## RESEARCH ARTICLE

# E- service quality and customer satisfaction: A bibliometric retrospective and future research agenda

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## ABSTRACT

E-service quality and satisfaction with service quality provided by e-commerce websites have become prominent in the past few years because of the availability of a wide array of services in an online manner. The present study intends to identify trends and patterns in existing literature in the domains of e-services, e-service quality, and customer satisfaction. In pursuit of the same objective, the present study analyses past trends and suggests future agendas in the domain using bibliometric analysis. Based on an analysis of 252 publications extracted through the Scopus repository from 2001 to 2023, this study found that academic interest is growing yearly. Li, H., with five publications, is the most influential author in the domain. India has a strong bibliographic coupling with nations such as Malaysia, the UAE, and Saudi Arabia, with 22417 links. Through keyword co-occurrence analysis, three clusters were identified: e-service quality dimensions (red cluster), applications of e-service quality (green cluster), and outcomes of e-service quality (blue cluster). Lastly, a future research agenda has been presented for each cluster based on keyword co-occurrence analysis.

*Keywords:* E-service quality; customer satisfaction; online services; review paper; bibliometric analysis

## 1. Introduction

Marketing practitioners have been primarily interested in improving the standard of service, satisfaction, and loyalty of shoppers in a digital environment. This subject is significant since it contributes to the formulation of a sustainable competitive edge, including the enhancement of firm financial outcomes.

"Online service quality is the extent to which a digital shop uses trustworthy and efficient searching, buying, and shipping of goods and services"[1] .Many scholars and business leaders have realised in recent

years that providing good customer service is essential for attracting new customers and retaining existing ones. In addition to the studies on existing service conditions, the growth and concept of e-service quality have become top priorities. A lot of research has been done in the areas of online banking, online travel, online libraries, and even online retailing, but most of it has been done in developed nations like the USA, UK, and Canada. Many developing nations are also exhibiting. These factors are important for a developing economy like India since it has the potential to grow significantly in the e-commerce era. The factors of quality of service in the traditional business world are no longer relevant in the e-business area. So, a need for more study regarding online service quality is emerging. The objective of the current study is to eradicate this information gap by thoroughly analysing, assessing, and providing an in-depth review in this domain. As a result of the current scenario, the current research assesses the literature on the issue using bibliometric analysis.

Bibliometric analysis is a quantifiable technique for assessing and analysing the data related to terms that were used and explored in the literature, their associations, the number of publications in a given timeframe, and their citations. Bibliometrics is really a branch of research concerned with analysing published work quantitatively[2-3].

Making use of bibliometric analysis approaches holds major possibilities for studying future directions in study and classifying articles published[4-6]. Directions have been given for the researchers to model managerial and organisational skills and study processes using an integrated viewpoint[7-9].

The literature about e-service quality and its significance in the modern world has been developed by researchers in the past few years. For example, the growing popularity of the internet as a platform for distribution and buying requires knowledge of e-service quality[10]. In the same way, an additional study summarises and thoroughly analyses an article regarding aspects of the acceptance area of grocery applications. It also highlights how the topic has expanded over time and identifies possible areas of study for the coming years[11]. In addition, only a few researchers have analysed service quality in the health care sector using bibliometric analysis[12]. A further review of research outlined the significance of online service quality and analysed the latest advancements in this domain[13]. The study mentioned above shows how essential e-service quality is becoming.

Although the review studies currently available in the literature have made a significant contribution, there are still some notable gaps in this field of research. Only co-authorship and co-occurrence analysis were done by employing VOSviewer; other tasks, including co-citation and bibliographic coupling, can be performed successfully with the same tool[12].

Only 'e-services and e-service quality' were included in the search phrase; therefore, it may not have covered every relevant research topic. Also, this study did not include studies from 2021, which may have contained interesting problems related to the searched field[13]. Therefore, this research fills a relevant gap in the literature by providing this first review analysis of the studies in this domain. The uniqueness of the current research is described in **Table 1.**

**Table 1.** Comparison of current study with existing studies.

| Basis of Comparison | Ali et al. (2021) | Ali et al. (2021) | Prabowo et al. (2020) | Blut et al.(2015) | Our Study |
|---|---|---|---|---|---|
| Time Period | 2000-2020 | 1969-2019 | 2016-2020 | Not mentioned | 2001-2023 |
| Keywords | Specified | Specified | Specified | Specified | Specified |
| Purpose | To examine improvements in e- | Service quality in health care sector | Re-examine the article in grocery | To provide an overview of | To investigate trends and |

| | | | | influence of e-service quality on key outcomes—user satisfaction, repurchase intentions, and word-of-mouth. | improvements in e-services, e-service quality, and customer satisfaction. |
|---|---|---|---|---|---|
| | services and their quality. | | application adoption area. | | |
| Methodology | Bibliometric analysis | Bibliometric analysis | SLR | Meta-analysis | Bibliometric analysis |
| Number of studies reviewed | 404 documents | 4689 papers | 38 articles | 170 empirical studies | 252 papers |

So, to guide future studies regarding this field, the current research attempts to provide scholars with an overview as well as a study development analysis. The focus of this research was to investigate and comprehend global trends and advances in this domain. Through this ongoing work, these queries from research are covered.

