Information Seeking Anxiety: Background, Research, and Implications

Muhammad Asif Naveed

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Information Seeking Anxiety: Background, Research, and Implications

Muhammad Asif Naveed\textsuperscript{a,b}

\textsuperscript{a}Department of Information Management, University of the Punjab, Lahore, Pakistan; \textsuperscript{b}School of Governance and Society, University of Management and Technology, Lahore, Pakistan

\textbf{ABSTRACT}

This research aims to provide an analytic and critical review of research on information seeking anxiety (ISA) with a view to inform the information professionals, especially those engaged in information literacy instructions about the existing situation. This study established the background of the proposed phenomenon, provided integrated analysis of the available research, and discussed the theoretical and practical implications of ISA on information services, especially information literacy instruction. Although the results from previous studies were not comparable, directly due to varied geographical contexts and research methods, it was nevertheless possible to draw some common conclusions regarding the users' anxiety related to information seeking tasks. This review overwhelmingly indicated the manifestation and prevalence of ISA among students in the digital environment. Some personal and academic variables of students appear to be correlated with ISA. The results of reviewed studies indicated the necessity for a need-based information literacy curriculum for alleviation of anxiety related to students' information-seeking tasks.

\textbf{Background}

Research examining users' information interaction from a psychological perspective was meager before the mid-1980s (Fine, 1984). Several researchers had touched this area in one way or the other. As a result, this area had gone through many changes and different tags were used for its representation. A perusal of the research published on information users' anxiety indicated that this phenomenon began to be investigated since the mid-1980s using university students of all levels. Swope and Katzer (1972) identified the reasons for non-question-asking behavior of library users who seemed anxious, confused, and frustrated. The major reason for avoiding help from the library staff was due to the dissatisfaction with prior library service. This conception was labeled as 'people problem.' The study of Hatchard and Toy (1986) discovered that students did experience emotional problems while approaching library staff for help. They recommended the need for investigations examining determinants of users' decision for not approaching the librarian.

It was Mellon (1986) who developed the theory of library anxiety grounded in the understanding of university students' information searching process using freshmen taking English courses. While working with academic librarians and English composition faculty on a 2-year-long project, she discovered that students reported the feeling of being lost, afraid in approaching library staff, and unable to approach the information problem effectively. She tagged these composite feelings of discomfort as library anxiety. However, Mellon's library anxiety theory with its components could not be measured quantitatively, which indicated the need for quantitative measure to study the library anxiety construct. Afterwards, a number of efforts have been made for the development and validation of quantitative library anxiety measures and for the identification of users' attributes that influence library anxiety.

Jacobson's (1991) semi-experimental study explored the correlation between library anxiety and computer anxiety. This study appeared to be the first that was an attempt to quantify feelings of library anxiety by using a sort of 'library anxiety' scale. This instrument was prepared by adapting questions based on a couple of earlier studies. There were 16 items that were divided into four sub-scales, namely, library anxiety, computer anxiety, using computers for library research anxiety, and general interest in using computers for...
library research. Each sub-scale contained four items to measure the students’ level of confidence and sense of well-being while using libraries and computers. The results indicated these scales to be highly reliable as the values of Cronbach’s alpha ranged from 0.725 to 0.922. Although Jacobson labels only the first four statements as ‘library anxiety’ scale, 12 of the 16 statements in her instrument relate to the library setting.

Bostick (1992) conceptualized library anxiety as a multi-dimensional construct and developed a psychometric scale consisting of 43 statements for measuring students’ library anxiety and called it the Library Anxiety Scale (LAS). These 43 items were grouped into five sub-dimensions: (1) staff barriers, \( \alpha = 0.90 \); (2) affective barriers, \( \alpha = 0.80 \); (3) comfort with the library, \( \alpha = 0.66 \); (4) barriers with library knowledge, \( \alpha = 0.62 \); and (5) mechanical barriers, \( \alpha = 0.60 \). Bostick’s LAS, since its development, has been utilized extensively to assess library anxiety construct among students across different library environments (Jiao & Onwuegbuzie, 1997, 1998, 1999, 2001; Jiao, Onwuegbuzie, & Lichtenstein, 1996; Karim & Ansari, 2010; Onwuegbuzie, 1997; Onwuegbuzie & Jiao, 1997, 2000). It has had a few modifications and translations owing to different educational, cultural, and geographical grounds (Anwar, Al-Qallaf, Al-Kandari, & Al-Ansari, 2012; Shoham & Mizrachi, 2004; Swigon, 2011; Van Kampen, 2004). The study of Anwar et al. (2004) and Kwon (2004) reported LAS as superannuated and inadequate for its continued application to measure library anxiety in the current digital library environment.

