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Mobile Technology in Libraries: A Survey of Periodical Literature Published in Emerald Database

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Abstract

The purpose of this study is to explore the growth and development of periodical literature on “Mobile Technology” from the March 2002 to March 2019. The bibliographic data of the articles has been collected from the 18 leading peer-reviewed journals by using keywords such as “Mobile Technology”, “Smartphone”, “SMS” etc. indexed in Emerald database (www.emeraldinsight.com). For analyzing and interpretation, a bibliographic detail of the articles such as author, title, year, types of paper, place of publication, source, etc has been recorded in the MS-Excel sheet (2007). The result indicates that a total 113 articles on Mobile Technology published in 18 leading peer-reviewed journals and it's indexed in the emerald database during the March 2002 to March 2019. Further, the study reveals that 2014 was the most productive year 17 (15.04%) in terms of growth of LIS literature on Mobile Technology. It has also been observed that a total of 23 (20.35%) articles on Mobile Technology published in “Library Hi-Tech News” followed by Library Hi-Tech 22 (19.47%). The USA is the most productive country 29 (25.66%) in relation to the contribution of LIS literature. The study is based on 113 research articles published since March 2002 to March 2019 and it seems while collecting data from the emerald database that publication of articles on mobile technology was started from 2002. The whole research work is carried out under the umbrella of research ethics and its outcome might be helpful for the other research scholars.

Keywords: Mobile Technology, Smartphone, SMS, Instant messaging service

1. Introduction

Technology has encircled the today's environment from all the point of view. The impact of technology has been seen in all the service sectors including library and information science and its result also make out the sense of sanguinity. Mobile technology is one of the outcomes of advanced technology research like a computer, minicomputer and other technological pheperials. It's become a part and parcel of human life. Earlier it was used just for a voice phone call but now mobile is associated with the Internet and Internet of Things (IoT) features. All the smartphones are embedded with the 4G networks. Progress

in mobile technology offered an opportunity to the working professionals to work from anywhere infinitely easier. Application of Mobile technology in the library is a recent phenomenon and its astounding features induce LIS professionals to shift from traditional based library services to modern based library services. User command instant library services instead of standing in a queue. Research has been going on for the effective use of mobile technology in the library. A cursory review of the literature shows that the library and information centers have been developing various types of Mobile Application for providing effective library services through Smartphone. The main objective of this study is to analyze the growth of periodical literature on mobile technology published in the Emerald database. The study will represent the research trends in mobile technology and its application in the library.

2. Objectives of the Study

1. To identify the growth of periodical literature published on the subject of mobile technology and its application in libraries.
2. To know the country-wise growth of periodical literature on mobile technology.
3. To identify the author contribution in publishing Articles on mobile technology.
4. To find out the foremost journals in the field of LIS covering the literature on mobile technology.
5. To compile a bibliography on mobile technology literature published in LIS journals indexed in the emerald database.

3. Scope and Limitation of the Study

The scope of this study is limit to the emerald database journals publications in the field of library and information science from March 2002 to March 2019. The use of this study purely for academic purpose only. The data has been collected from 18 leading scholarly peer-reviewed journals. The study also covers the eight types of papers which are published in emerald database namely research papers, review papers, conceptual papers, general review papers, case studies, technical papers viewpoints, and secondary source. These are the category which is categorized by the Emerald database group itself.

4. Methodology

Bibliographic data has been obtained from the Emerald database (www.emeraldinsight.com) and limit to the academic purpose only. The various searching techniques like basic search, advanced search, the keyword was used for gathering bibliographic information. The data has

received with the help of following keywords like "Mobile technology", "Smart Phone", "Application of Mobile Technology in Library", "Instant Messaging Service" etc. The bibliographic details were recorded in MS-Excel and analysis and interpretation is done with the same. For the citation and referencing, the APA 6th edition has followed throughout the study.

