

Information needs and Information seeking behaviors of Social Science Graduate Students in Malaysian Public Universities

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Abstract

Information seeking is a grand challenge and it is one of a considerable issue for Information Science. The focused of the study was the graduates of Social Sciences by research to pursue Master and Doctor of Philosophy (Phd) degrees in Public Malaysian Universities. The graduates of Social Sciences by research were in need for large volumes of current and relevant information sources to fulfill their research requirements. The advancement of the technology like computerization has changed Social Science graduates' information need and seeking behaviors. Hence, the study is to gain a clearer picture of how graduate students seek information. This study is also to determine if there exist any correlation between information needs and information seeking of these graduates. An extensive review of related and relevant literature of previous and present studies is also included. The sample of the study was drawn from the Social Science graduate students of four Local Universities: UiTM, UM, UKM and USM. Quantitative data was collected using closed-ended questionnaires and the statistical package for the Social Sciences (SPSS) version 12 was used to analyze the data.

1.0 Introduction

The role of information has been acknowledged as an important aspect in the research activities of the graduates. However, it is believed that a better understanding of the information needs and the information seeking behaviors of graduates is fundamental to the achievement of the graduates' research activities to pursue Master and PhD degrees. This is because information seeking is a key competency, which will be needed as graduates embark their information sources to fulfill their information needs. Information seeking is also an important part of learning process as Vakkari (1999), states that information seeking is as a process of searching, obtaining and using information for a purpose. Through searching for information for different purposes, in many situations, users develop a variety of behaviors to encounter, seek, comprehend and use information (Cheng & Shaw, 1999). On entering to university, where a range of additional information sources must be accessed an advance skills should be integrated, hence, the graduates need information seeking skills to enhance for needed information. This study tries to seek information needs and information seeking behaviors of the Malaysian Social Science graduate students by research to pursue Master and PhD.

The information professionals, such as the librarians then, could response to the skills of the graduates in terms of how well they respond to the information and learning needs of the graduates. This is because the information professional have two main roles in learning environments; assessment of information needs and planning the information provision (Sternberg, 2000). As Orange (2001), emphasizes that libraries are to ensure access to information for all and they must respond to the information needs of everyone in their communities. Thus, building good systems with suitable information resources to better match the users' modes of engaging in research will result that users being more likely to be successful in their research. The overall purpose of the study is to examine deeper understanding of:

- information needs of Social Science graduate students
- various stages of information seeking behaviors of Social Science graduate students.
- information skills and strategies of graduates in information seeking.
- the various information sources referred by the graduates
- barriers faced by the graduates in information seeking.
- Comments of graduates that they experienced during their information seeking episodes.

This research reports the activities of Master and PhD Social Science graduate students by research in the field of Social Sciences in local Malaysian Public Universities. The research was conducted at four public universities in Malaysia: Universiti Teknologi MARA (UiTM), Universiti Malaya (UM), Universiti Kebangsaan Malaysia (UKM) and Universiti Sains Malaysia (USM). These universities were chosen due to their diverse population of Social Science graduate students.

2.0 Problem Statement

With the increasing number of publications, it has become difficult for the information users typically the graduates to keep up with the fast expanding knowledge. With the increase in the availability of information, user expectations have risen substantially, thus, information professionals are increasingly expected to assist users in evaluating the information they received (Hess, 1999). Due to this problem, it is true that an evolving role for the information professionals is important to assist information seekers. Below are considerations by various authors about the importance of the study of information seeking behaviors. Cheuk (1999), mentions that knowledge about how and why people exhibit different information seeking behavior is very little and it is also mentioned that research studies have not yet fully acknowledged information seeking as a dynamic process.

Kuhlthau (1999), said that often users have difficulty in the early phases of information seeking. Even when they begin with enthusiasm and initial success, many become confused, hesitated and uncertain about how to proceed after a short period of time. Rice (2003), believes that students' levels of expertise in finding information and assessing its credibility are wide ranging as it is wondered how users were functioning in this newly emerging environment, how much users were really making sense of what they were finding and what were they really doing. Thus, this research explores the range and variety of information-seeking behaviors of Social Science graduate students by examining their unique abilities to locate information. This research is to investigate of why Social Science graduate students of Malaysian Public Universities seek for information in their respective area of specialization.