Van Kampen (2004) was of the view that “When the LAS was developed, scant information and few theories were available on the user’s feelings during the research process itself; the Internet was not yet widely used as a research tool, and database access was limited primarily to the physical confines of the library” (p. 29). She developed a Multidimensional Library Anxiety Scale (MLAS), based on Bostick’s LAS and validated it as a 54-item Likert-type instrument to determine anxiety among doctoral students. The MLAS has six components: (1) comfort and confidence when using the library, \( \alpha = 0.86 \); (2) information seeking process anxiety, \( \alpha = 0.87 \); (3) staff barriers, \( \alpha = 0.73 \); (4) perceived importance of the library, \( \alpha = 0.79 \); (5) library technologies competence, \( \alpha = 0.73 \); and (6) comfort level while inside the library building, \( \alpha = 0.74 \). Her results indicated that doctoral students experienced anxiety in the information search process at the library, which increased to the highest level in the first (Task Initiation) and the third stage (Formulation) of Kuhlthau’s ISP Model (Kuhlthau, 1988, 1991). MLAS has been used by a few studies since its development (Erfanmanesh, 2011; Platt & Platt, 2013).

Considering the age and unsuitability of Bostick’s LAS in a drastically changed library environment, Anwar, Al-Qallaf, Al-Kandari, and Al-Ansari (2012) developed and validated a new library anxiety scale, named AQAK, to measure library anxiety among undergraduates. This scale consisted of 40 items distributed in five factors, namely, Information resources (6 items, \( \alpha = 0.723 \); Library staff (10 items, \( \alpha = 0.843 \); User knowledge (12 items, \( \alpha = 0.772 \); Library environment (7 items, \( \alpha = 0.758 \); and User education (5 items, \( \alpha = 0.625 \). The AQAK was reported as a highly reliable and valid library anxiety measure as it indicated 90% internal reliability. Since its development, this scale has been used by Rehman, Soroya, and Awan (2015) and Jan, Anwar, and Warraich (2016a, 2016b). The qualitative study of Abusin and Zainab (2010) also explored library anxiety among Sudanese university students using a diary method in the digital environment. The results indicated students’ negative perceptions fall into five dimensions, namely: (1) library environment, (2) peer students, (3) library staff, (4) library services, and (5) psychological barriers.

However, these studies investigated users’ anxiety regarding information seeking tasks in a conventional information space known as the library. This conventional information space has drastically changed due to the advent and proliferation of information communication technologies (ICTs) as its resources can be accessed remotely from anywhere and at any time. Although library anxiety is still one of the important dimensions affecting users’ information seeking, the library is only a setting now where students seek information for their academic needs. The availability of information in multiple formats from an overwhelming number of sources has posed new challenges to its users in making efficient and effective information choices. The uncertain quality and increasing quantity of information has added new dimensions to users’ anxiety regarding information tasks (Anwar et al., 2012). In addition, the reasonable ICTs proficiency is also an essential requirement (prerequisite) for interacting with digital information environment and ICTs competence can also intensify information users’ anxiety with computer and internet anxieties.
The combination of library anxiety and ICTs anxiety was named as information anxiety by Blundell and Lambert (2014). It was interesting to note that these researchers examined undergraduates’ anxiety using Bostick’s LAS, which is too old and inadequate to measure library anxiety in the digital environment, as reported by Anwar et al. (2004) and Kwon (2004). Whereas information anxiety is a broader term encompassing “several degrees of intensity and can be caused by many factors,” which goes beyond the four walls of the library (Eklof, 2013, p. 249; Girard & Allison, 2008). According to Wurman (1989), an expert in information architecture, “information anxiety is produced by the ever-widening gap between what we understand and what we think we should understand. It is the black hole between data and knowledge, and it happens when information doesn’t tell us what we want or need to know” (p. 34). The conceptual framework of Wurman includes five sub-components, namely: (a) understanding information, (b) information overload, (c) knowing information exists, (d) finding information, and (e) accessing information.

