

Mobile Banking and Customer Acceptability: A Bibliometrics analysis

Munish Gupta*¹, Lovepreet Negi*² & Nitin Pathak*³

*¹ Associate Professor, USB, Chandigarh University
Email: gupta.munish2005@gmail.com (Corresponding Author),

ORCID id-<https://orcid.org/0000-0002-1982-4136>

*² Assistant Professor, Sant Baba Bhag Singh University

Email: lovepreet.sbbs.negi@gmail.com,

*³ Professor, USB, Chandigarh University

Email: nitin17pathak@gmail.com,

ORCID id-<https://orcid.org/0000-0002-8062-0554>

Abstract: Mobile banking has brought a revolution in providing real-time account information and financial transaction facilities to account holder along with an expanded range of services which were available earlier only at branches. Due to substantial development in mobile banking, banks are in a position to cut down their operational cost without sacrificing customer satisfaction. In this paper, in the field of mobile banking with the objective of identifying the recent development and future lines in research, bibliometric analysis has been conducted. For this purpose, data has been extracted from the Elsevier Scopus database. The searching word queries with the phrase “mobile banking” and “customer*” was put up in its title, summary or keywords. The search was conducted in May, 25, 2022 which contained 319 documents which includes 264 Articles, 29 conference papers, 19 Book chapters, 2 Conference reviews, 2 Reviews, 2 Books, 1 Editorial and 1 Short Survey covering the period from 2011 to May 2022. The study concludes that customer acceptability of mobile banking is in the development phase and there is a shifting paradigm of mobile banking from consumer behaviour and technology acceptance to customer experience and customer engagement.

KEYWORDS: Mobile Banking, Bibliometric analysis, Customer Acceptability, Adoption

Introduction

Technological advancement has fully redesigned the dimensions of the economic environment and one of the major segments in the world economic environment is the banking sector which is leading in the adoption and utilisation of technological advancements in internet and mobile banking and consumer markets. However, extraordinary changes are witnessed in the history of banking service delivery. The technological advancement in information and communication has created new avenues for the banking industry to develop customer value co-creation strategies. However, applying the internet and mobile technology with focusing only on cost diminution may result in high supply chain effectiveness and potential customer value prospects may be overlooked (Jonsson & Gunnarsson, 2005). Thus, it is a fundamental requisite of service development to understand the behaviour of service users and value perceptions. Perception Value offers a basis for understanding consumer behaviour in the context of e-services. Undoubtedly, mobile banking has arisen as a revolutionary transformation into a wireless service-providing channel that has augmented the perceived value of customers' banking transactions. (Alt et al., 2018) recognizes analogue as well as digital technologies, which have both supporters in the financial sector. The literature suggests that smartphones are performing an important role and transformed people's life significantly in a supportive manner. Plenty of services are being offered by the financial sectors through mobile gadgets that open more channels for the communication of companies with their valuable customers. As per (Laukkanen, 2007b) three determinants—efficiency, convenience and safety are prominent in determining the variation in customer value perceptions between mobile banking and the internet. Further, the banking sectors have also expected the indispensable use of this network to take the benefit of its comfort, ubiquity and interactivity and mobile banking is one of the major sources of the same. (Rahmani et al., 2012). Mobile banking applications have shaped an upright influence during this pandemic to protect human lives and comprehensive transactions at their fingertips deprived of visiting banks physically (Nair et al., 2021). The worldwide mobile banking segment was valued at \$715.3 million in 2018 and is predictable to reach \$1,824.7 million by 2026, benchmarking a CAGR of 12.2% from 2019 to 2026. (Allied Market Research, 2020, n.d.)

Given this context, it was a question of interest to conduct a study on the comprehensive research done on mobile banking and customer acceptability. Based on a bibliometric analysis of customer acceptability of mobile banking, the following questions, which are the major objective of this paper, are discussed in this research:

1) Which author has worked on the most cited documents on mobile and customer acceptability?

- 2) Which sources have published maximum literature on mobile banking and customer acceptability?
- 3) Which country has rigorously worked in the study of mobile banking and customer acceptability?
- 4) Which are the most relevant documents on mobile banking and customer acceptability and what methodology and theory were used in them?

