Library anxiety among Croatian students: Construction, Validation and Application of Croatian-Library Anxiety Scale (CRO-LAS)

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Library anxiety among Croatian students: Construction, Validation and Application of Croatian-Library Anxiety Scale (CRO-LAS)

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ABSTRACT

Library anxiety is a phenomenon that occurs among university students worldwide, and it is most often measured using different library anxiety scales. This paper describes the process of development, validation and use of the Croatian-Library Anxiety Scale (CRO-LAS) in examining the presence and degree of library anxiety among students at the University of Zadar, Croatia. CRO-LAS consists of 32 items divided into 6 categories, namely; staff barriers, affective barriers, technological barriers, IT equipment barriers, library comfort barriers and resources barriers. The average score on CRO-LAS showed that the overall library anxiety level among students at the University of Zadar is low and varies depending on the category. According to the findings, students tend to experience higher levels of library anxiety concerning IT equipment and resources barriers, whilst the lowest levels of library anxiety are reported on staff and library comfort. Also, it is proven that undergraduate students experience a higher level of library anxiety than graduate students. Furthermore, considering its psychometric properties, CRO-LAS has proven to be a reliable tool for measuring library anxiety among Croatian university students. Results of this study can be practically applied by librarians while creating library orientation programs and other, librarian-led courses. Also, CRO-LAS can be used as a reliable tool in conducting future studies of library anxiety phenomena.

Introduction

Progress made in evolvement and availability of information technologies and information resources has dramatically changed all information activities (Saracevic, 2007). In this regard, importance of university libraries and their services to students is more pronounced today than ever. Nowadays, university libraries have adopted an extended role in students' life and serve as information hubs (Deol & Brar, 2021), informal learning areas (Torras & Sætre, 2009), and places for students to meet and socialize.

In order to use the library and its services to a full extent, students should perceive the library as a friendly place in which they feel welcome, relaxed, and assured that librarians have enough time, skill, and will to help them meet their needs. In this case, the library can serve as an extension of the classroom by providing its resources and services to students (Song et al., 2014).

On the other hand, a certain number of students tend to experience uncomfortable feelings or emotional dispositions while using the library or thinking about using the library. This phenomenon is called library anxiety (Mellon, 1986), and it is defined by Jiao et al. (1996, p.152) as

an "uncomfortable feeling of emotional disposition experienced in a library setting which has cognitive, affective, and behavioral ramifications".

If not addressed appropriately and in a timely manner, library anxiety can cause serious consequences such as academic procrastination (Onwuegbuzie & Jiao, 2000), poorer academic success (Jiao & Onwuegbuzie, 2002), lack of information literacy skills (Birch, 2012; Kwon et al., 2007), library avoidance and even increased drop-out rates (Lawless, 2011).

Literature review

Library anxiety

Library and information science scholars were long aware of the barriers some students tend to experience in a library setting. Swope and Katzer (1972) refer to students who appear confused, frustrated, and lost while using the library as to "silent minority". Mellon (1986) connected feelings of fear, being lost, and shame among students while using the library with previously known academic-related anxieties and coined

the term "library anxiety". According to Mellon (1986), there are four main sources of library anxiety: (1) the size of the library; (2) ignorance of the organization of the library and disorientation in the library space; (3) lack of self-confidence at the beginning of the search, and (4) fear of seeking help from a librarian.

Since 1986 and Mellon's seminal work, there is a number of scientific papers on library anxiety antecedents. Sharon Lee Bostick (1992) concluded that library anxiety is a multidimensional construct composed of five interrelated categories, namely, barriers with staff, affective barriers, library comfort barriers, library knowledge barriers, and mechanical barriers. Jiao and Onwuegbuzie (1997) conducted the first study using a quantitative method in investigating library anxiety.

Researchers have also examined the role of personality traits in library anxiety. Biglu et al. (2016) have concluded that individuals who tend to be neurotic are more likely to experience library anxiety concerning that they have a tendency to feel negative emotions. This finding is coherent with the conclusions of Jiao and Onwuegbuzie (1999, 2002), claiming that individuals with high self-confidence and positive self-perception are less likely to experience library anxiety than ones with negative self-perception.

