

# The Evolution of Self-Service Technologies: A Citation Analysis of Research Trends and Influencers

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## ABSTRACT

This study conducts a comprehensive bibliometric analysis to assess the current state of self-service technology research. Through citation analysis, the study seeks to identify patterns in publication trends, prominent authors, leading institutions, top-performing countries, and influential sources in the field. Our findings reveal that the first research article on self-service technologies emerged in 1993, with interest surging significantly from 2020 to the present. The United States is found to be the most influential and productive country in self-service technologies research, while Meuter, M.L. is identified as the most prominent author. The Journal of Marketing is revealed as the most influential journal in the field. This study provides essential insights for scholars, policymakers, industry stakeholders, and consumers seeking to promote the adoption of self-service technology and inform future research directions.

**Keywords:** Self-service technologies, Citation Analysis, Trends, Bibliometric Analysis.

## I. INTRODUCTION

Technological advancements have replaced the traditional business patterns associated with productivity and employment (Taufik and Hanafiah, 2019). Now business organizations operate more effectively than ever before (Scherer et al., 2015). Additionally, not only for organizations, self-service technologies have introduced new methods for enhancing customer value and allowing service organizations to communicate with consumers across borders (Galdolage, 2021). Self-service technologies shape the role of customers from being dependent to becoming self-reliant (Hilton et al., 2013). Hence, the technology's success heavily depends on the

customer's experience while using it (Kaushik & Rahman, 2015). An enjoyable experience with self-service technologies contributes towards a positive image of the organizations, which further aids in gaining a competitive advantage by providing benefits to both service employees and consumers (Akesson et al., 2014).

Meuter et al. (2000) provide various examples related to self-service technologies in different sectors, including ATMs that allow consumers to do bank transactions without interacting with employees, bar-code scanning in retail stores, online shopping without visiting malls, Kiosks for collecting boarding passes, self-bag drop technologies at airports, mobile apps for making payments and many more. Given the increasing significance of technology in almost all fields, the organizations are investing heavily in these innovations to reduce labour cost and increasing satisfaction among consumers (Chan & Petrikat, 2022). To realize these benefits, the most important and initial step for an organization is to motivate consumers to use self-service technologies instead of employee interaction (Galdolage, 2020). Hence, numerous studies are available in the literature that highlight the importance of technology in this digital era (Ha, 2020; Gupta & Sharma, 2021). But, the studies summarise the self-service technology adoption concept are very few. So, based on this gap the present research provides a bibliometric review of studies.

The bibliometric analysis acts as a powerful tool which helps in mapping the intellectual landscape of particular area through quantitative assessment of publishing patterns, citation networks, and keyword trends (Yu et al., 2022). This study aims to provide a comprehensive

overview of the evolution of self-service technology research and identify the important authors that drive this concept of innovative technologies by applying bibliometric methodology.

For analysis data was collected from the Scopus database to find research work meeting the selection criterion. The present study tries to answer the following research question using bibliometric analysis:

RQ: How has the research on Self-service technology evolved in terms of the number of publications, authorship trends, and the institutions involved?

This study enhances our comprehension of the rapidly evolving field of self-service technology research by addressing this question and offering essential insights for scholars, policymakers, industry stakeholders, and consumers dedicated to promoting the adoption of self-service technology.

### Research Methodology

The study employed a bibliometric analysis to evaluate research performance in the area of self-service technologies. This approach helps to understand the impact, trends, and influence of research in a particular area by looking

at various metrics. Data for this analysis was sourced from the Scopus database, the largest repository of academic research articles. Papers meeting the selection criteria were identified, resulting in a sample of 392 research articles. The collected data included bibliographic details, citations, author affiliations, and references related to self-service technologies. The keyword "Self-service technology" was used to gather the sample, and the VOSviewer software was used for the citation analysis.

## II. DISCUSSION AND RESULTS

### Publication Trends in the field of Self-service Technologies

Figure 1 illustrates the growing trend of research publications on self-service technologies from 1993 to 2024. The first article on this topic emerged in 1993, and since then, the number of publications has consistently increased, reaching a peak in 2023. As of July 2024, there are already 40 published documents, with expectations of further growth by the end of the year. This upward trend suggests a significant surge in interest and research efforts focused on self-service technologies over the past few years.