3.0 Objectives of Study

The objectives of the research are as follow:

- To identify the information needs of Social Science graduates.
- To investigate the information seeking behaviors of Social Science graduates.
- To determine if there is a correlation exists between information needs of graduates verses information seeking of graduates.

4.0 Literature Review

Research on information seeking may be traced back to the studies of library users and readership investigations. In 1948, the Royal Society Scientific Information Conference discussed the beginnings of the modern study of human information seeking behavior. The significance of 1948 as a starting date is evident, for example, in a study led by Menzel at the University of Columbia, Menzel & et al. (1960), in which all of the references were from 1948 onwards (Wilson, 2000). Sonnenwald and Wildemuth (2001) used the Concept of Information Horizons. The participants were asked to describe several recent information seeking situations for a particular context, and to draw a map of their information horizon in this context - graphically representing the information resources (including people) they typically access and their preferences for these resources. The combination of graphic and verbal representations of the participants' information horizons provided much more breadth and much more depth. This technique is much less labor intensive than direct observation of people's information activities. In addition, the method incorporates both verbal description and graphical representation thus, improving its validity.

Meho (2001), used a questionnaire, citation analysis, and follow-up inquiry to examine how a Social Science Faculty studying the Kurds, a particular stateless nation, look for government information and the factors that influenced their seeking behavior and use of such information. The result of the study shows that accessing the needed materials is a major information seeking activity. Hess (1999) used three sources of qualitative data. The first was verbal report: a think aloud protocol strategy that is believed to reflect more immediate cognitive processes and these protocols were recorded onto an audiocassette and later transcribed. The second was a semi-structured interview which was then recorded and transcribed. The third was open-ended questions designed to gather reflective information. Hess mentioned that merely browsing sites haphazardly is not recommended. Information skill training may be a major step in this refinement process; thus, he suggested that future research should investigate the impact information skills training on search strategy refinement.

5.0 Theoretical Framework

5.0.1 Information Needs

Kennedy (1997) wrote that the concept of information needs is similar to the need for love and the physiological need for food and water. He added, information seeking thus, is dependent upon the problem situation from which the need for information arises. In this view, information need is a situation or task which depends on many factors and changes as the person goes from one stage of task to the next (Kennedy, 1997). Information needs is often understood as evolving from a vague awareness of something used and as culminating in locating the information that contribute to understanding and meaning (Kuhlthau, 1993). Thus, it is seen that there is a need to understand the user's requirements because the root of any information seeking is believed to be the concept of information needs, which fall into various categories: need for new information; need to expand or clarify the information obtained; and need to confirm or validate the information know (Allen, 1996, p. 103) Leug (2002) further, added, that the goal of user's information seeking activities is to find information that satisfies his or her information needs.

5.0.2 Information Seeking

The concept of information seeking is basically, is the consequence of a felt information need by a user who may then make demands upon formal and informal information sources or services in order to satisfy the needs (Boadi & Letsolo (2004). Information seeking means different things in different context that involves the search, retrieval, recognition and application of meaningful content (Kingrey, 2002). Boyd, (2004) added that information seeking is a personal and situation dependent activity that is underpinned by access to information and the strength of the information sources. Backlund (2003), information seeking is a process in which participants can act as both receivers and senders. It is defined as a purposive process, in which the individual attempts to find information through information sources in order to satisfy his or her information needs (Brystrom, 1999).

6.0 Methodology

6.0.1 Quantitative Data Using Questionnaires

A closed-ended questionnaire was used to gather quantitative data. The final questionnaire for this study has been approved after it has undergone various changes and critics from the colleagues, advisor, and panel faculty members. The final questionnaires were administered personally by distributing the questionnaires while the graduates attended classes. The questionnaires were also mailed to the Social Science graduates of UiTM, UM, and UKM.