McAfee (2018) stated that shame, as a negative feeling, emerges as a dominant affect in library anxiety. On the other hand, Lund and Walston (2020) propose Anxiety-Uncertainty Model Theory as a better explanation of library anxiety origination. This model implies that there are several factors internal to each individual that contribute to anxiety. Based on the extent to which each of these factors impact the individual, anxiety will rise (Lund & Walston, 2020). These articles should be taken as an example of studies in which authors have tried to answer *why* library anxiety occurs. Discussions and opposing opinions on possible theories why library anxiety occurs, along with the development of new, reliable tools for measuring library anxiety is a way in which researchers can get a full grasp on this phenomenon.

Concerning that library anxiety predominately occurs among university students, there is a number of research papers concerning library anxiety implications on university libraries and its alleviation among university students. Muszkiewicz (2017) concluded that orientation programs can help to alleviate library anxiety. This conclusion concurs with those made by Van Scoyoc (2003), who concluded that librarian-led bibliographic instructions are more effective in reducing library anxiety than computer-assisted bibliographic instructions. Vidmar (1998) and Brown (2011) also point out the importance of personal contact in library anxiety alleviation.

Library anxiety, as a research subject, has arisen in the United States, primarily due to Qun G. Jiao and Anthony Onwuegbuzie, who have published more than twenty scientific articles on library anxiety (Vernon et al., 2016), but there is also a number of studies on library anxiety among university students in other countries such as Israel (Shoham & Mizrachi, 2001), Kuwait (Anwar et al., 2004), Poland (Swigon, 2011), China (Song et al., 2014), Greece (Konstantinos-Anastasios et al., 2015), and most recently Egypt and Saudi Arabia (Shehata & Elgllab, 2019).

In order to be appropriately addressed, library anxiety among university students should be measured using reliable, up-to-date tools. A thorough analysis and comparison of the original LAS and its derivatives is provided in the following paragraphs.

Instruments in library anxiety studies

Mellon (1986) did set the theoretical framework of library anxiety but did not make any suggestions on how library anxiety among students could be measured. In order to measure library anxiety, researchers have developed and validated scales for measuring library anxiety.

Sharon Lee Bostick (1992) designed and conducted the study in which she tried to determine the possibility of the development and validation of a quantitative tool for measuring library anxiety among students.

Based on the results from the conducted study, Bostick developed and validated tool for measuring library anxiety (Library Anxiety Scale or LAS).

LAS is a Likert-type five-point instrument consisted out of 43 statements divided into five factors, namely, (1) Barriers with Staff (15 statements, Cronbach's alpha coefficient 0.90), (2) Affective Barriers (12 statements, Cronbach's alpha coefficient 0.80), (3) Comfort with the Library (8 statements, Cronbach's alpha coefficient 0.66), (4) Knowledge of the Library (5 statements, Cronbach's alpha coefficient 0.62), (5) Mechanical Barriers (3 statements, Cronbach's alpha coefficient 0.60).

The overall Cronbach's alpha coefficient of LAS was 0.80, indicating adequate internal consistency (Song et al., 2014). Based on this data, Bostick considered LAS valid and used it to measure library anxiety among US students. Bostick's scale is considered to be the first and still most used tool for measuring library anxiety (Carlire, 2007). All scales listed below are derivatives of original LAS adapted in a way to reflect cultural and educational setting of certain country (Anwar et al., 2004).

Shoham and Mizrachi (2001) created the Hebrew-Library Anxiety Scale (H-LAS) by modifying and translating original LAS to measure library anxiety among Israeli undergraduates. H-LAS is a Likert-type five-point instrument consisting of 35 statements in seven categories, (1) Staff factor (Cronbach's alpha coefficient 0.75), (2) Knowledge factor (Cronbach's alpha coefficient 0.77), (3) Language factor (Cronbach's alpha coefficient 0.76), (4) Physical Comfort factor (Cronbach's alpha coefficient 0.60), (5) Library Computer Comfort (Cronbach's alpha coefficient 0.51), (6) Library Policies/Hours factor (Cronbach's alpha coefficient 0.45) and (7) Resources factor (Cronbach's alpha coefficient 0.52). As it can be seen in three of the H-LAS instances, Cronbach's alpha coefficients are low even though the overall validity is, according to the authors, adequate.

