

E-BANKING ADOPTION: A BIBLIOMETRIC ANALYSIS OF LAST TWO DECADES

Tamanna Kewal *; Dr. Charu Saxena**

*Research Scholar,
University School of Business,
Chandigarh University, Gharuan,
Mohali, Punjab, INDIA
Email id: tamannakewal04@gmail.com

**Assistant Professor,
University School of Business,
Chandigarh University, Gharuan,
Mohali, Punjab, INDIA
Email id: charu.e8966@cumail.in

DOI: [10.5958/2249-7137.2022.00840.0](https://doi.org/10.5958/2249-7137.2022.00840.0)

ABSTRACT

In the new normal world to which we are still adjusting, distance banking has become more of a requirement than an option. In the recent decade, this topic has piqued the interest of scholars from several disciplines. This article analyzes 891 publications on e-banking adoption that were published between 2001 and 2021. The data was gathered from the Scopus database. The data after the filtration has been analyzed using VOSviewer. This study will present a general outlook of the current literature on e-banking adoption in various subject areas. The author discusses the findings after analyzing them from various perspectives. The publication trend by year has been given, as well as the top journals and countries in this discipline. Year-wise publications trend has been shown, leading journals and leading countries in this field are highlighted. The organizations, countries, journals, and authors who have prominent contributions in this field are revealed by computing the average citation per document. A list of the most frequently used keywords is provided. The findings will help in the understanding of the contributions made in last two decades and may be useful to researchers working in this domain.

KEYWORDS: *Bibliometric Analysis, Cluster Analysis, Co-Citation Analysis, E-Banking, Network Analysis.*

1. INTRODUCTION

Every industry has evolved due to continuous technological advancements. The technology adoption in financial sector has gained attention of researchers in last decade and the term fintech has been widely used to study the adoption of financial services. integration of financial sector with technology has made the services more accessible and affordable for the users and the efficiency of supply side has also increased(Anshari et al., 2020).Integration of technology with other sectors has made the process easy and fast. Manufacturing sector has transitioned from

manual to smart way of handling the process and now every kind of the product can be delivered at door step easily (Farina & Fontana, 2021). Implementation of technological changes was not as challenging as services sector due to its tangible nature. Services being intangible needed the presence of both the parties for the completion of the transaction before the advent of technology. Finance and banking institutions are critical components of the service sector and the delivery of financial services digitally has become the core function of every bank now. Traditional banking and finance institutions have been replaced after the advancements in technology and since then there has been a lot of difference in bank-consumer interaction. Through the internet, the customer can access the banking services without visiting the bank (Rotchanakitumnuai & Speece, 2003). The institutions adopted technology-based delivery of services due to increasing competition (Flavián et al., 2004). Not only online banking was integrated into the banking system for combating the market pressure but also it was cheaper than traditional banking (Levy, 2014; Rotchanakitumnuai & Speece, 2003). The customers demanded real-time services which was a result of technological advancements taking place along with globalization and all this led to the banks offer e-services along with physical services (González et al., 2008). The adoption of new technology by users remains a concern for the provider or developer. Various studies conducted in this regard to study the issues and challenges faced by the users e.g. (Aladwani, 2001) focused on the drivers and challenges of the customers, (Benamati et al., 2007) in their article discussed reasons behind the confidence of current users in e-banking and incertitude among potential ones, (Johnson et al., 2018; Merhi et al., 2019) focused on security and privacy concerns of customers and suggested what can be done to mitigate it. (Aboobucker & Bao, 2018; Baptista & Oliveira, 2015; Chawla & Joshi, 2018; Mohammed & Tejay, 2017) examined the impact of demographic variables and culture on the adoption intentions of users. Various studies have shown that persuading customers to move from physical to online banking is more difficult than providing the services. Many researchers have contributed to the literature in this area to comprehensively understand the variables that influence the acceptance or rejection of technology-based services, demonstrating that convincing customers to manage their money through technology is a challenge for banking institutions. Excellent surveys on user acceptance of e-banking have been done, however, there are few bibliographic studies on this topic. This study demonstrates the contributions in this area for the trend of publication, author contribution, popular articles and keywords, most productive institutions, and countries. This Bibliometric analysis includes 894 articles published from 1986 to July 2021 in the Scopus database. The results identify the top authors, institutions, countries, most cited documents along with a network of co-citation analyses based on references and sources. The paper concludes with a discussion of the results and limitations along with the future scope of the study.

2. METHODOLOGY

This section of the paper discussed the method of data extraction and analyses. The current study's data is gathered from a single source, Scopus. Relevant keywords in this area were utilized to extract the data. The search terms were “e-banking” OR “electronic banking” OR “online banking” OR “mobile banking” AND “adoption” OR “intention” OR “usage”. The search revealed 1348 items, including articles, conference papers, book chapters, review papers, and conference review papers, published between 1986 and July 27, 2021. Documents from a different subject area have been included. Conference papers, book chapters, and review papers were not included in the study. Finally, 891 papers published in journals were chosen for

evaluation after applying inclusion and exclusion criteria. For analyzing selected articles, VOSviewer is used. It is among one of the most widely used tools used for bibliographic mapping and presenting maps in form of graphs (Jan van Eck & Waltman, 2010).

