

Analysis of Information Seeking Behavior Research Trends in Iran

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Received: 22 August 2022

Accepted: 22 January 2023

Abstract

This study explored its research trends by examining Iran's methods, contexts, and theories of information behavior research. This study is applied research regarding objectives and a content analysis regarding methodology. The research population consisted of 325 studies on information behavior. A researcher-made checklist was used to collect data, the validity of which was confirmed by experts. According to the researcher-made checklist, 325 data were analyzed based on the variables of each section. Data analysis was performed using descriptive statistics and SPSS software (version 22). The results indicated the dominance of the quantitative approach and, consequently, the application of statistical analysis tools and methods related to this approach in relevant studies. In addition, most investigations were practical in this field, and therefore, fewer theoretical-philosophical studies and, in other words, fundamental research have been addressed in this field. There is no diversity in studies methodologically, and most of the reviewed studies, while referring to influential research in this field in their backgrounds, do not pay attention to their methodologies. Most of the research works are copies of previous studies conducted using quantitative, applied, and survey methods, and the desired population has changed only in some cases. Moreover, the scope of disciplines and specialties involved in the research production and studies reflects the interdisciplinary nature of this field with emphasis on knowledge and information science. The approach of information behavior research is expanding in various contexts with the presence of different types of users. However, it seems that the information behavior of the general public is less considered, and new studies are required in this regard. Research and studies conducted on information behavior in Iran have mainly considered the international models in this field, and some studies have even attempted to modify them. Few researchers have also proposed new models in this field, some of which have been published in international papers.

Keywords: Information behavior, Information-seeking behavior, Information-search behavior, Research Methodology, Research Context, Theoretical Development of Research, Iran.

Introduction

Every day, humans may encounter many vague questions and phenomena that require information to discover and obtain answers. Therefore, information seeking is critical and indispensable for human beings, which is necessary to meet their needs throughout their lives. According to Marchionini (1995), information-seeking originates from human life, and information behavior occurs after feeling the need (Adhami, 2004). Wilson (2000) considered information behavior the most general research field in information science and indicated that information behavior is a purposive seeking to find the required information. He also distinguishes four types of behavior: (i) information behavior, (ii) information-seeking behavior, (iii) information-search behavior, and (iv) information-use behavior. According to Wilson (2000), information is all human behavior concerning information sources and channels, including active and passive information seeking and using information. Information-seeking behavior is the purposive seeking of information to satisfy a particular objective. Information-search behavior is the micro-level behavior the explorer uses in interaction with information systems. Moreover, information use behavior consists of physical and mental actions based on information in an individual's knowledge base.

The concept of "information behavior" has been considered since the mid-1960s (Savolainen, 2007). Wilson (1999) cited the study of the library used by researchers as the first example of research in information behavior, which was presented at the Royal Society Scientific Conference in 1948. This conference presented studies on how users use information, which initiated a new approach to studying human information-seeking behavior (Wilson, 1999). American researchers expanded the scope of information-seeking behaviors by holding the International Conference on Scientific Information in Washington in 1958, giving it global and international prestige. After that, studies in this field focused on the information needs of the urban and organizational community (Azami & Davarpanah, 2013). During the 1970s, the concept of information behavior gradually found its position among researchers' vocabulary, focusing on information needs and information use. Lin and Garvey (1972) argued that researchers need to focus on the information behavior of scientists and technologists. Moreover, Ford (1973) studied "user behavior".

The study of information-seeking behavior has become popular among scientific circles and various groups of scientists since the late 1980s. Furthermore, several studies investigated the role of factors in individuals' information-seeking behavior (Azami & Davarpanah, 2013). Research in this area underwent many variations in the mid-1980s, and the focus of studies shifted from the system to the users. Researchers employed a more holistic approach to studying the information-seeking behavior of individuals, groups, and organizations. The study of the behavior of large populations and the use of questionnaires in data collection gradually shifted to the study of small groups through observation and interviews. In addition, using models to evaluate the information-seeking behavior of individuals or organizations became common (Nowkarizi & Davarpanah, 2006).

According to the literature, there is no specific consensus on the beginning of research on the information behavior in Iran; for example, Karbal Aghaie Kamran and Rezaie Sharif Abadi (2009) believed that research on the information behavior in Iran began by studying how users access their required resources (Asadi Gorgani, 1987) and continue with research on the information needs of different groups of users (Masoumi, 1992). According to Ahmadi and Yari (2014), the initiation of the discussion on information-seeking behavior in Iran dates back

to the mid-1990s. In this regard, some investigations show that the first published document in this field is a thesis written by Dilamghani (1996). However, as Azami and Davarpanah (2013) claimed, the first study on information-seeking behavior in Iran dates back to 1975 and was conducted by the Library Department of the University of Tehran. Despite the few studies from 1975-1991, this field had no significant evolution. Since 1991, studies on information-seeking behavior have gradually entered most scientific areas.

Due to society's need for information, information-seeking behavior has always been of great importance and value among researchers focusing on knowledge and information science. The large volume of published papers and theses indicates the position and significance of this field among librarians (ibid). However, there is still no clear picture of research in this field methodologically, contextually, and thematically as inputs and outputs in terms of used models and theories after three decades of discussing information behavior in Iran.

Determination of a topic's success rate and trends requires analysis of its literature. Therefore, reviewing the articles published in that field is one approach that can help understand the new prevailing conditions and predict future changes. Lack of knowledge or awareness of the ongoing developments in a field leads to an improper understanding of the subject and inconsistency of the research trend with the realities of that field (ibid). Observing the literature of a field helps interested researchers and students understand the existing gaps, identify new research topics and areas, and reveal factors and issues that were not previously considered, which will avoid duplicate texts and make more valuable and high-quality literature.