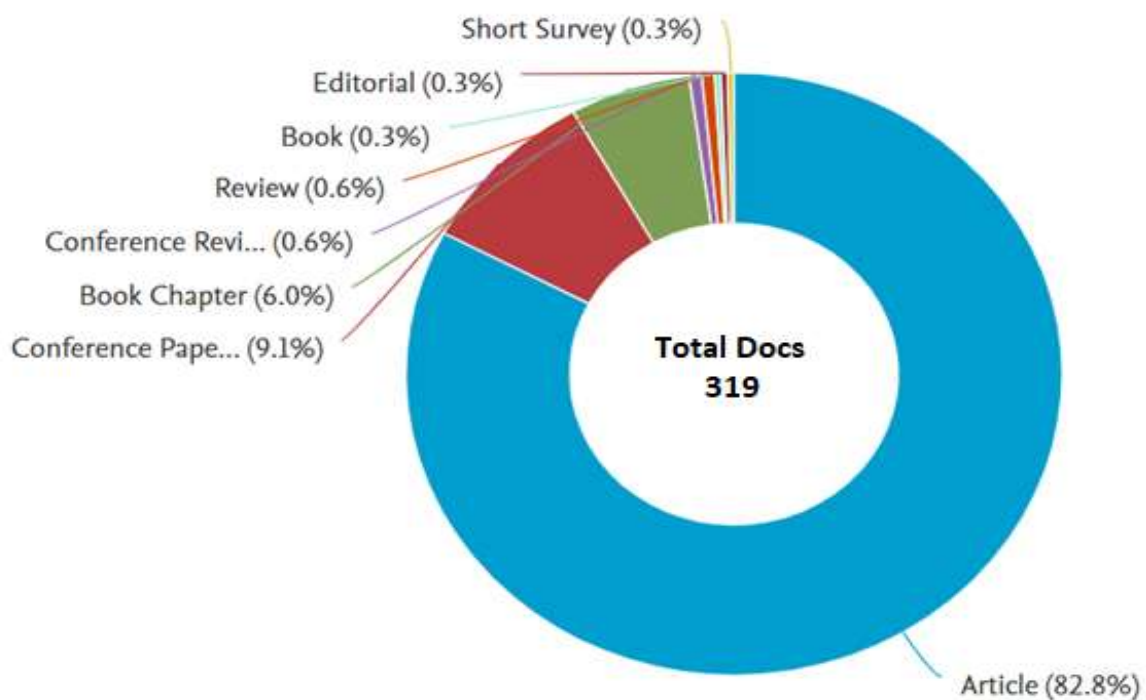
Scope and data source

Data mining was carried out using the Scopus database on 26 May 2022. The main theme of this paper was a review article in the title and abstract that included "Mobile banking" AND "Customer*". The oldest date of publication is 2003 and the most recent Returning to 2022. The search query string used to show: *(TITLE-ABS-KEY("Mobile-Banking" AND "customer*") AND (LIMIT-TO (SUBJAREA,"BUSI") OR LIMIT-TO (SUBJAREA,"ECON")) AND (LIMIT-TO (LANGUAGE,"English")))* and the final result was 319 documents.

Research publications-Types, Directions and Annual publications

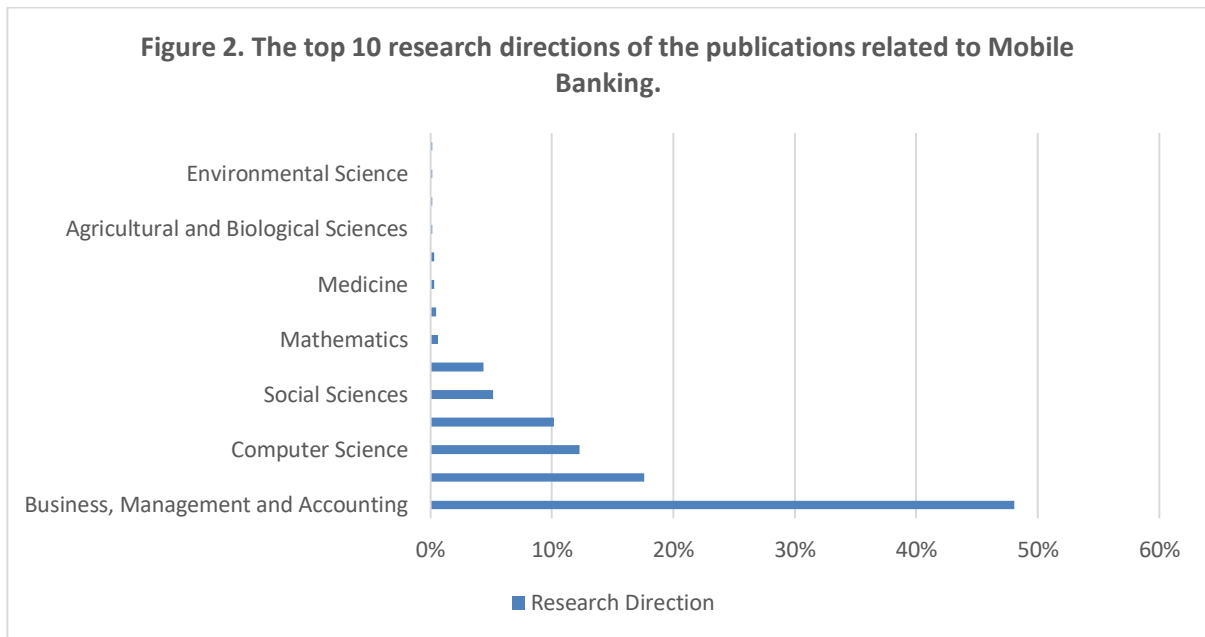
As per the Scopus database, we have obtained all types of Mobile banking publications, and characterised into 8 types, as depicted in Figure 1.