3. RESULTS

The study constituted 894 articles by 2019 authors associated with 1653 organizations in 103 countries. Articles are from 380 published sources and citing 27468 references. The summary of general results is shown in table 1. These documents have been analyzed from various perspectives. Results show publications per year from 1986 to 2021. Most cited articles are discussed along with leading countries, institutions, authors. The analysis helps in identifying the most popular articles, most eminent authors in this field along with dominating countries with the highest productivity.

TABLE 1. RESULTS SUMMARY

Criteria	N
Documents	894
Authors	2019
Sources	380
Organizations	1653
Countries	103
References	27468

3.1 YEAR-WISE PUBLICATION

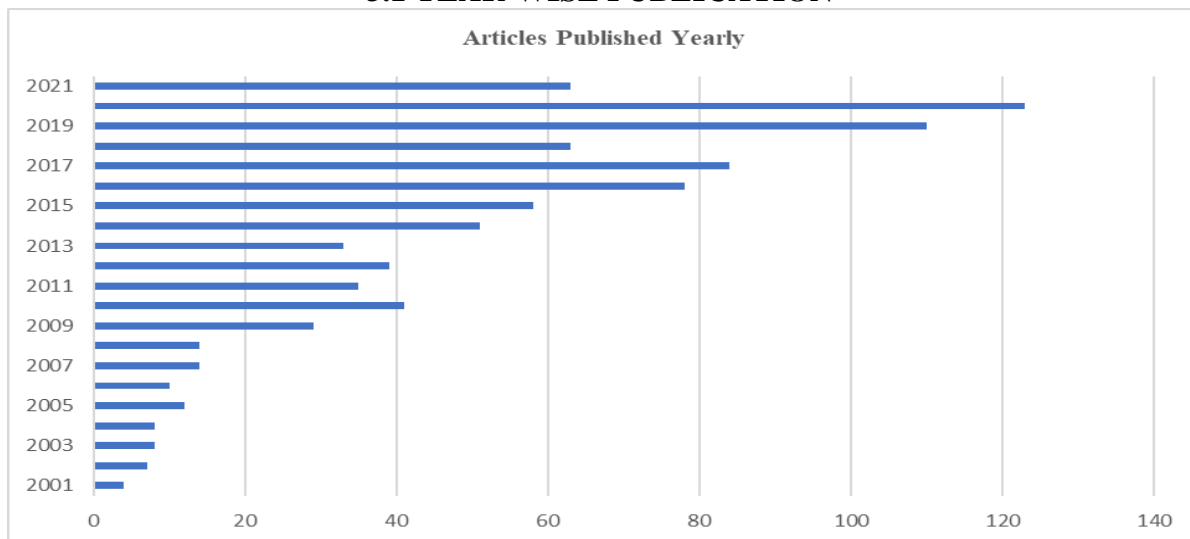


Figure 1. Trend of publication over the years

The articles published in the last 20 years are presented in figure 1. Only 1 article each year has been published from the year 1986 to 2000 hence it is not shown in the following chart. The chart depicts the increase in the number of publications in this domain each year except for 2 years. There has been a slight decrease in 2013(n=33) and 2018(n=63) as compared to previous years. As far as current year publications count is only 63 as the search was done in the middle of the year the number of articles for the ongoing year is less. This study only includes the articles

indexed in the Scopus database hence it can also be the possible reason. The highest percentage growth in publications is seen in the year 2019 as compared to last year. If we study the overall picture then there is an increasing trend and this topic is gaining importance with each year. Observing the trend, a continuous rise in the number of publications is expected in this domain in the future years to come.

3.2 LEADING JOURNALS

To identify the top 10 leading journals in this domain analysis has been done using bibliographic coupling. For reaching the results the minimum number of documents per source with at least 5 citations has been selected. Out of 380 sources, 33 met the threshold criteria, and out of the top 10 journals according to the average number of citations per document are listed in table 2. Results reveal that “Computers in Human Behavior” is the most influential journal as 16 documents have in total 1604 citations and the average citation per document is the highest among all i.e., 179.3. If we observe according to the number of citations and number of documents only then “International Journal of Bank Marketing” is the preferred journal in the adoption of e-banking technology with 67 articles having 4295 citations.

TABLE 2.TOP 10 JOURNALS

Ranking	Journal	Documents	Citation	Impact factor (last updated)	Average citation per document
1.	Computers in Human Behavior	16	2870	6.829	179.3
2.	International Journal of Information Management	9	1604	14.098	178.2
3.	Journal of Services Marketing	5	708	4.57	141.6
4.	Telematics and Informatics	6	704	7.45	117.3
5.	Internet Research	6	411	6.773	68.5
6.	International Journal of Bank Marketing	67	4295	4.06	64.10
7.	Journal of Business Research	8	473	4.874	59.1
8.	Journal of Enterprise Information Management	6	272	5.17	45.3
9.	International Journal of Mobile Communications	10	424	1.551	42.4
10.	Marketing Intelligence and Planning	6	251	2.99	41.8

3.3 MOST CITED DOCUMENTS

For finding the top 10 cited documents, citation analysis was performed and the criteria were set to a minimum of 50 citations per document. Out of 894 documents, 113 articles meet the

threshold limit. Table 3 shows that the topmost cited document was by (Bhattacharjee, 2001) published in MIS quarterly with a total of 3728 citations.