5. Review of related literature

KP Singh and Gill (2013) conducted a survey to know the growth of literature on "Web 2.0 technologies" in libraries. The findings show that a total 206 research articles published on Web 2.0 technology. At the end of the article, the author provided a bibliography of selected articles.

KP Singh and Chander (2014) conducted a study to know the publication trends in library and information science. The finding shows that the majority of contribution by a single author.

Sethi and Panda (2012) conducted a study to know the growth and nature of International LIS research. In this study, two prominent LIS journals have chosen namely "International Information and Library Review" and "Library and Information Science Research" by considering following parameters which are authorship patterns, distribution of papers by journals, citation pattern ranking pattern, etc.

KP Singh et al. (2018) briefly explore the growth and development of Library and Information Science Journals in India from 1912 to 2016. The result shows that a total of 196 Journals has emerged from the last 11 decades. Among the 29 states of India, Delhi is found to be the best productive city in the field of library and information science journal publication.

Jayaraman et al. (2012) carried out a bibliometric study of "Annals of Library and Information Studies" journal. The study shows that two author citation is high and "Annals of Library and Information Studies" are the most chosen Journal by the authors.

Akhter et al. (2011) conducted a bibliometrics study of "Electronic Library Journal" from 2000 – 2010. This paper deals with the year-wise distribution of Articles, Category wise classification of articles, authorship pattern, etc.

Ansari, Manir Uddin and Nisha (2019) carried out a survey on "Use of Mobile Technology by the BLISc and MLISc Students from the Jamia Millia Islamia, Delhi in their Academic

Lives: A survey”. The main objective of this paper is to analyze the way of using a Smartphone in today’s modern era of ICT for their academic purpose. The finding shows that the majority of the students using Smartphone for their academic purpose and Jio network found to be domination of all over other networks.

6. Analysis and discussion

Data analysis is associated with several steps like scrutinizing, cleansing, transforming, and modeling data with an aims to ascertain the facts or conclude with meaningful information for decision-making. In writing this paper, a total 113 articles on mobile technology has been collected and thoroughly scrutinized for analysis and interpretation.

The **table: I** exemplify the number of articles published in the emerald database indexed journals. The prominent journals are listed below with the number of publications.

Table: I Core journals and number of papers published

Sr. no	Name of the Journal	No. of Papers	Percentage
1.	Library Hi-Tech News	23	20.35
2.	Library Hi-Tech	22	19.47
3.	The Electronic Library	21	18.58
4.	Reference Service Review	13	11.51
5.	New Library World	10	8.85
6.	Library Management	7	6.19
7.	Program	4	3.54
8.	Journal of Enterprise Information Management	2	1.77
9.	Global Knowledge, Memory, and Communication	2	1.77
10.	Online Information Review	1	0.88
11.	Library Review	1	0.88
12.	Journal of Documentation	1	0.88
13.	International digital library perspectives	1	0.88

14.	Interlending & Document Supply	1	0.88
15.	Information and Learning Science	1	0.88
16.	Collection Building	1	0.88
17.	Campus Wide Information System	1	0.88
18.	Aslib Proceedings	1	0.88
	Total	113	

The above **table I** provide a clear picture that the journal “Library High Tech News” covers the highest number of Article 23 (20.35%) and occupied ranked one, followed by Library Hi Tech 22 (19.47%), “The Electronic Library” 21 (18.58%), etc. In addition to these, it is also found that there are some journals like “Aslib Proceeding”, “Online Information Review”, “Library Review”, “Journal of Documentation”, “Collection Building” etc has received only one article in mobile technology since March 2002 to March 2019. However, these journals are very outstanding as per their impact factors assessment.