Shoham and Mizrachi (2001) concluded that the overall average of library anxiety among Israeli students is 2.51, which is almost in the precise center of the scoring range. They also concluded that the most outstanding factor of library anxiety is the information resources language factor, with the average of 3.63.

By this finding, Shoham and Mizrachi (2001) have confirmed findings from Jiao and Onwuegbuzie (2001), who also concluded that language factors could be a major stressor and source of library anxiety.

Anwar et al. (2004) raised the question of whether students from different cultural backgrounds will experience the same anxieties as American students. In order to answer this question, Anwar et al. (2004) have developed the Kuwait-Library Anxiety Scale (K-LAS) consisting of 34 items divided into four categories: (1) Staff approachability (Cronbach's alpha coefficient 0.91), (2) Feelings of inadequacy (Cronbach's alpha coefficient 0.79), (3) Library confidence (Cronbach's alpha coefficient 0.78) and (4) Library constrains (Cronbach's alpha coefficient 0.71).

Van Kampen (2004) created Multidimensional Library Anxiety Scale to assess six dimensions of an individual's perception of an academic library and the information search process (ISP). MLAS is a five-point Likert scale instrument consisted out of 54 items divided into six categories: (1) Comfort and confidence when using the library (Cronbach's alpha coefficient 0.86), (2) Information search process and general library anxiety (Cronbach's alpha coefficient 0.87), (3) Barriers concerning staff (Cronbach's alpha coefficient 0.73), (4) Importance of understanding how to use the library (Cronbach's alpha coefficient 0.79), (5) Comfort level with technology and how it applies to the library (Cronbach's alpha coefficient 0.73) and (6) comfort level while inside the library building (Cronbach's alpha coefficient 0.74).

Swigon (2011) created and validated the Polish-Library Anxiety Scale (P-LAS) to determine the level of library anxiety among Polish students. P-LAS consists of 46 statements divided into six components: (1) Barriers with staff (Cronbach's alpha coefficient 0.75), (2) Affective barriers (Cronbach's alpha coefficient 0.80), (3) Technological barriers (Cronbach's alpha coefficient 0.73), (4) Library knowledge barriers (Cronbach's alpha coefficient 0.78), (5) Library comfort barriers (Cronbach's alpha coefficient 0.47) and (6) Resource barriers

(Cronbach's alpha coefficient 0.75).

Swigon (2011), similar to Anwar et al. (2004), states that the original LAS is unsuitable for Polish students due to cultural differences and its obsolescence. By analyzing the English translation of the statements, even though P-LAS is created based on LAS (Bostick, 1992), K-LAS (Anwar et al., 2004), and MLAS (Van Kampen, 2004), it can be seen that P-LAS is not just the translation of original LAS (as H-LAS) or slightly modified version. P-LAS draws more attention to problems concerning traditional (single copy policy and long overdue books) and electronic information sources (lack of databases and electronic journals subscription). In that regard, P-LAS represents a significant advance in developing instruments for measuring library anxiety.

Song et al. (2014) have translated and adapted the original LAS to the current Chinese cultural environment, named it Chinese-Library Anxiety Scale, and used it to measure library anxiety among Chinese students. C-LAS consists of 36 statements divided into seven factors: (1) Knowledge (Cronbach's alpha coefficient 0.62), (2) Regulations (Cronbach's alpha coefficient 0.52), (3) Staff (Cronbach's alpha coefficient 0.82), (4) Affection (Cronbach's alpha coefficient 0.57), (5) Retrieval (Cronbach's alpha coefficient 0.59), (6) Comfort (Cronbach's alpha coefficient 0.72) and (7) Resources (Cronbach's alpha coefficient 0.59). Overall, Cronbach's alpha coefficient of C-LAS was 0.84, which indicates good reliability.