TABLE 3. TOP 10 ARTICLES

Ranking	Author/Year	Title	Source	Citations
1.	(Bhattacharjee, 2001)	Understanding information systems continuance: an expectation-confirmation model	MIS Quarterly	3728
2.	(Luarn & Lin, 2005)	Toward an understanding of the behavioral intention to use mobile banking	Computers in Human Behavior	960
3.	(Lee, 2009)	Electronic Commerce Research and Applications Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit	Electronic Commerce Applications	836
4.	(Zhou et al., 2010)	Integrating TTF and UTAUT to explain mobile banking user adoption	Computers in Human Behavior	709
5.	(Luo et al., 2010)	Examining multi-dimensional trust and multi-faceted risk in initial acceptance of emerging technologies: An empirical study of mobile banking services	Decision Support Systems	533
6.	(Lin, 2011)	An empirical investigation of mobile banking adoption: the effect of innovation attributes and knowledge-based trust	International journal of information management	449
7.	(Kim et al., 2009)	Understanding dynamics between initial trust and usage intentions of mobile banking	Information systems journal	415
8.	(Gu et al., 2009)	Determinants of behavioral intention to mobile banking	Expert Systems with Applications	383
9.	(Y. Wang et al., 2006)	Predicting consumer intention to use mobile service	Information systems journal	365
10.	(Yu, 2012)	Factors affecting individuals to adopt mobile banking: Empirical evidence from the UTAUT model	Journal of Electronic Commerce Research	362

3.4 LEADING AUTHOR**TABLE 4. TOP 10 AUTHORS**

Ranking	Author	Documents	Citations	Average citation per document
1.	Luarn, p.	2	1322	661
2.	Lin h,h.	3	1347	449
3.	Wang, b.	3	888	296
4.	Luo, x.	2	557	278.5
5.	Zhang, j.	2	546	273
6.	Li, h.	2	535	267.5
7.	Lu, y.	4	901	225.2
8.	Baptista, g., Wang, w.s.	2	387	193.5
9.	Zhou, t.	7	1350	192.8
10.	Koenig-lewis, n.	2	370	185

Table 4. shows the leading authors in this field. To reach the conclusion citation analysis was performed based on authors and the criteria were set to a minimum of 2 documents per author with a minimum of 30 citations. Out of 2019 authors, 113 met the threshold criteria. The tool calculates the results based on the links with other authors. Authors with the highest average citation per document are selected. The leading author is Pin Luarn with 2 documents having 1322 total citations and 661 average citations but if we observe only the highest number of citations then Tao Zhou is the leading author with 7 documents having 1350 citations.

3.5 KEYWORD NETWORK ANALYSIS

Out of 2920 keywords, only 58 were selected when minimum co-occurrence criteria were set to 15 times. Popular keywords in this topic which occurred more than 50 times are mobile banking, banking, e-banking, trust, internet banking, electronic commerce, online banking, internet, adoption, technology adoption, technology acceptance model. Figure 2. Shows the network of popular keywords.