6.0.2 Point Scales Used for Survey

The questionnaire used Likert-scale with a seven-point. The respondents were asked to use a rating scale from one to seven (1–7). This rating scale allows respondents to circle the right answer either *Strongly Agree* to *Strongly Disagree* and *Important* to *Not Important*. The choices are *Strongly Disagree* (1), *Disagree* (2), *Slightly Disagree* (3), *Neutral* (4), *Slightly Agree* (5), *Agree* (6) and *Strongly Agree* (7).

7.0 Results from Questionnaire Responses

A total of 521 sets of questionnaires were sent out to Social Science graduates students. Out of these a total of 268 or 51.4% of the questionnaires were returned. This shows about half of the response rate received from the graduates. As according to Blaikie (2003), researchers may proceed on the basis that a large sample over 30 would be sufficient for most purposes. The questionnaires returned from the graduates of Universiti Teknologi MARA were being much higher with 150 or 56%. This is because UiTM has the largest number of Social Science graduate students. There were about 221 graduates' addresses given by the Dean of the Graduate Center of UiTM. The second was Universiti Malaya, 150 questionnaires were sent and 54 or 20.1% of the questionnaires were returned. The third was Universiti Kebangsaan Malaysia, 100 questionnaires were sent and 34 or 12.7% of the questionnaires were returned to the researcher. The least questionnaires received were from USM, where only 50 graduates' addresses were contacted and as a whole only 30 or 11.2% returned the questionnaires. The percentage of returned questionnaires was not quite the same, nevertheless, there was no comparison results between these universities. This is because the respondents' responses were considered collectively as a group of Social Science graduate students from Malaysian Public Universities.

7.1 Demographic Profile of Respondents

The demographic profile of respondents is shows in Table 1, below.

Table 1.0, Demographic Profile of Respondents

Age	20 – 29 Year Old 53 (19.8%)	30 – 39 Year Old 87 (32.5%)	40 – 49 Years Old 100 (37.3%)	50 – 59 Years Old 27 (10.1%)
Gender	Male 130 (48.5%)		Female 138 (51.5%)	
Marital Status	Married 250 (78.5%)		Single 62 (23.1%)	
Universities	UiTM 150 (56%)	UM 54 (20.1%)	UKM 34 (12.7%)	USM 30 (11.2%)
Modes of Studies	Full Time 159 (59.3%)	Part Time 102 (38.1%)		Flexible/Distance Learning 4 (1.5%)
Degree Sought	Doctoral Degree 170 (63.4%)		Master Degree 94 (35.1%)	
Year of Studies	Year One - 75 (28%) Year Two - 80 (29.9%) Year Three - 66 (24.6%) Year Four - 27 (18.1%)		Year Five - 9 (3.4%) Year Six - 3 (1.1%) Year Seven - 2 (0.7%) Year Eight - 2 (0.7%)	

7.2 Reliability, Consistency and Representativeness of Data

According to Uma Sekaran (2000), Cronbach's Alpha is a reliability coefficient that indicates how well the items in a set are positively correlated to one another. He added that the closer the Cronbach's Alpha is to 1, the higher the internal consistency. For this study the Cronbach's Alpha is used to test the reliability and consistency of the elements of variables. The corrected item total correlations of variables are also presented to determine the consistency of data distribution. Table 1, above shows that majority of the variables show Cronbach's Alpha exceed 0.8. Since the Alpha value is high, therefore, the scale questions were considered to have internal consistency (Rasimah, 2002). Majority of the total correlations among variables also exceed 0.2. Thus, it is believed that, the internal consistency of data is well distributed.