Konstantinos-Anastasios et al. (2015) have developed and validated Greek-Library Anxiety Scale (G-LAS). The instrument consists of 32 items divided into eight constructs: (1) Barriers with staff, (2) Affective barriers, (3) Technological barriers, (4) Knowledge of the library organization barriers, (5) Knowledge of the library services barriers, (6) Library comfort barriers, (7) Resource barriers and (8) Rules barriers. Authors do not state exact Cronbach's alpha coefficient values for each construct nor for the scale in total but it is pointed out that 'G-LAS has good psychometric properties with Cronbach's alpha coefficient values ranging from 0.73 to 0.91 for "Barriers with staff" and "Rules barriers", respectively (Konstantinos-Anastasios et al., 2015 p. 28).

By analyzing the above-mentioned library anxiety scales and the findings which researchers came across by utilizing them, it can be seen that students are often anxious about using the library and hesitant to ask for assistance or advice. Moreover, it is obvious that students from different countries, thus, different cultural and educational settings, do not experience library anxiety in the same way and at the same level. Consequently, to examine library anxiety among students in a certain country, researchers need to use a specific instrument. Considering that library anxiety has not yet been explored in Croatia, it is necessary to conduct grounded research to determine the presence and level of library anxiety among Croatian students. In order to achieve this goal, the authors have developed Croatian-Library Anxiety Scale.

The objective of this study is to present the procedure of construction of CRO-LAS and its use in examining the presence and level of library anxiety among students at the University of Zadar, Croatia. This study aims to raise awareness among Croatian university librarians on recognizing library anxiety as a threat that can affect students' optimal use of library resources.

Problem statement and research questions

Library anxiety, as a phenomenon that occurs among university students, is not a new issue.

The presence and level of library anxiety was examined using library anxiety scales worldwide: in the USA (Bostick, 1992), Israel (Shoham & Mizrachi, 2001), Kuwait (Anwar et al., 2004), Poland (Swigon, 2011), China (Song et al., 2014) and Greece (Konstantinos-Anastasios et al., 2015).

All scales mentioned above are based on the original Library Anxiety Scale (LAS) created by Bostick (1992). According to Carlire (2007), various LAS adaptations were used in more than thirty quantitative library anxiety studies among university students.

So far, library anxiety among Croatian students has not been a subject of scientific research. In order to examine the presence and level of library anxiety among Croatian students, it is necessary to create and apply a new, improved version of LAS, named Croatian-Library Anxiety Scale. The reasons for creating new, up-to-date scale are the following:

First, as pointed out by Van Kampen (2004), the original LAS was created in 1992, when information behavior has not been the subject of research to such extent as today, the Internet was at its beginnings, and database access was limited to physical access. Concerning all mentioned, the original LAS is obsolete.

CRO-LAS is created to reflect opportunities that arise from high-tech information environment (wireless broadband Internet access, widespread use of laptops, smartphones, and other gadgets) and current trends in academic librarianship (digital repositories, online publishing platforms, online reference services, online resources accessibility, process-oriented approach to teaching information literacy, users information behavior studies, etc.).

Second, different cultural and educational settings require different, culturally specific library anxiety scales (Anwar et al., 2004). Concerning that library anxiety among Croatian students has not been a subject of grounded research, there is a need to develop and validate a relevant instrument that would take into account contextual determinants of Croatian university libraries.

In order to achieve the stated objective, this study will address the following research questions:

RQ1: Is CRO-LAS a valid and reliable tool for measuring library anxiety among Croatian students?

RQ2: What is the level of library anxiety among students at the University of Zadar?

RQ3: In which categories library anxiety occur the most?

RQ4: Is there a difference in the level of library anxiety between undergraduate and graduate students?

Methodology

In order to create a reliable instrument for measuring library anxiety among Croatian students that will be used in providing answers to research questions, the authors have decided to use a sequential exploratory mixed method approach, which is especially advantageous in building a new instrument. This is a two-phase approach that starts with the gathering and analysis of qualitative data, which is later used to develop an instrument that can be administered to the population (Creswell, 2009). In the first study of the research, the authors used the focus group method as a tool to gather qualitative data, which was used to construct quantitative instrument that was applied and validated in the second study.