However, there was a need to address users’ anxiety while seeking information from a variety of sources, including the library, the Web, and humans. The study of Erfanmanesh, Abrizah, and Karim (2012) appeared to be the first that used the term ‘information seeking anxiety’ (ISA), which developed an Information Seeking Anxiety Scale (ISAS) considering the contemporary information environment. ISA is defined as the feelings of discomfort that an information seeker experiences in seeking needed information. The course of information seeking may be either manual or computer-based and may be performed anywhere, either at home or at a library in the university. A number of studies have been conducted on this issue but no attempt seems to have been made to establish the background and synthesize the results of existing research in this area. This study, therefore, reviews research on ISA with a view to inform researchers and reference librarians managing information literacy (IL) instruction of what has been found about the antecedents and correlates of ISA.

**Methods and procedures**

For the purposes of this research, the existing research on ISA needed to be identified. LISTA, ISI Web of Knowledge, and Google Scholar were considered more appropriate for identification of existing research on ISA because LISTA has a reasonable coverage on Library and Information Science, whereas ISI web of knowledge and Google Scholar cover overall scholarly literature. First, LISTA and ISI web of knowledge were searched using the following keywords: “library anxiety,” “information seeking anxiety,” “information seeking,” using ‘AND’ with “anxiety,” and “information anxiety.” The results are presented in Table 1.

<table>
<thead>
<tr>
<th>Keywords</th>
<th>LISTA</th>
<th>ISI Web of Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;library anxiety&quot;</td>
<td>148 citation</td>
<td>103 citations</td>
</tr>
<tr>
<td>&quot;information seeking anxiety&quot;</td>
<td>7 citations</td>
<td>4 citations</td>
</tr>
<tr>
<td>&quot;information seeking&quot; AND &quot;anxiety&quot;</td>
<td>45 citations</td>
<td>291 citations</td>
</tr>
<tr>
<td>&quot;information anxiety&quot;</td>
<td>22 citations</td>
<td>30 citations</td>
</tr>
<tr>
<td>Total</td>
<td>222 citations</td>
<td>428 citations</td>
</tr>
</tbody>
</table>

These broad searches resulted in a total of 650 citations. These 650 citations were examined one by one for the elimination of duplicates, which resulted in 191 unique citations. The abstracts of these citations were examined one by one to identify key studies for this review. As a result, 183 more citations were omitted because they did not meet the eligibility criterion, leaving only eight citations to deal with. Then, the reference list from relevant research papers were examined to find more related citations resulting in eight more papers, which fit into the scope of this research. Lastly, Google scholar was searched using a word “information seeking anxiety” so that the directly related research on ISA may be identified and for broadening the search process. This search indicated 87 total citations. These citations were also examined one by one resulting in 10 related citations, which were duplicated in already available citations. Thus, 16 citations on ‘information seeking anxiety’ were used for analysis.

Of the 16 citations, there were 11 journal articles, two doctoral dissertations, one conference paper, one poster presentation, and a book chapter. These citations appeared during 2012–2017. Seven of these 16 citations were produced in one year, i.e., 2016. The remaining nine were produced as follows: three in 2012, four in 2014, two in 2015, and one citation in 2017. The geographic origin for these citations was Pakistan (8), Malaysia (6), Iran (1), and United States (1). Full text of all these papers was accessed and examined one by one. This process indicated that 11 citations (nine journal articles, two conference papers) originated from two doctoral dissertations. The conference papers were
also published later on as journal articles. Therefore, four more citations (two doctoral dissertations and two conference papers) were excluded due to possible redundancy in the results of the papers included. The remaining 12 citations (11 journal papers and one book chapter) were used for writing this review.