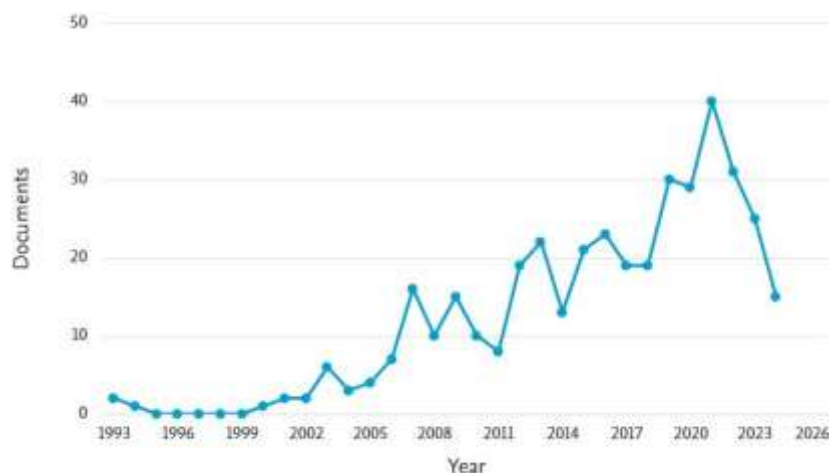


Figure 1: Publication of articles per year

### Publications of Articles on Self-Service Technologies by Authors

Figure 2 highlights the contributions of various authors in the field of self-service technologies research. Meuter, M.L. stands out as a leading researcher with an impressive 7

publications to his credit. A group of active contributors, including Kaushik, A.K., Lee, H.J., and Mattila, A.S., have each authored 6 papers on the topic. Additionally, Collier, J.E., and Rahman, Z., have made significant contributions with at least 5 publications each.

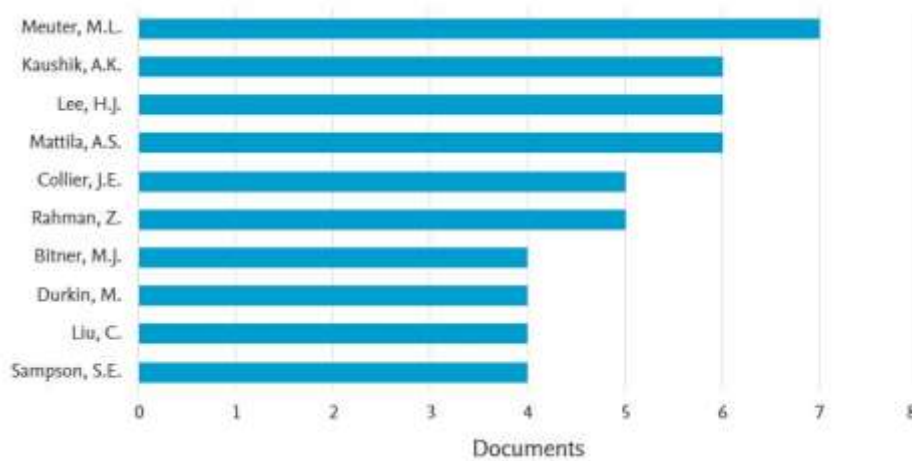


Figure 2: Publication by authors

**Publication of Articles on Self-Service Technologies by Organisations**

This bar graph displays the number of research documents published by different institutions on self-service technologies. Queensland University of Technology and Pennsylvania State University are the top contributors with 11 and 10 papers, respectively. Other significant contributors include Nanyang Technological University, The Hong Kong

Polytechnic University, Purdue University, California State University, Chico, Mississippi State University, University of Central Florida, Hanyang University, and UNSW Sydney, each contributing 4 to 7 documents. This shows that institutions from various countries actively participate in self-service technologies research, with notable contributions from universities in Australia, the US, Singapore, Hong Kong, and South Korea.

