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Analyzing Bibliometric Trends in Factors Influencing Consumer Adoption of Technology: A Study on Technology Acceptance

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Abstract

This study identifies the consumer adoption trends in the technological aspect. Through Bibliometric techniques, we examine a sample of 621 studies from the Scopus database to analyze the studies on the adoption behavior between 1991-2022, March. We identify the most significant contributions towards the field of technological adoption in terms of articles, authors institutions, journals, and countries based on the citations and publications. The current themes and future avenues have been explored through the analysis. The various lesser-explored themes have been stated along with the collaborative possibility for future research.

Keywords: Bibliometric Analysis, Consumer Adoption, Technology Acceptance, Consumer Behaviour

Introduction

Consumer adoption has grown inclined towards technological products and services. Even though Covid-19 hindered the growth of various industries, technological adoption has risen sharply. The factors behind such adoption need to be examined to fully understand the value of such technological product development services and to utilize the technological services and products to their maximum. Over the past two decades, the technological acceptance literature has become an integral part of consumer behavior studies to understand the consumer adoption phenomenon. The adoption factors of technological services utilize the factors of both behavioral sciences and social psychology. The study of users' adoption behavior help determines the reasons responsible for the acceptance of technological services. The significant theories studied and developed over the past to determine such adoption factors are the theory of reasoned action (TRA), the technology acceptance model (TAM), the technology acceptance extension model (TAM2), and the unified theory of acceptance and use of technology(UTAUT).

These models are derived upon the consumer's personal use intention and personal belief in using technology-oriented services. Pertaining to the development of technological integration into services and consumer behaviour, the adoption factors have been closely examined since Davis developed the Technological Adoption Behaviour in 1998. The various UTATUT model has also gained momentum in the adoption studies devised by Venkatesh. The literature is focused mostly on the study of individual models/combined models or on a particular industry. Thus, the literature review technique is adopted to expand the scope from one model/industry to analyze, summarize, sort out, and comment on the present findings and problems. The scientific research evaluation is being done with bibliometrics due to quantitative objectivity and macro research modelling The graphical and pictorial representation tools of bibliometric software were used – a) to

analyze the adoption factors behind the consumer's acceptance to gain insight into the research results and application practice of the acceptance factors; b) to examine the evolution trach and future research prospects of such factors, and c) to cover the gap between theory and application. This creates a base of the theoretical framework of the technological adoption factors behind consumer adoption.

The Bibliometric studies enrich the literature to know research prospects and categorize the publications (Wang et al., 2020). This type of analysis can determine the theoretical basis and research trends. There have been various studies on the individual acceptance models, such as TPB (Si et al., 2019), TAM (Hsu & Chiang, 2017), TRA (Lin et al., 2011), and diffusion model research (Sriwannawit & Sandstrom, 2015), but not much have been explored combining the acceptance behaviour factors. Moreover, the existing literature has various limitations due to the absence of systematic review documents, specifically lacking top-cited documents. Further, the various individual adoption factors have also not been considered in the bibliometric analysis. Therefore, the comprehensive view of the consumer adoption factors can be derived through the paper. The paper aims to:

1) Study the themes explored related to consumer adoption of technological infrastructure.

2) Identify the significant contributors to the field as authors, institutes, journals and countries.

3) Identify the field's top publications and citation trends since 1991.

4) Analyze the publication pattern on the topic from 1991-2022.

Proceeding with the above objectives, the Scopus database, has been used as it is more comprehensive. The keywords- adoption factors OR Consumer Adoption OR Technology Acceptance, has been explored thus downloading data from 720 articles. After sorting and deleting the data from external fields, 621 papers were analyzed.

Literature Review

Technological Adoption has been on the rise since the 90's. Icek Ajzen formulated the first Technological Acceptance Theory and Martin Fishbein in 1967, referred to it as the Theory of Reasoned Action (TRA), which states that attitude and subjective norms impact the behavioral intention, which creates the behaviour. Further, the Theory in 1977 as Self-Efficacy Theory (SET) developed by Albert Bandura, examined behaviour and performance through self-efficacy, determined by performance accomplishment, vicarious learning, verbal encouragement and emotional states. The Theory of Planned Behaviour (TPB) was introduced in 1985 by Icek Ajzen, wherein the behaviour is studied through intention being formed by attitude, subjective norm, and perceived behavioral control. The Technology Acceptance Model (TAM) was developed by Fred D. Davis (1986), which considers perceived usefulness and perceived ease of use to be determining factors of attitude which creates behavioral intention to usage leading the user to actually use. In 2000, the Technology Adoption Model 2(TAM2) was developed by Venkatesh V. and Davis F.D., which states that the TAM factors are affected by voluntariness, experience, subjective norm, image, job relevance, output quality and result demonstrability. After this Venkatesh V., developed the Unified Theory of Acceptance and Use of Technology (UTAUT), wherein user behaviour is determined by behavioral intention, which is impacted by performance expectancy, effort expectancy, social influence, facilitating conditions being mediated by gender, age, experience, and voluntariness to use. Also, Technology Acceptance Model 3(TAM 3) was given by Venkatesh V. and Hillol B. (2008), which states that the perceived usefulness is determined by voluntariness, experience, subjective norm, image, job relevance, output result demonstrability and perceived ease of use. The perceived ease of use is influenced by computer self-efficacy, perception of external control, computer anxiety, computer playfulness and result demonstrability. The perceived usefulness and Perceived ease of use further create the

intention to use, leading up to user behaviour. The studies are mainly based on various theories without considering the individual adoption factors of consumer adoption behaviour.

With the Adoption of technological devices and services on the rise, the segregation of the various factors has some problems. Keeping in view the aim of the paper, this study focuses to offer a comprehensive analysis of the consumer adoption factors towards technology acceptance and studies the evolution of the various theories with the help of bibliometric analysis. The literature has been collected from the Scopus database and analyzed through Vos viewer software.

Defining search terms

The topic CONSUMER ADOPTION FACTORS OF TECHNOLOGY ACCEPTANCE consist of two terms-consumer adoptions and technology acceptance. These were identified based on literature reviews.