In this regard, several studies have been conducted in Iran and other countries with the topic of reviewing the literature on information behavior, which can be referred to studies of Karbal Aghaie Kamran and Rezaie Sharif Abadi (2009), Davarpanah and Azami (2011), YaminFiroz, NooshinFard and Siamian (2012), Azami and Davarpanah (2013), Ahmadi and Yari (2014), Mokhtarpour and Keshvari (2015), Jafarzadeh and Fadaei Iraqi (2017) in Iran, and investigations of Julien (1996), Julien and Duggan (2000), Case (2007), Julien, Pecoskie and Reed (2011), Greifeneder (2014), Gaston (2017), and Kim (2017) in other countries. However, none of these studies have explicitly addressed the texts and resources of behavior and have mainly focused on the methodology. All the studies mentioned in Iran have only assessed the status of papers in this field. None of them, except Ahmadi and Yari (2014) in the form of a summary without diagrams and figures, has evaluated the status of theses, which are considered the result of a systematic study of an important subject and also identify the problems.

Accordingly, this study analyzes the content of literature on information behavior, including scientific research papers and theses methodologically, contextually, and thematically, and inputs and outputs from the perspective of the models and theories used. The findings of this study can acquaint experts in this field with the range of research conducted by various researchers and can help conduct better and more comprehensive research in the future. Furthermore, in addition to identifying the strengths and weaknesses of these studies from methodological, contextual, and thematic aspects, and inputs and outputs in the form of papers and theses in Iran, the need to review some research approaches and practices to achieve better results will become evident.

This study's primary issue was: What methods and approaches characterize the literature on information behavior in Iran? How does the literature vary regarding topic, context, and thematic domains? What theoretical development implications do they have for their field?

Literature Review

The knowledge and information science in Iran has witnessed many master's and doctoral theses on information behavior, showing the importance of information behavior for researchers and students in this field. Few studies have been conducted in Iran to analyze the research trends on information behavior. In this regard, the researcher's search effort was not successful, and a comprehensive study was not found that analyzed all publications on information behavior (e.g., theses and papers) from different aspects (methodology, context, and theoretical development), which in turn can show the importance and necessity of this research. The studies in this field in Iran and the literature review of studies of other countries are provided in the following.

Identifying the intellectual and scientific roots and the change of paradigms in this field are among the important issues considered in some research. For example, Jafarzadeh and Fadaei Iraghi (2017) found that the scientific output in information-seeking behavior dates back to the 1970s. They also showed that one of the significant points in the scientific and intellectual formation of information-seeking behavior is the use of qualitative research methods, indicating the importance of this method in this field. Other research results include the intellectual structure of information-seeking behavior based on two categories of sources: the central sources that show the theoretical framework and the surrounding sources that have been considered methodologically. Pourkhalil and Koochi Rostami (2020) also investigated the paradigm shift and different research approaches in information behavior using a library method with an analytical approach. Their results showed that information behavior studies could be divided into two main categories: old and new paradigms. The old paradigm refers to how individuals use information channels, and less consider individuals interacting with information. The old paradigm focuses on Shannon's information theories, and the new paradigm emphasizes interdisciplinary relationships. Cognitive, sociological, and multifaceted approaches can be observed in the new paradigm category. They concluded that the evolution of information behavior research shows the combination of disciplines, interdisciplinary theories, and new relationships in understanding human information behavior.

To identify the components affecting information-seeking behavior and measure their impact from Persian and English articles, Mirzaei, Hariri and Matlabi (2020) researched using the meta-analysis method. Their results indicated that seventeen variables and factors affecting information-seeking behavior were identified in four main subgroups: students, faculty members, medical staff, and citizens. In addition, the overall results of the meta-analysis revealed that the coefficient of the effect of variables and factors affecting information-seeking behavior is 0.589. They also showed that the two variables of sample groups and study field are modulators of factors affecting information-seeking behavior.

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Another topic of interest to researchers has been the investigation of methodological aspects in the research conducted in this field. For example, Karbal Aghaie Kamran and Rezaie Sharif Abadi (2009) conducted a study to assess the research trends of papers published on

information-seeking behavior in Persian publications during 1996-2009, in which bibliometric techniques and checklist tools were used. The results showed that more than 85% of the studies on information-seeking behavior were conducted by survey method, and more than 96% of these studies used questionnaire tools. This study also showed that the studies in this field had not changed methodologically during 1996-2009. Another study conducted by Azami and Davarpanah (2013) using the documentary method also confirms the research results of Karbal Aghaie Kamran and Rezaie Sharif Abadi (2009) regarding the methods and tools of these researchers. The population of this study consisted of papers on information-seeking behavior in seven journals in the field of information science. This study revealed that the book is the most used in the academic and non-academic community, and the priorities of using resources and information-seeking behavior are different in various groups. Ahmadi and Yari (2014) showed: (i) After 17 years of discussing information-seeking behavior in Iran, most published literature was modeled from other studies, and only the statistical population was changed; (ii) during these years, a growing trend is observed in the texts and resources quantitatively and qualitatively that more than 90% of these studies were applied research; (iii) <4% of these sources have been translated; (iv) approximately 34% of these studies have investigated the information-seeking behavior of faculty members and then students (~ 17%) and then researchers (~ 14%); and the least attention has been related to the information-seeking behavior of the general public. This research was conducted using the content analysis method. The study of only the literature on information-seeking behavior and the lack of diagrams and images to clarify the issue are among the shortcomings of this research, making it required to analyze the literature on information behavior. Mokhtarpour and Keshvari (2015) methodologically evaluated some of the most important research pieces and models used in information-seeking behavior in other countries. They compared them with domestic studies to provide a brief perspective for Iranian researchers. Finally, the results of this study showed that in their information-seeking studies, Iranian researchers are unaware of the methodological tradition governing these studies, have considered the stereotypical approach, and sometimes merely modeled it from others' works. Interestingly, these researchers often refer to influential studies in this field without considering the methods used. By all means, this study indicates that the lack of methodological diversity is not only observed in qualitative approaches but also the quantitative approaches themselves.