Table 2, Reliability, Consistency and Representativeness of Data

Variables	Alpha if item deleted	Corrected item Total Correlation	Mean Score	Standard Deviation	Coefficient Variance (CV)	N
Information Needs	0.880- 0.879	0.014- 0.395	5.64- 6.37	0.747- 1.595	0.12- 0.29	267- 268
Information Seeking	0.879- 0.881	0.126- 0.335	5.18- 5.89	1.115- 1.588	0.19- 0.31	262- 267

The Coefficient Variance for each variable is also determined by dividing the standard deviation over the mean scores of the variable (Blaikie, 2003). It is seen that majority of the Coefficient Variance scores also exceed 0.2, as according to Rasimah (2002), the Coefficient Variance of data that ranges between 0.2 to 0.5 are considered representative. Hence, the mean scores of the variables for this sample population are also considered representative. Therefore, this data set is considered reliable and valid for analyzing the elements of information needs and information seeking behaviors of Social Science graduate students.

8.0 Hypothesis Testing

These quantitative data were tested to identify the distribution of data whether they were normal or not normal. As the distribution of variables determined the adoption of the appropriate correlation analysis tools to be used. A One Sample Kolmogorov-Smirnov Test was run to determine the distributions of respondents' perception scores as depicted in table 3, below. The results of hypothesis testing were described according to appropriate methods used to verify their validity using Pearson Product Moment Correlation for normal data. The value of correlations and the number of respondents (N) were also presented.

Table 3, Normality Distributions of Data

		Information Needs	Information Seeking Behavior
N		268	263
Normal Parameters(a,b)	Mean	5.9160	5.8279
	Std. Deviation	.58828	.71594
Most Extreme Differences	Absolute	.055	0.85
	Positive	.033	.063
	Negative	-.055	-.085
Kolmogorov-Smirnov Z		.901	1.386
Asymp. Sig. (2-tailed)		.391	.043

Table 4 below, shows the correlation Tests of variables selected using Pearson Correlation Test and Spearman Rank Correlation Test.

Table 4, Correlation Tests: Pearson Correlation Test and Spearman Rank Correlation Test

Paired Variables	A Spearman Rank Correlation	(2-tailed test)	N
Graduates' information Needs/ Graduates' information Seeking	0.243**	.000	266

8.0.1 Hypothesis: The greater the information needs of Social Science graduate students, the higher their information seeking performed to search for relevant information to fulfill their information requirements. The test distribution shows that data regarding information needs of Social Science graduates is normally distributed based on the K-statistics where significant value (p) is greater than 0.05, where ($p = 0.391$), however, the data distribution for information seeking behaviors of graduates is not normal where ($p = 0.43$). Thus, this test is important as it tells the researcher to adopt appropriate correlation analysis tools. A Spearman Rank Correlation is used

8.0.2 A Spearman Rank Correlation Test

The study reveals that there is a significant positive, but small relationship exist that is ($r = 0.243$) between information needs of graduates and information seeking behaviors of the graduate students which is statistically significant at 1% level ($p < 0.01$). It is also mentioned that the value of r is also used to indicate the level of agreement between the two variables (Smailes & MCGrane, 2000). The correlation coefficient thus, indicates the strength of an association between two variables. Thus, information needs of graduates are associated and correlated with their information seeking activities. Therefore, the information needs of graduates go in the same direction with their information seeking behaviors that is the more information needed by the Social Science graduate students the higher the information seeking behaviors performed.

9.0 Findings

9.0.1 Information Needs

Table 5, below shows the distribution of graduates' responses regarding information needs.

Information Needs	SD 1	D 2	SI D 3	Neu 4	SI A 5	A 6	S A 7	N
The need to increase the current stage of knowledge.	-	-	0.4	0.7	9.3	36.3	53.2	267
The need to solve a problem at hand.	1.9	4.5	9.3	3.0	12.3	37.3	31.7	268
The need for new information.	1.5	2.2	4.5	1.5	7.5	34.7	48.1	268
The need to fulfill research requirements	-	1.1	1.1	3.0	12.3	35.1	47.4	268
The need to expand the information presently obtained	1.9	1.9	3.0	1.5	7.8	46.6	37.3	268
The need to validate the information presently known	1.9	1.5	3.4	2.2	13.0	44.4	33.6	268
The need to understand meaning of information.	0.7	0.7	1.1	4.5	20.5	42.2	30.2	268
The need to clarify the information obtained.	1.1	1.5	3.4	3.0	19.8	44.4	26.8	268
The recognition of the existence of uncertainty.	1.5	1.1	5.2	5.2	20.5	42.2	24.3	268