Search Delimiting Criteria

The search was conducted on the Scopus database on 23 March 2022. A total of 6,211 documents were found. They were then limited to the fields of Business, Management, Decision Sciences, Social Sciences, and Interdisciplinary. The journal articles have been considered for the study. After sorting the papers and manually excluding the data from irrelevant fields,621 papers were selected for the final analysis.

Analysis Methodology

The bibliometric analysis was carried out to explore the most influential and relevant papers, journals, authors, themes, institutes, years, and countries on Consumer adoption factors towards technology acceptance (Castriotta, Loi, Marku, & Naitana, 2019). For the said purpose, techniques such as citation analysis, co-citation analysis, keyword co-occurrence analysis and co-authorship analysis were used in the study to identify the research trends and avenues (Castriotta et al., 2019; Korom, 2019). MS-Excel and VOS viewer were used in the study to perform the analysis (Persson et al., 2009).

Descriptive Analysis

The data has been collected and sorted from the SCOPUS database up to 23March, 2022.To analyze the publication trend in Customer adoption factors towards technology acceptance, the articles were analyzed by authors, citations, institutions, organizations and year.

Table 1-Publication and Citation Analysis-Year Basis

Year	TP	TCP	TC	TC/TP	TC/TCP	≥4000	≥3000	≥2000	≥1000	≥500	≥100	≥50	≥10	≥1
1991	1	1	2347	2347	2347	0	0	1	1	1	1	1	1	1
1995	1	1	4773	4773	4773	1	1	1	1	1	1	1	1	1
1997	2	2	785	392.5	392.5	0	0	0	0	0	2	2	2	2
1998	1	1	302	302	302	0	0	0	0	0	1	1	1	1
1999	1	1	896	896	896	0	0	0	0	1	1	1	1	1
2000	5	5	4117	823.4	823.4	0	0	1	1	3	4	5	5	5
2001	3	3	4179	1393	1393	1	1	1	1	1	1	3	3	2
2002	4	4	4420	1105	1105	0	0	0	2	4	4	4	4	4
2003	8	8	20637	2579.62	2579.62	1	1	1	2	3	6	7	8	8
2004	15	15	6342	422.8	422.8	0	0	1	2	3	10	11	15	15
2005	18	18	6737	374.27	374.27	0	0	0	2	7	9	13	15	15
2006	17	17	5084	299.05	299.05	0	0	0	1	4	9	13	17	17
2007	20	20	3768	188.4	188.4	0	0	0	0	2	12	17	20	20
2008	25	25	4091	163.64	163.64	0	0	0	1	2	9	15	24	24
2009	31	31	4048	130.58	130.58	0	0	0	0	1	11	18	39	40

2010	21	21	1966	93.61	93.61	0	0	0	0	0	6	10	17	21
2011	27	27	2636	97.62	97.62	0	0	0	0	0	12	18	26	27
2012	29	29	1873	64.58	64.58	0	0	0	0	0	6	13	23	29
2013	38	37	2294	60.36	62	0	0	0	0	0	7	13	20	24
2014	37	36	2849	77	79.13	0	0	0	0	0	10	17	30	6
2015	41	41	1638	39.95	39.95	0	0	0	0	0	4	12	27	14
2016	53	53	3220	60.75	60.75	0	0	0	0	0	9	23	42	52
2017	52	50	2827	54.36	56.54	0	0	0	0	0	10	15	34	48
2018	43	43	1503	34.95	34.95	0	0	0	0	0	4	10	28	41
2019	38	33	849	22.34	25.72	0	0	0	0	0	1	2	20	13
2020	44	42	556	12.63	13.23	0	0	0	0	0	0	1	18	41
2021	38	30	117	3.07	3.9	0	0	0	0	0	0	0	1	29
2022 *	9	3	3	0.33	1	0	0	0	0	0	0	0	0	3

Note:TP = Total Publications, TC = Total Citations, TCP = Total Cited Publications; ≥ 4000, ≥3000, ≥ 2000 and ≥ 1000, ≥ 500, ≥ 100, ≥ 50, ≥ 10, ≥ 1= number of articles receiving at least 4000, 3000, 2000, 1000,500,100,50,10 and 1 citation(s), respectively. * 2022 data only collected till March

Publication Trend

Table 1 depicts the publication trend of Consumer Adoption Factors toward Technology Acceptance. The initial publication started in the 90s (specifically 1991 onwards), while it gained momentum in the 2000s.As can be observed from Table 1, most of the articles have been published in 2016 and 2017, followed by 2020 and 2018. Thus, it can be concluded that the consumer technology adoption trend has increased since the 2000s.

Citation Trend

To analyze the most critical articles on Consumer Adoption Factors towards Technology Acceptance, the top 20 most cited articles were identified from the data collected, as shown in Table 2. The citations examine the impact of the articles on others' contributions (Ding & Cronin,2011). The article titled 'User acceptance of information technology: Toward a unified view' has been by far the most cited, authored by Venkatesh V., Morris M.G., Davis G.B., Davis F.D. in MIS Quarterly: Management Information Systems in 2003 with a total of 17648 citations and receiving an average of 968.35 citations each year since its publication. As per the citation analysis, the author with the highest citations in the field of consumer adoption factors towards technology acceptance is Venkatesh V., followed by Hsu C.-L. The journal contributing most towards the scope of work of consumer adoption factors towards technology acceptance is MIS Quarterly: Management Information Systems, followed by Information Systems Research.