Figure 1. The type distribution of the publications.



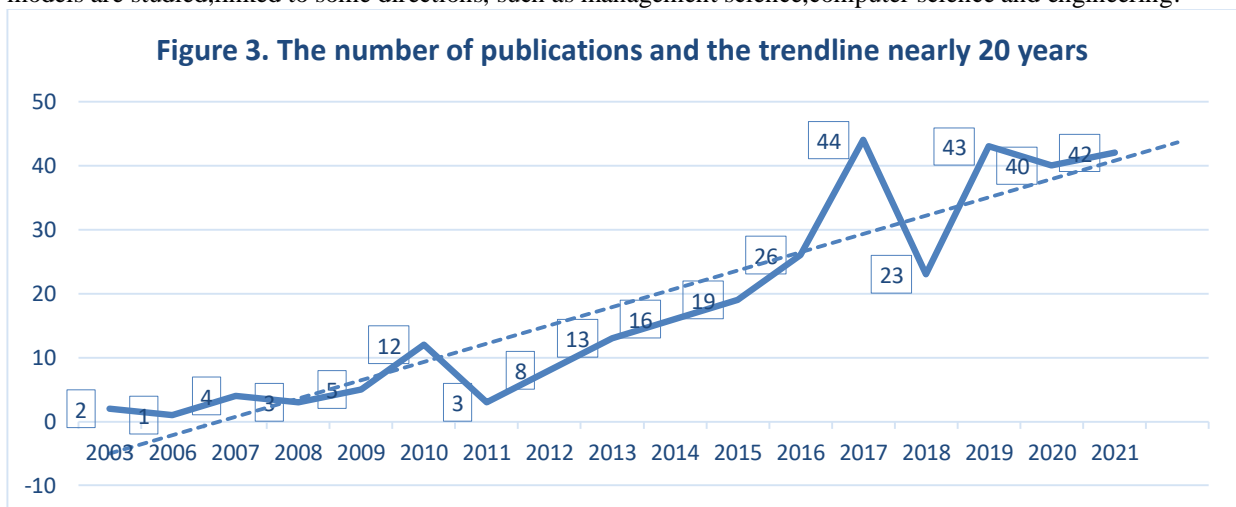
Source 1: generated using Scopus database

From Figure 1, we can identify that most of the publications are in articles with 264, which occupies 82.8% of all the research documents and followed by 29 research publications which are in form of proceedings papers, reporting for 9.1%. Further, 19 and 2 of them are published in book reviews and review papers, respectively. There is 1 editorial material, 2 book chapters and 1 short survey are the main preferences for academics in the subject of the research field.



Source 2: generated using Scopus database

Figure 2 shows the top 10 research directions of publications associated with Mobile banking. The most popular research directions are Business, Management and Accounting (48%), Economics, Econometrics and Finance (18%), Computer Science (12%), Decision Science (10%), Social Science (5%) and Engineering (4%). It is reflected that there are ironic research directions and Mobile Banking has been widely exercised in many fields. These directions can be categorised into *Finance* field and *Computer science* fields. In relation of the finance field, numerous research outputs are related to financial services, product and management methods, etc., such as business economics. Similarly, in the field of *Computer science*, financial devices and models are studied, linked to some directions, such as management science, computer science and engineering.



Source 3: generated using Scopus database

Figure 3 depicts the annual research publications and the trendline from 2003 to 2021. There is overall showing an upward trend and the number of publications only from the year 2011 with two peak periods, i.e., 2017 (44) and 2019 (43). Investigating the reasons, we have identified that the year 2017 was of digitalisation global economy.

Productive countries/regions

Table 1: The top 10 most productive countries for Mobile Banking.