Table: II Geographical distribution Articles

Sr. no	Name of Country	No. of Contributions/Articles	Percentage
1.	USA	29	25.66
2.	China	18	15.93
3.	UK	9	7.96
4.	South Africa	5	4.43
5.	India	4	3.54
6.	Canada	4	3.54
7.	Australia	4	3.54
8.	Nigeria	3	2.65
9.	Iran	3	2.65
10.	New Zealand	3	2.65
11.	Switzerland	2	1.77
12.	South Korea	2	1.77
13.	Singapore	2	1.77
14.	Norway	2	1.77
15.	Ireland	2	1.77
16.	Greece	2	1.77
17.	USA/KOREA	1	0.88
18.	China/Finlad	1	0.88

19.	China/USA	1	0.88
20.	China/USA/UAE	1	0.88
21.	India/Switzerland	1	0.88
22.	UK/India	1	0.88
23.	UAE	1	0.88
24.	Finland	1	0.88
25.	Turkey	1	0.88
26.	Spain	1	0.88
27.	Netherland	1	0.88
28.	Malaysia	1	0.88
29.	Jordan	1	0.88
30.	Israel	1	0.88
31.	Indonesia	1	0.88
32.	Ghana	1	0.88
33.	Germany	1	0.88
34.	Cuba	1	0.88
35.	Croatia	1	0.88
	Total	113	

Table II has given a clear picture of the Articles contributions from different countries. The USA occupied the first position in the contribution of Articles with having 29 (25.66%) followed by the China 18 (15.93%) and UK 9 (7.96%) respectively. The contribution of Articles from India is only 4 (3.54%) from March 2002 to March 2019. In addition to these, the table also shows the collaborative efforts of the country in Article publishing each by one which are USA/Korea, China/Finland, China/USA, India/Switzerland, China/USA/UAE and UK/India.

Table: III Institution wise distribution of the contribution

Contributed by	No of Contribution	Percentage
University	91	80.53
College /Institute	16	14.16
National Library	3	2.65
Organisation	1	0.88
School Library	1	0.88
NA	1	0.88
Total	113	

Table III illustrates the Institution wise distribution of Articles. It is evident from the table that majority with highest number 91 (80.53%) of such articles published by the University, followed by College/Institute 16 (14.16%), National Library 3 (2.65%) respectively.

Table: IV Year-wise distribution of literature

Year	No. of Papers	Percentage	Cumulative
2014	17	15.04	17
2016	13	11.51	30
2013	13	11.51	55
2015	12	10.62	42
2012	12	10.62	67
2017	9	7.97	76
2010	10	8.85	86
2011	8	7.08	94
2018	7	6.19	101
2009	4	3.54	105
2008	2	1.77	107
2007	2	1.77	109
2019	1	0.88	110
2006	1	0.88	111
2005	1	0.88	112
2002	1	0.88	113

Table: IV represents the year wise growth of periodical literature on “Mobile Technology”. The research is a continuous process surrounded by several steps to find out the truth. The countries growth and development is fully depending on the fact-finding study. Hence emphasized on research is given by all the countries for their development. Research may categorize into various kind, disciplinary oriented research is one of them. Research in the library and information science is not lagging behind, depth research has observed by the review of literature in different aspects with special reference to the application of ICT in libraries for better service. It is evident from the above table that the growth of literature in “Mobile technology” in the year 2014 is found to be the highest contributed year 17 (15.04%), followed by the year 2013 and 2016 has grown with the same figure 13 (11.51%)

respectively. The year 2002, 2005 and 2006 cumulatively published only three Articles. Since 2006 onwards publication on “mobile technology” has been increasing.

Table: V Authorship Pattern

Authors	No. of Papers	Percentage (%)
Single	58	51.33
Double	29	25.66
Three	16	14.16
More than three	10	8.85
Total	113	

Table V analyse the authorship pattern in the publication of articles. The above **table** depicted that highest number 58 (51.33%) articles published by the single author, followed by 29 (25.66%) with two authors, 16 (14.16%) with three authors and only 10 (8.85%) by more than three authors respectively.