As mentioned in the introduction and problem statement section, information behavior is one of the research areas that researchers have long considered in various fields, including knowledge and information science. As shown in the literature review section, there is not much research on reviewing and analyzing the content of information behavior literature in Iran. In addition, none of these studies comprehensively addressed articles and theses on information behavior, information-seeking behavior, and information-search behavior methodologically, contextually, and thematically, and patterns and models are not studied. However, many studies (e.g., Julien (1996); Julien and Duggan (2000); Case (2007); Parmar, Kumar and Prakash (2007); Julien, Pecoskie and Reed (2011); and Kim (2017, 2019)) have focused on the literature on information behavior and in most cases have conducted more comprehensive research than investigations performed in Iran. In addition, according to studies conducted to date, no research could fully and comprehensively evaluate studies on information behavior in Iran from the perspective of methodology, context, and theoretical development.

Methods and Materials

This study used a quantitative content analysis method with a descriptive approach. For implementing this study, various searches were done for terms and keywords, e.g., "information behavior," "information-seeking behavior," and "information-search behavior," in the theses database of the Iranian Research Institute for Information Science and Technology (IranDoc) named Ganj (<https://ganj.irandoc.ac.ir/>) and Persian article databases. The statistical population of this research consists of all theses registered in IranDoc on information behavior in Iran and all scientific research articles published in prestigious journals of the Ministry of Science on information behavior in Iran from the beginning to the first six months of 2019. We conducted our search in September 2020. Accordingly, in the present investigation, 109 related theses and 216 related articles from various journals were selected, of which 325 references were reviewed. The data collection tool was a researcher-made checklist divided into three parts according to the research objectives and questions: methodological, contextual, and theoretical development. Accordingly, the literature trends in information behavior were analyzed. The validity of the checklist used in this study was also confirmed after the approval of three experts in human-computer interaction and its compliance with specialized literature.

Results

All 325 references were reviewed to respond to the question: what is the type of population studied in investigations on information behavior? The frequency of the research population type is shown in Table 1.

Table 1

Frequency distribution of research by the type of studied population

Type of Studied Population	Frequency	Frequency Percentage
University students	123	37.6
Faculty members	45	13.8
Specialists, researchers, and scholars	19	5.8
Users, clients, and consumers	18	5.5
Farmers	10	3.1
Assistants	10	3.1
Literature (books, articles, theses, etc.)	8	2.4
Employees, experts, and staff	7	2.1
Patients	6	1.8
Teachers	6	1.8
School students	5	1.5
Women	5	1.5
Children	5	1.5
Ordinary public	5	1.5
Theories	5	1.5
Physicians	4	1.2
Youth and adolescents	4	1.2
Managers	4	1.2
People in need of rehabilitation (disabled, blind)	3	0.9
Nurses	3	0.9
Science and technology companies and parks	3	0.9

Type of Studied Population	Frequency	Frequency Percentage
Religion students	3	0.9
TV broadcast program makers	2	0.6
Librarians	2	0.6
Visited web pages	2	0.6
Trainers (instructors, coaches, etc.)	2	0.6
Other communities	18	5.5
Total	327	100

As shown in Table 1, university students with a frequency of 123 (37.6%) formed the largest research population, followed by faculty members with 45 (13.8%), specialists, researchers and scholars with 19 (5.8%), users, clients, and consumers with 18 (5.5%), farmers and assistants with 10 (3.1%), published literature on information behavior with 8 (2.4%), employees, experts, and staff with 7 (2.1%), patients and teachers with 1.8%, school students, women, children, ordinary public, and theories with 5 (1.5%), physicians, youth, adolescents, and managers with 4 (1.2%), and people in need of rehabilitation, nurses, companies, and religion students each with a frequency of 3 (0.9%), TV broadcast program makers, librarians, and visited web pages with 2 (0.6%). Other communities with a frequency of 1 (e.g., interns, clients, engineers, weblogs, citations, parliament members, databases, investors, records, immigrants, emergency technicians, policyholders, entrepreneurs, older people, teachers, library software, and exchanged messages) are not presented in the table due to the prolongation, and only their names are mentioned; these communities are ranked fourth together as mentioned earlier.

A classification was provided to answer the question of how many samples are employed in the studied data, in which, according to each research, a rating of 1 to 7 was considered. The frequency of analyzed data samples is presented in Table 2.