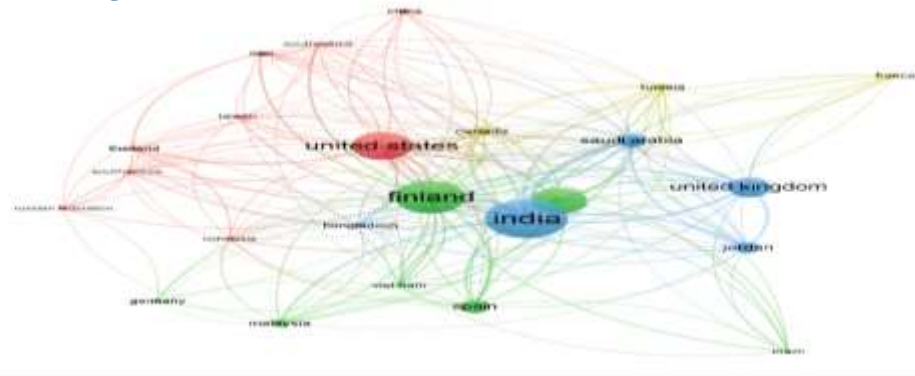
Rank	Country	TP	TC	AC	%TC
1	India	77	1091	14.17	35%
2	United States	25	790	31.60	11%

3	Malaysia	18	202	11.22	8%
4	United Kingdom	17	564	33.18	8%
5	Finland	16	926	57.88	7%
6	Saudi Arabia	15	382	25.47	7%
7	Bangladesh	14	119	8.50	6%
8	Indonesia	14	37	2.64	6%
9	Iran	13	130	10.00	6%
10	Thailand	12	109	9.08	5%

Source 4: generated using Scopus database

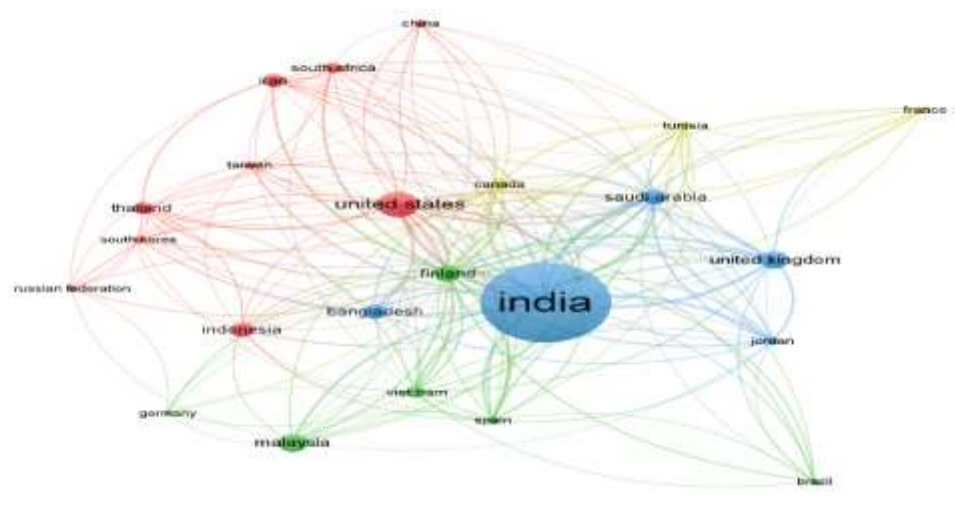
According to Table 1, India and United States are the most two productive countries with 77 and 25 publications, followed by Malaysia (18) and the United Kingdom (17). However, in terms of Total Citation, Finland scored Rank 2 with 926 citations after India with the highest citation (1091) and scored 1st rank. In terms of average citation per document, Finland has scored 57.88 and stood 1st in all of the nations. Whereas in the proportion of total citations, Indian research in the field of Mobile banking is cited a maximum of 35% followed by the USA with 11%.

Figure 4: Countries' network based on Citation



Source 5: generated using Scopus database

Figure 5: Countries' networks based on Documents published



Source 6: generated using Scopus database

In Figure 4, the node represents the countries, the size of the node denotes the number of citations, and the connection between two nodes means that there is a link strength of citation between the nations. The thicker the connection, the more strength of the citations. We can obtain that: India has the highest link strength with Saudi Arabia (26), United Kingdom (19), Jordan (14) and Bangladesh (6) within the cluster. Its total link strength is 247 with the highest 1091 citations followed by Finland (926) and the intra-cluster link strength between India and Finland is the highest (54) among all the nations. In Figure 5, the node represents the countries, and the size

of the node denotes the number of documents. The connection between two nodes means that there is a link strength of documents between the nations. The thicker the connection, the more strength of the connected documents. It has been identified that India has published maximum papers (77) followed by the United States (25) and the link strength between India and the United States is relatively low (19) than between India and Finland.

