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Global Trends of Service Quality in Healthcare: A bibliometric analysis of Scopus Database.

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ABSTRACT

Purpose: The rising importance of healthcare service quality in the literature led us to conduct a bibliometric analysis of the said area of interest. It aims to investigate the trends and patterns happened in the literature of service quality in healthcare service.

Data Source: Scopus database was used to conduct the 4689 papers for bibliometric analysis.

Method: VOSviewer software was used to evaluate the research papers associated with healthcare service quality. The Publication trend was analyzed from the year 1969 to 2019 by using Scopus database. The number of documented retrieved and put into the analysis was 4689. The most productive and influential authors were identified. Co-authorship and Co-occurrence analysis were conducted.

Findings: Results of Co-authorship and Co-occurrence analysis revealed that the United States and the United Kingdom were leading the publication of documents related to healthcare service quality. Also, the keywords -service quality, satisfaction, healthcare, perception, expectation, performance and SERVQUAL were found to be most prominent in the literature.

Conclusion: The bibilometric analysis was conducted to identify the trends in the area of service quality of healthcare sector. The current study identified the publication trend which was potentially increasing and would be increasing in the future. M.Bahadori and Ramin Ravangard were the most influential authors found. Also, co-authorship and co-

occurrence analysis was performed to evaluate the countries which are performing at the front and keywords used in the literature.

Keywords: Service Quality, Healthcare, Bibliometric Analysis

1. INTRODUCTION

To understand and comprehend the current state of knowledge and discipline, which is inherited by the theoretical and empirical work of scholars, it is the need of the time to analyze such contributions in the body of the knowledge that develop any scientific discipline overtime (Li, Ma, & Qu, 2017). Bibliometric analysis is one of the tools that can serve the purpose.

Bibliometric analysis is a quantitative approach which helps to identify and analyze the data related with keywords used and searched in the literature, their relationships, the number of articles published in a particular time frame and their citations (Evren & Kozak, 2014; Muñoz-Leiva, Porcu, & Barrio-García, 2015). It is used in different contexts and disciplines which includes tourism and hospitality (Koc & Boz, 2014; Köseoglu, Sehitoglu, Ross, & Parnell, 2016; Park, 2019; Rodríguez-lópez, Alcántara-pilar, Barrio-garcía, & Muñoz-leiva, 2019), management (Hughes, Hughes, Powell, & Al-sarireh, 2019; Kumar, Sharma, & Salo, 2019; Odriozola-fernández & Berbegal-mirabent, 2019; Ramos-Rodríguez & Ruíz-Navarro, 2004) and environmental concerns (Id, Estoque, Xie, Murayama, & Id, 2019; Liu, Wang, Li, Chen, & Sun, 2019; Sarkodie & Strezov, 2019). However, the current study focuses on the bibliometric analysis of the concept that is 'Service Quality' in Healthcare.

Healthcare service like any services contain the complex and complicated array of activities. Patients being consumers of healthcare services expect the desired results from the service provided by the healthcare service providers such as doctors, nurses, and support staff. A lot of attention has been put to healthcare sector recently because of its importance and effect on the economy and population of countries, reducing health disparities, and provide valuable data and information to the policy makers (Muir, Bosworth, & Lee, 2010). Also because of private and public healthcare streams, competition has been increased in the industry which has forced healthcare organizations to increase the quality and overcome the deficiencies (Kalaja, Myshketa, & Scalera, 2016).

No one can imagine a country without healthcare service (Javed & Nawaz, 2019). It is among the essential industries a country depends on, for it also affects other fields and values of a country such as business, political, social, financial, and moral (Bahadori et al., 2018). Apart from its high importance, the healthcare sector is also one of the growing and among highly competitive industries across the globe (Islam, Ahmed, & Tarique, 2016). In this regard, rapid growth and intense competition have led healthcare services to deliver high service quality as compared to their competitors.