Table 2

Frequency distribution of samples in the studies

Number of Samples	Frequency	Frequency Percentage
1-50	44	16
51-100	26	9.5
101-200	63	22.9
201-300	55	20
301-400	62	22.5
401-500	13	4.7
>500	12	4.4
Total	275	100

Accordingly, it is clear that among the remaining 325 data, 275 studies used sampling, and no specific sampling was considered for the rest. Data between 101 and 200 samples with the highest frequency percentage (22.9%) were placed in the first rank of the number of samples, followed by data between 301 and 400 samples with a frequency percentage of 22.5%. A total of 55 data (20%) between 201 and 300 samples were in the third place, and 44 data with a frequency of 16 were in the fourth place. In addition, 26 data (9.5%) had 51-100 samples, 13 had 401-500 samples, and 12 had more than 500 samples, ranked fifth to seventh, in respective order. Therefore, much of the data had 101-200 samples, and 12 had the fewest with more than

500 samples. First, the research method of all sampling methods according to books and articles was set in a table to provide a clear picture of sampling methods in the data. After reviewing the data, the used sampling methods were identified and displayed according to Table 3.

Table 3

Frequency distribution of research for sampling method

Sampling Method	Frequency	Frequency Percentage
Stratified sampling	90	39.3
Simple random sampling	71	31
Purposive sampling	23	10
Convenience/Accidental sampling	19	8.3
Cluster sampling	17	7.4
Snowball sampling	8	3.5
Quota sampling	1	0.4
Total	229	100

As indicated in Table 3, the stratified sampling method with a frequency of 90 (39.3%) is the most extensively used approach, and the quota sampling method with a frequency of 1 is the least used sampling method, followed by random, purposive, convenience, cluster, and snowball methods, in respective order. All available resources to answer the research question were reviewed in this section, and their collection tools were identified. For this purpose, the abstracts and the third chapter in the thesis, i.e., the tools and methods of collection section, and the abstracts and full texts of articles are carefully examined to achieve the answer of this part; the results are presented in Table 4.

Table 4

Frequency distribution of data collection tools in the studies

Collection data tools	Frequency	Frequency percentage
Questionnaire	252	75.9
Interview	45	14.2
Checklist	11	3.3
Observation	11	3.3
Documentary observation	6	1.8
Interaction record software	5	1.5
Total	332	100

As shown in Table 4, the questionnaire with 252 items (75.9%) was the most used for information behavior research. After that, the interview, with 14.2%, is in second place, and the checklist and observation, each with a frequency of 11, are in third place. Documentary observation is in the next place, and interaction record software is at the bottom of the table. Interviews have been used in recent years with significant growth in information behavior research, which shows researchers' attention to the use of interview tools and has led to qualitative research. The number of data collection tools in the theses and articles was counted like the data collection tools mentioned above, and all 109 theses provided information about the tools used. The tools used in 167 articles among 216 articles were identified to count the

number of article tools, and information about the tools used by 49 articles was not found; therefore, they were excluded from this part of the research. Information about the number of tools used in the data is presented in Table 5.

Table 5

Frequency distribution of the number of data collection tools in the studies

The number of data tools	Frequency	Frequency percentage
1	188	68.1
2	43	15.6
3	22	8
4	9	3.3
5	4	1.4
6	10	3.6
Total	276	100

As indicated in Table 5, 188 articles used only one tool to collect data, 43 articles and theses used two tools, and 22 references used three tools. However, four tools were observed in only 9 references, five were used in 4 articles, and six were applied in 10 references.

Chapter 3 and the research methodology of all data were reviewed to determine the research approach (quantitative, qualitative, or mixed) in the field of information behavior in Iran, and the results are presented in Table 6.

Table 6

Frequency distribution of research for research approach (quantitative, qualitative, or mixed)

Research approach	Frequency	Percentage
Quantitative	251	79.2
Qualitative	32	10.1
Mixed	34	10.7
Total	295	100

295 out of 325 data were found on the research approach. According to the data presented in Tables 4-8, 79.2% of the studies employed a quantitative approach, indicating the dominance of a quantitative process on the information behavior research in Iran. In comparison, 10.1% used the qualitative approach and 10.7% applied a mixed approach.

The study of the methodological information of the literature, mainly the information from the third chapter of the theses and the research methodologies of papers, suggested that only 11 methods were used for studies on information behavior. Their data are shown in Table 7.

Table 7

Frequency distribution of methodologies used in information behavior research in Iran

Methodology	Frequency	Percentage
Survey	240	72.2
Grounded theory	27	8.2
Library or documentary	26	7.9
Mixed	10	3
Experimental	9	2.7

Content analysis	7	2.1
Citation analysis	3	0.9
Scientometrics, bibliometrics	3	0.9
Ethnography	2	0.6
Log analysis	2	0.6
Heuristic evaluation	1	0.3
Total	330	100

As indicated in Table 7, the survey method with 72.2% was the most frequent approach in this area, followed by grounded theory (8.2%), the library method (7.9%), the mixed and experimental methods (~3%), content analysis, citation analysis, scientometrics, ethnography, log analysis, and heuristic evaluation each with <1%.

A literature review determined the field of study of most of the authors. The author's discipline was known in theses; however, for articles with no authors' discipline data, data were collected by referring to the author's CV, university, Humanities Comprehensive Portal (<http://ensani.ir/fa>), Noor Specialized Magazines Website (<https://www.noormags.ir/>), and Iranian Journals Database (<https://www.magiran.com/>).