Productive Publications

Table 2: The top 10 most Influential Publications

Title	Year	Citations	Citation/Year	Type
Understanding of mobile banking UTAUT meets TTF and ITM	2014	396	49.50	Article
Application of diffusion of innovation: Application of diffusion of innovation	2012	252	25.20	Article
Understanding of mobile banking in Jordan: A study of usefulness, ease of use, and self-efficacy	2016	240	40.00	Article
Understanding of mobile banking: comparing customer adoption in emerging markets	2007	217	14.47	Article
Understanding of mobile banking: comparing customer adoption in emerging markets	2010	186	15.50	Article
Understanding of mobile banking: comparing customer adoption in emerging markets	2017	181	36.20	Article
Understanding of mobile banking: comparing customer adoption in emerging markets	2003	162	8.53	Article
Understanding of mobile banking: comparing customer adoption in emerging markets	2010	160	13.33	Article
Understanding of mobile banking: comparing customer adoption in emerging markets	2014	104	13.00	Article
Understanding of mobile banking: comparing customer adoption in emerging markets	2016	103	17.17	Article

Source 7: generated using Scopus database

The top 10 most cited articles in mobile banking can be seen in Table 7. The top-cited article was authored by (Oliveira et al., 2014) with the title “Extending the understanding of mobile banking adoption: When UTAUT meets TTF and ITM”. The article was published in *the International Journal of Information Management* with 1396 citations or 49.50 cites per year. The articles authored by (al-jabrii m &sohailm.s, 2012) and (Alalwan et al., 2016) has scored good citation score of 252 and 240. The top 10 most cited articles mainly discussed the understanding the customer adoption of mobile banking using the task technology fit (TTF) model, unified theory of acceptance and usage of technology (UTAUT), initial trust model (ITM), Diffusion of Innovation model and Technology Acceptance Model (TAM) with the application of Structural equation modelling (SEM) technique.

Table 3: The top 10 most productive Organisations in Mobile Banking.

Rank	Organisation	Country	TP	TC	AC	%TC
1	Virginia Commonwealth University	United States	1	396	396	12%
1	Universidade nova de Lisboa,	Portugal	1	396	396	12%

1	University of Ljubljana	Slovenia	1	396	396	12%
4	King Fahd University of Petroleum and Minerals,	SaudiArabia	1	252	252	8%
4	King Fahd University of Petroleum and Minerals,	SaudiArabia	1	252	252	8%
6	Al-Balqa Applied University	Jordan	1	240	240	7%
6	Swansea University	United Kingdom	1	240	240	7%
6	Swansea University	United Kingdom	1	240	240	7%
9	University Of Eastern	Finland	2	346	173	10%
10	Swansea University	United Kingdom	2	275	138	8%

Source 8: generated using the Scopus database

Figure 6: Organisation network based on Citation



Source 9: generated using the Scopus database

Table 3 lists the top 10 most productive research institutions in the field of Mobile banking all over the world. Even though Virginia Commonwealth University (United States), Universidade nova de Lisboa (Portugal) and University of Ljubljana (Slovenia) have published only one research paper each, these universities have been scored maximum citation (396) and followed by UniversityofEastern (Finland)

Table 4: The top 10 most Productive Journals in Mobile Banking.

Rank	Journals	TP	TC	AC	%TC
1	International journal of bank marketing	40	1685	42.1	74.1%
2	Journal of retailing and consumer services	5	107	21.4	4.7%
3	Journal of internet banking and commerce	14	230	16.4	10.1%
4	Journal of financial services marketing	9	101	11.2	4.4%
5	Journal of IslamicMarketing	6	64	10.7	2.8%
6	Journal of Asian finance, economics and business	6	33	5.5	1.5%

7	International journal of business information systems	5	24	4.8	1.1%
8	Banks and bank systems	6	27	4.5	1.2%
9	International journal of applied business and economic research	5	2	0.4	0.1%
10	Proceedings of the international conference on industrial engineering and operations management	6	2	0.3	0.1%

Source 10: generated using the Scopus database

Figure 7: Journals network based on Publication



Source 11: generated using the Scopus database

Figure 6 shows the visualization map of overlay visualisation for 22 journals with the highest publication on mobile banking. “Journal of internet banking and commerce” is the highest publishing source with 14 articles in 2013. During 2017-18, the concept of mobile banking gained popularity and the “International journal of bank marketing” has published 40 research papers with the highest citation score of 1685. with 200 citations and above. However, in 2020-21, a significant reduction in mobile banking theme has been reflected and the highest 6 research papers have been published in “Journal of Asian finance, economics and business”.