**RQ 1:** How is the scientific distribution and production of "e-service quality and customer satisfaction" measured?

**RQ 2:** Within the same field, who are the most influential writers in this domain?

**RQ 3:** Which nations have strong bibliographic coupling in the domain?

**RQ 4:** What is the research trend on the basis of the co-occurrence of keywords?

**RQ5:** What will be the future research based on keyword analysis?

The following is the study's organisational framework: The first part of the current study describes research objectives and research questions. The second part is an explanation of the theoretical framework. The third part, which acts as the methodology, explains the search techniques used to find the literature in the same domain. Results and discussion are described in the fourth part, and a conclusion for this current study is in the fifth. The final part discusses directions for further study.

## 2. Theoretical framework

### 2.1. E-service quality

By presenting the ideas of digital business transactions, computer technology has introduced significant innovations to established business models, and it is continually developing innovative methods.

Typical e-commerce inefficiencies, such as a lack of support for processing the transaction, availability, and shipping concerns, moved focus to "online service quality"[1]. The quality offered by websites is an especially important element when assessing whether e-commerce will flourish. There are already a variety of published works in journals, books, and other forms that have offered a variety of definitions in this regard.

"Communication, agreement, fulfilment, and after-sales services are all included under online service quality."[13]. Online services are services that are rendered in cyberspace, such as through the use of technology[14]. Consumers assess e-services and their performance in the same way they assess other services. Consequently, the assessment and belief in services by consumers in digital marketplaces and digital spaces is known as e-service quality[15].

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### 2.2. Customer satisfaction in online environment

Customer satisfaction can be determined by the degree to which expectations were surpassed, as well as how expectations were satisfied and provided[16]. The discrepancy between aspirations prior to purchase and judgements made after purchase is generally defined as consumer satisfaction[17]. The definition of online user satisfaction is the "user's perception regarding a particular e-service retailer based on their previous purchasing experiences"[18]. Customer satisfaction is an important aspect that determines a customer's desire to purchase something in the future[19].

In the context of digital shopping, customer satisfaction is the assessment of an e-retailer's customer service about a customer's previous buying experiences. Therefore, the nature of online satisfaction is behavioural and has been observed to be the most significant aspect influencing online loyalty when conditions are both online and offline[20].

### 2.3. Online user satisfaction and online service quality: Relationship

A business's capability to keep customers is a major factor in its performance, so the quality provided by the business and user happiness is essential components for every business.

Customer satisfaction should come from providing superior service quality; this will encourage customer loyalty and on-going customer relationships[21]. Consumer satisfaction and service quality have associations in both directions[22].

Research shows the user's happiness is affected by online customer support, and customer satisfaction effects both brand loyalty and CEBs[23]. Customer satisfaction, assurance, and maintenance are the most complex elements of shopping online. A service-focused approach is vital for existence in this extremely challenging digital marketplace.

To encourage repeat business and brand loyalty, customers need to feel satisfied with an organisation[24]. To attain excellent levels of customer satisfaction, excellent service quality is necessary that significantly supports expectations for positive behaviour[25]. Knowing the connection between customer satisfaction and assessments of service quality is always essential. Regarding whether customer satisfaction and quality service truly represent distinct ideas, there are still conflicts between researchers. To put it differently, service quality is not a function of the purchase experience; instead, satisfaction or unhappiness is[26]. According to available studies, user satisfaction and e-service quality are positively correlated.

## 3. Materials and methods

In a database of research journals, researchers performed bibliometric analysis to reveal worldwide trends in a specified field of research. This distinguished it from a review paper, which examines the latest advances, difficulties, and criticisms, as well as prospects in a particular study field[27,28]. Data from academic publications provided by the SCOPUS documents was employed to conduct a bibliometric study on online services, their quality, and user satisfaction. All the top publishers' journals, including Emerald, Springer, Sage, and others, are included in Scopus's scope[29]. Based on the Scopus database's 'title, abstract, keywords' option, a custom search query can be created to find 'journal articles[30].

An orderly approach was used for analysing the body of study that has been written about the online services sector, selecting the appropriate research articles based on the finding of appropriate keywords, sorting the initial information set to guarantee that only articles of interest receive assessment, determining the system mapping and bibliometric methods of carrying out the research analysis, and in conclusion.

### 3.1. Strategy for search and data gathering

The research's information has been gathered through the Scopus repository. It is believed to be the most significant reference and abstract repository of studies with peer review in the world, with a wide variety of subjects covered[27,31]. In January 2024, information needed for the bibliometric analysis was taken via the repository. Most of the search queries focused on important areas of study (e-services or e-service quality and customer satisfaction), which generated 578 documents. From 2001 to 2023, the publication trend was analysed.