Table 2- Author Ranking-Citation Based

Rank	Authors	Year	Journal Title	Citation	Ave. Citation
1	Venkatesh V., Morris M.G., Davis G.B., Davis F.D.	2003	MIS Quarterly: Management Information Systems	17648	968.35
2	Taylor S., Todd P.A.	1995	Information Systems Research	4773	182.00
3	Bhattacherjee A.	2001	MIS Quarterly: Management Information Systems	4110	203.21
4	Agarwal R., Karahanna E.	2000	MIS Quarterly: Management Information Systems	2555	120.37
5	Mathieson K.	1991	Information Systems Research	2347	77.65
6	Van Der Heijden H.	2004	MIS Quarterly: Management Information Systems	2311	134.16
7	Koufaris M.	2002	Information Systems Research	1854	96.43

8	Wixom B.H., Todd P.A.	2005	Information Systems Research	1691	104.22
9	King W.R., He J.	2006	Information and Management	1458	95.76
10	Featherman M.S., Pavlou P.A.	2003	International Journal of Human Computer Studies	1441	79.06
11	Hsu C.-L., Lu H.-P.	2004	Information and Management	1285	74.60
12	Hsu C.-L., Lin J.C.-C.	2008	Information and Management	1121	84.76
13	Luarn P., Lin H.-H.	2005	Computers in Human Behavior	1029	63.42
14	Rai A., Lang S.S., Welker R.B.	2002	Information Systems Research	1006	52.32
15	Venkatesh V.	1999	MIS Quarterly: Management Information Systems	896	40.31
16	Lederer A.L., Maupin D.J., Sena M.P., Zhuang Y.	2000	Decision Support Systems	798	37.59
17	Chen L.-D., Gillenson M.L., Sherrell D.L.	2002	Information and Management	782	40.67
18	Devaraj S., Fan M., Kohli R.	2002	Information Systems Research	778	40.46
19	Sussman S.W., Siegal W.S.	2003	Information Systems Research	777	42.63
20	Bhattacherjee A., Sanford C.	2006	MIS Quarterly: Management Information Systems	722	47.42

Martin Fishbein and Icek Ajzen introduced the theory of reasoned action (TRA) in 1967, the TRA is the theory of individuals' intended behaviour. This theory was derived to explain the inter-relatedness between attitudes and behaviour within human action. The theory states that particular behaviour is determined by behavioral intention whilst the behaviour intention itself is determined by a person's attitude and subjective norms (Van Eeuwen, 2017). The top-cited authors and journals have been reported in Table 2.The most cited article is User acceptance of information technology: Toward a unified view, published in MIS Quarterly: Management Information Systems, authored by Venkatesh V., Morris M.G., Davis G.B., Davis F.D.in 2003, which has been cited by 17648 with average citation of 968.3584; followed by the article titled Understanding information technology usage: A test of competing models, authored by Taylor S., Todd P.A.in the year 1995 in the Journal Information Systems Research with total citations of 4773 having an average citation of 182

Year-wise Publication and Citation Analysis

The data were sorted based on the year of publication and citations. On an average, it was observed that consumer adoption and technology acceptance have 20 yearly publications between 1991 and 2022. The average number of citations received during the said period is 3,059. Interestingly, the number of total publications increased rapidly (almost quadrupled) with the rise in the technology adoption since 2004. The publications and citations depict the growing inclination towards the topic. This shows the topic's inclusion into various knowledge fields and exploration and evolution. On one hand, the Table 2 depicts more than 500 citations in some years, while on the other hand the citations have crossed the 4,000 marks in some years such as in 1995, 2001, and 2003. The number of publications with citations exceeding the 3000 marks are only three, while those exceeding 2000 are six. Since the recently published articles have not been available for a long time, thus explaining the lesser number of citations.

Leading Journal Analysis

The journals with the highest number of publications have been sorted in the decreasing order published till 23rd March 2022 in Table 3. The journal, ‘Computers in Human Behavior’ recorded the highest number of articles related to the topic, followed by ‘Behaviour and Information Technology’. The significant similarity between these journals is that they are based on technological and consumer behaviour.

Table 3-Citation and Impact Factor-Journal Basis

Rank	Journal Name	TP	SC	S/C	IF
1	Computers in Human Behavior	101	11187	110.76	6.82
2	Behaviour and Information Technology	41	1396	34.04	3.29
3	Information and Management	34	12033	353.91	7.55
4	Computers and Education	33	4671	141.54	8.53
5	International Journal of Information Management	25	1698	67.92	14.09
6	Journal of Computer Information Systems	21	652	31.04	3.4
7	MIS Quarterly: Management Information Systems	21	31848	1516.57	7.19
8	Decision Support Systems	16	2411	150.68	5.95
9	Information Systems Research	15	15463	1030.86	5.20
10	Online Information Review	15	969	64.6	2.32
11	International Journal of Human-Computer Interaction	14	354	25.28	3.35
12	Industrial Management and Data Systems	13	940	72.30	7.22
13	Information Systems Management	9	172	19.11	2.09
14	International Journal of Human Computer Studies	8	2301	287.62	3.63
15	Journal of Global Information Management	8	179	22.37	1.67
16	European Journal of Information Systems	7	554	79.14	4.34
17	International Journal of Business Information Systems	7	137	19.57	0.95
18	International Journal of Enterprise Information Systems	7	118	16.85	2.21
19	International Journal of Information Systems in the Service Sector	7	51	7.28	1.61
20	Journal of High Technology Management Research	7	298	42.57	3.44

SC: Sum of citations, S/C: Sum of Citations/Count, TP: Total publications, I: Impact factors

The publications have been sorted based on the country in Table 4. The highest number of articles (191), along with the highest number of citations (55869) on consumer adoption and technological acceptance, are published in the United States, followed by Taiwan (83 and 11334 publications and citation respectively) and further followed by China with 59 publications and 2819 citations. If we look through the author's publication, the highest number of publications is authored by Dwivedi Y.K. (ten), while the most cited publications is authored by Venkatesh V. (19237), who, interestingly, also tops in the total citations to full publications (3206). India, specifically, stands at 13th rank with 16 publications on the topic with 535 citations, comprising an average of 33.44 citations per publication.