Study one – CRO-LAS development

The first step in researching library anxiety among Croatian students was to gain insight into students' understanding of library anxiety phenomena. In order to meet this requirement and gather qualitative data, the authors have formed a focus group. The focus group consisted out of 12 students (6 men, 6 women) covering different years of study as well as different fields of study (STEM, social sciences, humanities etc.) and meetings were held in December 2021 and January 2022. Focus group participants were selected from the visitors of the university library at the University of Zadar and asked if they would like to participate in a focus group on library anxiety. The first meeting was held in an informal setting, and during 60-minute semi-structured conversation, students were asked to share their insights and opinions on library anxiety. According to participants answers, they were not familiar with the term "*library anxiety*" but they talked openly on feeling "*lost in the library*", "*overwhelmed with information*" and "*uncertainty when they need to express what they need*". At the end of the meeting, participants were asked to complete a questionnaire that will be sent to them via e-mail. Also, they

have been asked to attend the second meeting that will take place after the completion of the questionnaire.

Data gathered at the first focus group meeting was analyzed and used for the creation of 26 new statements, which, along with statements adopted from Bostick's (1992) original LAS, were compiled into a list of 72 items. Item list is created in a way that statements cover all possible sources of library anxiety (e.g., affective, technological, or library comfort barriers, etc.), and also to reflect Croatian cultural and educational environment as well as on current possibilities regarding information technologies and library services.

This list, was arranged into a questionnaire and sent to focus group participants for completion. Upon completion, a focus group meeting was held, and during the discussion, students provided valuable suggestions and proposed amendments based on their experiences regarding library anxiety. For example, part of the students did not even know about the possibilities of using digital repositories or reading books on digital publishing platforms. Furthermore, almost all focus group participants claimed that the main sources of library anxiety are IT equipment barriers and resources barriers. From the discussion was visible that students are aggravated by the lack of new computers operating on modern software.

After additional analysis, the statement list was reduced to 62 items (Appendix A) divided into 7 categories, namely: barriers with staff, library rules barriers, affective barriers, technological barriers, library knowledge barriers, library comfort barriers, and resources barriers. Also, CRO-LAS contains seven positively worded statements which were reverse scored and responses are measured on a five-point Likert scale with the following answers: "1" = strongly disagree", "2″ = disagree, "3″ = nor agree nor disagree, "4″ = agree, "5″ = strongly agree (see Appendix B).

Study two – CRO-LAS validation

In the second phase, after obtaining permission from the University of Zadar Ethic committee, a survey was published online using *LimeSurvey* tool. All students at the University of Zadar were invited to participate in the survey through their university department's official websites, the University of Zadar Student union website, and through informal communication channels (*Facebook*, *Instagram*, etc.). The decision about whether to participate in the study was voluntary. Potential study participants were told that the survey takes approximately 10 min to complete and that is completely anonymous. Students who decided to take part in the study were asked to click on the link that will lead them to the online survey. The survey was structured out of a cover letter, socio-demographic questions, and questionnaire containing items on library anxiety. At the end of the questionnaire, participants were asked to add other sources of library anxiety, in case not previously mentioned. The survey was available for completion during one month period (from February to March 2022).

The survey was completed by a total of 266 students (149 or 56.02 % undergraduate students and 117 or 43.98 % graduate students) out of 508 who started the survey which makes 52.36 % completion rate. The gender distribution of participants was 23 or 8.6 % male and 243 or 91.4 % female participants. According to the data obtained from University of Zadar studies office, 4.928 students are enrolled at the University of Zadar, which makes 5.39 % response rate. Upon expiration, survey results were downloaded and processed using Jamovi 2.2.5 open stats platform.

Results

Validity and reliability of the CRO-LAS

Research question 1: Is CRO-LAS a valid and reliable tool for measuring library anxiety among Croatian students?

In order to validate the newly constructed instrument, the

psychometric properties of the CRO-LAS are checked according to the strict procedure.