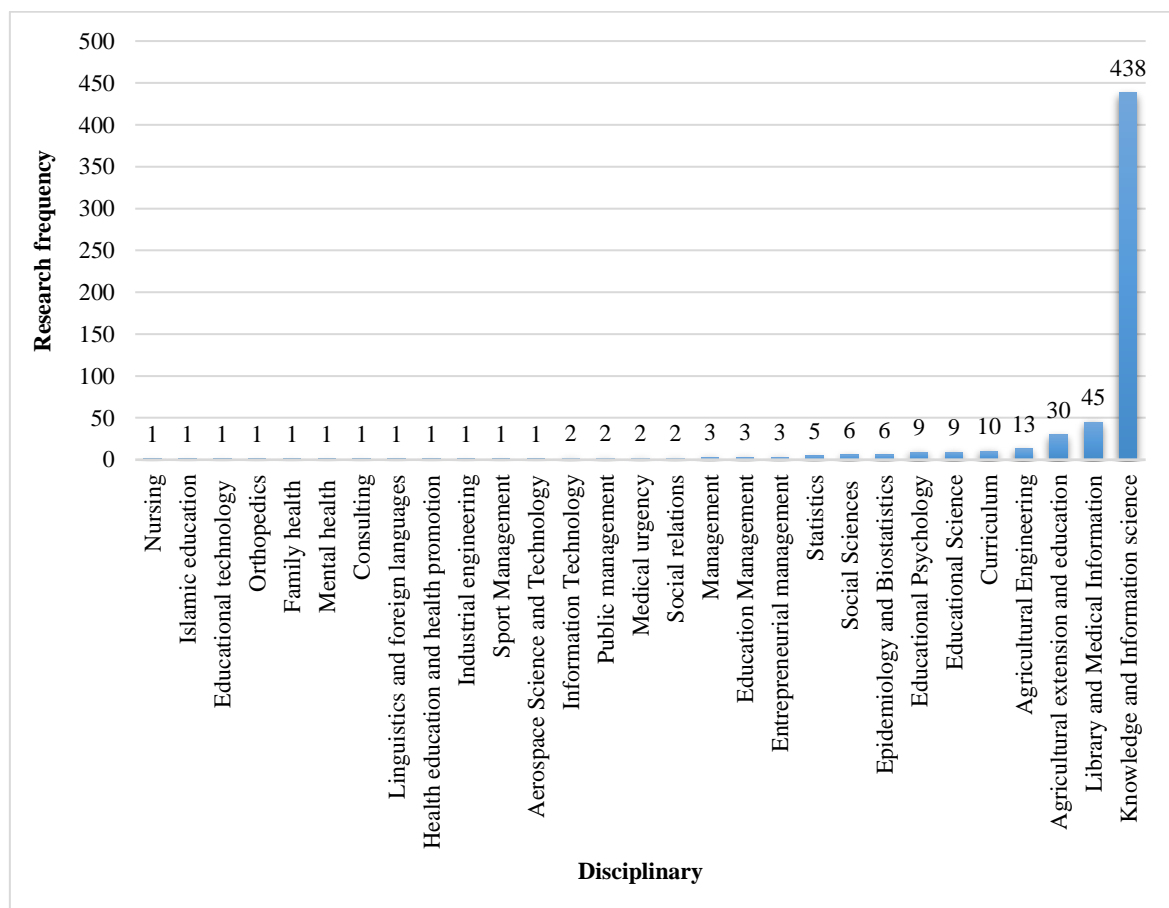


Figure 1: Frequency distribution of information behavior publications in Iran based on the authors' field of study

As demonstrated in Figure 1, a total of 438 authors were investigated in the field of

knowledge and information science, suggesting that the field of knowledge and information science had the highest contribution ($\approx 90\%$) in the development of research on information behavior, which the great desire of students and professors in this field to conduct research related to information behavior. Library and medical information, with a frequency of 45, and agricultural extension and education, with a frequency of 30, ranked second and third, respectively. Other disciplines such as curriculum, educational science, educational psychology, epidemiology and biostatistics, social sciences, and statistics had a small contribution to developing research on information behavior and the researchers' fields of study. The table above and the diversity of researchers' fields of study confirm the interdisciplinary nature of research in information behavior. By reviewing the literature on information behavior, the author extracted and counted the theories and models the researchers used in their works, presented in Figure 2.