Productive Keywords Analysis

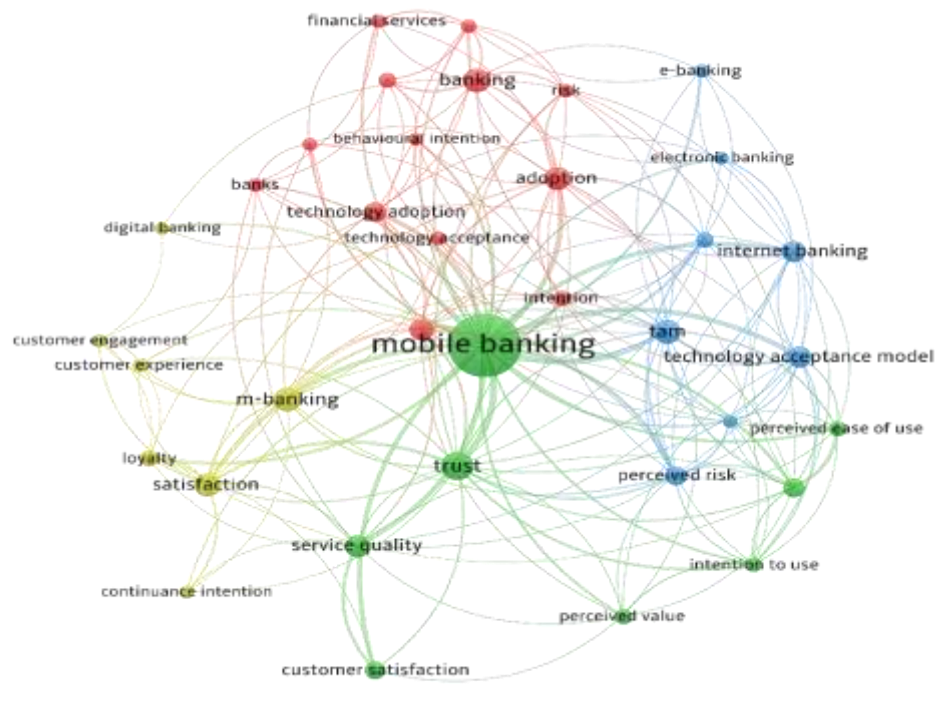
Table 5: The most occurred Keywords in Mobile Banking.

All Journals		10 highly cited journals	
Keywords	Freq	Keywords	Freq
Mobile Banking	160	Banking	6
Banking	37	Mobile Banking	6
Mobile Bankings	29	Tam	3
Trust	29	Innovation	2
Customer Satisfaction	24	Mobile Communication Systems	2
M-Banking	21	Risk	2
Tam	20	Decision Making	1
Adoption	18	Decision Support Framework	1

Internet Banking	18	Decision Support Systems	1
Satisfaction	18	Initial Trust Model	1
Service Quality	18	Initial Trusts	1
Technology Adoption	18	Least Squares Approximations	1
Sales	17	Mobile Bankings	1
Technology Acceptance Model	17	Partial Least Square (PLS)	1
Utaut	15	Security Of Data	1
Cellular Telephone Systems	14	Technology Adoption	1
Electronic Commerce	14	Technology Characteristics	1
India	14	TTF	1
Perceived Usefulness	14	Unified Theory of Acceptanceand Usage Of Technology(Utaut)	1
Perceived Risk	12	Utaut	1

