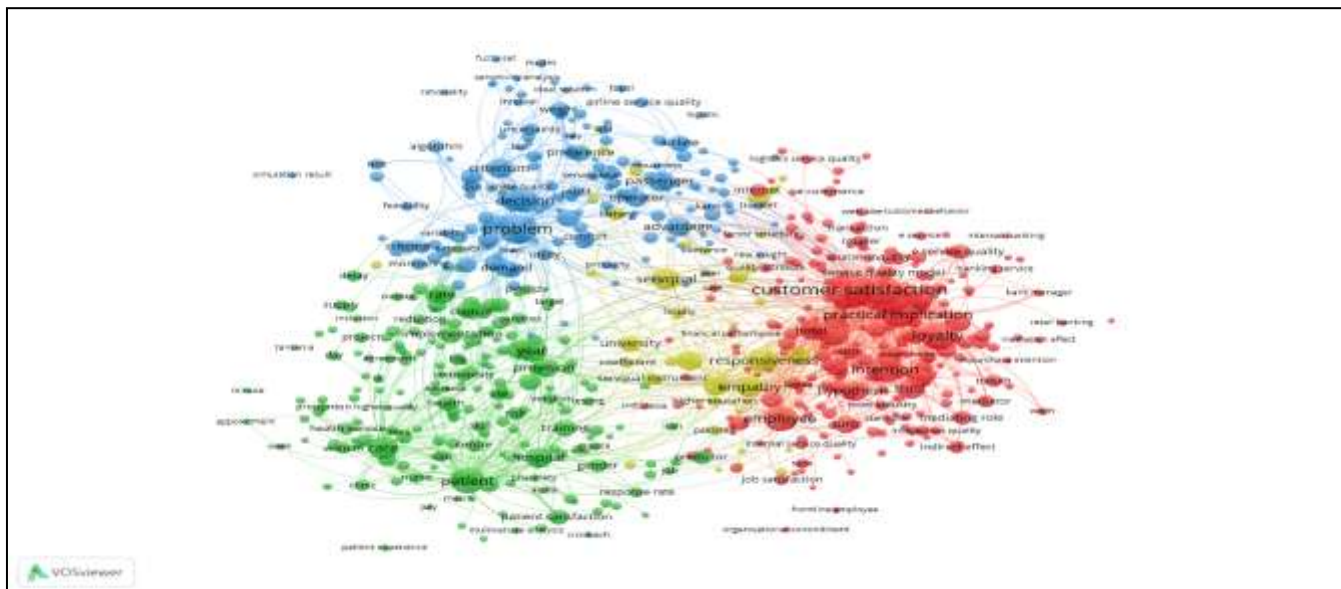
**Network of co-occurrence of keyword analysis**

This network helps to identify frequently used keywords in extracted research documents. These

keywords help to identify the topics and themes focused by the authors. Text-mining technique of VOSviewer generates a map, in which the separation among multiple terms is regarded as a sign of the connection between the different keywords (Laudano et al., 2017). If the

relationship is strong between two terms, the appearance of distance between them is greater. The co-occurrences in the articles were examined to ascertain how closely connected the terms were to one another. (van Eck & Waltman, 2010) The

data collection had 38418 keywords in total. Only those 681 keywords that popups more than 10 times were chosen to create a network map. The map displays multiple lines connecting various terms.



**Fig.6.Keyword Co-occurrence Network.**

The top 50 keywords that appeared the most frequently are listed in Table IV. In the data collection, the terms "Customer Satisfaction"

appeared a total of 351 times. The data set also contained numerous other keywords like loyalty, Service quality dimensions etc.

**Table 5:Top 50 Keywords appeared frequently in the VOSviewer dataset.**

Sr. No.	Term	Occurrences
1	Customer satisfaction	351
2	Originality value	262
3	Design methodology approach	250
4	Problem	249
5	Loyalty	207
6	Practical implication	202
7	Patient	198
8	Employee	185
9	Intention	181
10	Service quality dimension	162
11	Year	160
12	Responsiveness	156
13	Care	153