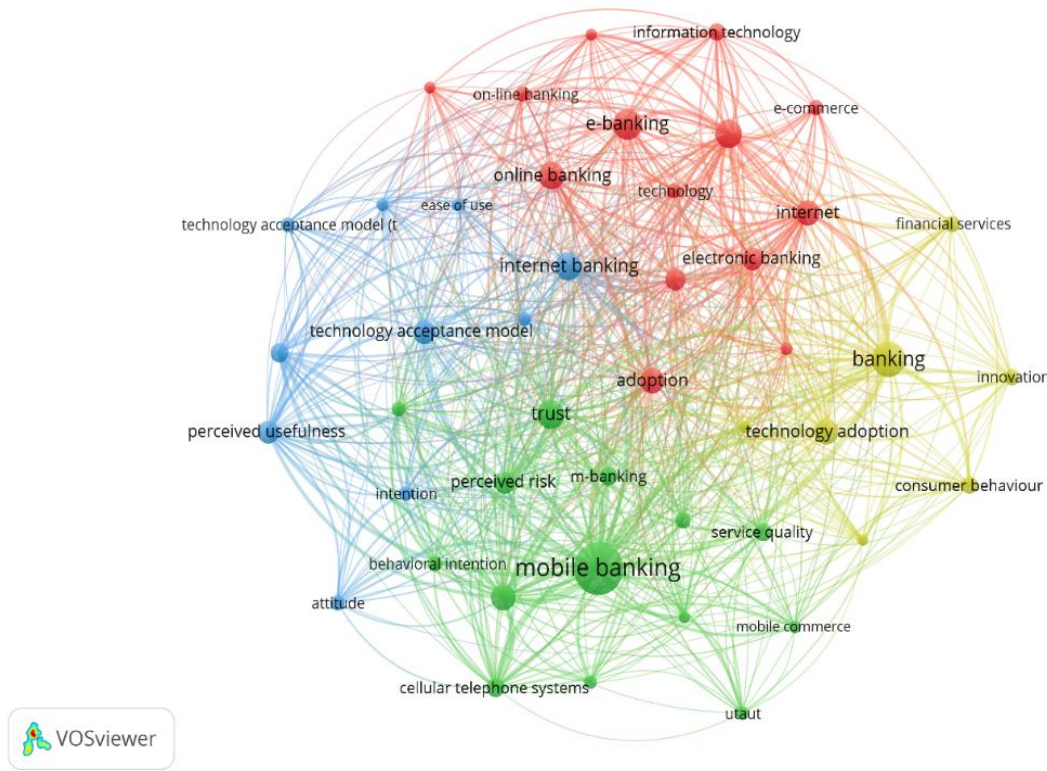


Figure 2. Popular keywords network

3.6 LEADING COUNTRIES

TABLE 5. TOP 10 COUNTRIES

Ranking	Country	Documents	Citations	Average citation per document
1.	Taiwan	29	3638	125.4
2.	United States	110	9551	86.8
3.	Portugal	19	1450	76.3
4.	Finland	23	1531	66.5
5.	United Kingdom	67	3881	57.9
6.	Kuwait	7	372	53.1
7.	South Korea	30	1579	52.6
8.	Australia	26	1161	44.6
9.	Spain	19	686	36.1
10.	Jordan	7	372	35.7

To find out the leading countries in this field bibliographic coupling was done. The maximum number of countries per document was fixed to 25 while a minimum number of documents per country along with a minimum number of citations per country was set to 5. The results show that out of 103 countries 44 met the threshold criteria. Table 5 presents the result according to the average citation per document, Taiwan is the most productive country with 125.4 average

citations per document. If we observe according to the count of documents then India (n=174, citations=1607) is the leading contributor in this field, and on the other hand, if we observe according to citations then the United States of America is the leading country with 9551 citations from 110 documents.

3.7 LEADING INSTITUTIONS

For finding the institutional contribution in this field, citation analysis based on organizations was performed with the criteria set to a minimum of 2 documents per organization with a minimum of 10 citations per organization. Results revealed out of 1653, 46 met the threshold criteria. Table 6 shows according to the maximum number of citations and the average number of citations Hangzhou Dianzi University of China is leading in this field. Conversely, if we look for maximum documents then the Depaul University of United States and the Kyung Hee University of South Korea lead the list with the contribution of 4 documents each.

TABLE 6. TOP 10 INSTITUTIONS

Ranking	Department/Institution/Country	Documents	Citations	Average citation per document
1.	School of Management, Hangzhou Dianzi University, China	3	1069	356.3
2.	Mississippi State University, United States	2	549	274.5
3.	School of Management, Huazhong University of Science and Technology, China	3	812	270.6
4.	Department of Business and Management, University of Kuopio, Finland	2	395	197.5
5.	Department of Information Management, National Changua University of Education, Taiwan	2	387	193.5
6.	School of Business and Economics, Swansea University, United Kingdom	2	370	185
7.	Department of business, University of Eastern Finland, Finland	2	311	155.5
8.	Department of Business Management, Islamic Azad University, Iran	2	275	137.5
9.	School of Management, Swansea University, United Kingdom	2	213	106.5
10.	King Abdulaziz University, Saudi Arabia	3	191	63.6

3.8 CO-CITED REFERENCES CLUSTER ANALYSIS

By performing the co-citation among references, the top-cited references were revealed and out of 27468 references, the analysis was done for 43 references chosen based on a minimum of 20 citations criteria. The co-citation analysis helped in learning about the theoretical framework behind the studies. 43 references formed 3 clusters, cluster 1 comprised of 17 items, cluster 2 comprise 16 items, and the remaining 10 items were part of cluster 3 as shown in table 7. Studies included forming cluster 1 were mostly conducted for building theories and further modification in those theories. These researches mainly identify various variables associated with the behavior and intentions of consumers for choosing e-banking services. Cluster 2 studies were mostly based on studies for building trust and minimizing the risk associated with these services as these two are the critical factors behind the adoption or rejection of online e-banking services. The studies which focused on demographic differences and studied the different segments of customers formed cluster 3. The most cited references among these were (Ajzen, 1991; Davis et al., 1989; Venkatesh et al., 2000).