Table 4-Author, Publication and Citation Trend-Country Basis

Rank	Country	TP	TC	TC/TP	Author	TP	TC	TC/TP
1	United States	191	55869	292.51	Dwivedi Y.K.	10	394	39.4
2	Taiwan	83	11334	136.55	Shin D.-H.	9	671	74.56
3	China	59	2819	47.78	Venkatesh V.	6	19237	3206.17
4	South Korea	45	6696	148.8	Williams M.D.	6	220	36.67
5	United Kingdom	45	4396	97.69	Wu J.	5	313	62.6
6	Germany	33	1900	57.58	Yen D.C.	5	663	132.6
7	Malaysia	29	853	29.41	Agarwal R.	4	3774	943.5
8	Spain	28	2320	82.86	Mensah I.K.	4	19	4.75
9	Australia	26	1349	51.88	Shiau W.-L.	4	238	59.5
10	Canada	25	7491	299.64	Benbasat I.	3	458	152.67
11	Hong Kong	18	2404	133.56	Cenfetelli R.T.	3	622	207.33
12	France	17	1100	64.71	Chen Y.-C.	3	514	171.33
13	India	16	535	33.44	Gefen D.	3	247	82.33
14	Turkey	14	579	41.36	Gholami R.	3	41	13.67
15	Netherlands	13	1149	88.38	Goyal S.	3	531	177
16	Finland	11	1254	114	Hsu C.-L.	3	2592	864
17	Jordan	11	228	20.73	Hussein R.	3	90	30

18	Saudi Arabia	9	350	38.89	Hwang Y.	3	90	30
19	Indonesia	8	15	1.88	Irani Z.	3	137	45.67
20	Italy	7	173	24.71	Karahanna E.	3	3060	1020

TP: Total Publication, TC: Total Citation

Table 5- Documents and Citation-Organization Basis

S.No.	Organization	Document	Citations	D/C
1.	National Chung Hsing University, Taiwan	3	292	97.33333
2.	Harbin Institute of Technology, China	3	100	33.33333
3.	University Of Arkansas, United States	3	531	177
4.	Bogazici University, Turkey	2	159	79.5
5.	University Of Southern Indiana, United States	2	429	214.5
6.	Universidad De La Rioja, Spain	2	45	22.5
7.	Sungkyunkwan University, South Korea	2	151	75.5
8.	University Of Malaya, Malaysia	2	85	42.5
9.	Erc For Process Mining of Manufacturing Services in Shaanxi Province, China	2	12	6
10.	German Graduate School of Management and Law, Germany	2	118	59
11.	University Of South Florida, United States	2	4832	2416
12.	University of Munich, Germany	2	82	41
13.	Newcastle University Business School, United Kingdom	2	38	19
14.	Portland State University, United States	2	159	79.5
15.	University Of British Columbia, Canada	2	240	120
16.	Virginia Commonwealth University, United States	2	155	77.5
17.	The State University of New York, United States	2	69	34.5
18.	Beijing University of Posts and Telecommunications, China	2	98	49
19.	Tongji University, China	2	484	242
20.	University Of Science and Technology of China, China	2	18	9

D/C: Documents/citations

For organization-publication analysis, the results obtained are compiled in table 5. The highest number of publications has been contributed by the National Chung Hsing University, Taiwan; the Harbin Institute of Technology, China; and the University of Arkansas, United States. It is to be noted that the country with the most significant number of institutes working on the said topic is the United States (6), followed by China (5). The highest citation-receiving document has been from the University of South Florida, United States (4832), which also has the highest citation per document ratio (2416), followed by another institute from the United States, i.e. the University of Arkansas, with 531 citations.

The most cited journal in the Consumer adoption factors towards Technological Acceptance has been Computers in Human Behavior (101), followed by Behaviour and Information Technology (41), while the journal with the highest Impact Factor is International Journal of Information Management. The highest number of citations has been received by the MIS Quarterly: Management Information Systems. The most significant number of titles that have been highly cited are from MIS Quarterly: Management Information Systems.

Table 6-Ranking on Citation Basis

Rank	Authors	Title	Year	Source Title	Cited by	Ave. Citation
1	Venkatesh V., Morris M.G., Davis G.B., Davis F.D.	User acceptance of information technology: Toward a unified view	2003	MIS Quarterly: Management Information Systems	17648	968.35
2	Taylor S., Todd P.A.	Understanding information technology usage: A test of competing models	1995	Information Systems Research	4773	182
3	Bhattacharjee A.	Understanding information systems continuance: An expectation-confirmation model	2001	MIS Quarterly: Management Information Systems	4110	203.21
4	Agarwal R., Karahanna E.	Time flies when you're having fun: Cognitive absorption and beliefs about information technology usage	2000	MIS Quarterly: Management Information Systems	2555	120.37
5	Mathieson K.	Predicting user intentions: Comparing the technology acceptance model with the theory of planned behavior	1991	Information Systems Research	2347	77.65
6	Van Der Heijden H.	User acceptance of hedonic information systems	2004	MIS Quarterly: Management Information Systems	2311	134.16
7	Koufaris M.	Applying the Technology Acceptance Model and flow theory to online Consumer Behavior	2002	Information Systems Research	1854	96.43
8	Wixom B.H., Todd P.A.	A theoretical integration of user satisfaction and technology acceptance	2005	Information Systems Research	1691	104.22
9	King W.R., He J.	A meta-analysis of the technology acceptance model	2006	Information and Management	1458	95.76
10	Featherman M.S., Pavlou P.A.	Predicting e-services adoption: A perceived risk facets perspective	2003	International Journal of Human Computer Studies	1441	79.06
11	Hsu C.-L., Lu H.-P.	Why do people play on-line games? An extended TAM with social influences and flow experience	2004	Information and Management	1285	74.6
12	Hsu C.-L., Lin J.C.-C.	Acceptance of blog usage: The roles of technology acceptance, social influence and knowledge sharing motivation	2008	Information and Management	1121	84.76
13	Luarn P., Lin H.-H.	Toward an understanding of the behavioral intention to use mobile banking	2005	Computers in Human Behavior	1029	63.42
14	Rai A., Lang S.S., Welker R.B.	Assessing the validity of IS success models: An empirical test and theoretical analysis	2002	Information Systems Research	1006	52.32
15	Venkatesh V.	Creation of favorable user perceptions: Exploring the role of intrinsic motivation	1999	MIS Quarterly: Management	896	40.31

				Information Systems		
16	Lederer A.L., Maupin D.J., Sena M.P., Zhuang Y.	Technology acceptance model and the World Wide Web	2000	Decision Support Systems	798	37.59
17	Chen L.-D., Gillenson M.L., Sherrell D.L.	Enticing online consumers: An extended technology acceptance perspective	2002	Information and Management	782	40.67
18	Devaraj S., Fan M., Kohli R.	Antecedents of B2C channel satisfaction and preference: Validating e-commerce metrics	2002	Information Systems Research	778	40.46
19	Sussman S.W., Siegal W.S.	Informational influence in organizations: An integrated approach to knowledge adoption	2003	Information Systems Research	777	42.63
20	Bhattacherjee A., Sanford C.	Influence processes for information technology acceptance: An elaboration likelihood model	2006	MIS Quarterly: Management Information Systems	722	47.42

The article receiving the highest citations (17648) was written by Venkatesh V., Morris M.G., Davis G.B., Davis F.D. named User acceptance of information technology: Toward a unified view in the year 2003 in MIS Quarterly: Management Information Systems with average citations 968.3584, per year. The prominent authors on the topic have been Venkatesh V. and Hsu C.-L.

