IS BOBCATSSS PREPARING ITS PARTICIPANTS FOR DIGITAL TRANSFORMATION? TOPIC ANALYSIS OF PAPERS PRESENTED AT BOBCATSSS CONFERENCES FROM 2015 TO 2020

Antonija Golub, Valentina Pjanić, Tina Ćošić, Drahomira Cupar

University of Zadar (CROATIA)

Abstract

This paper deals with a topic analysis of papers presented at the BOBCATSSS conferences from 2015 to 2020. The corpus for this research was gathered from conference proceedings and includes only paper presentations and excludes posters, workshops, pecha-kucha, etc. Sample consists of 234 collected papers. Content analysis was done by using a classification scheme for library & information sciences compiled by Järvelin and Vakkari (1990), and developed further by Tuomaala, Jarvelin, Vakkari (2014). Content analysis, i.e. indexing was applied only on titles, and was done by all authors individually. After the indexing of all 234 titles, results were gathered in topical clusters, created using a proposed classification scheme. The aim of the paper is to explore the distribution of the topics presented at the BOBCATSSS conference and compare them against the topics gathered around this years' main theme: digital transformation. This analysis will explore in more details all papers found dealing with digital content, digitalization, information and communication technology, etc. Research questions are as followed: 1. Which areas are most represented within the papers presented at the BOBCATSSS conferences from 2015 till 2020? 2. How are topics in the area of digital transformation represented in BOBCATSSS conferences from 2015 till 2020? 3. Is BOBCATSSS following trends in relevant topics in the field of library & information sciences?

Keywords: Topic analysis, analysis of conference papers, Bobcatsss conference, digital transformation

INTRODUCTION

Digital transformation is often seen as usage of IT while performing tasks or introducing IT into business organization. Reis et al. (2018, p. 418) did literature review and analyzed different definitions of the term. After analysis of all definitions found in literature, they defined Digital Transformation "as the use of new digital technologies that enables major business improvements and influences all aspects of customers' life". Also, Rogers (2016) and Herbert (2017) identified five domains where the digital transformation takes place, which includes use of ICT: 1. Customers, 2. Competition, within organizations concerning the consumer, 3. Information, and the management of it, 4. Innovation, regarding development and new ideas and 5. Value.

The aim of this paper is to explore the distribution and representation of topics presented at the BOBCATSSS conferences during last five years (2015–2020) which include aspects mentioned above to see how digital transformation is interesting to BOBCATSSS' authors. This analysis will explore in more details all papers found dealing with digital content, digitalization, information and communication technology and other connected topics. In order to see if and how BOBCATSSS papers' topics correspond to trends recognized in other relevant published research done on literature in the field of (library and) information science(s).

This paper deals with a topic analysis of papers presented at the BOBCATSSS conferences from 2015 to 2020 and published in BOBCATSSS proceedings. This research will answer following research questions: RQ1. Which areas are most represented within the papers presented at the

BOBCATSSS conferences from 2015 till 2020? RQ2. How are topics in the area of digital transformation represented in BOBCATSSS conferences from 2015 till 2020? RQ3. Is BOBCATSSS following trends in relevant topics in the field of library & information sciences?

METHODOLOGY

The corpus for this research was gathered from published conference proceedings and included only written papers published in BOBCATSSS proceedings. All posters, workshops, pecha-kucha and other types of contributions were excluded from the research sample. Sample consists of 234 collected papers. Content analysis was done using a classification scheme for library & information sciences compiled by Järvelin and Vakkari (1990), and developed further by Tuomaala, Jarvelin, Vakkari (2014) (Table 1). Classification, i.e. indexing was applied only on titles, and was done by all four authors individually. Each author analyzed the sample without consulting others. After individual analysis, 4 results were compared and the final result – chosen class from the proposed scheme was done on mutual consensus on the content of at least 3 out of 4 results. If there was a problem understanding the content from the title, authors consulted an abstract of the paper and decided on the class based on the abstract. Sometimes, discussion was necessary to understand the right topic. After the indexing of all 234 titles, results were gathered in topical clusters, created using a proposed classification scheme. Detailed analysis was done on titles marked as 'digital transformation topic'.

