

Publication trends in Facebook: A scientometric study

Ecem Basak, and Fethi Calisir

Abstract—The aim of this research is to conduct a bibliometric study and evaluate the publications related to Facebook. The data were retrieved from the database of Web of Science. “Facebook” was used as the keyword to conduct the search, and all publications were identified by the following criteria: topic and title. Publications from 2005 to 2013 were taken into consideration in this study, and a total of 4714 Facebook-related publications were found. The annual number of publications was increased from 1 in 2005 to 1823 in 2013. There were seven main document types in Facebook-related publications and articles were mostly used among all document types. The United States was found to be the most productive country and English was the most frequently used language among all publications. Moreover, Computers in Human Behavior was the main distribution channel and engineering, business and economics, and education were the top three most popular research areas.

Keywords—Facebook, bibliometric studies, publication trends, scientometric

I. INTRODUCTION

SOCIAL networking sites (SNSs) have become very popular in the previous decade. Facebook is one of the social networking sites that was founded on February 4, 2004 by Mark Zuckerberg and his friends from the University of Harvard. Individuals use Facebook to keep in touch with family and friends, to get news about the things happening in the world, to share the things that are important to them, and to express themselves to others [1]. Facebook is currently the most popular social networking site in the world. Worldwide, the number of daily and monthly active users of Facebook are 757 million and 1.23 billion, respectively, as of December, 2013 and the daily users of Facebook outside the United States and Canada are around 81% of the total users [2].

In the literature, there are many studies related to Facebook. Reference [3] examined the effects of teacher self-disclosure through Facebook on college student motivation, affective learning, and classroom climate. Reference [4] investigated how Facebook influenced students’ social integration into university life and explored preregistration engagement with a university. Facebook network influences students’ postregistration social networks. Reference [5] examined Facebook users’ awareness of privacy issues and perceived

benefits and risks of utilizing Facebook. Reference [6] explored how use and perception of Facebook were changed over time. Reference [7] studied the motives behind participating in Facebook. Reference [8] explained the users’ motivations for using Facebook and the effects of these motivations on different features of Facebook. Reference [9] investigated why Somali youth used Facebook. Reference [10] studied the evolution of user interaction in Facebook. Reference [11] conducted a study that compared college faculty members with students in terms of uses and perceptions of Facebook. Reference [12] qualitatively evaluated the content of communication in Facebook groups dedicated to patients with diabetes. Several other studies also focused on Facebook in the literature [13-16].

Although Facebook is a trend topic in the literature, to our knowledge, there has been no study that analyzes the Facebook-related publications in the scientific world. The use of scientometric methods in recent years has increased and researchers have started using bibliometric analysis to evaluate the research activities related to a particular topic [17]. Reference [18] evaluated the publications trends in library and information science and performed a bibliometric study in Library Management. Reference [17] applied a scientometric study of global electric vehicles using the database of Web of Science. Reference [19] conducted a bibliometric analysis of the Global Positioning System (GPS) based on the Science Citation Index and Social Sciences Citation Index databases. Reference [20] conducted a scientometric analysis of the publication trends in knee surgery. Reference [21] characterized the pattern of publications in the areas of Internet, video games, and cell phone addiction using the PubMed database. The aim of this research is to conduct a bibliometric study and evaluate the publications related to Facebook.

The next section of this article discusses the data and methodology. This is followed by the results section. Then, this paper concludes with a discussion of the findings and recommendations for further studies.

II. DATA AND METHODOLOGY

The data were retrieved from the database of Web of Science. “Facebook” was used as the keyword to conduct the search, and all publications were identified by the following criteria: topic and title. Publications from 2005 to 2013 were taken into consideration in this study, and a total of 4714 Facebook-related publications were found. Since Facebook was launched in 2004, no study was conducted during that

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year; thus, the year 2005 was chosen as the lower time constraint of publications. On the other hand, the year 2013 was selected as the upper time constraint of publications because of the time frame of this study. Publications were assessed using the filters (publication year, document types, countries, language, source title, and research areas) in the website of Web of Science. Excel was used to analyze the data.

III. RESULTS

A total of 4714 Facebook-related publications were identified between 2005 and 2013. The annual number of publications was increased from 1 in 2005 to 1823 in 2013. The chronological distribution of research papers is shown in Fig. 1.

There were seven main document types in Facebook-related publications, and articles (1957; 41.51 %) were mostly used among all document types. It was followed by patents (1367; 29 %), proceeding papers (1043; 22.13 %), editorials (142; 3.01 %), abstracts (78; 1.65 %), reviews (58; 1.23 %), news (31; 0.66 %), and others (38; 0.81 %). Fig. 2 shows the distribution of document types.