Further, the strength of nodes in the figure 1 shows the node's weight and the node's size determines the association and the influence. The thickness of the nodes shows the connection/co-occurrence between the nodes. As per the bibliographic coupling in the figure, the author possessing the most citations is Venkatesh V. with 17648 citations, followed by Taylor S. with 4773 citations.

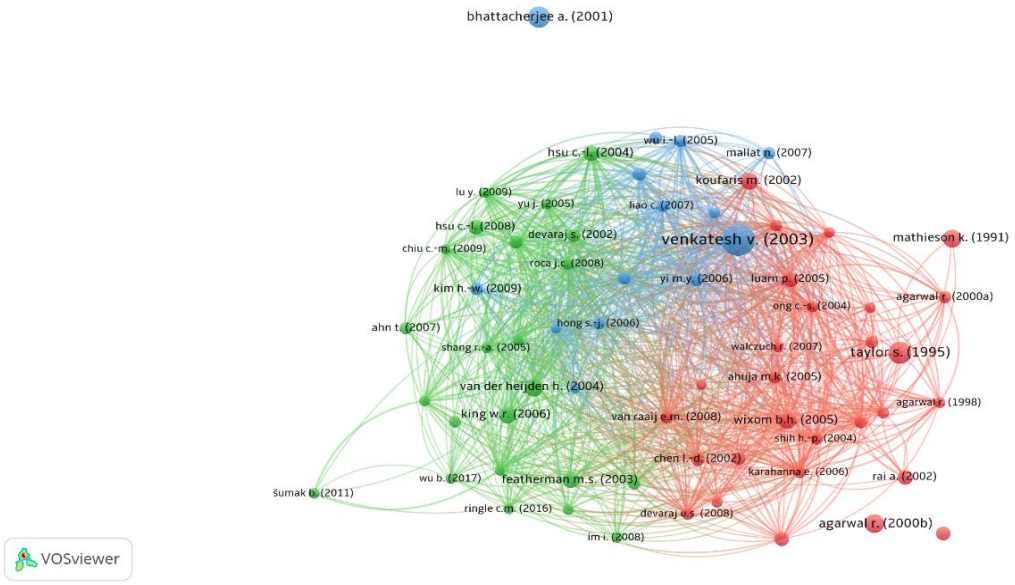

Fig.1

The top fifty cited journals have been included in the figure 2 to identify the most cited journals. As can be observed, the most cited Journal is MIS Quarterly, followed by Computers in Human Behavior and Information Systems Research.

The top 5 Journals contributing to the topic are MIS Quarterly (2235), Computers in Human Behavior (1209), Information Systems Research (1046), Information and Management (946), and Management Science (826).

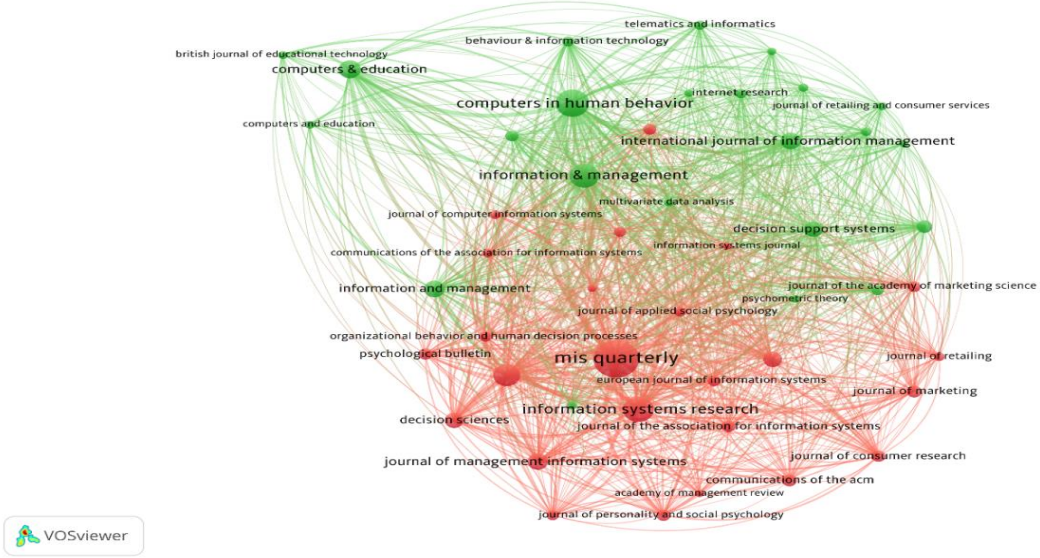

Fig.2

The co-citation links between the various authors is evident is figure 3. The top 5 prominent authors with the highest citations are Davis F.D. (1517), followed by Venkatesh V. (1340), Ajzen I. (644), Bagozzi R.P. (548), and Gefen D. (401). The top linked authors are Shiau W.-L., Hsiao C.H., Gumussoy C.A., Ortega Egea J.M. And Chakraborty I with strength link of 3944,3769,3621,3411 and 3150 respectively.