Table 1. The classification system (Tuomaala, Jarvelin, Vakkari (2014, 16))

Topic	
Library and information science topic	**420** collections study
010 the professions	**430** information or reference service
020 library history	**440** user education including information literacy
030 publishing (including book history)	**450** library buildings and facilities
100 education in library and inf. science	**460** administration or planning
200 methodology (as the study of research methods)	**470** automation study, digital libraries study (except when concerned with some particular activity 41-46)
300 analysis of library and inf. science (both literature based empirical and theoretical)	**480** other L&I service activities
400 Research on library and information service activities	**490** several interconnected activities
410 circulation or interlibrary loan activities	**500** Research in information storage and retrieval
	510 metadata/cataloguing study

520 study on classification and indexing (intellectual, automatic, NLP, stemming, lemmatization, thesauri/ontologies in indexing)

530 Study on search information retrieval (clustering, information filtering, query formulation, relevance feedback, retrieval models, search process, question answering:

531 text retrieval systems in test collections

532 other media (systems) in test collections

533 web retrieval (systems)

540 digital information resources

550 interactive (user-oriented) IR (test collections/web/log analysis)

560 other study of information storage and retrieval

600 Research on information seeking

610 information dissemination study

620 the use or users of channels or sources of information (focus on channels or sources; persons can be units of observation, but focus is on channel preferences or frequency of their use)

630 the use of L&I services (no other channels considered)

640 Study on information seeking behavior (focus on persons). Information seeking process as the point of departure

641 task-based information seeking study (tasks or interests as the point of departure

642 other information seeking

650 information use study (whether (and how) information has been used)

660 information management (IRM), knowledge management

700 Research on scientific and professional communication

710 scientific or professional publishing

720 citation patterns and structures

730 webometrics

740 other aspects of scientific or professional communication

800 other aspects of LIS

900 other study (other discipline)

The Classification scheme consists of 42 groups of topics distributed in 9 classes and 3 general classes.

PREVIOUS RESEARCH

This research relies on results of different studies of usage of content analysis as a research method within the LIS field in order to find out what topics and interests are within the body of literature. One of those studies is done by Domas White & Marsh (2006) where they wanted to see in what capacity authors in the LIS field use content analysis as a method. Content analysis proves to be a flexible method since it can be used as a combination of qualitative and quantitative data. Although it is a rather old study, Blessinger & Frasier (2007) analyzed articles published in LIS journals. It is interesting to see that most of the topics fell within the library operations, such as cataloging, services, etc. Technology is still less present than 'traditional' library work. The most important research for this paper was done by Tuomaala, Järvelin & Vakkari (2014), the creators of the scheme used in this study. Over the years, most Tuomaala, Järvelin & Vakkari (2014) concluded that most researched areas are information storage and retrieval and library services and the biggest research growth was in communication and seeking. These topics are strongly connected to the internet/digital environment. Within library services most popular subfields are found to be automation and digital libraries; while within retrieval it is classification and indexing (Tuomaala, Järvelin & Vakkari, 2014, p. 6-10). The authors concluded that a major shift in library and information science research went from studying the systems to studying individuals/users (ibid, 12-13).

RESULTS

This research is mainly based on a content analysis of the papers from the sample, i.e. classification of titles using adapted classification scheme of library and information science from Järvelin and Vakkari's (1990), and developed later in Tuomaala, Järvelin & Vakkari (2014). This scheme was already used in several studies, such as Barbarić, Hebrang Grgić & Horvat (2007), Mučnjak & Zrnić (2018). In both researches results showed that the scheme went through some adaptation in order to accommodate specificities found in the chosen samples of works. Authors in both studies concluded that the scheme lacks topics in contemporary LIS research. In this research, the goal was to apply one class to each title but on several occasions authors had difficulties applying only one class to the topic of the paper. Often there were two or more predominant topics in each paper. In those cases, all authors read the abstract and discussed the topic in order to mutually decide on the topic, i.e. to assign appropriate class. Each author needed to decide whether the paper deals with the topic within the digital transformation area. In order to make decisions easier and more accurate, authors strived to connect the topics of digital transformation with above mentioned five domains recognized by Rogers (2016) and Herbert (2017): 1. Customers, 2. Competition, within organizations concerning the consumer, 3. Information, and the management of it, 4. Innovation, regarding development and new ideas and 5. Value. It is important to emphasize that in library and information science customer is referred as user or patron; competition is not driven by the money and rather by the recognition; information is always in the center of all topics but in rare cases is the topics itself and most of the time papers are dealing with information organization, information seeking, information retrieval, information behavior, information services, etc.; innovation and new ideas are often seen as the force behind development of new services and value is often perceived value, and not measurable by any visible tools or instruments, and also hidden within the service and impact which information has on the user(s). When all five domains are applied to the chosen sample, total results show that 172 (73,5%) (Table 2) papers presented at BOBCATSSS conferences can be recognized within Digital Transformation topics.