Service quality is a unique, complicated, complex in nature, indistinct, elusive, abstract and a difficult concept to grasp, it has no universal definition (Abbasi-moghaddam, Zarei,

Bagherzadeh, Dargahi, & Farrokhi, 2019; Brady & Robertson, 2001; Grönroos, 2001; Reeves & Bednar, 1994; Shieh, Huang, & Wu, 2019; Tuzkaya, Sennaroglu, Kalender, & Mutlu, 2019). But there are certain prominent scholars who have defined service quality on which most of the studies are based in the literature. Among them are Ananthanarayanan Parasuraman, Zeithaml, & Berry, (1988, 1985) who have defined service quality as the difference between consumers' expectations and their perceptions. In the resemblance of above definition, Chien & Tsai, (2000) defined service quality as it was the compatibility between the expectations and perceptions of consumers towards service providers.

Therefore, 'Service Quality' has been under a high attention by researchers, scholars, and practitioners, though it has been studied and reviewed in various studies (Abbasi-moghaddam et al., 2019; Fatima, Humayun, Iqbal, & Shafiq, 2018; Haddad, 2019; Javed & Nawaz, 2019; Park, 2019; Shankar, Datta, & Jebarajakirthy, 2019), yet no study found concerning bibliometric analysis of service quality in healthcare. Hence the current research aims to conduct the bibliometric analysis of service quality in healthcare from 1969 to 2019. It intends to identify the trend of publication of papers in the said area, identify the influential contributors in healthcare service quality, analyze co-authorship of different authors and countries, and analyze the co-occurrence of author keywords.

2. BACKGROUND: HEALTHCARE RESEARCH AND BIBLIOMETRIC ANALYSIS

There are many studies available in the literature that focus on different aspects of service quality in healthcare. First, various studies have targeted the evaluation of the concept *'Service Quality'* in healthcare sector (Abbasi-moghaddam et al., 2019; Ampah, Ali, Ampah, & Ali, 2019; Anabila, Kumi, & Anome, 2018; Fatima et al., 2018; Fauziah, Surachman, & Muhtadi, 2019; Jahantigh, 2019; Meleddu, Pulina, & Scuderi, 2019; Pekkaya, İmamoğlu, & Koca, 2017; Shafiq & Naeem, 2017; Swain, 2018; Upadhyai & Roy, 2019)(Abbasi-moghaddam et al., 2019)(25). Second, literature has focused on the *measurement models of service quality* (Behdioğlu, Acar, & Burhan, 2019; Chang et al., 2019; Gupta & Singh, 2017; Ibrahim & Ahmed, 2019; Jahantigh, 2019; Jebraeily, Safdari, Rahimi, Makhdoomi, & Ghazisaeidi, 2018; Materla & Cudney, 2017; Shafiq & Naeem, 2017; Shieh et al., 2019; Singh & Prasher, 2019; Srivastava & Goel, n.d.; Tuzkaya et al., 2019). Third, *patients' satisfaction* has been studied in some studies (Amankwah, Choong, & Mohammed, 2019; Javed & Nawaz, 2019; Kwateng, Lumor, & Acheampong, 2017; Marimon, Gil-doménech, & Bastida, 2017; Meesala & Paul, 2018; Mohammadi-Sardo & Salehi, 2019; Ng & Luk, 2018). Fourth, *patients' loyalty* was also evaluated in the literature of service quality in healthcare (Meesala & Paul, 2018). The current bibliometric analysis seeks to assess these aspects of the study. Because more strings and links of satisfaction, loyalty, and measurement model such as SERVQUAL are found which are linked with service quality and majority of the literature have discussed them together. Results of the current study also showed the streams and their

strength which were linked with those concepts to service quality in 'Authors' Keywords' session.

Pritchard, (1969) coined the term *'bibliometrics'* which meant to apply mathematical and statistical techniques to different forms of communication materials. Among such materials, there is bibliographic material that can be analyzed quantitatively by a method which is known as bibliometric analysis (Broadus, 1987). It helps to explain the whole body of knowledge available in a particular field concerning its citations, mapping of keywords and concepts, structuring scientific research graphically, and its evolution in different spheres of literature (Montero-Díaz, Cobo, Gutiérrez-Salcedo, Segado-Boj, & Herrera-Viedma, 2018). Odriozola-fernández & Berbegal-mirabent, (2019) mentions that not only this is literature that bibliometric analysis is getting into, but also it helps to highlight the details of authors, institutions, and journals that are leading their works to a particular area or field which ultimately helps newcomers and scholars to frame new research policies that can aid into the development of a specific theme, area or field.