**Scope and limitations**

This review included only those studies that had investigated the ISA construct directly. However, the literature on library anxiety was used for establishing the background of the phenomenon and was not included in this review. Moreover, this study included only those papers that were written in the English language. Papers written in other languages, if any, were excluded. For limitations, it is possible that some papers escaped identification in the searching process. The patterns that have been discovered by using these papers cannot be generalized due to the small amount of literature analyzed in this study. In addition, of the 12 papers, 10 of them belong to two groups of researchers from Pakistan and Malaysia and can bring a bias in overall analysis.

**Results and discussion**

This section first summarizes the key aspects of each research paper presented in chronological order (Table 2), compares the research outcomes of these studies, and discusses similarities and contrast of research outcomes. Finally, the implications for major results are explored at the last part of this study.

A cursory look at some of the demographic features of the identified 12 citations would be interesting and seems in order. These 12 citations were produced by eight authors. Nine were produced as a result of a collaborative effort: six papers were two-authored and three were three-authored. There were only three citations that were single-authored. These 12 citations originated from Pakistan (6), Malaysia (4), Iran (1), and United States (1). The 11 journal articles were published by seven journals: *Malaysian Journal of Library and Information Science* (3), *Libri* (2), *Education Libraries* (1), *International Journal of Information Science and Management* (1), *Pakistan Journal of Behavioral Sciences* (1), *Pakistan Journal of Information Management* (1), *Pakistan Library and Information Science Journal* (1), and *Library Philosophy and Practice* (1).

Before discussing research outcomes, a note on methodological features of the reviewed studies also appears to be interesting. First of all, nearly all of these studies adopted quantitative research design using a structured questionnaire except the studies of Naveed (2016) and Katopol (2012), which utilized qualitative research design using interview guides. There was a single study by Naveed and Ameen (2016c) that deployed a sequential exploratory mixed method as research design. The population of all these studies was either postgraduate or graduate students except the study of Rahimi and Bayat (2015) who selected the high school students to investigate the relationship between online information seeking anxiety and English reading proficiency. None of the reviewed studies selected undergraduates as a unit of analysis or individuals from workplaces. The reasons for focusing on postgraduate and graduate students might be due to the fact that these students usually engage in independent and intensive information seeking as compared to undergraduates who mainly either do guided information seeking or search for known items. However, the selection of the respondents was made using varied sampling procedures, such as stratified random sampling, convenient sampling, purposive and snowball sampling techniques. Despite the fact that these studies drew their samples from different geographical locations using varied sampling procedures, it was quite interesting to note that all of these studies brought almost similar research outcomes about information seeking anxiety.

The results of these studies, having whatever research design and population, indicated the prevalent manifestation of ISA among university students. However, the quantitative inquiries reported presence of information seeking anxiety at different levels (i.e., no anxiety, low anxiety, mild anxiety, moderate anxiety, and severe anxiety) based on criterion developed by Anwar et al. (2004). This criterion was originally based on Chebyshev’s theorem developed by a Russian mathematician, Pafnuty Chebyshev, which is useful for slicing any data set having normal distribution for any purpose. It was quite interesting to note that most of these studies reported more than low anxiety in information seeking tasks. Based on the results of these studies, the respondents appeared less comfortable with the information seeking tasks in an ever-changing information environment suggesting the need for information literacy instructions incorporating information seeking
Table 2. Research studies on information seeking anxiety.