Exploratory factor analysis was conducted using the *'maximum likehood'* extraction method in combination with *'varimax'* rotation. By this procedure, 30 non-compliant statements were dropped, four statements were loaded into other categories, and two statements regarding IT equipment formed a separate category. Remaining statements proved to have satisfactory factor loadings (see Appendix C).

For internal consistency, Cronbach's alpha coefficient was computed for each subscale, and it is shown in Table 1.

The resultant Cronbach's alpha coefficient of **0.906** for 32 items proves adequate internal consistency of the CRO-LAS.

Final version of the CRO-LAS is consisted out of 32 statements, including three reverse-scored items, divided into 6 categories (see Appendix B). Considering the psychometric properties of the instrument and in response to the first research question, we can conclude that CRO-LAS is a valid and reliable tool for measuring library anxiety among Croatian students.

Research question 2: What is the level of library anxiety among students at the University of Zadar?

For determining the levels of library anxiety, authors used a Likert-type proposed by Anwar et al. (2004), who defined library anxiety levels as follows: no anxiety (0.00–2.21), low anxiety (2.22–2.65), mild anxiety (2.66–3.54), moderate anxiety (3.55–3.98) and severe anxiety (3.99–5.00). This model was previously used for quantifying library anxiety levels among Polish (Swigon, 2011), Canadian (Lawless, 2011), Chinese (Song et al., 2014), and Omani and Saudi Arabian (SeddiqAbdoh, 2021) students.

General library level of library anxiety among students at University of Zadar students is **2.38**, which indicates that overall level of library anxiety among students is low (Table 2).

Research question 3: In which categories library anxiety occurs the most?

Students reported the lowest level of library anxiety regarding staff, 1.78 (no anxiety), library comfort, 2.00 (no anxiety) and highest levels of library anxiety regarding IT equipment, 3.29 (mild anxiety) and resources barriers, 2.82 (mild anxiety) (Table 2.).

Research question 4: Is there a difference in the level of library anxiety between undergraduate and graduate students?

The overall library anxiety level among undergraduate students is 2.45, whilst their colleagues at the graduate level reported an overall library anxiety level of 2.30 (Table 3.).

The results of *t*-tests to examine differences in different factors of library anxiety suggest that undergraduate and graduate students differ in affective barriers, technical barriers, IT equipment barriers, and overall library anxiety levels.

Undergraduate students reported higher levels of library anxiety related to affective and technical barriers as well as higher overall level of library anxiety whereas graduate students reported higher levels of library anxiety connected to IT equipment barriers.

Consequently, in response to the third research question we can conclude that undergraduate students experience a higher level of library anxiety than graduate students.

Table 1
Cronbach alpha coefficients of CRO-LAS.

Subscale	Cronbach's alpha
Barriers with staff (A1-A5)	0.827
Affective barriers (B1-B7)	0.870
Technological barriers (C1-C7)	0.874
IT equipment barriers (D1-D2)	0.613
Library comfort barriers (E1-E4)	0.805
Resources barriers (F1-F7)	0.873
Overall CRO-LAS	0.906

Table 2

Descriptive parameters of observed variables in whole sample (N = 266).

Variable	M	SD	Min	Max	Skewness (SE)	Kurtosis (SE)
Staff	1.78	0.65	1.00	4.00	0.624 (0.149)	−0.054 (0.298)
Affective	2.41	0.89	1.14	5.71	0.864 (0.149)	0.770 (0.298)
Technical	2.71	0.90	1.00	5.00	0.131 (0.149)	−0.494 (0.298)
ITEQ	3.29	0.86	1.00	5.00	0.347 (0.149)	−0.251 (0.298)
Comfort	2.00	0.73	1.00	4.75	0.713 (0.149)	0.564 (0.298)
Resources	2.82	0.76	1.00	4.86	−0.153 (0.149)	−0.108 (0.298)
Library Anxiety	2.38	0.54	1.06	4.34	0.301 (0.149)	0.376 (0.298)

Note: Affective – Affective barriers; Technical – Technical barriers; ITEQ – IT equipment barriers; Comfort – Library Comfort barriers; Resources – Resources barriers; SE – standard error.