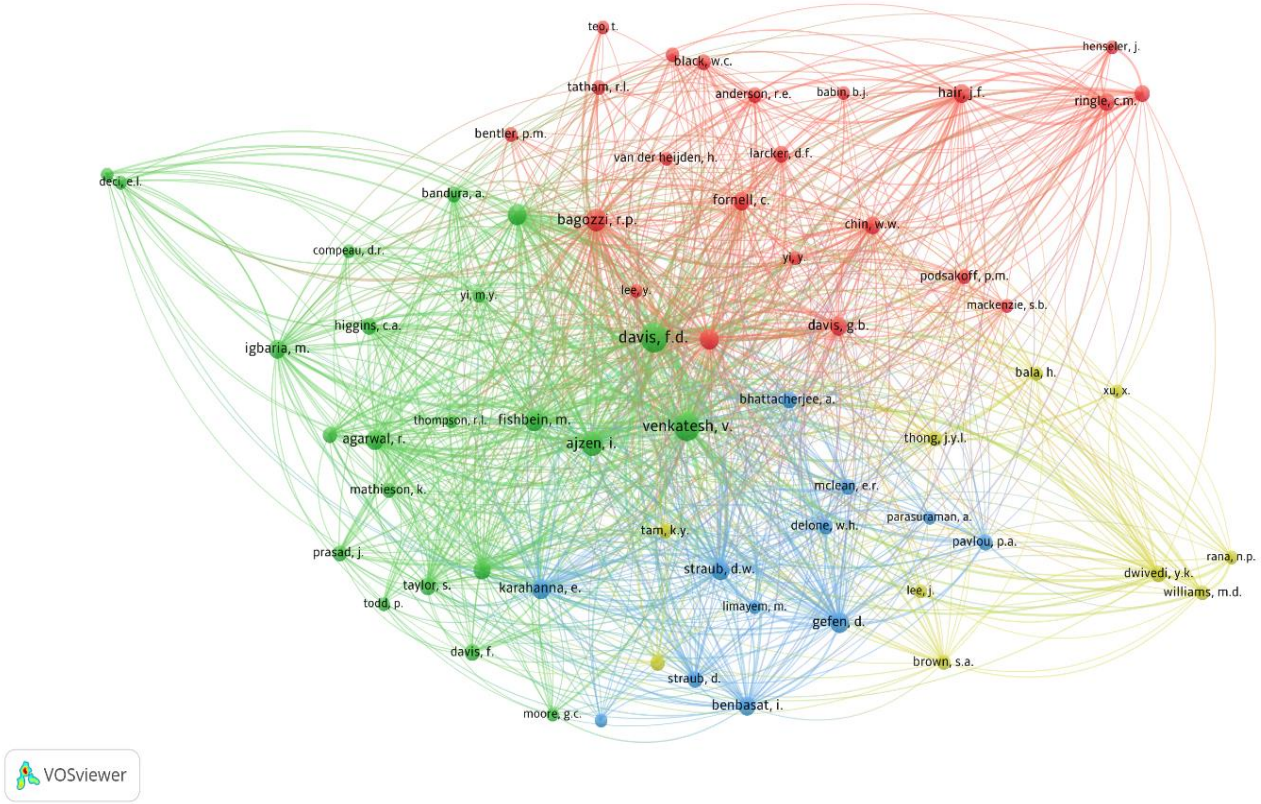

Fig.3

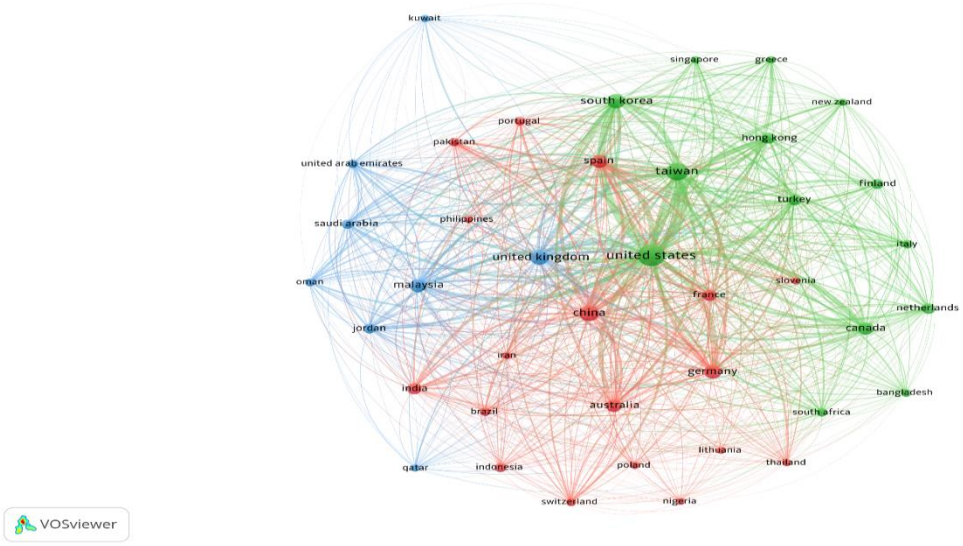

Fig.4

Fig 4 shows the countries with leading publications and citations. The United States leads the race with 191 publications and 55,869 citations followed by Taiwan with 83 publications and 11,334 citations, Canada with 25 publications and 7491 citations, South Korea with 45 and 6696 citations, and the United Kingdom with 44 publications and 4181 citations. The highest number of publications has been in the years 2011 and 2012. The minimum link strength for the above figure is 39. The countries where the least work on the topic has been done are Greece, Poland, Iran, New Zealand, and Qatar.

Further, Fig 5 depicts the most used keywords on the topic. The Technology Acceptance Model is the most occurring word amongst the select literature, followed by technology acceptance and perceived usefulness, succeeded by social media and information systems. The keywords with the highest citation are Theory of Planned Behavior, followed by Acceptance and User Acceptance, succeeded by UTAUT and Computer-mediated communication. The most linked themes are the technology acceptance model, perceived usefulness, technology acceptance, perceived ease of use and social media. The purchase intention, social networking sites, flow experience, risk, social commerce are the lesser explored themes as evident from the figure.