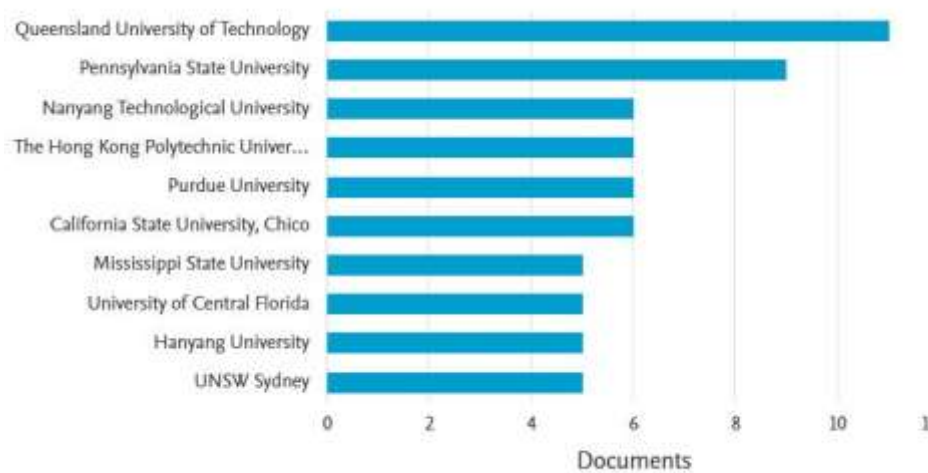


Figure 3: Publication by organisations

**Publication of Articles on Self-Service Technologies by Countries**

This bar graph shows the number of research documents on self-service technologies published by authors from different countries. The United States leads significantly with around 130 documents, followed by Taiwan, Australia, India,

China, South Korea, the United Kingdom, Malaysia, Germany, and the Netherlands, each contributing between 20 and 40 documents. This indicates that the US is the dominant contributor to research in this field, while several other countries also show active participation.

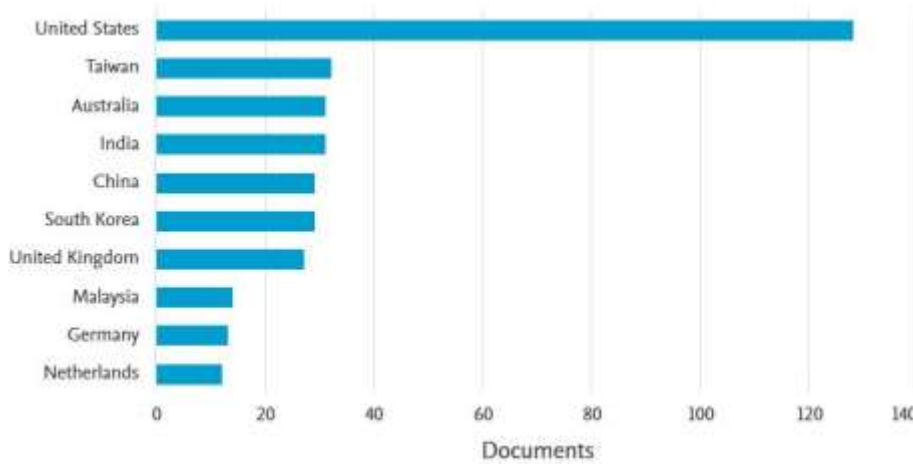


Figure 4: Publication by countries

**Publication of Articles on Self-Service Technologies by Sources**

This line graph depicts the number of documents on self-service technologies published in various journals over time. The journals include the Journal of Services Marketing, Journal of Retailing and Consumer Services, Journal of Service Management, International Journal of Bank

Marketing, and Service Industries Journal. The graph shows periodic publication activity across these journals from 1994 to 2024, with an increase in recent years, indicating an increasing interest in self-service technologies research. The Journal of Services Marketing and the Journal of Retailing and Consumer Services have shown notable activity in recent years.

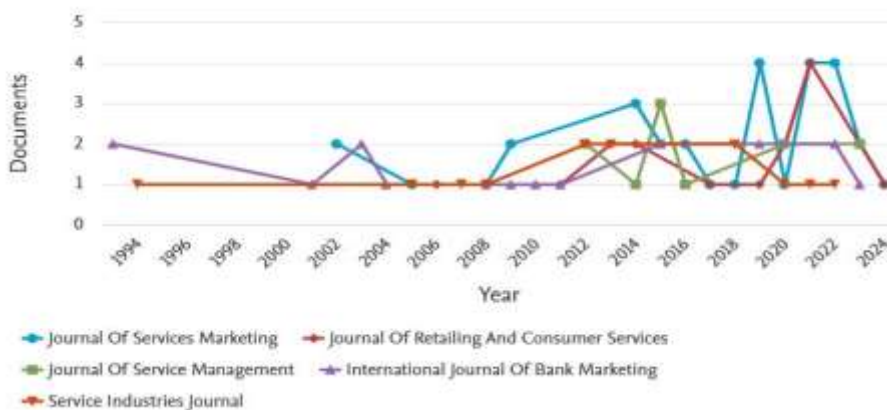


Figure 5: Publication by sources

**Citation Analysis of Top 15 Authors**

Table 1 presents the top 15 authors in self-service technologies research, with Meuter, M.L. leading as the most influential and productive

author, having 4534 citations and 7 publications. Following closely are Bitner, M.J. with 3722 citations and Ostrom, A.L. with 3662 citations.