Most of the time, papers include more than one domain, dealing with users, innovative ideas and information, and almost without exception – information technology played a major role in it.

Table 2. Papers marked as Digital Transformation (DT) topics in the sample

Year	Number of published papers	DT topics	Percentage of DT topics (%)
2015	40	29	72,5%
2016	40	23	57,5%
2017	44	31	70,5%
2018	26	18	69,2%
2019	39	35	89,7%
2020	45	36	80%
Total	234	172	73,5%

If we compare the main topics of the conferences for each year from the sample, it can be seen (Table 3) that years with the highest number of DT topics are the last two years, 2019 (89,7%) and 2020 (80%). Both years had topics highly connected to ICT: Information and technology transforming lives: connection, interaction, innovation (2019) and Information management, fake news and disinformation (2020).

Table 3. Main topics of the BOBCATSSS conferences (2015 – 2020)

Year	Main topic of the BOBCATSSS conference
2015	Design • Innovation • Participation
2016	Information • Libraries • Democracy
2017	Life quality through information
2018	The power of reading
2019	Information and technology transforming lives: connection, interaction, innovation
2020	Information management, fake news and disinformation

Results focus only on papers published in 2019 and 2020 to show what types of topics and classes were most used. This sample consists of 71 papers. All papers are distributed within 28 classes. Most of them fit (prevalently) into the class 400 Research on library and information service activities (Table 1). All together 28 papers are dealing with topics connected to: 430 information or reference service (1 paper); 440 user education including information literacy (10 papers); 450 library buildings and facilities (7 papers); 460 administration or planning (1 paper);

470 automation study, digital libraries study (2 papers), 480 other L&I service activities (3 papers) and 490 several interconnected activities (4 papers). Distribution in other classes is as follows: class 500 Research in information storage and retrieval and class 600 Research on information seeking both have 12 papers dealing with topics within those areas. Classes 300, 800, 900 and 020, 030 have 1 paper each, class 010 has 2 papers and class 700 Research on scientific and professional communication has 4 papers. The rest of the papers (8) belong to class 100 education in the library and inf. science. Since most of the papers from the sample belong to at least two classes, authors aimed to simplify results to demonstrate overall coverage of BOBCATSSS papers with topics which can be seen as topics within the digital transformation area. In order to gain a much more complex and in-depth view, this study must be done in more details, with usage of abstracts, keywords and possibly controlled vocabulary and software to enable and ensure consistency in indexing. Authors should approach each topic with more rigor and not to settle for 'the closest' result.

CONCLUSIONS

This research managed to answer all research questions. Within the chosen sample, 73,5% of all papers can be connected to the topics of digital transformation. To answer RQ1. Which areas are most represented within the papers presented at the BOBCATSSS conferences from 2015 till 2020, we can say that presented papers mainly deal with library and information service activities. In RQ2 we wanted to see how topics in the area of digital transformation are represented in BOBCATSSS conferences from 2015 till 2020. These topics are mostly presented in almost all domains recognized in DT, but mainly in following: Customers, i.e. (library/information) users or patrons; Information, and the management of it; Innovation, regarding development and new ideas and (hidden) value. And as far as RQ3 we can with certainty claim that BOBCATSSS is successfully following trends in relevant topics in the field of library & information sciences. It can be concluded that BOBCATSSS participants are mostly well prepared and already went through digital transformation which is shown through their presentations and papers. Year 2020 was extremely challenging for all, especially for the field of library and information sciences – in theoretical areas as well as in information institutions as public services providers. Technology and digital transformation was necessary if information institutions wanted to stay 'in the game' as reliable information providers. It would be far from the truth to conclude that the global health crisis forced information institutions and information professionals to move to a digital environment. It is safe to say that LIS field and LIS professionals were already there.

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