TABLE 7. TOP CITED REFERENCES CLUSTERS WITH NUMBER OF CITATIONS

Cluster 1 - building and testing theoretical foundations	Cluster 2 - mitigating risk and building trust approach	Cluster 3 - Moderation analysis and customer-based approach
(Ajzen, 1991) - 51	(Kim et al., 2009) - 40	(Chitungo & Munongo, 2013) - 20
(Al-somali et al., 2009) - 24	(Luo et al., 2010) - 36	(Laforet & Li, 2005) - 26
(Davis et al., 1989) - 61	(Alalwan et al., 2017) - 30	(Laukkanen, 2007) - 25
(Featherman & Pavlou, 2003) - 20	(Luarn & Lin, 2005) - 25	(Laukkanen & Kiviniemi, 2010) - 21
(Fornell & Larcker, 1981) - 48	(Zhou et al., 2010) - 58	(Laukkanen, 2016) - 21
(Puschel et al., 2011) - 22	(Gu et al., 2009) - 29	(Koenig-Lewis et al., 2010) - 20
(Martins et al., 2014) - 35	(Lin, 2011) - 39	(Riquelme & Rios, 2010) - 40
(Moore & Benbasat, 1991) - 20	(Afshan & Sharif, 2016) - 38	(Thakur, 2014) - 21
(Pikkarainen et al., 2004) - 35	(Akturan & Tezcan, 2012) - 26	(Wessels & Drennan, 2010) - 32
(Sathye, 1996) - 28	(Al-Jabri & Sohail, 2012) - 23	(Zhou, 2011) - 37
(Anderson & Gerbing, 1988) - 25	(Alalwan et al., 2016) - 20	
(Taylor & Todd, 1995) - 29	(Oliveira et al., 2014) - 40	
(Venkatesh et al., 2000) - 62	(Venkatesh et al., 2012) - 32	
(Venkatesh & Bala, 2008) - 20	(Hanafizadeh et al., 2014) - 30	

(Y. S. Wang et al., 2003) - 29 (Shaikh & Karjaluo, 2015) - 59

(Davis, 1989) - 68 (Baptista & Oliveira, 2015) - 31

(Venkatesh et al., 2003) - 68

3.9 CO-CITED SOURCES CLUSTER ANALYSIS

Co-citation analysis was performed on the top 38 journals after fixing the criteria of a minimum of 100 citations per source. The network formed by the above criteria was formed 4 clusters shown in table 8. The journals in cluster 1 which encompass journals from the field of information technology had a total of 3245 citations, cluster 2 included journals from the marketing field having 2071 citations, cluster 3 included journals of management having 4112 citations, and cluster 4 had 877 citations which mostly included journal based on latest development in the field of electronic finance and banking. most popular journals are the International Journal of Bank Marketing(n=1566), MIS Quarterly(n=900), and Computers in Human Behavior(n=710).

TABLE 8.TOP CITED SOURCES CLUSTER WITH NUMBER OF CITATIONS

Cluster 1- Information Technology	Cluster 2- Marketing	Cluster 3- Management	Cluster 4- Recent trends in finance and banking
Decision Sciences-112	European Journal of Marketing-122	Computers in Human Behavior-710	Diffusion of Innovations-113
Decision Support Systems-326	International Journal of Service Industry Management-126	Expert Systems with Applications-142	Information and Management-132
Electronic Commerce Research Applications-221	Journal of Business and Research-356	Industrial Management & Data Systems-130	Journal of Electronic Commerce Research-201
Information Management-332	& Journal of Consumer Research-125	Information Systems Journal-124	Journal of Financial Services Marketing-208
Information Systems Research-331	Journal of Marketing-293	International Journal of Bank Marketing-1566	Journal of Internet Banking and Commerce-355
International Journal of Electronic Commerce-119	Journal of Marketing Research-263	International Journal of Information Management-579	
Internet Research-331	Journal of Retailing-169	International Journal of Mobile Communications-169	

Journal of Journal of Service Journal of Enterprise
 Management Research-125 Information
 Information Systems- Management-136
 142

Journal of the Journal of Services Journal of Retailing and
 Association for Marketing-156 Consumer Services-222
 Information Systems-
 112

Management Science- Journal of the Telematics &
 319 Academy of Marketing Informatics-334
 Science-220