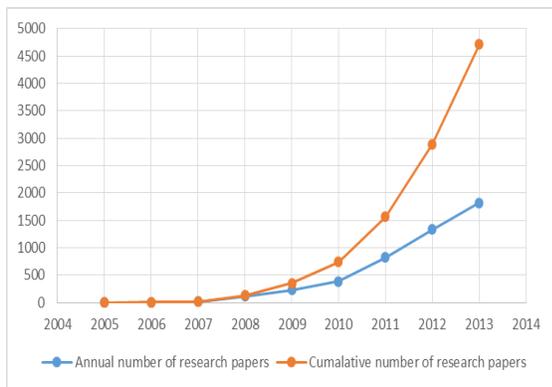


Fig. 1 Chronological distribution of research papers

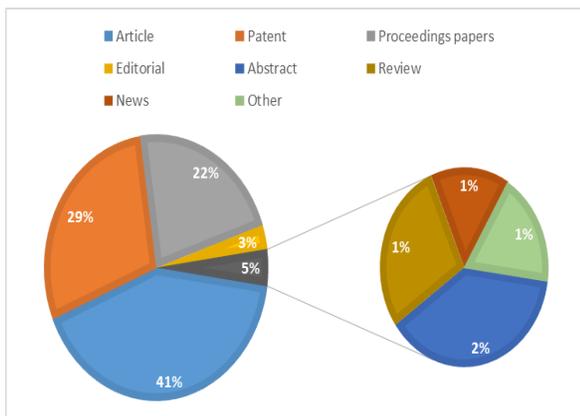


Fig. 2 document types distribution of publications

The 10 productive countries are shown in Table I. The United States was found to be the most productive country having 1147 (24.33 %) publications, followed by England (172; 3.65 %) and Australia (135; 2.86 %). The contributions from Canada, Taiwan, Germany, Spain, Republic of China, Italy, and South Korea each were less than 1 % among all 10

productive countries. Overall, 90.26 % of all publications were written in English (4255; 90.26 %), followed by (351; 7.45 %) and Spanish (47; 1 %). German, Portuguese, French, Italian, Hungary, Turkish, and Dutch were the other most frequently used languages in all publications. Table I shows the top 10 languages used in publications and the number of publications for each language.

TABLE I
GEOGRAPHIC AND LANGUAGE DISTRIBUTION OF PUBLICATIONS

Top 10 most productive countries	Number of publications	% share in publication	Top 10 language	Number of publications	% share in publication
USA	1147	24.33	English	4255	90.26
England	172	3.65	Korean	351	7.45
Australia	135	2.86	Spanish	47	1.00
Canada	108	2.29	German	17	0.36
Taiwan	108	2.29	Portuguese	14	0.30
Germany	100	2.12	French	6	0.13
Spain	95	2.02	Italian	4	0.08
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China	94	1.99	Hungary	4	0.08
Italy	63	1.34	Turkish	2	0.04
South Korea	55	1.17	Dutch	2	0.04

Table II shows the total distribution of top 10 sources that published Facebook-related research and their total publications. Computers in Human Behavior (111; 2.35) was the top source by publication count, followed by Lecturer Notes in Computer Science (94; 1.99), Cyberpsychology Behavior and Social Networking (76; 1.61), Procedia Social, and Behavioral Science (50; 1.056). Forbes, Fortune, Communications in Computer and Information Science, Journal of Medical Internet Research, New Media Society, and Journal of Computer-Mediated Communication each had less than 1 % share in all publications. Moreover, Computers in Human Behavior and Journal of Computer-Mediated Communication each had more than 1000 citations between 2005 and 2013.

TABLE II
TOP 10 SOURCE DISTRIBUTION

Top 10 source distribution	Number of publications	% share in publication
Computers in Human Behavior	111	2.35
Lecturer Notes in Computer Science	94	1.99
Cyberpsychology Behavior and Social Networking	76	1.61
Procedia Social and Behavioral Science	50	1.06
Forbes	41	0.87
Fortune	28	0.59
Communications in Computer and Information Science	28	0.59
Journal of Medical Internet Research	24	0.51
New Media Society	21	0.45
Journal of Computer Mediated Communication	21	0.45

Facebook was taken into consideration in many different research areas, including engineering, business and economics, education, and psychology. Most of the studies related to Facebook were conducted in the areas of engineering (908; 19.26 %), followed by business and economics (378; 8.02 %),

education (377; 8.00 %), and psychology (367; 7.79 %). The top 10 research areas are shown in Table III.

TABLE III
TOP 10 RESEARCH AREA

Top 10 research area	Rank	Number of publications	% share in publication
Engineering	1	908	19.26
Business and Economics	2	378	8.02
Education and Educational Research	3	377	8.00
Psychology	4	367	7.79
Information Science and Library Science	5	237	5.03
Communication	6	227	4.82
Telecommunications	7	199	4.22
Social Sciences Other Topics	8	147	3.12
Healthcare Sciences and Services	9	82	1.74
Government Law	10	78	1.65

IV. DISCUSSION AND CONCLUSION

This study focused on the trend of publications related to Facebook. For this reason, a total of 4714 Facebook-related publications that were retrieved from the database of Web of Science were identified between 2005 and 2013. Publication outputs were assessed by publication years, document types, countries, languages, source titles, and research areas.

In the previous decade, there was a drastic increase in publications. The number of publications was increased from 1 in 2005 to 1823 in 2013. Overall, 7 main document types were used in Facebook-related publications and articles were found to be the most frequently used document type among all publications. They were followed by patents and proceedings papers. Scientometric analysis revealed that the United States was the most productive country having approximately 25 % share in all publications and 90.26 % of all publications were written in English. Moreover, Computers in Human Behavior, Lecturer Notes in Computer Science, and Cyberpsychology Behavior and Social Networking were the top three most popular distribution channels and Facebook was mainly studied in the areas of engineering, business and economics, and education.

In conclusion, this study also has limitations. The database of Web of Science was used in this study. First, the data can be varied by using different databases. Second, for future studies, publication trend per year can be determined and then, the number of publications for the next few years can be predicted. Third, the publications can be assessed based on institution origin and number of authors. Collaboration of author network can also be formed for a further research.

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