The search was then confined to the subject area (business, management, and accounting), articles, and conference papers, using journals and conference proceedings for the main documentation and English as a means of communication. An aggregate of 252 papers was used for the current research. **Figure 1** depicts the search query used in this study:

> **TITLE-ABS-KEY ( ( "e-services" OR "e-service quality" ) AND ( " customer satisfaction" OR " user satisfaction" ) ) AND PUBYEAR > 2000 AND PUBYEAR < 2024 AND ( LIMIT-TO ( SUBJAREA , "BUSI" ) ) AND ( LIMIT-TO ( DOCTYPE , "cp" ) OR LIMIT-TO ( DOCTYPE , "ar" ) ) AND ( LIMIT-TO ( LANGUAGE , "English" ) ) AND ( LIMIT-TO ( SRCTYPE , "j" ) OR LIMIT-TO ( SRCTYPE , "p" ) )**

**Figure 1.** Search query used in this study.

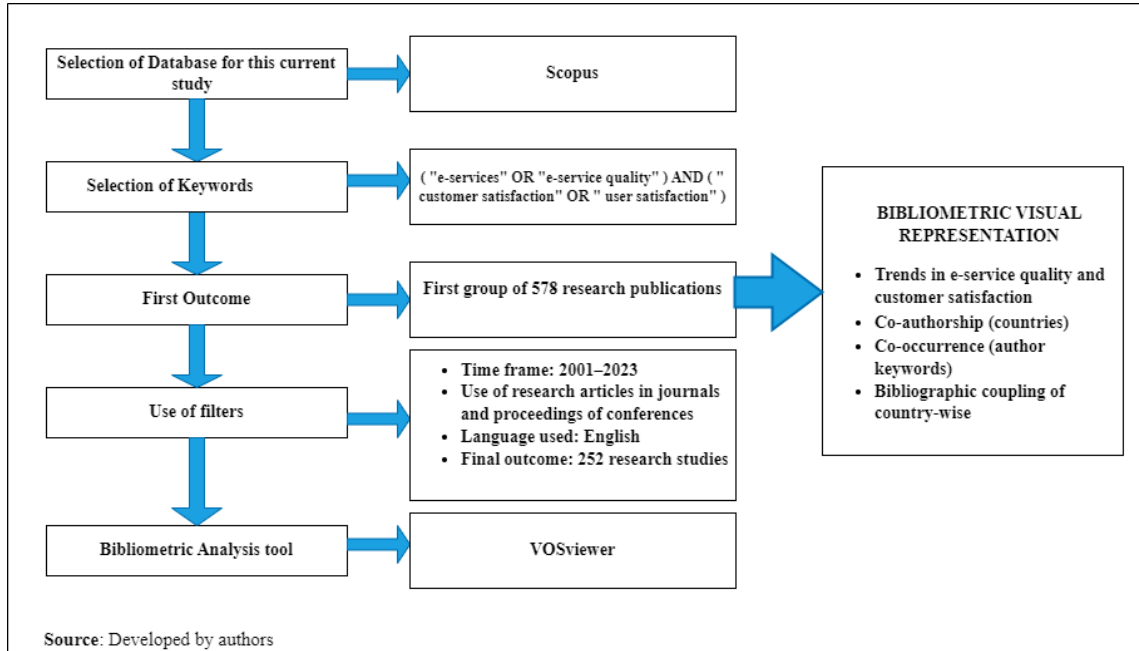The procedure for the search flowchart is shown in **Figure 2.**