Table: VI Types of paper published

Sr. No	Types of papers	No. of papers	Percentage (%)	Rank
1.	Research Papers	66	58.41	1
2.	Case Studies	17	15.04	2
3.	Review Papers	16	14.16	3
4.	Conceptual Paper	5	4.43	4
5.	General Review	4	3.54	5
6.	Technical Papers	2	1.77	6
7.	View Points	2	1.77	7
8.	Secondary Source	1	0.88	8
	Total	113		

The Emerald database has categorized the publications in various types which are “Research Papers”, “Case Studies”, “Review Papers”, “Conceptual Papers”, “Technical Papers”,

“General Review”, “View Points”, and “Secondary Source”. Each type of papers occupies value as per their importance. It was found from the **table VI** that the contribution of a “Research Paper” is higher than the any other else which constitutes a total of 66 (58.41%) out of 113 articles and therefore “Research Papers” publication occupies rank one. In addition to these, the papers “Case Studies” 17 (15.04%) and “Review Papers” 16 (14.16%) occupies rank second and third. The emerald database also published secondary sources which constitute only one. It is very unfortunate that the contribution of conceptual research is very low 5 (4.43%) out of 113.

Table: VII Types of papers published in Journals (Research Papers)

Sr. no	Name of the Journals	Research Papers	Percentage (%)
1.	Library Hi-Tech	18	27.27
2.	The Electronic Library	16	24.25
3.	Library Hi-Tech News	11	16.67
4.	Reference Services Review	5	7.57
5.	New Library World	4	6.06
6.	Global Knowledge, Memory, and Communication	2	3.03
7.	Journal of Enterprise Information Management	2	3.03
8.	Program	2	3.03
9.	Aslib Proceedings	1	1.52
10.	Campus-Wide Information Systems	1	1.52
11.	Information and Learning Science	1	1.52
12.	Journal of Documentation	1	1.52
13.	Library Management	1	1.52
14.	Library Review	1	1.52
	Total	66	

Table VII described the journals which cover the types of papers published by the Journals most of the time and with quantity. The table deals with the “Research Papers” coverage in the Journals and exemplify that the Journals “Library Hi Tech” which cover 18 (27.27%) research papers out of 66 followed by “The Electronic Library” covers 16 (24.25%), “Library Hi Tech News” 11 (16.67%) research papers respectively. In addition to these there are some other prominent journals also exhibits but the Journals get published very few “Research papers” which are Reference Services Review five (16.67%), New Library World four (6.06%), Global Knowledge, Memory and Communication two (3.03%), Journal of Enterprise Information Management two (3.03%), Program two (3.03%), Aslib Proceedings one (1.52%) etc.

Table: VIII Types of papers published in Journals (Review papers)

Sr. no	Name of the Journals	Review Papers	Percentage (%)
1.	Library Management	5	25
2.	The Electronic Library	4	20
3.	Library Hi-Tech News	3	15
4.	New Library World	2	10
5.	Program	2	10
6.	Reference Services Review	2	10
7.	Interlending & Document Supply	1	5
8.	Online Information Review	1	5
	Total	20	

Table VIII deals with the number of “Review Papers” published in different Journals. It was found that a total 20 review papers published on “Mobile Technology” out of 113 papers. These 20 “Review Papers” got published under the eight Journals namely “Library Management”, “The Electronic Library”, “Library Hi Tech News”, “New Library World”, “Programme”, “Reference Service Review”, “Interlending & Document Supply”, and “Online Information Review”. The above table shows that five (25%) “Review Papers” published in “Library Management” journals followed by “The Electronic Library” four (20%), “Library Hi Tech News” three (15%).