3. METHOD

There are prominent databases available for conducting certain types of analysis, including bibliometric analysis. These are Scopus, Web of Science (WoS), and Google Scholar. The analysis of the current study is based on the Scopus database. Scopus database is chosen because it considered as largest citation and abstract database of peer-reviewed literature which covers a wide array of subjects (Khudzari, Kurian, Tartakovsky, & Raghavan, 2018). Thus, to cover more topics, Scopus database was used, and such topics may not be available in WoS or MedLine databases.

3.1 Search Strategy

Data were extracted from the Scopus database between the period of December 03, 2019, to December 10, 2019. The search string was mainly focused on Service Quality in Healthcare. The search string is mentioned in the supplementary materials given at the end of the paper. The years covered in Scopus were from the oldest 1969 to the recent 2019. The search was limited to document type – articles, source type – journals and language – English only. The publication year 2020 was excluded from the search, and the search string was used to exclude review papers. After doing that, the total number of documents was found was 4689. Search strategy used different keywords related with service quality such as quality of service, quality service, healthcare quality and healthcare service quality. These keywords were merged then in one keyword that was 'SQ' which was shown in FIGURE 5. We exported all material in three files by limiting our search in three different ranges of years, such as from 2016 to 2019, 2010 to 2015, and 1969 to 2009. In that way, we could export all documents for analysis.

4. ANALYSIS AND RESULTS

Analysis of documents and their results are presented in this session.

a. Publication per year

For the period of almost 51 years, 4689 papers were published (Figure 1) given the limitations in the search string. The oldest paper was published in 1969 related to service quality. The trend witnessed quite low before the year 1985, then there was increasing number of documents related to service quality in healthcare which showed there would be more documents to pour in the literature of service research. It might be because of the development of SERVQUAL, widely accepted measurement model of service quality, by Parasuraman, Zeithaml, & Berry, (1988). The year 2018 and 2019 witnessed more than 400 publications in respective years. It reflects that this trend will also grow by the increasing rate, which shows the importance of the topic of service quality in healthcare.

b. Most influential authors

The two most prominent authors found are from Iran. It is because the search terms used, and the database used in the study. There may be more other influential authors who have done important studies in service quality in other contexts. The authors found in this study, are M.Bahadori and Ramin Ravangard. The former is affiliated with Shahid Beheshti University of Medical Sciences, Tehran, Iran, and the latter with Shiraz University of Medical Sciences. Both are experts in the field of healthcare service quality. M.Bahadori and Ramin Ravangard have published nine documents that are related to healthcare service quality and have 24 and 18 overall h-index (Figure 2). They have 2910 and 1138 total citations, respectively. Both have total link strength of 20, which is higher than others.

c. Co-authorship analysis

We run the co-authorship analysis of authors by using VOSviewer (www.vosviewer.com). The minimum number of documents of an author selected was five as the threshold, and the minimum number of citations of an author chosen was 0 as the threshold. Of the 14499 authors, 79 met the criteria. A total of 41 clusters were identified with 64 links and 150 total link strength (Figure 3). The most influential authors identified were Zhang Y., Bahadori M., and Ravangard R. Zhang Y. had 12 documents with 12 links with other authors, and 15 total link strength. Bahadori M. and Ravangard R. had nine documents with two links and 13 total link strength, and they have co-authored most of the documents. Overall, the figure shows very little or no connections among the authors who have done work in the field of healthcare service quality.

After co-authorship concerning authors, co-authorship with respect to countries was analyzed. The overlay visualization of data is shown in (Figure 4). The minimum number of documents of a country was kept 1, and the minimum number of citations of a country was kept zero. All 238 countries met the criteria. The largest set of connecting countries was 146, and some of the 163 countries are not connected in the map. Also, there were about 30 items

that were not the names of countries and hence were excluded from the data. Data revealed that most of the documents were published in the United States followed by United Kingdom, China, India, Australia, Iran, South Africa and Germany. Authors from the United States have published 1181 documents with authors of other countries having 100 links and total link strength of 559. They have co-authored most papers with China which has link strength of 44, and with Canada which has link strength of 30. Interestingly authors from Iran have also contributed a good number of publications of papers related with healthcare service quality and published 157 documents with authors from other countries.