**Figure 2.** Strategy for search and data gathering.

# 4. Results & discussion

## 4.1. Publications trends by year and subject wise

Over this research period, 252 research publications were released (**Figure 3**). The quantity and quality of online services and online service quality studies publications increased from 2007 to 2008. Over time, the overall trend towards publication has risen. This rising trend may be attributed to the increased availability of digital services. As technology progresses, we observe the era of interactive marketing, where service providers connect with customers digitally. Almost every service was being offered digitally during that period, giving academia enough opportunity to delve into the domain of e-services and customer satisfaction. From **Table 2**, we can observe that academic interest in the domain has increased as 71 publications in 2001 -2010, 132 publications in 2011- 2020, and in just three years, i.e. from 2021 to 2023, there are 49 papers already published. The contribution of services is increasing global economy mainly due to three reasons. First, the consumers are embracing the online services more than earlier. For example, the penetration of online retailing and online banking is rising. Second, the scope of services has increased. For example, due to the rise OTT platforms or platform economy, the consumption of new type of online services has increased such as usage of Netflix, Airbnb or Uber. The rise of social media has also fuelled this trend. Lastly, the availability of products as services has also enhanced the scope of services. Many physical product-oriented companies, such as Caterpillar, have started providing services along with their traditional business. Thus, more publications are expected in the domain. Business, management, and accounting accounted for 51.4% of the papers released, with computer science following in second with 13.5% and decision science with 12.4%. In online services and service quality studies, less than ten percent had been observed in all other disciplines (**Figure 4**).
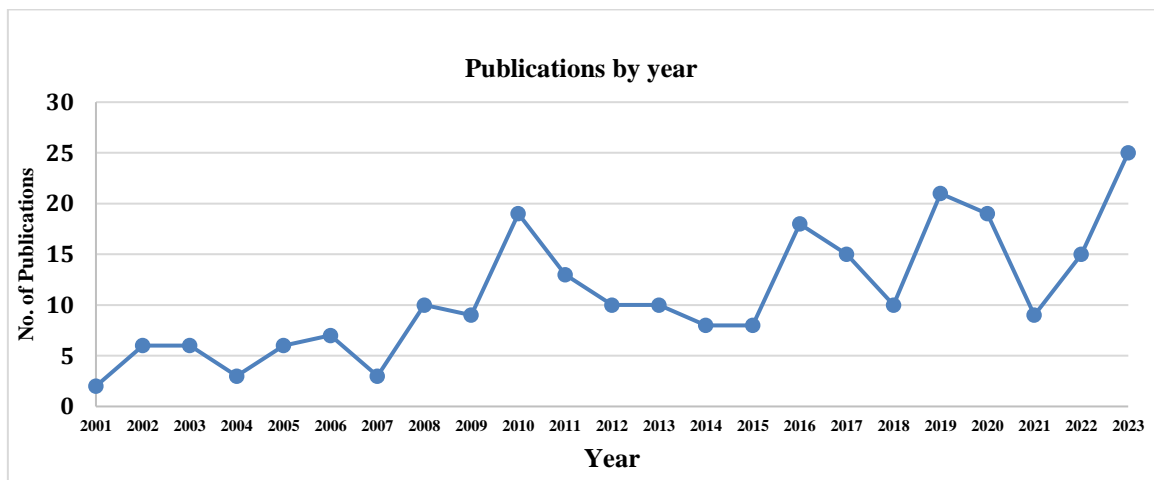


**Figure 3.** Analysis of publications by year.

**Table 2.** Analysis of publications by year.

| Year | No. of Publications | Year | No. of Publications |
|------|---------------------|------|---------------------|
| 2001 | 2 | 2013 | 10 |
| 2002 | 6 | 2014 | 8 |
| 2003 | 6 | 2015 | 8 |
| 2004 | 3 | 2016 | 18 |
| 2005 | 6 | 2017 | 15 |
| 2006 | 7 | 2018 | 10 |
| 2007 | 3 | 2019 | 21 |

| 2008 | 10 | 2020 | 19 |
| 2009 | 9 | 2021 | 9 |
| 2010 | 19 | 2022 | 15 |
| 2011 | 13 | 2023 | 25 |
| 2012 | 10 | | |

**Table 3.** Subject-wise publications number.

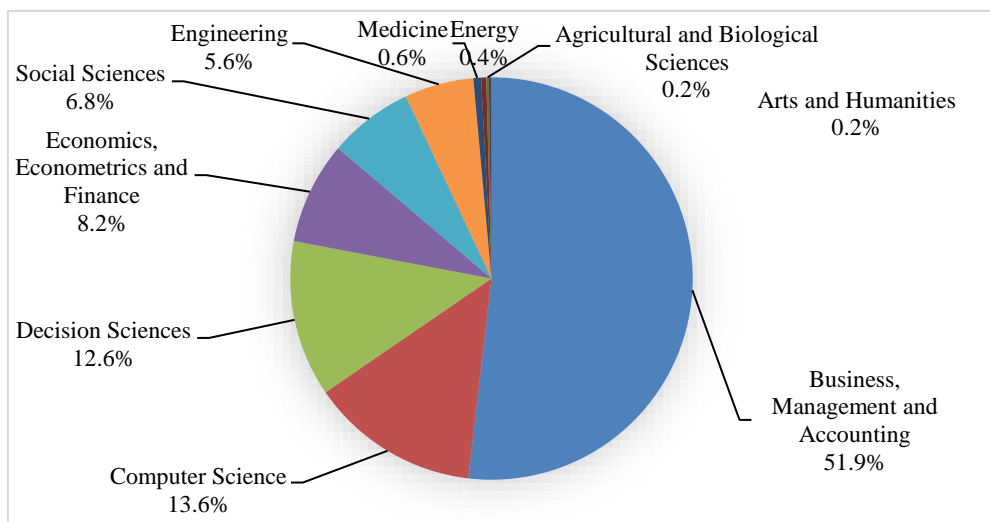| Subject Area | No. of Publications |
|---|---|
| Business, Management and Accounting | 252 |
| Computer Science | 66 |
| Decision Sciences | 61 |
| Economics, Econometrics and Finance | 40 |



**Figure 4.** Subject-wise publications number.

## 4.2. Most influential authors

We discovered that Li, H., had the most documents published in this field over this period. **Table 4** describes the ten leading influential writers in this domain.