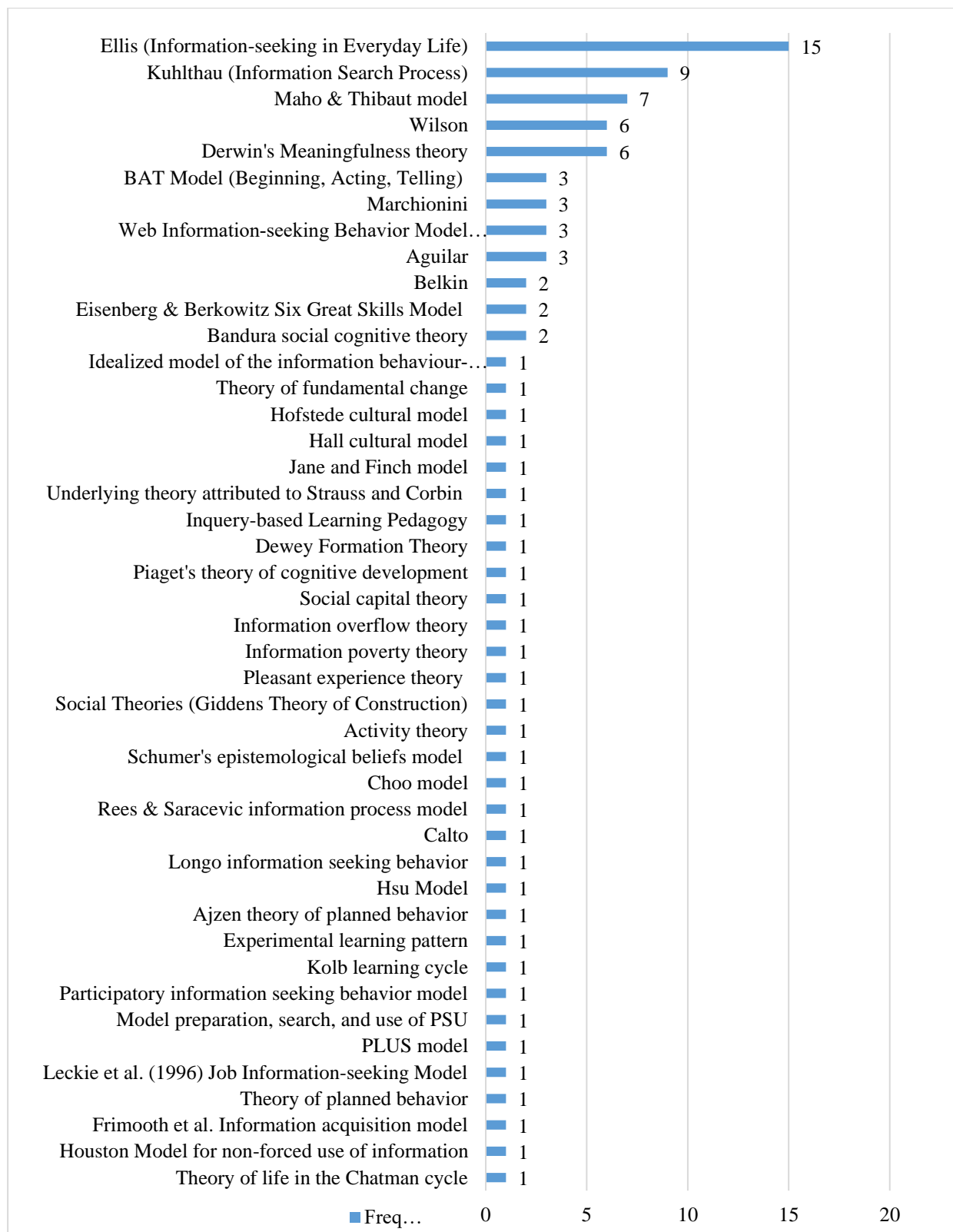


Figure 2. Frequency distribution of theories and models used in the literature

As shown in Figure 2, the "Ellis model," with a frequency of 15, was frequently used by various researchers. Perhaps because Ellis's model is an example based on search conditions and environment, it has been most applied by researchers. After that, the Kuhlthau model with

a frequency of 9 and the Maho and Thibaut model with a frequency of 7 are in the second and third places, respectively. In addition, Wilson and Darwin's meaningfulness models with a frequency of 6 are in the fourth and fifth places, respectively. Some models and theories in psychology and sociology were alternately used by researchers in information behavior, indicating that this field is interdisciplinary.

They are reviewing Chapter 4 and especially Chapter 5 of the thesis, in which the main foundation and essence of the researchers' work are revealed. The articles' findings, new theories, and models were extracted, as presented in Table 7.

Table 7

New theory or model presented in the literature on information behavior in Iran

No.	Source	New Models	Name of Researcher	Educational Degree/ Occupational Status
1	Thesis	Model of faculty members' information-seeking behavior	Mozhdeh Salajegheh	Ph.D.
2	Thesis	A comprehensive and integrated model of the information-seeking behavior of graduate students	Zohreh Parvini	MSc.
3	Thesis	Proposed conceptual model of database interface information search based on the components of the Ellis model and Derwin's meaningfulness theory	Mohammad Azami	Ph.D.
4	Thesis	Conceptual model of information seeking in the context of the daily life of relatives	Amin Zarea	Ph.D.
5	Thesis	Model of non-compulsory use of information	Mohamadreza Kiani	Ph.D.
6	Thesis	Supportive-care model of information seeking for cardiovascular patients	Mohammad Gholami	Ph.D.
7	Thesis	Model of youth health information-seeking behavior through the Internet	Tahereh Jokar	Ph.D.
8	Thesis	Help-seeking model of digital library users	Mohammad Zerehsaz	Ph.D.
9	Thesis	Conceptual model of corporate business information behavior	Rohollah Khademi	Ph.D.
10	Thesis	A model related to business information services system	Rohollah Khademi	Ph.D.
11	Thesis	Causal model to explain the information behavior of explorers based on Bandura's social cognition theory	Maria Nasiri	Ph.D.
12	Thesis	Model of the participatory information-seeking behavior of digital library users	Mahmoud Sangari	Ph.D.
13	Thesis	Model of unplanned behavior in	Hadi Harati	Ph.D.

No.	Source	New Models	Name of Researcher	Educational Degree/ Occupational Status
		the use of academic library resources and services		
14	Thesis	Conceptual model of people needing rehabilitation information behavior cycle from information needs to information search challenges.	Faranak Zomorodpoush	Ph.D.
15	Article	Developing a user information model in a hidden web environment: Preliminary steps	Yazdan Mansourian	Faculty member
16	Article	Developing a model of informational inquiry-based behavior	Mohammadramin Naderi Yazdan Mansourian	Ph.D. Faculty member
17	Article	Model of information search behavior of researchers in the web environment	Maryam Asadi Najla Hariri	PostDoc Faculty member
18	Article	Information behavior model of Bushehr emergency technicians	Zahed Bigdeli Mahasti Ganjo/ Alireza Pourshams/ Leila Dehghani	Faculty member Ph.D. students
19	Article	A conceptual model for evaluating the reliability of the information in the web environment	Hamid Keshavarz Fatemeh Fahimnia Alireza Norouzi Mohammadreza Esmaili Givi	Faculty member Faculty member Faculty member Ph.D. student

New models have also been presented in studies on information behavior in Iran, of which only one study was the master thesis, and the rest were all presented by Ph.D. students and faculty members. Among the 19 newly proposed models, 14 were published as theses, while five were published in articles.