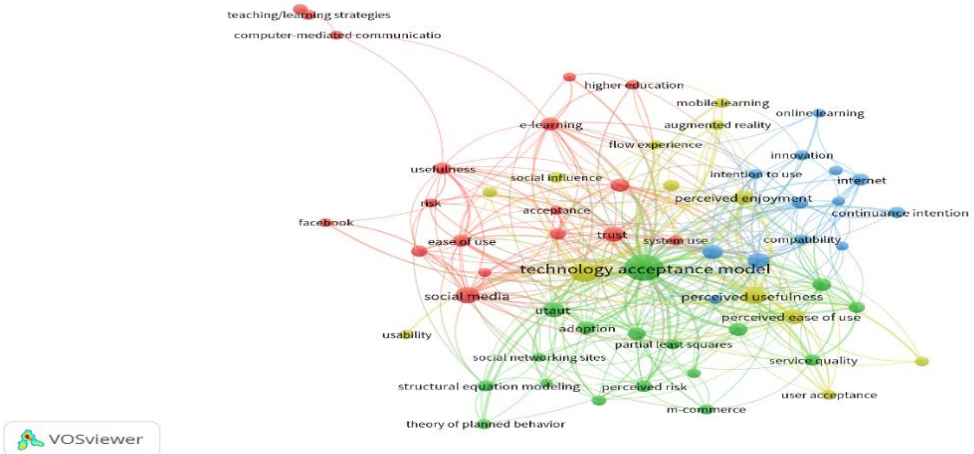

Fig.5

Summary

The study overviews the evolution of technology acceptance and consumer adoption explored in the literature by various authors in the past. Factually stating, the initial consumer adoption phase concerning technology acceptance began in the 1990s and was at its peak in the 2010s. Academically speaking, since the technology is still in the innovative phase, the adoption factors are continuously evolving with it. Our study provides an outlook on the various themes, citation and publication trends, and the individual author contribution to the field along with the institutional and national contribution. The institutional and country-wise analysis depicts that the U.S. and China being the primary focal points of such studies. The most common phrases amongst in the literature have been the technology acceptance model, technology acceptance, and perceived usefulness. Due to the technological advancement in the previous three decades, technological acceptance has become prominent for the various adoption studies, thus rising in terms of both publications and citations, hence giving rise to various adoption theories in the said field. Finally, the study identifies the lesser-explored areas regarding consumer adoption regarding technological acceptance.

Concluding Remarks

The study is a Bibliometric analysis of the significant trends in the technology adoption factors from 1991-2022. The data has been extracted from the Scopus database. The data has been graphically analyzed and presented with VOS viewer. The various inferences have been drawn based on the MS-excel analysis and the VOS viewer links. Research on the topic has been on the rise since the 2000s and has been growing with the advancement in technological development. The significant contributions in the technology adoption literature have been from the USA, Taiwan, China, South Korea, and U.K. The leading authors and journals of technological adoption behavior have also been identified in the study. The institutions mainly contributing to this field of research are National Chung Hsing University-Taiwan, Harbin Institute of Technology-China, University of Arkansas-United States, Bogazici University-Turkey, and University of Southern Indiana-United States. The keyword analysis depicts the themes of the journals on the said topic. The major connected themes are the technology acceptance model, perceived usefulness, technology acceptance, perceived ease of use, and social media. The most cited authors in the field are Venkatesh V., Taylor S., Bhattacharjee A., Agarwal R., and Mathieson K. Further, the study throws light upon the significant and not so explored areas, thus paving the way for future research themes. The study would aid the upcoming researchers in the field towards the lesser explored themes, and the emerging themes in the particular field.

References

1. Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T
2. Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. Psychological Bulletin, 84(5), 888–918. https://doi.org/10.1037/0033-2909.84.5.888
3. Baker, H. K., Kumar, S., & Pandey, N. (2021). Thirty years of the Global Finance Journal: A bibliometric analysis. Global Finance Journal, 47, 100492. https://doi.org/10.1016/j.gfj.2019.100492
4. Baker, H. K., Kumar, S., & Pandey, N. (2020). A bibliometric analysis of European Financial Management ’s first 25 years. European Financial Management, 26(5), 1224–1260. https://doi.org/10.1111/eufm.12286
5. Baker, H. K., Kumar, S., & Pattnaik, D. (2020). Fifty years of The Financial Review : A bibliometric overview. Financial Review, 55(1), 7–24. https://doi.org/10.1111/fire.12228

6. Baker, H. K., Kumar, S., & Pattnaik, D. (2021). Research constituents, intellectual structure, and collaboration pattern in the Journal of Forecasting: A bibliometric analysis. Journal of Forecasting, 40(4), 577–602. https://doi.org/10.1002/for.2731
7. Baker, H. K., Kumar, S., & Pattnaik, D. (2021). Twenty-five years of the Journal of Corporate Finance: A scientometric analysis. Journal of Corporate Finance, 66, 101572. https://doi.org/10.1016/j.jcorpfin.2020.101572
8. Baker, H. K., Kumar, S., & Pattnaik, D. (2020). Twenty-five years of Review of Financial Economics : A bibliometric overview. Review of Financial Economics, 38(1), 3–23. https://doi.org/10.1002/rfe.1095
9. Bhaskar, R., Hunjra, A. I., Bansal, S., & Pandey, D. K. (2022). Central Bank Digital Currencies: Agendas for future research. Research in International Business and Finance, 62, 101737. https://doi.org/10.1016/j.ribaf.2022.101737
10. Chen, C. (2006). CiteSpace II: Detecting and visualizing emerging trends and transient patterns in scientific literature. Journal of the American Society for Information Science and Technology, 57(3), 359–377. https://doi.org/10.1002/asi.20317
11. Chiu, C.-M., Hsu, M.-H., & Wang, E. T. G. (2006). Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. Decision Support Systems, 42(3), 1872–1888. https://doi.org/10.1016/j.dss.2006.04.001
12. Cresswell, K., & Sheikh, A. (2013). Organizational issues in the implementation and adoption of health information technology innovations: An interpretative review. International Journal of Medical Informatics, 82(5), e73–e86. https://doi.org/10.1016/j.ijmedinf.2012.10.007
13. Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. MIS Quarterly, 13(3), 319. https://doi.org/10.2307/249008
14. Donthu, N., Kumar, S., Pandey, N., & Soni, G. (2020). A retrospective overview of Asia Pacific Journal of Marketing and Logistics using a bibliometric analysis. Asia Pacific Journal of Marketing and Logistics, 33(3), 783–806. https://doi.org/10.1108/APJML-04-2020-0216
15. Donthu, N., Kumar, S., & Pattnaik, D. (2020). Forty-five years of Journal of Business Research: A bibliometric analysis. Journal of Business Research, 109, 1–14. https://doi.org/10.1016/j.jbusres.2019.10.039
16. Donthu, N., Kumar, S., Paul, J., Pattnaik, D., & Strong, C. (2022). A retrospective of the Journal of Strategic Marketing from 1993 to 2019 using bibliometric analysis. Journal of Strategic Marketing, 30(3), 239–259. https://doi.org/10.1080/0965254X.2020.1794937
17. Han, H., Hsu, L.-T. (Jane), & Sheu, C. (2010). Application of the Theory of Planned Behavior to green hotel choice: Testing the effect of environmental friendly activities. Tourism Management, 31(3), 325–334. https://doi.org/10.1016/j.tourman.2009.03.013
18. Holden, R. J., & Karsh, B.-T. (2010). The Technology Acceptance Model: Its past and its future in health care. Journal of Biomedical Informatics, 43(1), 159–172. https://doi.org/10.1016/j.jbi.2009.07.002
19. Hong, S.-J., Thong, J. Y. L., Moon, J.-Y., & Tam, K.-Y. (2008). Understanding the behavior of mobile data services consumers. Information Systems Frontiers, 10(4), 431–445. https://doi.org/10.1007/s10796-008-9096-1
20. Hsu, C. W., & Yeh, C. C. (2018). Understanding the critical factors for successful M-commerce adoption. International Journal of Mobile Communications, 16(1), 50. https://doi.org/10.1504/IJMC.2018.088272