**Table 4.** Most influential authors

| Author Name | No. of Publications | Author Name | No. of Publications |
|---|---|---|---|
| Li, H. | 5 | Kim, J.H. | 3 |
| Boyer, K.K. | 3 | Marimon, F. | 3 |
| Finn, A. | 3 | O'Cass, A. | 3 |
| Ha, H.Y. | 3 | Abdel-Fattah, M.A.K. | 2 |
| Ingaldi, M. | 3 | Al-Momani, K. | 2 |

### 4.3. Bibliographic coupling of country-wise

India has maximum links with other countries. The main countries with the most links are Malaysia, Australia, Saudi Arabia, and the UAE. On the other hand, in the second cluster (green cluster), Taiwan has strong bibliographic couplings with the USA, South Korea, and Canada. China (yellow cluster) has shown strong bibliographic coupling with Hong Kong, France, and Greece. Lastly, the UK (blue cluster) has shown strong connections with countries such as Indonesia, Spain, Jordan, and Turkey. **Figure (5)** illustrates the country-wise bibliographic coupling.

**Table 5.** Bibliographic Coupling of Country-Wise.

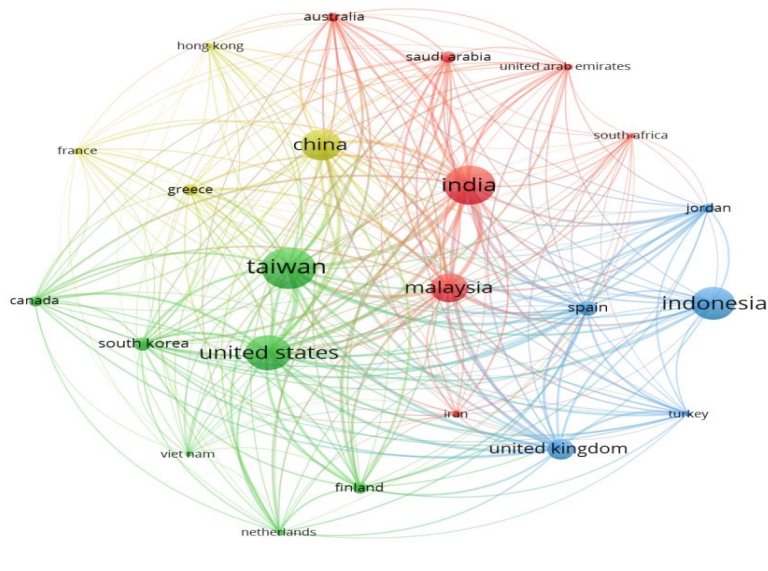| Country | Documents | Citations | TLS |
|---|---|---|---|
| India | 40 | 437 | 22417 |
| Taiwan | 42 | 1662 | 20760 |
| United States | 35 | 1853 | 19531 |
| Malaysia | 29 | 394 | 14914 |
| China | 31 | 509 | 14304 |
| Spain | 15 | 736 | 13396 |
| United Kingdom | 21 | 606 | 12767 |
| Finland | 12 | 1472 | 8610 |
| South Korea | 14 | 707 | 8554 |
| Jordan | 10 | 67 | 7207 |



**Figure 5.** Bibliographic Coupling of Country-Wise.

### 4.4. Co-authorship (Countries)

Following Zhang et al. (2022), we chose 5 as the minimum number of manuscripts written in collaboration by the authors of two different countries[33]. After putting this threshold at 21, such connections emerged after analysis. Figure 6 depicts that a few countries have weak collaboration links with other countries, such as Finland, South Africa, and Vietnam which have very little collaborative work with other countries. **Table 6**

reveals that few countries, such as Finland, Australia, and Canada, have published very few documents in this domain, which could be a possible reason for the number of collaborations with other countries. Moreover, except Australia, these countries are small in size; hence, a smaller number of publications may be attributed to this. **Table 6** contains a list of all countries and the strength of their associations.