Pakistan has also contributed to the field with the publication of 70 documents. It has 28 links with other countries with a total link strength of 64. Authors from Pakistan have co-authored most papers with China, the United Kingdom, and South Korea witnessing 8,7 and 7 link strength between them, respectively.

d. Co-occurrence (Author Keywords)

We conducted co-occurrence analysis to know the keywords authors have used in their studies so far. Our results after running co-occurrence analysis of author keywords revealed 8388 keywords used in the papers related to healthcare service quality. The minimum threshold of 3 keyword occurrence was set to include keywords that had occurred three times in the analysis. Keywords- service quality, quality of service, quality service, 'healthcare service quality and hospital service quality were replaced by 'SQ'. Similarly, other similar keywords were merged into common keywords such as satisfaction, healthcare, perception, expectation, and performance. The most keywords occurred were SQ, healthcare, satisfaction, quality, and SERVQUAL with the occurrence of 917,636, 371, 146, and 95 respectively.

The largest set of connected items consisted of 897 items out of 900 items (Figure 5). Our results showed 28 clusters of all keywords having 6742 links, and total link strength was 10030. Among all the keywords, “SQ” was the prominent one because the current paper focused on service quality. Results showed that SQ had 589 links to other keywords with the total link strength of 1990. SQ had major links with healthcare, satisfaction, and SERVQUAL (Link strength: 241,193,62 respectively). Interestingly SQ had low link strength with perception, experience, expectation, loyalty, and performance (28, 13, 11, 22 & 18 respectively).

Other interesting avenues in healthcare service quality were the use of the fuzzy technique and the Kano Model. The occurrence of 'Fuzzy' keyword was 17, and it had 14 links with total link strength was 28. It had link strength of 8 with SQ. The occurrence of 'Kano Model' keyword was 6. It had 5 links with total link strength of 12 out of which 4 was the link strength with SQ.

Fuzzy technique is derived from the Fuzzy Set Theory (FST) introduced by Zadeh (Zadeh, 1965). As service quality is measured by the input of perceptions of service users (patients) and provider (doctors, nurse and other staff), these perceptions are subjective and hard to quantify and measure (Tuzkaya et al., 2019). Therefore, FST has been utilized to overcome

the subjectivity in measuring healthcare service quality (Singh & Prasher, 2019). Kano (Kano, 1984) developed the Kano Model to identify the quality attributes and suggested a non-linear relationship between service quality and customer satisfaction which was perceived as linear relationship before.

5. CONCLUSION

The purpose of the current paper was to conduct a bibliometric analysis of service quality in the healthcare service. Therefore, 4689 documents were analyzed by using the Scopus database from the year 1969 to 2019. There was an increasing rate of publications per year in the area of service quality research. The current paper identified the most productive and influential authors of healthcare service quality. Co-authorship analysis of authors and countries was performed to investigate the links between authors and countries where healthcare service quality documents were written. Also, co-occurrence analysis of author keywords was performed to identify and analyze the keywords used and linked in the research of healthcare service quality.

The current study was not free from limitations. It was just focused on the context of healthcare whereas other contexts and their service quality for example transportation, education, hospitality, superstores, and other services can be analyzed. Also, the analysis was limited to the Scopus database only; further analysis can be performed by using other databases such as Web of Science, Google Scholar or MedLine and, also these can be utilized in combinations. Finally, only Co-authorship and Co-occurrence analysis were performed by using VOSviewer, further tools such as Co-Citation and Bibliographic Coupling of the software can be performed by using the same software.

Healthcare service quality research witnessed the emerging use of models like Fuzzy and Kano. Therefore, it is suggested to use these models to measure service quality in healthcare setting. Most of the studies of service quality in healthcare were linked with saturated outcomes such as satisfaction and loyalty. Therefore, it is suggested to include some new outcome variables in relation to service quality of healthcare service. Also, there is a need to study the relationship of service quality with the wellbeing of consumers or patients in healthcare. Because no streams of keywords occurrence were found in the review which had a link between the service quality and the wellbeing of patients.