Source 12: generated using the Scopus database

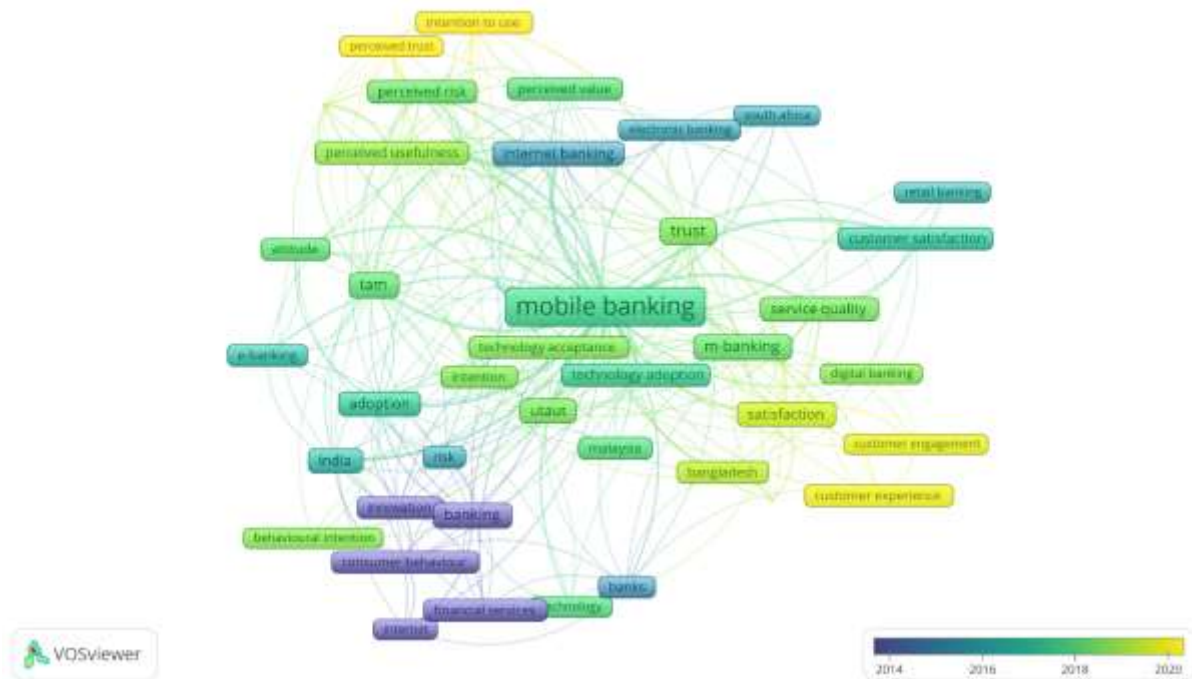
Figure 8: Keywords occurrence network in Mobile Banking



Source 13: generated using the Scopus database

There are four main clusters of keywords in publications related to Mobile Banking. The first cluster (in the red circle) is research related to the adoption of mobile banking; the keywords are “adoption”, “banking”, “technology acceptance”, “behaviour intention”, etc. Cluster 2 (in the green circle) is research related to “Mobile banking”, and “customer satisfaction” that reflect the perceived value of mobile banking in terms of ease to use, trust and usefulness. Cluster 3 (in the blue circle) is related to models applied with the keyword “Technology acceptance model (TAM)” with the study of customer’s “attitude” in “perceived trust” or “perceived risk”. Cluster 4 (in the yellow circle) reflects “customer satisfaction” with “m- banking” in terms of “loyalty”, “customer experience” and “continues intention” to use mobile banking in future.

Figure 8: The timeline analysis of keywords



Source 14: generated using the Scopus database

Figure 8 has initially analysed the characteristics of authorkeywords and presents their frequencies of them. Further, to better understand the trend of hot topics in the field of Mobile banking and customer acceptability. Figure 8 selects the most cited or occurred keywords with the strongest citation bursts from 2011 to 2021, as shown in Figure. The Figure shows that most of the area explored in the timeframe of 2012-2014 in 'Mobile Banking', is "Innovation", "Consumer behaviour", and "Financial services". Further, from 2016 to 2018, the research areas explored are "technology adoption", "Trust" and "Risk analysis". The research models during the same periods that are opted for study have been identified as "TAM (technology acceptance model)", "PLS-SEM" and "UTAUT (Unified theory of acceptance and use of technology)". The technology acceptance model (TAM) is considered essential in studying consumer behaviour applied to adopt a particular technology. (Carranza et al., 2021) According to the TAM model, an analysis of the factors which influence bank customers to adopt e-banking to facilitate their banking services and support the process of value co-creation. In the current scenario, the maximum research work in Mobile banking is getting done on "Customer Experience" and "Customer engagement".

Discussions and Conclusion

Based on the above analysis of Mobile banking, some current challenges and future possible research directions are reflected through analysis. We can see that the number of documents has increased significantly after 2011. The keywords, including trust and customer satisfaction, are the main areas of research. It can be explained as satisfaction has a strong influence on loyalty in mobile banking. (Jahan & Shahria, 2021). The widely used research model in mobile banking acceptability study is TAM and UTAUT along with PLS-SEM and the highest space given for research on mobile banking is "International journal of bank marketing" with the highest percentage of total citation (76%). The highest publication on the theme is published in India. However, the average citation is significantly higher in Finland (57%) as compared to India (14%). It simply reflects the quality of work in Finland in comparison to India.