**Table 6.** Co-authorship (Countries).

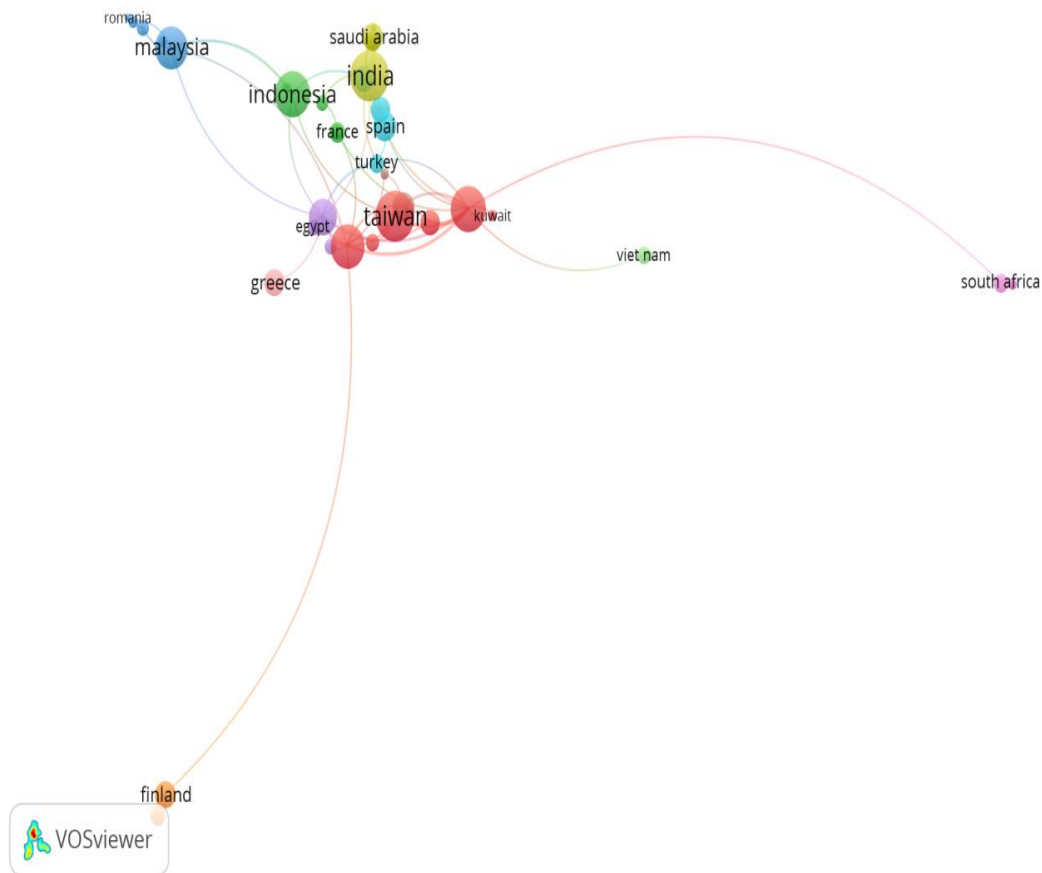| Country | Documents | Citations | Total Link Strength (TLS) |
|---|---|---|---|
| United States | 35 | 1853 | 20 |
| China | 31 | 509 | 12 |
| United Kingdom | 21 | 606 | 12 |
| India | 40 | 437 | 7 |
| Taiwan | 42 | 1662 | 7 |
| Canada | 11 | 578 | 6 |
| Australia | 10 | 479 | 5 |
| Indonesia | 33 | 153 | 5 |
| Finland | 12 | 1472 | 4 |
| Malaysia | 29 | 394 | 4 |



**Figure 6.** Co-authorship (Countries).

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## 4.5. Co-occurrence (Author Keywords)

We executed a co-occurrence analysis of the keywords provided by the authors. **Figure 7(A)** depicts the links or co-occurrences of the keywords provided by the authors. The authors' keyword occurrence analysis showed that the work in this domain can be categorised into three major streams. The first stream of e-service quality dimensions (red cluster) showed that service quality has been linked with satisfaction, word of mouth, loyalty, and trust, among others. Researchers examined service quality using a technology acceptance model. A small number of studies also explored website design quality, information quality, and system quality. Another stream: applications of e-service quality (green cluster) revolve around the work done in the areas of online shopping, banking, and retailing.

Researchers examined consumer behaviour and service quality primarily in these domains. The final cluster: outcome of e-service quality (blue cluster) is dedicated to measuring dimensions of e-service quality, e-trust, e-loyalty, and e-satisfaction. In this cluster, scholars examined the service quality, satisfaction, loyalty, and trust related to mobile banking services.