MIS Quarterly-900 Marketing Intelligence
 & Planning-116

5. CONCLUSION

Bibliometric analysis performed on 894 Scopus indexed articles published from 1986 to 2021 revealed the development and trends in the field of e-banking adoption. Analysis was done for finding the popular article, most eminent author, relevant journals, popular keywords in this domain. Co-citation network analysis performed grouped the items in the cluster which consisted of items having similarity in a certain way. The result contributes to the field of e-banking adoption by reviewing the contributions made in this field since 1986. The articles published every year are rising and this field has gained popularity in the last decade. Most of the articles included in this review are from “*International Journal of Bank Marketing*” and they have received the greatest number of citations. But if we analyze based on average citation per document then “*Computers in Human Behavior*” is the most favored source. Coming to the most popular article "Understanding information systems continuance: an expectation-confirmation model" was the most cited article based on the average number of citations but the author Bhattacharjee, a. is not in the list of eminent authors as the criteria were set to a minimum 2 documents per author and this author had an only single document. The most eminent author in this field according to the results is Pin Luarn from the management field. If we look at the results among leading countries, Taiwan is the most productive with the highest number of average citations. If we notice the total number of citations of the total documents then, the United States and the United Kingdom are leading contributors. India is dominant in the number of publications but lags topmost nations (Taiwan, United States, Portugal, Finland, United Kingdom, Kuwait, South Korea, Australia, Spain, Jordan) in the average number of citations as the total citations are 1607 for 174 documents. Citation analysis based on organizations shows that universities from China and the United States are majorly contributing to research in this field. The co-citation reference analysis revealed the core studies in this domain and on which most of the studies are based e.g. comparison between two popular adoption theories namely theory of reasoned action and technology acceptance model done by (Davis et al., 1989), an extension of TAM by (Venkatesh et al., 2000) which is also known as TAM2, the study by (Ajzen, 1991) to develop the theory of planned behavior. The articles related to this domain are published in the English language journal from the field of information technology, marketing,

management, banking, and finance. The outcome of this research will contribute to the knowledge of researchers working in this area to identify the popular articles, authors, journals, and keywords.

6. LIMITATIONS AND FUTURE SCOPE

As this study is dependent on the data extracted from a single database, many papers that are not indexed in Scopus are excluded from the analysis. Documents from other databases e.g., Web of Science and Google Scholar can be integrated with Scopus to acquire a more in-depth understanding of contributions in this discipline. The results are dependent on the criteria set for analysis; hence the result can slightly vary if the threshold limits are modified. Another limitation is that for the analysis only articles are selected and in some bibliometric surveys authors have included conference papers too if the conference proceedings have been included the results could have been different.

7. REFERENCES

- Aboobucker, I., & Bao, Y. (2018). What obstruct customer acceptance of internet banking? Security and privacy, risk, trust and website usability and the role of moderators. *Journal of High Technology Management Research*, 29(1), 109–123. <https://doi.org/10.1016/j.hitech.2018.04.010>
- Afshan, S., & Sharif, A. (2016). Acceptance of mobile banking framework in Pakistan. *Telematics and Informatics*, 33(2), 370–387. <https://doi.org/10.1016/j.tele.2015.09.005>
- Ajzen, I. (1991). The Theory of Planned Behavior. *Organisational Behavior and Human Decision Processes*, 50(2), 179–211.
- Akturan, U., & Tezcan, N. (2012). Mobile banking adoption of the youth market: Perceptions and intentions. *Marketing Intelligence and Planning*, 30(4), 444–459. <https://doi.org/10.1108/02634501211231928>
- Al-Jabri, brahim M., & Sohail, M. S. (2012). Mobile banking adoption: Application of diffusion of innovation theory. *Journal of Electronic Commerce Research*, 13(4), 379–391.
- Al-somali, S. A., Gholami, R., & Clegg, B. (2009). An investigation into the acceptance of online banking in Saudi Arabia. *Technovation*, 29(November 2005), 130–141. <https://doi.org/10.1016/j.technovation.2008.07.004>
- Aladwani, A. M. (2001). Online banking: A field study of drivers, development challenges, and expectations. *International Journal of Information Management*, 21(3), 213–225. [https://doi.org/10.1016/S0268-4012\(01\)00011-1](https://doi.org/10.1016/S0268-4012(01)00011-1)
- Alalwan, A. A., Dwivedi, Y. K., & Rana, N. P. (2017). Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust. *International Journal of Information Management*, 37(3), 99–110. <https://doi.org/10.1016/j.ijinfomgt.2017.01.002>
- Alalwan, A. A., Yogesh, A., Nripendra, D., & D. Williams, M. (2016). Consumer adoption of mobile banking in Jordan: examining role of usefulness, ease of use, perceived risk and self-efficacy. *Journal of Enterprise Information Management*, 29(1), 118–139.
- Anderson, J., & Gerbing, D. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423. <https://psycnet.apa.org/buy/1989-14190-001>

Anshari, M., Almunawar, M. N., & Masri, M. (2020). Financial technology and disruptive innovation in business: Concept and application. *International Journal of Asian Business and Information Management*, 11(4), 29–43. <https://doi.org/10.4018/IJABIM.2020100103>

Baptista, G., & Oliveira, T. (2015). Understanding mobile banking: The unified theory of acceptance and use of technology combined with cultural moderators. *Computers in Human Behavior*, 50, 418–430. <https://doi.org/10.1016/j.chb.2015.04.024>

Benamati, J. S., E-mail, O. O. H., & Serva, M. A. (2007). Trust and Distrust in Online Banking : Their Role in Developing Countries. *Information Technology for Development*, 13(2), 161–175. <https://doi.org/10.1002/itdj>

Bhattacharjee, A. (2001). Understanding information systems continuance: an expectation-confirmation model. *MIS Quarterly: Management Information Systems*, 25(3), 351–370.