**Table 1:** Top 15 Authors in the field of self-service technologies research

Sr. No.	Author	TC	TP
1.	Meuter, M.L.	4534	7
2.	Bitner, M.J.	3722	4
3.	Ostrom, A.L.	3662	3
8.	Falk, T.	453	2
9.	Wang, C.	392	4
10.	Gummerus, J.	366	2

4.	Curran, J.M.	870	3	11.	Harris, J.	318	3
5.	Hsieh, P.L.	475	3	12.	Kaushik, A.K.	311	6
6.	Lin, J.S.C.	475	3	13.	Grewal, D.	309	2
7.	Collier, J.E.	458	5	14.	Lee, H.J.	304	6
				15.	Mattila, A.S.	304	6

### Citation Analysis of Top 15 Organizations

Table 2 highlights key organizations in the self-service technologies research field, with California State University a prominent institution

with 2826 citations and 8 documents. Miami University and the University of Groningen follow with 1936 and 1889 citations respectively.

Table 2: Top 15 organisations in the field of self-service technologies research

Sr. No.	Institution	TP	TC
1	California State University	8	2826
2	Miami University	4	1936
3	University of Groningen	1	1889
4	Arizona State University	2	1834
5	University of Missouri-Columbia	2	1104
6	Oklahoma State University	5	839
7	Bryant University	1	836
8	Howard University	1	750
9	Swedish School of Economics And Business Administration, Finland	2	668
10	Nanyang Technological University	7	656
11	Universiteit Maastricht	5	615
12	Newcastle University Business School, United Kingdom	3	486
13	University of Victoria	2	457
14	Çukurova Üniversitesi	2	354
15	Pennsylvania State University	1	319

### Citation Analysis of Top 15 Countries

Table 3 lists the top 15 countries researching self-service technologies, with the United States at the top with 11490 citations and

128 articles, followed by the Netherlands with 2731 citations and Australia with 201 citations. India is in 12<sup>th</sup> place with 661 citations and 31 documents.

Table 3: Top 15 countries in the field of self-service technologies research

Sr. No.	Country	TP	TC	Sr. No.	Country	TP	TC
1	United States	128	11490	8	Singapore	7	784
2	Netherlands	12	2731	9	Finland	7	727
3	Australia	31	1857	10	South Korea	29	687
4	Taiwan	32	1497	11	Belgium	6	665
5	United Kingdom	26	1260	12	India	31	661
6	Germany	13	1006	13	Canada	9	630
7	China	29	941	14	New Zealand	6	627
				15	Sweden	12	623

### Citation Analysis of Top 15 Sources

Table 4 identifies the top 15 journals for self-service technologies research publications, led by the Journal of Marketing with 3245 citations. The Journal of Retailing and Journal of Services

Marketing follow the trend with 2305 and 2071 citations respectively, with the Journal of Services Marketing being the most productive journal, publishing 31 research articles on self-service technologies.

Table 4: Top 15 sources in the field of self-service technologies research

Sr. No.	Source	TP	TC
1	Journal of Marketing	4	3245
2	Journal of Retailing	4	2305
3	Journal of Services Marketing	31	2071
4	Journal of Business Research	10	1614
5	Journal of Retailing And Consumer Services	16	1422
6	International Journal of Bank Marketing	17	1368
7	Journal of Service Research	9	1215
8	Journal of The Academy Of Marketing Science	5	1134
9	International Journal of Service Industry Management	7	765
10	Service Industries Journal	12	462
11	International Journal of Hospitality Management	10	443
12	Journal of Service Management	11	400
13	Journal of Hospitality Marketing And Management	8	326
14	Decision Support Systems	2	254
15	Managing Service Quality	5	252

### III. CONCLUSIONS

This study provides a comprehensive review of the rapidly expanding field of self-service technology research, which has seen a significant surge in recent years, particularly since 2020-23. The growing interest in self-service technologies is driven by their potential to provide services to consumers conveniently, efficiently, and save them time. The study identifies key players, including prominent authors, organizations, and countries driving this research forward. The Citation analysis reveals that influential publications on self-service technologies have had a significant impact on the scientific community. This study opens up opportunities for further research and advances our understanding of the current state of up cycled food research.

The adoption of self-service technologies is crucial in today's digital age, as it offers numerous benefits to both businesses and consumers. One of the most significant advantages is the enhanced customer experience, as self-service technologies provide customers with the freedom to access services and products at their convenience, 24/7. This leads to increased customer satisfaction, loyalty, and retention.

Additionally, self-service technologies enable businesses to reduce operational costs, improve efficiency, and streamline processes, thereby increasing productivity and profitability

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