14	Decision	148
15	ServQUAL	138
16	Empathy	131
17	Network	126
18	Hospital	122
19	Score	122
20	Student	122
21	Hypothesis	120
22	Assurance	118
23	Criterium	117
24	Passenger	117
25	Customer loyalty	116
26	Research limitations implication	114
27	Trust	113
28	Advantage	111
29	Rate	107
30	Provision	101
31	Structural equation modelling	99
32	Bank	95
33	Demand	94
34	Confirmatory factor analysis	91
35	Turn	90
36	Antecedent	88
37	Requirement	88
38	Operator	87
39	Tangible	87
40	Implementation	85
41	Hotel	84
42	Program	83
43	Training	82
44	Challenge	80
45	Preference	80
46	University	80
47	Airline	77
48	Behavioural intention	76
49	Image	74
50	Parameter	74

## CONCLUSION

This study was carried out by Web of Science, the most popular and largest database used

worldwide which is considered from the year 1989 to 2021. Total of 2665 articles was extracted as the outcome of the search. The different parameters are considered for the analysis of this

database. It has been observed that publications have grown between 2007 and 2021 as a result of the development of SERVQUAL, a widely used measuring model of service quality, by Parasuraman, Zeithaml, & Berry. Research in several subject fields is increasingly focused on service quality especially in business economics, engineering and social science. Zeithaml va, Parasuraman and berry are the most prolific authors. USA, Peoples R. China and Taiwan are the countries whose publications are most cited. The behavioural consequences of service quality, Measuring Service Quality- A Re-examination and Extension, E-S-QUAL - A multiple-item scale for assessing electronic service quality is the publication which has received the highest number of citations. Eboli, Laura has co-authored the highest 28 times with 13 documents. The United States has 664 number of publications co-authored by 306 authors from other countries. Out of the top 100 keywords Customer Satisfaction, Loyalty and Responsiveness emerged as the highest frequently appeared keywords.

This study has certain limitations also, the researchers extracted data from the Web of Science, and further research can be conducted with the data from Scopus and other popular databases. The published research can be analysed with the Co-occurrence of keywords Co-citations, Bibliographic etc. which is uncovered in this study.

## REFERENCES

1. Angell, R. J., Heffernan, T. W., & Megicks, P. (2008). Service quality in postgraduate education. *Quality Assurance in Education*, 16(3),236–254. <https://doi.org>
2. Chen, C., & Naga, M. M. (2020). A bibliometric analysis of Chinese literature on competency skills of Library Professionals in Mainland China. *Library Philosophy and Practice*, 2020, 1–17.
3. Curran, K., Murray, M., Norrby, D. S., & Christian, M. (2006). Involving the user through library 2.0. *New Review of Information Networking*, 12(1–2), 47–59. <https://doi.org/10.1080/13614570601136263>
4. Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133(April), 285–296. <https://doi.org/10.1016/j.jbusres.2021.04.070>
5. Edvardsson, B. (1998). Research and Concepts Service Quality Improvement. *Managing Service Quality*, 8(2), 142–149.
6. Garg, K. C., Lamba, M., & Singh, R. K. (2020). Bibliometric analysis of papers published during 1992-2019 in decide journal of library and information technology. *DESIDOC Journal of Library and Information Technology*, 40(6), 396–402. <https://doi.org/10.14429/djlit.40.6.15741>
7. Laudano, M., Marzi, G., & Caputo, A. (2017). Ten years of International Journal of Entrepreneurship and Small Business: a bibliometric analysis from 2006 to 2016. *International Journal of Entrepreneurship and Small Business*, XXXX.
8. Li, W., & Zhao, Y. (2015). Bibliometric analysis of global environmental assessment

- research in 20 years. *Environmental Impact Assessment Review*, 50, 158–166. <https://doi.org/10.1016/j.eiar.2014.09.012>
9. Merigó, J. M., & Yang, J. B. (2017). A bibliometric analysis of operations research and management science. *Omega (United Kingdom)*, 73, 37–48. <https://doi.org/10.1016/j.omega.2016.12.004>
10. Ograjenšek, I. (2008). Service Quality. *Statistical Practice in Business and Industry*, 117–136. <https://doi.org/10.1002/9780470997482.ch6>
11. Rana, R. (2011). Research trends in library and information science in India with a focus on Panjab University, Chandigarh. *International Information and Library Review*, 43(1), 23–42. <https://doi.org/10.1016/j.iilr.2011.01.006>
12. Sahu, A. K. (2007). Measuring service quality in an academic library: An Indian case study. *Library Review*, 56(3), 234–243. <https://doi.org/10.1108/00242530710736019>
13. Thakuria, P. K. (2007). Concept of Quality in Library Services: an Overview. *5th Convention PLANNER -2007*, 412–420.
14. van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84(2), 523–538. <https://doi.org/10.1007/s11192-009-0146-3>