Chawla, D., & Joshi, H. (2018). The Moderating Effect of Demographic Variables on Mobile Banking Adoption: An Empirical Investigation. *Global Business Review*, 19(3_suppl), S90–S113. <https://doi.org/10.1177/0972150918757883>

Chitungo, S., & Munongo, S. (2013). Extending the technology acceptance model to mobile banking adoption in rural Zimbabwe. *Journal of Business Administration and Education*, 3(1), 51–79. <http://www.infinitypress.info/index.php/jbae/article/view/100>

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly: Management Information Systems*, 13(3), 319–340. <https://doi.org/10.5962/bhl.title.33621>

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, 35(8), 982–1003. <https://doi.org/10.1287/mnsc.35.8.982>

Farina, J., & Fontana, J. (2021). Managing change towards Industry 4.0: How organizations design and implement Industry 4.0 projects. *International Journal of Systematic Innovation*, 6(4), 17–32. [https://doi.org/10.6977/IJoSI.202106_6\(4\).0002](https://doi.org/10.6977/IJoSI.202106_6(4).0002)

Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption : a perceived risk facets perspective. *Interntational Journal of Human-Computer Studies*, 59, 451–474. [https://doi.org/10.1016/S1071-5819\(03\)00111-3](https://doi.org/10.1016/S1071-5819(03)00111-3)

Flavián, C., Torres, E., & Guinalú, M. (2004). Corporate image measurement: A further problem for the tangibilization of Internet banking services. *International Journal of Bank Marketing*, 22(5), 366–384. <https://doi.org/10.1108/02652320410549665>

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement. *Journal of Marketing Research*, XVIII(February), 39–50.

González, M. E., Mueller, R. D., & Mack, R. W. (2008). An Alternative Approach in Service Quality: An e-Banking Case Study. *Quality Management Journal*, 15(1), 41–58. <https://doi.org/10.1080/10686967.2008.11918055>

Gu, J., Lee, S., & Suh, Y. (2009). Determinants of behavioral intention to mobile banking. *Expert Systems With Applications*, 36(9), 11605–11616. <https://doi.org/10.1016/j.eswa.2009.03.024>

Hanafizadeh, P., Behboudi, M., Abedini Koshksaray, A., & Jalilvand Shirkhani Tabar, M. (2014). Mobile-banking adoption by Iranian bank clients. *Telematics and Informatics*, 31(1), 62–78. <https://doi.org/10.1016/j.tele.2012.11.001>

Jan van Eck, N., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84(2), 523–538. <https://doi.org/10.1007/s11192-009-0146-3>

Johnson, V. L., Kiser, A., Washington, R., & Torres, R. (2018). Limitations to the rapid adoption of M-payment services: Understanding the impact of privacy risk on M-Payment services. *Computers in Human Behavior*, 79, 111–122. <https://doi.org/10.1016/J.CHB.2017.10.035>

Kim, G., Shin, B., & Lee, H. G. (2009). Understanding dynamics between initial trust and usage intentions of mobile banking. *Information Systems Journal*, 19(3), 283–311. <https://doi.org/10.1111/j.1365-2575.2007.00269.x>

Koenig-Lewis, N., Palmer, A., & Moll, A. (2010). Predicting young consumers' take up of mobile banking services. *International Journal of Bank Marketing*, 28(5), 410–432. <https://doi.org/10.1108/02652321011064917>

Laforet, S., & Li, X. (2005). Consumers' attitudes towards online and mobile banking in China. *International Journal of Bank Marketing*, 23(5), 362–380. <https://doi.org/10.1108/02652320510629250>

Laukkanen, T. (2007). Internet vs mobile banking: Comparing customer value perceptions. *Business Process Management Journal*, 13(6), 788–797. <https://doi.org/10.1108/14637150710834550>

Laukkanen, T. (2016). Consumer adoption versus rejection decisions in seemingly similar service innovations: The case of the Internet and mobile banking. *Journal of Business Research*, 69(7), 2432–2439. <https://doi.org/10.1016/j.jbusres.2016.01.013>

Laukkanen, T., & Kiviniemi, V. (2010). The role of information in mobile banking resistance. *International Journal of Bank Marketing*, 28(5), 372–388. <https://doi.org/10.1108/02652321011064890>

Lee, M. (2009). Electronic Commerce Research and Applications Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit. *Electronic Commerce Research and Applications*, 8(3), 130–141. <https://doi.org/10.1016/j.elerap.2008.11.006>

Levy, S. (2014). Does usage level of online services matter to customers' bank loyalty? *Journal of Services Marketing*, 28(4), 292–299. <https://doi.org/10.1108/JSM-09-2012-0162>

Lin, H. (2011). International Journal of Information Management An empirical investigation of mobile banking adoption: The effect of innovation attributes and knowledge-based trust. *International Journal of Information Management*, 31(3), 252–260. <https://doi.org/10.1016/j.ijinfomgt.2010.07.006>

Luarn, P., & Lin, H. (2005). Toward an understanding of the behavioral intention to use mobile banking. *Computers in Human Behavior*, 21(6), 873–891. <https://doi.org/10.1016/j.chb.2004.03.003>