<table>
<thead>
<tr>
<th>Projects</th>
<th>Methods</th>
<th>Major results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Katopol (2012)</td>
<td>Qualitative inquiry; Interview guide;</td>
<td>• Participants experienced anxiety in information searching.</td>
</tr>
<tr>
<td></td>
<td>Purposive sampling; Few African-American graduate</td>
<td>• Frequent users of electronic information resources and rarely visited the library.</td>
</tr>
<tr>
<td></td>
<td>students who were at the thesis writing stage</td>
<td>• Time constraint, frequent use of electronic media, and a belief that library staff is not capable were key reasons for infrequent visits to library.</td>
</tr>
<tr>
<td>Erfanmanesh, Abirizah, and Karim</td>
<td>Quantitative; Questionnaire; Conveniently selected</td>
<td>• Participants had low information seeking self-efficacy, which generated feelings of inferiority adding another layer to discomfort.</td>
</tr>
<tr>
<td>(2012)</td>
<td>400 postgraduates</td>
<td>• Developed and validated the 47-item Likert type Information Seeking Anxiety Scale (ISAS) having six dimensions, namely, info resources (14 items, ( \alpha = 0.868 )), computer and internet (10 items, ( \alpha = 0.726 )); library (11 items, ( \alpha = 0.815 )), info searching (7 items, ( \alpha = 0.802 )), technical barriers (7 items, ( \alpha = 0.809 )), and topic identification (5 items, ( \alpha = 0.825 )).</td>
</tr>
<tr>
<td>Erfanmanesh, Abirizah, and Karim</td>
<td>Quantitative method; Questionnaire having 38-items</td>
<td>• ISAS had a high internal reliability (( \alpha = 0.902 )).</td>
</tr>
<tr>
<td>(2014a, 2014b)</td>
<td>ISAS; Stratified random sampling; 375 postgraduate</td>
<td>• Seven factors were identified, namely, barriers with library (10 items; ( \alpha = 0.832 )), information resources (7 items, ( \alpha = 0.783 )), computers, internet, and electronic resources (3 items, ( \alpha = 0.745 )), technical barriers (6 items, ( \alpha = 0.784 )), affective barriers (5 items, ( \alpha = 0.794 )), topic identification (3 items, ( \alpha = 0.763 )), and access barriers (4 items, ( \alpha = 0.730 )).</td>
</tr>
<tr>
<td>Erfanmanesh (2016)</td>
<td>Questionnaire having 38-items ISAS; Stratified</td>
<td>• Barriers related to topic identification and computer and internet and electronic resources were the least prevalent components.</td>
</tr>
<tr>
<td></td>
<td>random sampling; 375 postgraduate students</td>
<td>• A large majority of these respondents (96.5%) experienced ISA at different levels (low, mild, moderate, and severe).</td>
</tr>
<tr>
<td>Rahimi and Bayat (2015)</td>
<td>Quantitative method; Questionnaire having ISAS and</td>
<td>• No correlation of ISA was found with nationality, IL skills instruction received, academic major, and frequency of internet use.</td>
</tr>
<tr>
<td></td>
<td>PET; 177 high school students</td>
<td>• Correlational analysis indicated negative relationship between ISAS and PET.</td>
</tr>
<tr>
<td>Naveed (2016)</td>
<td>Qualitative inquiry; Interview guide; Purposeful</td>
<td>• Gender differences in the index of ISAS and PET were found as the girls' English reading was found to be moderately associated with information-seeking anxiety whereas there was no association between boys' English readability and information-seeking anxiety.</td>
</tr>
<tr>
<td></td>
<td>and snowball sampling; 31 research students from</td>
<td>• Regression analysis resulted in English reading ability as the significant predictor of information seeking anxiety.</td>
</tr>
<tr>
<td></td>
<td>synopsis writing stage</td>
<td>• Results indicated the manifestation of ISA in eight dimensions, namely: (a) procedural anxiety, (b) information overload, (c) resource anxiety, (d) library anxiety, (e) competence anxiety, (f) ICT anxiety, (g) language anxiety, and (h) thematic anxiety.</td>
</tr>
<tr>
<td>Naveed and Ameen (2016a, 2016b)</td>
<td>Quantitative method; Questionnaire having 47-item</td>
<td>• A large majority (n = 207, 82.4%) of the participants faced more than low anxiety while seeking required information.</td>
</tr>
<tr>
<td></td>
<td>ISAS; Convenient sampling; Postgraduate students</td>
<td>• Significant differences were found in students' overall anxiety scores based on their computer proficiency, study stage, faculty, and program of study.</td>
</tr>
<tr>
<td>Naveed and Ameen (2016c)</td>
<td>Mixed methods; Postgraduate students</td>
<td>• No significant differences were found in students' anxiety scores based on their age and gender.</td>
</tr>
<tr>
<td>Naveed and Ameen (2017a)</td>
<td>Quantitative method; 40-item ISAS; Stratified</td>
<td>• Both QUAN and QUAL data sets indicated the manifestation of ISA among postgraduate students.</td>
</tr>
<tr>
<td></td>
<td>convenient sampling; 251 postgraduate students</td>
<td>• ISA dimensions included: Resource Anxiety, ICT Anxiety, Library Anxiety, Search Anxiety, Mechanical Anxiety, Thematic Anxiety, Procedural Anxiety, Information Overload, Perceived Information Competence, and Language Anxiety.</td>
</tr>
<tr>
<td>Naveed and Ameen (2017b)</td>
<td>Quantitative method; 47-item ISAS; Stratified</td>
<td>• Thematic Anxiety was the most prevalent dimension among these students, which was followed by Resource Anxiety, Mechanical Anxiety, ICT Anxiety, and Search Anxiety.</td>
</tr>
<tr>
<td></td>
<td>convenient sampling; 297 postgraduate students</td>
<td>• Library Anxiety was the least prevalent dimension of ISA among these respondents.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Participants' age, gender, faculty, program of study, study stage, computer proficiency, and research experience appeared to be correlated to the information-seeking anxiety.</td>
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<tr>
<td></td>
<td></td>
<td>• Investigated the Psychometric properties of ISAS for postgraduate students in a Pakistani environment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• PCA yielded a six-factor solution to the Information Seeking Anxiety Scale (ISAS), namely: (1) Resource Anxiety (11 items, ( \alpha = 0.834 )); (2) ICT Anxiety (9 items, ( \alpha = 0.771 )); (3) Library Anxiety (6 items, ( \alpha = 0.772 )); (4) Search Anxiety (5 items, ( \alpha = 0.867 )); (5) Mechanical Anxiety (5 items, ( \alpha = 0.821 )); and, (6) Thematic Anxiety (4 items, ( \alpha = 0.872 )).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Although these six factors were consistent with those of Erfanmanesh et al. (2012), these differed slightly with regard to the loadings of statements on each factor. Consequently, the assigned labels were also different from those assigned by the original authors.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A 40-item ISAS was found to be psychometrically sound and stable when tested with Pakistani postgraduates.</td>
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</table>
skills (Erfanmanesh, Abrizah, & Karim, 2014a, 2014b; Naveed & Ameen 2016a, 2016b, 2017c).