Table 5, Distribution of Graduates' Responses Regarding Information Needs

Based on the graduates' responses shown above, it appears that majority of the respondents believed that they seek for information because they need to solve a problem at hand, the need for new information, the need to expand the information presently obtained, the need to validate the information presently known, the need to clarify the information obtained, the recognition of the existence of uncertainty, the need to increase the current stage of knowledge, the need to understand meaning of information, the need to fulfill research requirements. Thus, it is believed that graduates involves in information seeking to fulfill their information needs. By large, it is seen that their information needs motivated them seeking for information as supported by Allen (1996), the concept of information needs fall into the needs for new information, needs to expand or clarify the information obtained, need to confirm or validate the information known.

9.0.2 Information Seeking

Table 10.1, Distribution of graduates' responses regarding Information Seeking Behaviors

Information Seeking Behaviors	S D 1	D 2	S D 3	N 4	SI A 5	A 6	SA 7	N
Initiation – deciding about a topic, aware of an information need	2.6	1.5	2.6	1.9	14.9	36.6	39.6	267
Selection – identify topics to be investigated	2.2	2.2	3.7	1.5	16.4	41.0	32.8	265
Exploration – increase personal understanding on general topics	1.9	1.5	3.0	3.4	17.9	39.2	32.1	265
Formulation – focus and concentrate on the topic	1.1	.4	2.6	3.7	17.5	44.4	29.5	266
Collection – systematically collecting through information of interest: notes, facts and ideas	1.1	1.5	2.6	4.1	16.4	40.7	32.8	266
Presentation – explains his/her learning to others	4.1	7.5	4.9	7.1	19.8	36.9	17.5	268

Majority of the graduates agree that they experienced the six stages of information seeking when they searched for information. It began with **initiation** stage when the graduate prepared for deciding about a topic, a stage when they first became aware of an information need. This reflected from their responses where Slightly Agree (14.9%), Agree (36.6%) and Strongly Agree (39.6%) They then **selectively** identify a topic to be investigated, here their responses showed Slightly Agree (16.4%), Agree (41.0%) and Strongly Agree (32.8%). The next was **exploration** where they investigated information on the general topic to increase understanding and became familiar with it, with responses Slightly Agree (17.9%), Agree (39.2%) and Strongly Agree (32.1%). The fourth stage was **formulation** where they focus and concentrate on the topic with responses Slightly Agree (17.5%), Agree (44.4%) and Strongly Agree (29.5%). The fifth stage of information seeking was **collection** where interest and involvement of graduates in research is deepened and having focused to the problem at hand. The graduates' responses toward this stage showed, Slight Agree (16.4%), Agree (40.7%) and Strongly Agree (32.8%). At this stage, the graduate selectively identifying relevant materials and systematically working through a particular source to locate information of interest. At **presentation** stage, information search is considered complete thus, enable graduates explain their learning to others, where, information sharing took place. Their responses showed Slightly Agree with (19.8%), Agree with (36.9%) and Strongly Agree with (17.5%) responses.

10.0 Conclusion

The responses from respondents indicated that Social Science graduate students seek information due to their information needs to solve a problem at hand, the need for new information, the need to expand the information obtained, the need to validate the information presently known, the need to clarify the information obtained, the recognition of the existence of uncertainty, the need to increase the current stage of knowledge, the need to understand meaning of information, the need to fulfill research requirements. The graduates at the same time also agreed they experienced information seeking stages from initiation, selection, exploration, formulation, collection and presentation. The hypothesis of the study additionally, supports that the graduates' information needs correlates and positively go together with their information seeking activities. Hence, this strongly support and answer the hypothesis of the study that the greater the information needs of Social Science graduates students the higher their information seeking performed to search for relevant information to fulfill their information requirements. Therefore, information needs of Social Science graduates are seen as the motivator to instill and inspire them in seeking for information.

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