Discussion

The aim of this study was to construct and validate an instrument for measuring library anxiety among Croatian university students. In the following discussion, the authors will interpret the results of each sub-scale, address the items that may raise concern, and compare findings with other similar studies from other countries.

Psychometric and descriptive properties of CRO-LAS

It can be stated that CROLAS is a psychometrically valid and reliable measure. More specifically, CROLAS demonstrated concurrent validity by differing undergraduate and graduate students (Table 2). Moreover, all items have high factor loadings (Appendix A), which confirms CRO-LAS construct validity. According to the results of the reliability analyses, each CRO-LAS subscale has satisfactory reliability, and CRO-LAS overall reliability is satisfactory. IT Equipment barriers subscale has a somewhat lower reliability coefficient, but it can be assumed that this is due to the fact subscale has only two items.

The findings of this study suggest that library anxiety level among students at the University of Zadar is low. That indicates that library anxiety among the vast majority of students does not occur at a level that could cause them to avoid the library and impair their academic success.

The overall level of library anxiety of 2.38 is similar to library anxiety level among Polish, Greek and Israeli students which is 2.35, 2.4 and 2.51, respectively (Swigon, 2011; Konstantinos-Anastasios, 2015; Shoham & Mizrachi, 2001) and slightly lower than library anxiety levels among Chinese and Kuwaiti students which is 2.78 and 3.1 (Anwar et al., 2004; Song et al., 2014).

Undergraduate students reported a higher overall library anxiety level (2.45), compared with graduate students who reported a library anxiety level of 2.30. Furthermore, according to the detailed analysis, 1st year undergraduate students reported a library anxiety level of 2.50 in opposition to their colleagues from 2nd graduate year with an anxiety

level of 2.18, indicating that library anxiety level tends to decline as students progress through their studies (for detailed data see Appendix C). This is in accordance with the findings previously made by Shoham and Mizrachi (2001), Swigon (2011), Song et al. (2014), and Seddi-qAbdoh (2021), who have all found that undergraduate students tend to experience a higher level of library anxiety than graduate students. This could result from the fact that students, during their education, are required to use the library and its services to fulfill their assignments. Hence, over time, they build a habit of visiting the library and using its services. Consequently, anxiety levels decrease as students get used to the library. This phenomenon is also mentioned by Shoham and Miz-rachi (2001), who also observed a linear decline in library anxiety as students progress through their studies.

Findings also indicate significant differences among library anxiety levels in each factor.

Similar to their Polish colleagues (Swigon, 2011), Croatian students reported the lowest level of library anxiety regarding staff (1.78), indi-cating no anxiety. For example, in response to statement A4, "Librarians are kind and willing to help", 92.86 % of students responded with "strongly agree" or "agree". Also, 89.1 % of the students perceive li-brarians as approachable (statement A1). Furthermore, when asked if they are encouraged by librarians to ask questions when they do not understand something or when they need help (statement A3), almost 70 % of students responded positively. Finally, in response to statement A2, "In the library, I don't get help in time", 87.59 % of students stated their disagreement. These results show that most students the vast ma-jority of students perceive librarians as helpful and approachable.

The second category in which students, like their Polish (Swigon, 2011) and Kuwaiti (Anwar et al., 2004) colleagues, report no anxiety (2.00) is library comfort. For example, in response to statement E1 "Library is not a comfortable place to spend time in" 75 % students stated their disagreement with this claim. Also, 75 % of students find the library as a stimulative learning environment (statement E3). Finally, in response to statement E2, "If I can, I'd rather use library services from home (online) than come to the library in person", 41.35 % of students reported their disagreement, while 24.81 % strongly disagreed. Conversely, 10.90 % agreed, and only 3.76 % of students strongly agreed with this statement.

In accordance with these findings, students' perception of librarians as helpful and the library as a comfortable place to stay should be used to position the library as an extension of the classroom (Song et al., 2014) as well as an informal learning arena (Torras & Sætre, 2009). Also, the implementation of process-oriented information literacy courses (Kuhlthau, 2004) taught by librarians, which, except the Information Literacy course taught at the Department of information science does not exist, will further contribute to the positive perception of librarians, strengthen the position of the library within the university and emphasize the pedagogical role of librarians. In order to partake in the educational process as equal stakeholders, librarians need to be perceived by library users and patrons as professional and autonomous educators (Torras & Sætre, 2009).