The information and assistance advanced by a bank have the most significant influence on declining the usage barrier, followed by impression, value and risk barriers respectively (Laukkanen & Kiviniemi, 2010). However, there is a unique perception among young customers that cost is the most influencing factor, but security and conveyance have low influencing power. (Rahman, 2021). Perception of cost, risk, low perceived relative advantage and complexity was revealed to be the main reasons behind the reluctance to use the service. (Cruz et al., 2010) As per (Laukkanen, 2007a) efficiency, convenience and safety are salient in determining the differences in customer value perceptions between the internet and mobile banking. Usage behaviour of customers of mobile banking provides significant feedback on cognitive factors and customers' evaluations have significant impacts on satisfaction (Lin et al., 2014). Satisfaction enhances post-use trust, which in turn affects

future user behaviour. One of the studies indicates that the majority of respondents do not use any kind of mobile banking service and the main reasons behind the reluctance to use the service are Perception of cost, risk, low perceived relative advantage and complexity. (Cruz et al., 2010).

References

- Alalwan, A. A., Dwivedi, Y. K., Rana, N. P. P., & Williams, M. D. (2016). Consumer adoption of mobile banking in Jordan: Examining the role of usefulness, ease of use, perceived risk and self-efficacy. *Journal of Enterprise Information Management*, 29(1), 118–139. <https://doi.org/10.1108/JEIM-04-2015-0035/FULL/XML>
- al-jabrii m, &sohailm.s. (2012). Mobile banking adoption:Application of diffusion of innovation theory. *Journal of Electronic Commerce Research*, 13(4), 379–391.
- Alt, R., Beck, R., & Smits, M. T. (2018). FinTech and the transformation of the financial industry. *Electronic Markets*, 28(3), 235–243. <https://doi.org/10.1007/S12525-018-0310-9/FIGURES/2>
- Carranza, R., Díaz, E., Sánchez-Camacho, C., & Martín-Consuegra, D. (2021). e-Banking Adoption: An Opportunity for Customer Value Co-creation. *Frontiers in Psychology*, 11, 4003. <https://doi.org/10.3389/FPSYG.2020.621248/BIBTEX>
- Cruz, P., Neto, L. B. F., Muñoz-Gallego, P., & Laukkanen, T. (2010). Mobile banking rollout in emerging markets: Evidence from Brazil. *International Journal of Bank Marketing*, 28(5), 342–371. <https://doi.org/10.1108/02652321011064881/FULL/XML>
- Jahan, N., &Shahria, G. (2021). Factors effecting customer satisfaction of mobile banking in Bangladesh: a study on young users' perspective. *South Asian Journal of Marketing*, ahead-of-print(ahead-of-print). <https://doi.org/10.1108/SAJM-02-2021-0018>
- Jonsson, S., & Gunnarsson, C. (2005). Internet technology to achieve supply chain performance. *Business Process Management Journal*, 11(4), 403–417. <https://doi.org/10.1108/14637150510609426/FULL/XML>
- Laukkanen, T. (2007a). Internet vs mobile banking: Comparing customer value perceptions. *Business Process Management Journal*, 13(6), 788–797. <https://doi.org/10.1108/14637150710834550/FULL/XML>
- Laukkanen, T. (2007b). Internet vs mobile banking: Comparing customer value perceptions. *Business Process Management Journal*, 13(6), 788–797. <https://doi.org/10.1108/14637150710834550/FULL/XML>
- 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/FULL/XML>
- Lin, J., Wang, B., Wang, N., & Lu, Y. (2014). Understanding the evolution of consumer trust in mobile commerce: A longitudinal study. *Information Technology and Management*, 15(1), 37–49. <https://doi.org/10.1007/S10799-013-0172-Y/TABLES/5>
- Mobile Banking Market Size, Share | Industry Growth & Analysis by 2026*. (n.d.). Retrieved May 29, 2022, from <https://www.alliedmarketresearch.com/mobile-banking-market/purchase-options>
- Nair, A. B., Prabhu, K. S., Aditya, B. R., Durgalashmi, C. v., & Prabhu, A. S. (2021). Study on the Usage of Mobile Banking Application during COVID-19 Pandemic. *Webology*, 18(SpecialIssue2), 190–207. <https://doi.org/10.14704/WEB/V18SI02/WEB18066>
- 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>
- Rahman, Md. M. (2021). The Rural Users Challenges with Mobile Financial Services (MFS) In Bangladesh. *Asian Journal of Management*, 12(4), 359–366. <https://doi.org/10.52711/2321-5763.2021.00054>
- Rahmani, Z., Hamideh, A. T., Hoda, H., Marjan, Y., &Daghighi, S. (2012). MOBILE BANKING AND ITS BENEFITS. In *Arabian Journal of Business and Management Review (OMAN Chapter)* (Vol. 2, Issue 5).