21. Karahanna, E., Straub, D. W., & Chervany, N. L. (1999). Information Technology Adoption Across Time: A Cross-Sectional Comparison of Pre-Adoption and Post-Adoption Beliefs. MIS Quarterly, 23(2), 183. https://doi.org/10.2307/249751
22. Kent Baker, H., Pandey, N., Kumar, S., & Haldar, A. (2020). A bibliometric analysis of board diversity: Current status, development, and future research directions. Journal of Business Research, 108, 232–246. https://doi.org/10.1016/j.jbusres.2019.11.025
23. Khan, M. A., Ali, I., & Ashraf, R. (2020). A Bibliometric Review of the Special Issues of Psychology & Marketing: 1984-2020. Psychology & Marketing, 37(9), 1144–1170. https://doi.org/10.1002/mar.21393
24. Kumar, S., Kamble, S., & Roy, M. H. (2020). Twenty-five years of Benchmarking: An International Journal (BIJ). Benchmarking: An International Journal, 27(2), 760–780. https://doi.org/10.1108/BIJ-07-2019-0314
25. Kumar, S., Madhavan, V., & Sureka, R. (2020). The Journal of Emerging Market Finance: A Bibliometric Overview (2002–2019). Journal of Emerging Market Finance, 19(3), 326–352. https://doi.org/10.1177/0972652720944329
26. Kumar, S., Pandey, N., & Haldar, A. (2020). Twenty years of Public Management Review (PMR) : a bibliometric overview. Public Management Review, 22(12), 1876–1896. https://doi.org/10.1080/14719037.2020.1721122
27. Kumar, S., Sureka, R., & Colombage, S. (2020). Capital structure of SMEs: a systematic literature review and bibliometric analysis. Management Review Quarterly, 70(4), 535–565. https://doi.org/10.1007/s11301-019-00175-4
28. Lal, M., & RAI, V. K. (2022). Impact of Exchange Rate Volatility on International Trade: A Bibliometric Review. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.4209164
29. Lin, C.-C., Wu, H.-Y., & Chang, Y.-F. (2011). The critical factors impact on online customer satisfaction. Procedia Computer Science, 3, 276–281. https://doi.org/10.1016/j.procs.2010.12.047
30. Mohd Nor, N., Steeneveld, W., Mourits, M. C. M., & Hogeveen, H. (2015). The optimal number of heifer calves to be reared as dairy replacements. Journal of Dairy Science, 98(2), 861–871. https://doi.org/10.3168/jds.2014-8329
31. Pandey, D. K., Hunjra, A. I., Hassan, M. K., & Rai, V. K. (2023). Venture capital financing during crises: A bibliometric review. Research in International Business and Finance, 64, 101856. https://doi.org/10.1016/j.ribaf.2022.101856
32. Pattnaik, D., Hassan, M. K., Kumar, S., & Paul, J. (2020). Trade credit research before and after the global financial crisis of 2008 – A bibliometric overview. Research in International Business and Finance, 54, 101287. https://doi.org/10.1016/j.ribaf.2020.101287
33. Pattnaik, D., Kumar, S., & Vashishtha, A. (2020). Research on trade credit – a systematic review and bibliometric analysis. Qualitative Research in Financial Markets, 12(4), 367–390. https://doi.org/10.1108/QRFM-09-2019-0103
34. Schiuma, G., Kumar, S., Sureka, R., & Joshi, R. (2020). Research constituents and authorship patterns in the Knowledge Management Research and Practice : a bibliometric analysis. Knowledge Management Research & Practice, 1–17. https://doi.org/10.1080/14778238.2020.1848365

35. Si, H., Shi, J., Tang, D., Wen, S., Miao, W., & Duan, K. (2019). Application of the Theory of Planned Behavior in Environmental Science: A Comprehensive Bibliometric Analysis. International Journal of Environmental Research and Public Health, 16(15), 2788. https://doi.org/10.3390/ijerph16152788
36. Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. Management Science, 46(2), 186–204. https://doi.org/10.1287/mnsc.46.2.186.11926
37. Venkatesh, V., Davis, F., & Morris, M. (2007). Dead Or Alive? The Development, Trajectory And Future Of Technology Adoption Research. Journal of the Association for Information Systems, 8(4), 267–286. https://doi.org/10.17705/1jais.00120
38. Wang, X., Xu, Z., Su, S.-F., & Zhou, W. (2021). A comprehensive bibliometric analysis of uncertain group decision making from 1980 to 2019. Information Sciences, 547, 328–353. https://doi.org/10.1016/j.ins.2020.08.036
39. Xu, Z., Ge, Z., Wang, X., & Skare, M. (2021). Bibliometric analysis of technology adoption literature published from 1997 to 2020. Technological Forecasting and Social Change, 170, 120896. https://doi.org/10.1016/j.techfore.2021.120896
40. Zupic, I., & Čater, T. (2015). Bibliometric Methods in Management and Organization. Organizational Research Methods, 18(3), 429–472. https://doi.org/10.1177/1094428114562629