Discussion

The present study was planned and conducted to analyze the trends of information behavior research in Iran methodologically, contextually, and theoretically. The results indicated the dominance of the quantitative approach and, consequently, the use of analysis and statistical tools and methods related to this approach in related research. This confirms the results of Mokhtarpour and Keshvari's study (2015) and shows that Iranian researchers mostly use the quantitative approach. The lack of research using qualitative and mixed research methods is one of the significant findings of this research. In addition, most of the investigations were practical and less considered theoretically-philosophically and, in other words, fundamental. According to the study by Karbal Aghaie Kamran and Rezaie Sharif Abadi (2009) and Azami

and Davarpanah (2013), more than 85% of the research conducted in the field of information-seeking behavior with survey method and according to the study of Julien and Duggan (2000), about 60% of researchers have used the survey method (written questionnaires and interviews).

Furthermore, the scope of disciplines and specialties involved in the research production in this field reflects its interdisciplinary nature with an emphasis on knowledge and information science. The findings of the research of Azami and Davrpanah (2013), Julien (1996), Julien, Pecoskie and Reed (2011) were in line with the findings of this research, and it is a confirmation of its interdisciplinary nature and authors from different disciplines contributed to the research in this field.

The design and implementation approach of multivariate and multi-tool research has increased with fewer samples and deeper analysis in this field. However, investing in this area and further equipping laboratory spaces to conduct more in-depth research using more objective methods still seems necessary. The geographical and spatial scope of the publication of research and studies in Iran appears to be extensive. From a temporal perspective, the development of studies is evident over time. The approach of studying information behavior expands in various contexts with multiple users. However, it seems that attention to the information behavior of the general public has received less attention, and new studies are required in this regard.

Some studies on information behavior in Iran mainly considered international models in this field, and even other research pieces have attempted to modify them. A few researchers have also proposed new models in this field, some of which have been published in international articles. However, it seems necessary to provide further models and more use and citation of these models in indigenous studies.

Conclusion

In general, information behavior is an attractive study area for researchers in various fields, and it seems that in the present era, the need for significant studies in this area is felt more than ever due to changes in the information space, the development of information technologies, as well as the tastes and desires of users.

In the end, it is emphasized that if additional research is carried out separately and based on different aspects and contexts in information behavior and their results are compared with the results of this research, a better understanding of the state of study conducted in the field of information behavior can be reached. It is also possible to carry out research by examining all the information behavior texts, including articles, theses, research plans, and other texts for developing countries, and by reviewing the results with the present research results, a better understanding of the status of this field of study can be obtained. It is also possible to analyze the development strategies of the research field of information behavior by observing the views of experts.

Recommendations

According to the results of the present study, it can be recommended that:

- Given the results of the analysis of research trends on information behavior from a methodological point of view, it is recommended that different researchers in this field do not select the target population repeatedly and assess other communities' information-seeking behaviors.
- Moreover, the number of samples should be changed according to the type of research

so that all aspects of the information behavior of different groups can be analyzed.

- It is suggested that methodology in this specialized area be taught practically at the graduate level, and the ideas of experts be used in various fields to apply multiple scientific methods in information behavior research.

- Another practical suggestion is to move the master's and Ph.D. theses towards mixed research, selection of different tools in research, and use of several tools in research in the field of information behavior.

- It is recommended that specialized journals be launched to diversify scientific practices and that most of the accepted studies be published in these quality journals.

- According to the results of the analysis of research trends in the field of information behavior from a contextual perspective, it is suggested that as prolific authors were identified, researchers should use the comments of authors in this field as well as other scientific disciplines with the help of faculty members to conduct research in this area.

- Given the occupational status of authors in this field, it is recommended that researchers study the information behavior of different populations, emphasizing the daily needs of the ordinary public.

- According to the results of the analysis of research trends of information behavior from the theoretical development aspect, it is recommended that researchers use other models and theories in information behavior to conduct research in this field and study the information behavior of different populations. Investigation in this area must be concluded in a specific output, such as presenting a model and adding a value.

References

- Adhami, A. (2004). What is the information Seeking and Behavior of Information Seeking? *Iranian Journal of Information Processing & Management*, 19 (3 & 4), 31-36. Retrieved from https://jipm.irandoc.ac.ir/article_698684_086263aa28c5b872eb40b1b25b59c1de.pdf?lang=en [in Persian]
- Ahmadi, H. & Yari, S. (2014). A review on information seeking behavior literature in Iran. *Iranian Journal of Information Processing and Management*, 30 (1), 173-197. <https://doi.org/10.35050/JIPM010.2014.006> [in Persian]
- Asadi Gorgani., F. (1987). *Examining how welfare experts can access the necessary resources and documents*. Master Thesis, Iran University of Medical Sciences. [in Persian]
- Azami, M. & Davarpanah, M. (2013). The information needs and information-seeking behavior in Iran: A review of literature and studies. *Journal of Kerman School of Medical Management and Information*, 1 (1), 65-79. Retrieved from <https://jms.kmu.ac.ir/article-1-27-fa.pdf> [in Persian]
- Case, D. O. (2007). *Looking for information: A survey of research on information seeking, needs, and behavior*. Second edition. San Diego: Academic Press.
- Davarpanah, M. & Azami, M. (2011). Information needs and information behavior among nurses: Review of previous studies. *Journal of Research on Information Science and Public Libraries*, 17 (3), 427-453. <http://dorl.net/dor/20.1001.1.26455730.1390.17.3.3.3> [in Persian]