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Supplementary Materials

Figure 1

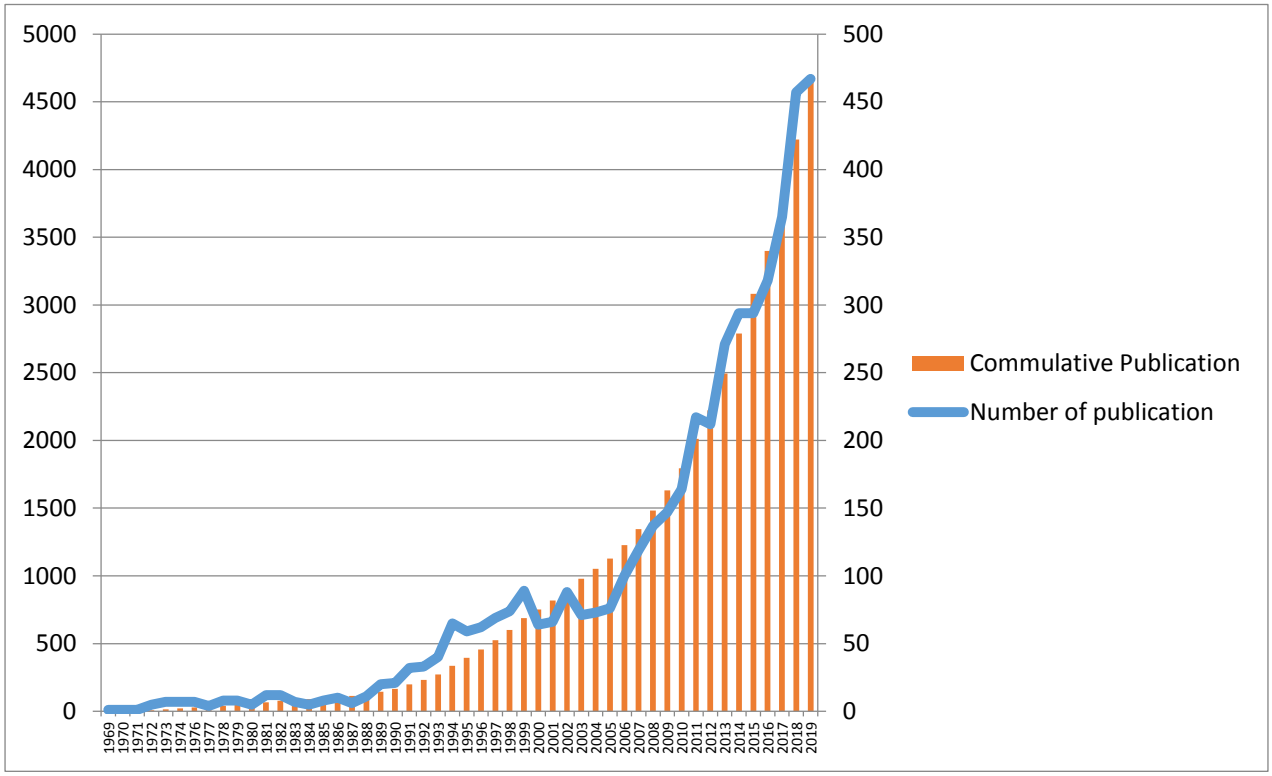


Figure 2

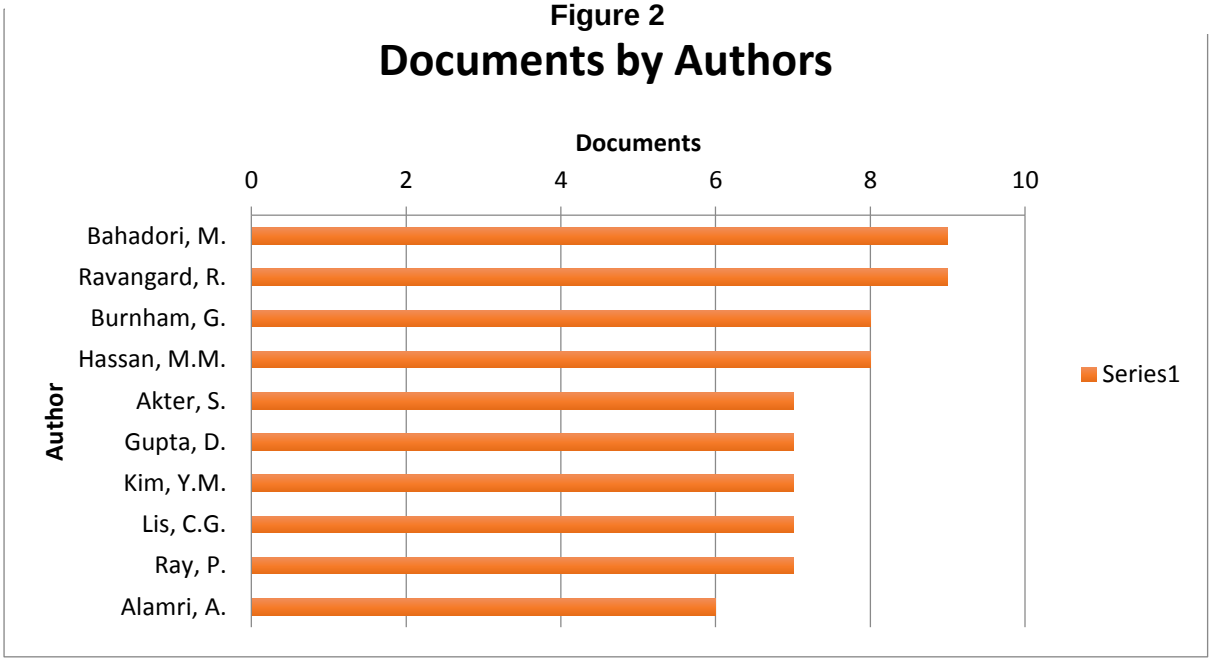


FIGURE 3

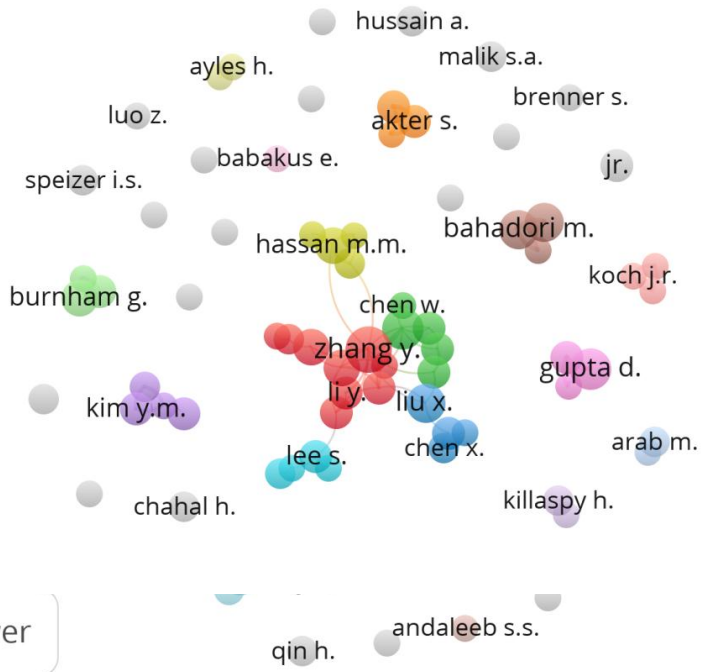