**Figure 7 (B)** presents the overlay visualisation of keywords, showing that from 2010 to 2014, e-commerce was emerging and very few industries were providing online services. Since 2014, a few big companies, such as Amazon, have expanded their operations in online retailing. Also, there was a wide option of online banking among consumers. Academicians have examined the quality of these online services through various studies. Furthermore, trust and loyalty to online services were also examined. In the last five years after 2018, website quality and consumer experience have taken centre stage, and through **Figure 7 (B)**, we can see that a lot of research is happening in Asian countries such as India and Malaysia. The probable reason for this is due to the attractiveness of the Asian market for global players.
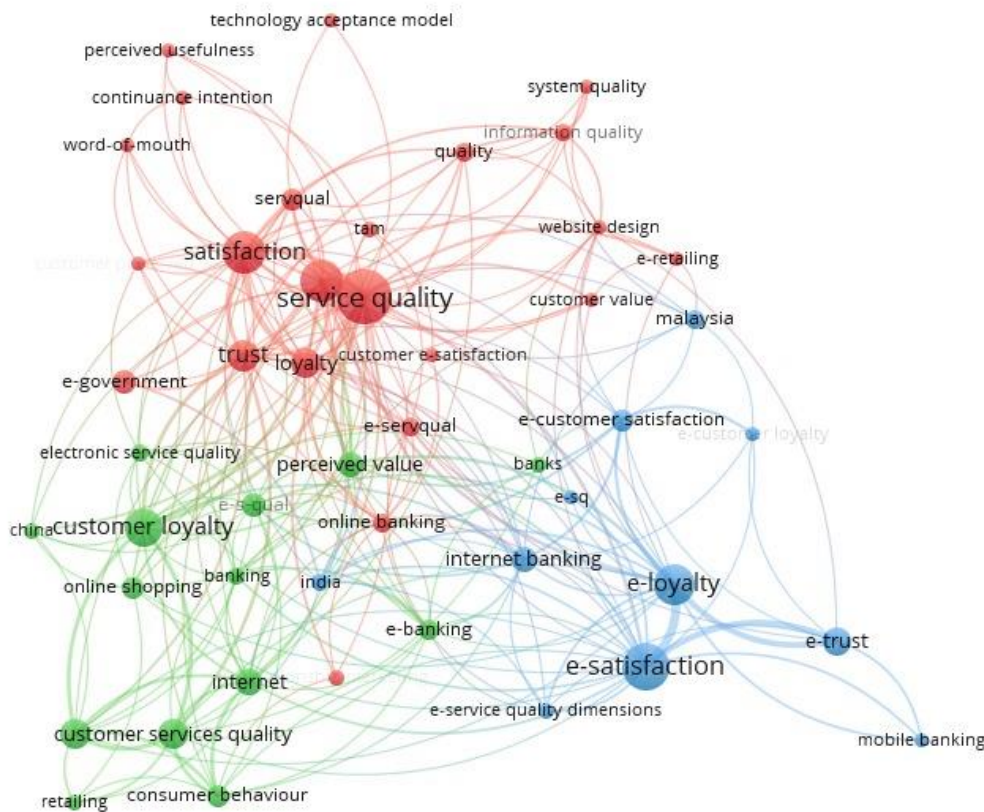


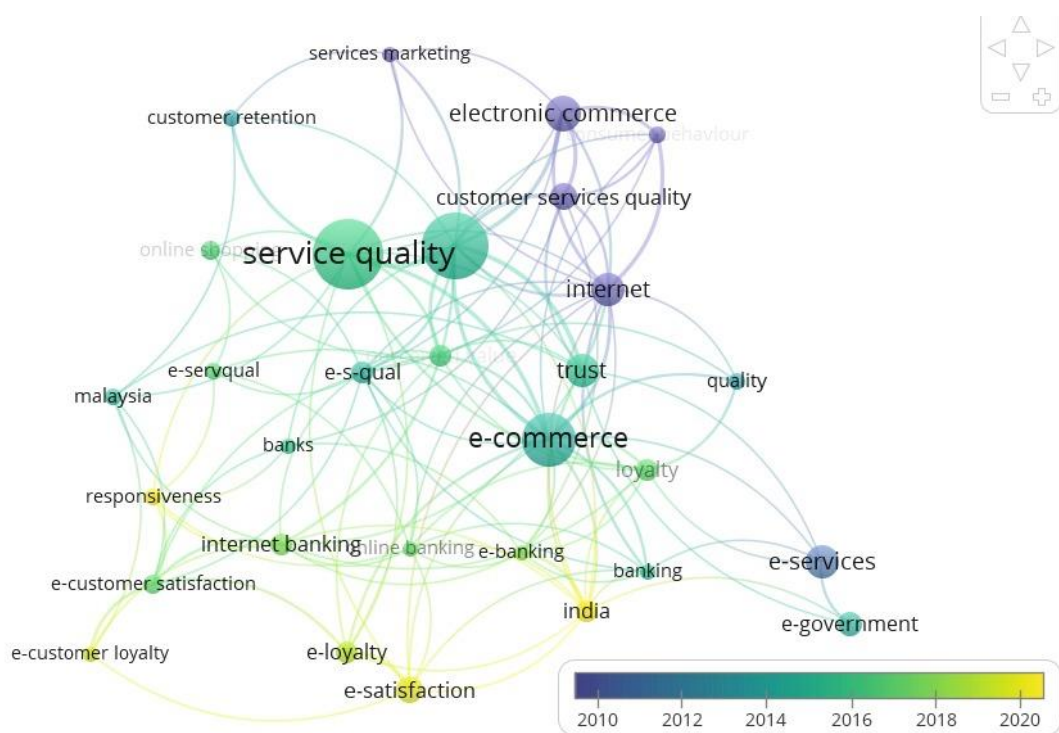**Figure 7(A).** Authors' Keyword Co-Occurrence (Network Visualisation).