- Luo, X., Li, H., Zhang, J., & Shim, J. P. (2010). Examining multi-dimensional trust and multi-faceted risk in initial acceptance of emerging technologies: An empirical study of mobile banking services. *Decision Support Systems*, 49(2), 222–234. <https://doi.org/10.1016/j.dss.2010.02.008>
- Martins, C., Oliveira, T., & Popovič, A. (2014). Understanding the internet banking adoption: A unified theory of acceptance and use of technology and perceived risk application. *International Journal of Information Management*, 34(1), 1–13. <https://doi.org/10.1016/j.ijinfomgt.2013.06.002>
- Merhi, M., Hone, K., & Tarhini, A. (2019). A cross-cultural study of the intention to use mobile banking between Lebanese and British consumers: Extending UTAUT2 with security, privacy and trust. *Technology in Society*, 59, 101151. <https://doi.org/10.1016/J.TECHSOC.2019.101151>
- Mohammed, Z. A., & Tejay, G. P. (2017). Examining privacy concerns and ecommerce adoption in developing countries: The impact of culture in shaping individuals' perceptions toward technology. *Computers & Security*, 67, 254–265. <https://doi.org/10.1016/J.COSE.2017.03.001>
- Moore, G. C., & Benbasat, I. (1991). Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation. *Information Systems Research*, 2(3), 192–222.
- Oliveira, T., Faria, M., Thomas, M. A., & Popovič, A. (2014). Extending the understanding of mobile banking adoption: When UTAUT meets TTF and ITM. *International Journal of Information Management*, 34(5), 689–703. <https://doi.org/10.1016/j.ijinfomgt.2014.06.004>
- Pikkarainen, K., Pikkarainen, T., Karjaluoto, H., & Pahlila, S. (2004). Consumer acceptance of online banking: an extension of the technology acceptance model. *Internet Research*, 14(3), 224–235. <https://doi.org/10.1108/10662240410542652>
- Puschel, J., Mazzon, jose afonso, & Hernandez, jose mauro c. (2011). Mobile banking: proposition of an integrated adoption intention framework. *International Journal of Bank Marketing*, 28(5), 389–409. <https://doi.org/10.1108/02652321011064908>
- Riquelme, H. E., & Rios, R. E. (2010). The moderating effect of gender in the adoption of mobile banking. *International Journal of Bank Marketing*, 28(5), 328–341.
- Rotchanakitumnuai, S., & Speece, M. (2003). Barriers to Internet banking adoption: a qualitative study among corporate customers in Thailand. *International Journal of Bank Marketing*, 21(6), 312–323. <https://doi.org/10.1108/02652320310498465>
- Sathye, M. (1996). Adoption of Internet banking by Australian consumers: an empirical investigation. *International Journal of Bank Marketing*, 17(7), 324–334.
- Shaikh, A. A., & Karjaluoto, H. (2015). Telematics and Informatics Mobile banking adoption: A literature review. *Telematics and Informatics*, 32(1), 129–142. <https://doi.org/10.1016/j.tele.2014.05.003>
- Taylor, S., & Todd, P. A. (1995). Understanding Information Technology Usage: A Test of Competing Models. *Information Systems Research*, 6(2), 144–176.
- Thakur, R. (2014). What keeps mobile banking customers loyal? *International Journal of Bank Marketing*, 32(7), 628–646. <https://doi.org/10.1108/IJBM-07-2013-0062>
-

Venkatesh, V., & Bala, H. (2008). Technology Acceptance Model 3 and a Research Agenda on Interventions. *Decision Sciences*, 39(2), 273–315.

Venkatesh, V., Davis, F. D., Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 46(2), 185–204.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478. <https://doi.org/10.1016/j.inoche.2016.03.015>

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1), 157–178. <https://doi.org/10.1109/MWSYM.2015.7167037>

Wang, Y., Lin, H., & Luarn, P. (2006). Predicting consumer intention to use mobile service. *Information Systems Journal*, 16(2), 157–179.

Wang, Y. S., Wang, Y. M., Lin, H. H., Tang, T. I., Wang, Y., Wang, Y., & Lin, H. (2003). Determinants of user acceptance of Internet banking: an empirical study. *International Journal of Service Industry Management*, 14(5), 501–519. <https://doi.org/10.1108/09564230310500192>

Wessels, L., & Drennan, J. (2010). An investigation of consumer acceptance of M-banking. *International Journal of Bank Marketing*, 28(7), 547–568. <https://doi.org/10.1108/02652321011085194>

Yu, C. (2012). FACTORS AFFECTING INDIVIDUALS TO ADOPT MOBILE BANKING: EMPIRICAL EVIDENCE FROM THE UTAUT MODEL. *Journal of Electronic Commerce Research*, 13(2), 105–121.

Zhou, T. (2011). An empirical examination of initial trust in mobile banking. *Internet Research*, 21(5), 527–540. <https://doi.org/10.1108/10662241111176353>

Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. *Computers in Human Behavior*, 26(4), 760–767. <https://doi.org/10.1016/j.chb.2010.01.013>