- Dilmaghani, M. (1996). Investigating the information-seeking behavior of mechanical engineering faculty members in acquiring specialized information in five universities in Tehran. Master Thesis, Tarbiat Modares University. [in Persian]
- Ford, G. (1973). Progress in documentation; research in user behavior in university libraries. *Journal of Documentation*, 29(1), 85-106. <https://doi.org/10.1108/eb026552>
- Gaston, N. M. (2017). Contextualizing Information Behavior: A Methodological Approach. *Journal of Critical Library and Information Studies*, 1: 2-33.
- Greifeneder, E. (2014). Trends in information behavior research. *The information behavior conference*, 19(4). Retrieved from <https://informationr.net/ir/19-4/isis/isis13.html>
- Jafarzadeh, R. & Fadaei Iraqi, G. (2017). Finding the roots of information-seeking behavior studies using the bibliometric approach. *National Studies of Library and Information Organization*, 28(1), 113-124. [in Persian]
- Julien, H. (1996). A content analysis of the recent information needs and uses literature. *Library & Information Science Research*, 18 (1), 53-65. [https://doi.org/10.1016/S0740-8188\(96\)90030-4](https://doi.org/10.1016/S0740-8188(96)90030-4)
- Julien, H. & Duggan, L. J. (2000). A longitudinal analysis of the information needs and uses literature. *Library & information science research*, 22 (3), 291-309. [https://doi.org/10.1016/S0740-8188\(99\)00057-2](https://doi.org/10.1016/S0740-8188(99)00057-2)
- Julien, H., Pecoskie, J. J. & Reed, K. (2011). Trends in information behavior research, 1999–2008: A content analysis. *Library & Information Science Research*, 33(1), 19-24. <https://doi.org/10.1016/j.lisr.2010.07.014>
- Karbal Aghaie Kamran, M. & Rezaie Sharif Abadi, S. (2009). Information seeking behavior articles in Persian Journals between 1996 and 2009. *Academic Librarianship and Information Research*, 43 (2), 45-69. [in Persian]
- Kim, E. (2017). The trends in information behavior research, 2000-2016: The emergence of new topical areas. *Journal of the Korean Biblia Society for Library and Information Science*, 28(2), 119-135. <http://doi.org/10.14699/kbiblia.2017.28.2.119>
- Kim, E. (2019). A comparative analysis of research on LIS information behavior and health information seeking behavior. *Journal of the Korean BIBLIA Society for library and Information Science*, 30(2), 167-187.
- Lin, N. & Garvey, W. (1972). Information needs and uses. In *Annual Review of Information Science and Technology*, vol. 7, Carlos A. Cuadra (ed), Washington, DC: American Society for Information Science.
- Marchionini, G. (1995), *Information-Seeking in Electronic Environments*, Cambridge: Cambridge University Press.
- Masoumi, F. (1992). Examining the information needs of pharmaceutical science specialists and providing a suitable model to meet their needs. Master Thesis, Iran University of Medical Sciences. [in Persian]
- Mirzaei, E., Hariri, N. & Matlabi, D. (2020). A meta-analysis of the factors affecting information seeking behavior in Iran and the world. *Research on Information Science & Public Libraries* 26(3), 415-438. <http://dorl.net/dor/20.1001.1.26455730.1399.26.3.5.8> [in Persian]
- Mokhtarpour, R. & Keshvari, M. (2015). Methodological approach to models and information-seeking studies: comparing the situation inside and outside the country. *Human Information Interaction*, 2(3), 43-60. <http://dorl.net/dor/20.1001.1.24237418.1394.2.3.5.6> [in Persian]

- Nowkarizi, M. & Davarpanah, M. (2006). Analysis of information behavior models. *Library and Information Science Research*, 9 (2), 119-152. [in Persian]
- Parmar, A. S., Sanghmitra A. K. & Thushara P. (2007) Bibliometric analysis of information seeking behavior related literature. *Journal of Library and Information Science*, 29(1/2), 55-64.
- Pourkhalil, N. & Koohi Rostami, M. (2020). Analysis of information behavior paradigms: Past and present. *Human Information Interaction*. 7 (3), 50-65. <http://dorl.net/dor/20.1001.1.24237418.1399.7.3.3.9> [in Persian]
- Savolainen, R. (2007). Information Behavior and information practice: Reviewing the 'Umbrella concept' of information seeking studies. *Library Quarterly*. 77(2), 109-132. <https://doi.org/10.1086/517840>
- Wilson, T. (1999). Models in information behavior research. *Journal of Documentation*. 55(3), 249-270. <https://doi.org/10.1108/EUM0000000007145>
- Wilson, T. (2000). Human information behavior. *Informing Science* 3 (2), 49-55. <https://doi.org/10.28945/576>
- YaminFiroz, M., NooshinFard, F. & Siamian, H. (2012). The concepts and characteristics of Wilson's information seeking behavior model: A literature review. *Health Information Management*, 9(4), 567-579. [in Persian]