Table: IX Year-wise distributions of Research Papers

Year	No. of Research Papers	Percentage	Cumulative
2016	10	15.15	10
2013	9	13.64	19
2015	9	13.64	28
2014	8	12.12	36
2011	6	9.09	42
2017	6	9.09	48
2018	6	9.09	54
2010	3	4.55	57
2012	3	4.55	60
2005	1	1.52	61
2006	1	1.52	62
2007	1	1.52	63
2008	1	1.52	64
2009	1	1.52	65
2019	1	1.52	66

Table: IX deals with the year-wise growth of “Research Papers”. Table shows that a total 66 “Research Papers” published out of 113 till March 2019. It was found that a total 10 (15.15%) article on “Mobile Technology” published in the year 2016 followed by 2015, 9 (13.64%), 2013, 9 (13.4%), 2014, 8 (12.12%) respectively. It was also invented from the study that the growth of periodical literature on “Mobile Technology” from 2005 to 2009 is not up to the mark. In the year 2019 till March, only one article found published

Table: X Year-wise distributions of Review Papers

Year	No. of Review Papers	Percentage (%)	Cumulative
2014	6	30	6

2012	5	25	11
2010	2	10	13
2013	2	10	15
2008	1	5	16
2009	1	5	17
2015	1	5	18
2016	1	5	19
2017	1	5	20

Table: X deals with the growth of “Review papers”. It was found that a total 20 “Review Papers” published out of 113 papers till March 2019. The “Review Papers” occupy the third position in terms of papers types of publication after “Research Papers” and “Case studies”. The table shows that the growth velocity of “Review Papers” is slow. A total six (30%) published throughout the year 2014 followed by five (25%) in 2012, two (10%) in 2010. A cumulative five (25%) review paper published from 2008 to 2017 respectively.

6. Findings

- It is found from the study that the Journal “Library Hi Tech News” had published largest number of Articles on “Mobile Technology” which constitutes 23 (20.35%) followed by “Library Hi-Tech”, 22 (19.47%), “The Electronic Library” 21 (18.58%). Hence these three Journals can be considered as core journals in terms of periodical literature publication on “Mobile Technology”.
- In terms of determining the most productive year, 2014 is found with a highest contributed year 17 (15.04%) followed by 2016, 13 (11.51%), 2013, 13 (11.51%).
- The study reveals that the USA is the most productive country, contributed 29 (25.66%) followed by China 18 (15.93%), UK 9 (7.98%).

- Universities contributed the highest number of 91 (80.53%) literature on “Mobile Technology” followed by College/Institute 16 (14.16%).
- To ascertain the authorship pattern on literature publication, the study shows that 58 (51.33%) articles published by a single author and 29 (25.66%) by double authors.
- In order to know the types of papers published in terms of quantity, the study publicized that a total 66 (58.41%) research papers published out of 113 articles followed by “Case Studies” 17 (15.04%), “Review Papers” 16 (14.16%).
- It is found from the study that a large number of “Research Papers” published in the Journal “Library Hi Tech” 18 (27.27%) followed by “The Electronic Library” 16 (24.25%). In the calculation of Review Papers publication, the journal “Library Management” published five (25%), followed by “The Electronic Library” four (20%).
- In order to know the year-wise “Research Papers” publication, 2016 found to be the most productive year which contribution is a total of 10 (15.15%). In the year 2013 and 2015, cumulative 18 (27.28%) published “Research Papers” types articles. In regards to review paper publication, 2014 is found to be the highest contributed year in periodical literature publications on “Mobile Technology”, 6 (30%) followed by 2012, 5 (25%).

7. Conclusion

Periodical literatures are the primary source of information and published with a regular interval. The primary source of information is the first-hand information which has been generated after the passage of several steps of research. Periodical literature covers different areas of library and information science. This study was undertaken to know the growth of periodical literature on topics “Mobile Technology” from 2002 to March 2019 in emerald database. The study reflected the quantitative growth of various types papers which are “Research Papers”, “Review Papers”, “Review Papers”, “Conceptual Papers”, “Technical Papers” etc in the area of “Mobile Technology” and also useful for those who have specialization in ICT. A total of 133 Articles bibliography has also prepared which might be helpful for the research scholars. In addition to these, the study also reflects the year wise growth of periodical literature on “Mobile Technology”. But still, there is a need to explore

more on the latest tools and technology and find out its application in libraries for better services.

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