The Information Seeking Anxiety Scale developed by Erfanmanesh et al. (2012) appeared to be the one and only reliable and valid instrument for assessing information seeking anxiety among postgraduate students. This scale consists of 47 items, which was clustered into six sub-dimensions, namely, barriers with information resources (14 items, $\alpha = 0.868$), computer and internet barriers (10 items, $\alpha = 0.726$), barriers associated with library (11 items, $\alpha = 0.815$), barriers with searching for information (7 items, $\alpha = 0.802$), technical barriers (7 items, $\alpha = 0.809$), and topic identification barriers (5 items, $\alpha = 0.825$). These components explained collectively about 35% of the total variation in the ISA construct. The study of Naveed and Ameen (2017b) investigated the psychometric properties of the ISAS for postgraduate students of a Pakistani university. The results yielded a six-factor solution to the ISAS, namely: (1) Resource Anxiety (11 items, $\alpha = 0.834$); (2) ICT Anxiety (9 items, $\alpha = 0.771$); (3) Library Anxiety (6 items, $\alpha = 0.772$); (4) Search Anxiety (5 items, $\alpha = 0.867$); (5) Mechanical Anxiety (5 items, $\alpha = 0.821$); and (6) Thematic Anxiety (4 items, $\alpha = 0.872$). These six factors were consistent with those of Erfanmanesh et al. (2012), which slightly differed with regard to the loadings of statements on each factor. Consequently, the assigned labels were also different from those assigned by the original authors. However, this study dropped seven items from the original ISAS as a result of reliability analysis. Although the results of Naveed and Ameen (2017b) demonstrated the psychometric soundness and stability of ISAS when tested with Pakistani postgraduates, it required more psychometric evaluations before drawing any sound conclusions regarding the adequacy of ISAS for the assessment of information seeking anxiety. In addition, the results of Naveed’s (2016) qualitative inquiry indicated the manifestation of ISA among research students in eight dimensions, namely: (a) procedural anxiety, (b) information overload, (c) resource anxiety, (d) library anxiety, (e) competence anxiety, (f) ICT anxiety, (g) language anxiety, and (h) thematic anxiety. These results not only confirmed some of these dimensions but also expanded the list with ‘procedural anxiety’, ‘information overload’, ‘competence anxiety’, and ‘language anxiety’. This study also discovered the manifestation of search avoidance, task avoidance, and research avoidance behaviors along with feelings of inferiority among students, which was quite alarming.