**Figure 7(B).** Authors' Keyword Co-Occurrence (Overlay Visualisation).

## 5. Concluding remarks

The current study explored global developments in the field of research associated with e-services. Bibliometric approaches were applied in this research to analyse 252 research publications published between 2001 and 2023. According to the report, during this period, there has been an ongoing and constant increase in this field. Through keyword co-occurrence analysis, three clusters were identified: e-service quality dimensions (red cluster), applications of e-service quality (green cluster), and outcomes of e-service quality (blue cluster). The first cluster (red cluster) showed that service quality has been linked with satisfaction, word of mouth, loyalty, and trust, among others. The second cluster (green cluster) revolves around the work done in the areas of online shopping, banking, and retailing. Researchers examined consumer behaviour and service quality primarily in these domains. In the final cluster (blue), scholars examined the service quality, satisfaction, loyalty, and trust related to mobile banking services. This analysis can also assist managers in developing better policies for developing their e-businesses because it will provide better knowledge of numerous topics related to this domain. It's important to understand the shortcomings of this research, even if it makes a significant contribution to the body of current knowledge. Initially, the current approach used only the most significant research databases on Scopus for the extraction of data. Therefore, it is possible that some research studies were not included in this review. Due to language restrictions, authors have mainly taken into consideration publications that have been published in English, which enables an opportunity for future research regarding works that are available in additional languages.

## 6. Future research based on keywords analysis (future research agenda)

After reviewing 252 studies in this field, we identified three different clusters: Cluster 1: E-service quality dimensions (red cluster), Cluster 2: Applications of e-service quality (green cluster), and Cluster 3: Outcome of e-service quality (blue cluster). Below, the authors have mentioned these clusters and the scope of future research in each cluster.

**Cluster 1: E-service quality dimensions (red cluster):** In the technology acceptance model, there are many theories. UTAUT theory, DOI theory, FLOW theory, and many other theories are used to examine the service quality. Also, the keyword analysis shows that very little work is done on the outcome of e-service quality. We have observed that, except for satisfaction, no much exploration has been done on the outcomes of service quality. Furthermore, studies are required to examine the values that customers extract through service quality. Further scholars have underscored website design, information quality, and system quality to evaluate the quality of services. However, for e-service quality, privacy is one of the important dimensions. So, more work is required in this direction.

**Cluster 2: Applications of e-service quality (green cluster): Figure 7 (A)** demonstrates that existing work is primarily scattered around online shopping and banking services. Nowadays, especially after COVID-19, more and more industrialists have embraced online services. For example: education, consumer wellness and fitness, healthcare, entertainment, hospitality, and tourism, among others. Hence, this provides a great opportunity for future researchers to examine the quality of e-services in such a new context. Furthermore, studies should be conducted in different countries, as the diagram depicts that most of the existing work is done on Chinese consumers. Further, since the adoption of smart phones has increased, the service quality of mobile apps should also be examined by future researchers. Few studies have also examined the perceived value of e-services. There is ample scope to examine the perceived risk associated with e-services.

**Cluster 3: Outcome of e-service quality (blue cluster):** In this cluster, researchers focused on traditional constructs like service quality, loyalty, satisfaction, and trust in an online environment. Despite the significant contribution made by the studies, there is ample scope to examine a few other constructs, such as customer experience, adoption of e-services, dissatisfaction, and revisit intention, among others. Besides this, very few studies have examined the antecedents of e-service quality, like convenience, customisation, personalisation, and enjoyability, among others. Further, apart from mobile banking, future studies can be done in the context of digital health services, online education, and omnichannel retailers.

**Table 7.** List of exemplary future research questions.

| S.no. | Exemplar Questions |
|---|---|
| 1. | How can a new theoretical framework be used to investigate e-service quality and customer satisfaction? |
| 2. | How can a new or existing theoretical framework be used to examine the values that consumers extract through service quality? |
| 3. | How can various outcomes of e-service quality be explored? |
| 4. | What is the impact of privacy on the quality of services offered by websites? |
| 5. | How can the quality of e-services be examined in a new context, such as health care, entertainment, hospitality, and tourism? |
| 6. | How can the perceived risk associated with services be examined? |
| 7. | What exactly are the various antecedents of e-service quality? |
| 8. | How can dissatisfaction and revisit intentions be examined? |

## Author contributions

Conceptualisation, BA and DK; methodology, BA; software, BA; validation, BA, DK and PG; formal analysis, BA; investigation, DK; resources, PG; data curation, BA; writing—original draft preparation, BA; writing—review and editing, BA; visualisation, PG; supervision, PG; project administration, BA. All authors have read and agreed to the published version of the manuscript.

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## Conflict of interest

The authors declare no conflict of interest.

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