Figure 4

Figure 4

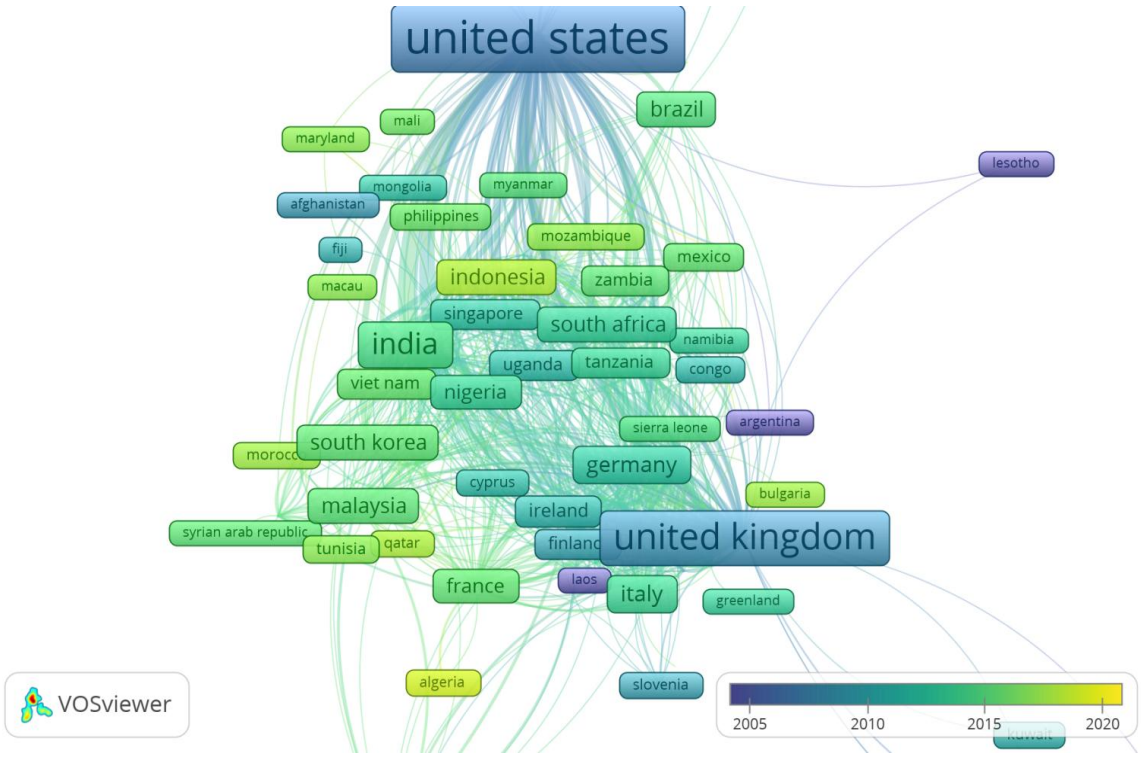
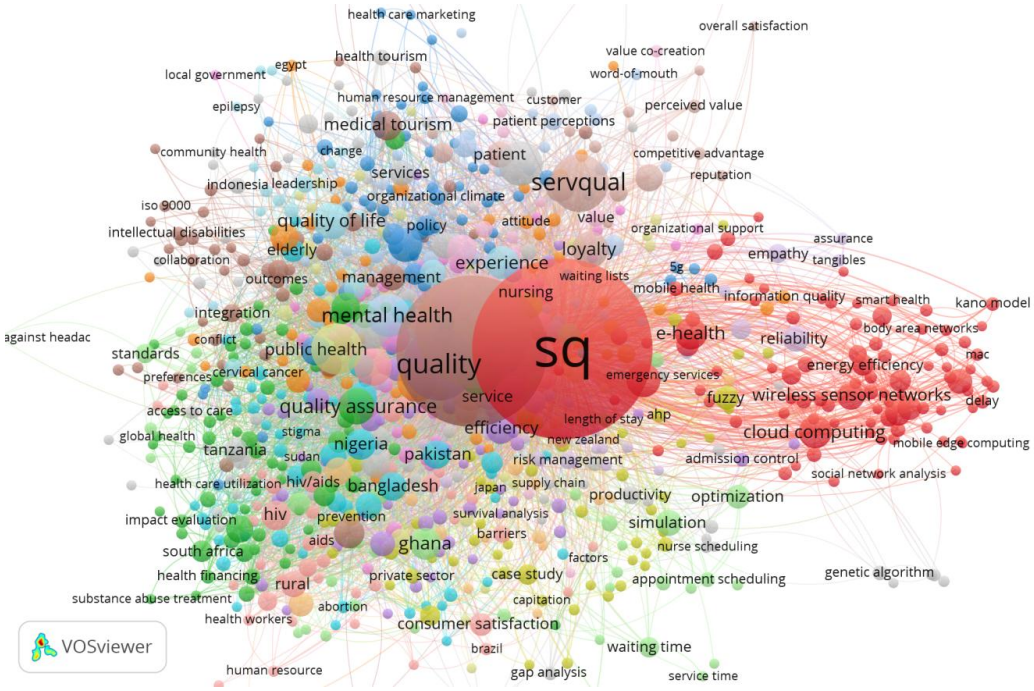


Figure 5



Annex-I

Search String:

The query string used to search the central theme was: (TITLE-ABS-KEY ("service quality") OR TITLE-ABS-KEY ("quality of service") AND TITLE-ABS-KEY (health*) AND NOT TITLE-ABS-KEY (review*)) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (SRCTYPE , "j")) AND (EXCLUDE (PUBYEAR , 2020)) AND (LIMIT-TO (LANGUAGE , "English")).