Based on ISAS statements, the study of Naveed and Ameen (2017a) reported the dimension of ‘Thematic Anxiety’ as the most prevalent among postgraduate students while they seek information. This was followed by ‘Resource Anxiety’, ‘Mechanical Anxiety’, ‘ICT Anxiety’, and ‘Search Anxiety’, whereas ‘Library Anxiety’ was the least prevalent dimension of information seeking anxiety. These results differed from those of Erfanmanesh et al. (2014a, 2014b) who discovered ‘library barriers’ and ‘info resource barriers’ as the most prevalent dimensions, whereas ‘computer and internet barriers’ as well as ‘barriers associated with topic identification’ were the least prevalent components of information seeking anxiety among university students.

The results of existing research also indicated certain personal and academic variables as correlates of information seeking anxiety (Erfanmanesh, 2016; Erfanmanesh et al., 2014b; Naveed & Ameen, 2016a, 2017a; Rahimi & Bayat, 2015). The studies of Erfanmanesh et al. (2014b) and Erfanmanesh (2016) found that the respondents’ age, gender, levels of study, and frequency of library use were correlates of information seeking anxiety, whereas there was no correlation of information seeking anxiety with nationality, IL instruction received, academic major, and frequency of Internet use. Some of these relations were corroborated by Naveed and Ameen (2017a) as they also reported that students’ age, gender, faculty, program of study, study stage, computer proficiency, and research experience appeared to be correlates of the information seeking anxiety. Rahimi and Bayat (2015) also discovered gender differences in the index of ISAS and Primary English Test (PET) and concluded that students’ English reading proficiency was a stronger element in reducing information seeking anxiety.

The results of the qualitative inquiries by Katopol (2012) and Naveed (2016) reported that the participants quite surprisingly went to other students for assistance with regard to content and search process than to library staff in managing their information seeking anxiety situations. These students felt that their professors might be appropriate sources for information but they were not available due to time constraints and other commitments. Both the studies reported that the participants were frequent users of online information but rarely visited the campus library for academic information activities. The lack of
awareness about library services, physical constraints, time pressure, online information preferences, and a belief that librarians were not capable to help in domain-specific information needs were the key reasons for infrequent visits to the library and for not approaching the library staff for assistance.

**Implications**

The manifestation of anxiety might have very serious implications for students’ information seeking self-efficacy and academic performance. If the information searches end up with failure or partial success due to anxiety, the efficiency and effectiveness of the information task is compromised because informed decision making will not be possible in the absence of relevant and timely information. This situation may not only affect students’ academic achievements but also may lead to academic procrastination. Understanding of users’ anxiety in the information seeking continuum and how they manage anxiety causing situations would be interesting to information professionals, especially those engaged in managing information literacy instruction. This research generated useful insights that could be used as a guide in taking appropriate measures for the alleviation of patrons’ anxiety.

These results are useful for information professionals in a number of ways. First, the information professionals can develop a need-based and student-centered information literacy program considering students’ psychological barriers in an ever-changing information environment. This would not only produce independent and lifelong learners but also reduce the users’ pressure on the help desk services and save precious time of the library staff. It would also ensure the usability of subscribed online databases as university libraries invest huge sums of money for annual subscriptions. If there was no optimum use of online resources due to information seeking anxiety, it might lead to wastage of precious and scarce resources. Second, provision of help desk services can be improved if library staff is aware about the dimensions of students’ information seeking anxiety. Lastly, this research provides a foundation for more detailed and in-depth investigations exploring information seeking anxiety, which can lead to new directions in research. In addition, this study also recommends more psychometric evaluations of ISAS, using varied populations having different geographical locales and context, before drawing any sound conclusions about ISAS adequacy for information seeking anxiety assessment. In conclusion, this study recommends that more research needs to be conducted addressing information seeking anxiety at workplaces in addition to academic settings.

**References**