Overall library anxiety level regarding affective barriers is 2.41,

Table 3

The results of t-tests to examine differences in observed variables between undergraduate (n = 149) and graduate students (n = 117).

Variable	$M_{undergraduate}$	$M_{graduate}$	$SD_{undergraduate}$	$SD_{graduate}$	t	df
Staff	1.75	1.83	0.64	0.67	−1.05	264
Affective	2.56	2.23	0.93	0.80	3.02**	264
Technical	2.91	2.46	0.84	0.92	4.21**	264
ITEQ	3.18	3.44	0.86	0.84	−2.43*	264
Comfort	2.01	2.00	0.78	0.66	0.06	264
Resources	2.84	2.79	0.76	0.75	0.52	264
Library anxiety	2.45	2.30	0.56	0.49	2.40*	264

Note: Affective – Affective barriers; Technical – Technical barriers; ITEQ – IT equipment barriers; Comfort – Library Comfort barriers; Resources – Resources barriers.

* p < .05.
** p < .01.

which indicates low anxiety. In response to statement B4, "I feel so anxious in the library that I can't use it at all", 54.89 % of students state their complete disagreement, 61.65 % of students do not feel anxious when they are in the library and don't know what to do (statement B3). Finally, 79.7 % students have expressed their disagreement about the statement B5 "I feel ashamed when I have to ask a question to librarians. Interpretation of results shows that undergraduate students report library anxiety level regarding affective barriers to be 2.56, compared to graduate students with an anxiety level of 2.23. This occurrence confirms the pattern of library anxiety decline through the progress of the study given the fact that library anxiety level regarding affective barriers is: 1st year undergraduate 2.72, 2nd year undergraduate 2.65, 3rd year undergraduate 2.36, 1st year graduate 2.34 and finally, 2nd year graduate 2.12.

The overall reported level of library anxiety regarding technological barriers is 2.71, which indicates that there is an occurrence of mild anxiety. In response to statement C2 "I don't know how to order a book via electronic library catalogue" 36.84 % of students stated their agreement. This response, along with responses to statements C1," I am not effective in using electronic databases which I have access through the university library," with 27.07 % agreement rate and C3"I am not effective in using library electronic catalogue" 28.95 % agreement rate indicates that there is many students in need of bibliographic instructions. Taking into account that almost 80 % of students does not feel ashamed to ask question to librarians, these instructions should be designed and conducted in a way that students are encouraged to ask questions and share their experiences. Vidmar (1998), Kracker (2002) and Van Scoyoc (2003), point out bibliographic instructions as a possible way to prevent library anxiety when it comes to anxiety that arises from a lack of skills in use of library services and resources. Nowadays, librarians have come beyond basic bibliographic instruction sessions and library anxiety is, among other ways, alleviated through information literacy instruction (Bell, 2011), workshop instruction model (Fleming-May et al., 2015) and use of augmented and virtual reality (Sample, 2020).

Undergraduate students report a library anxiety level related to technological barriers to be 2.91 in comparison to graduate students with a library anxiety level related to technological barriers of 2.46. Similar to affective barriers, there is also a linear decline in library anxiety related to technological barriers through the study's progress (Appendix C).

Students reported library anxiety level regarding IT equipment barriers to be 3.29 (mild anxiety), which makes IT barriers the main source of library anxiety among Croatian students. Undergraduate students reported an anxiety level of 3.18 and graduate students an anxiety level of 3.44. Most students agreed with the statement D1, "Computers for library users are outdated, and software runs slow". It is interesting to point out that in response to the statement D2," In the library, there are not enough computers for students" 39.09 % of students agreed or strongly agreed, while 36.09 % were undecisive, 21.43 % disagreed and 3.38 % completely disagreed. A high percentage of undecisive responses could arise from the fact that majority of the students use their laptops while using the library. Nevertheless, this problem should be addressed promptly to provide equal opportunities to all students regarding IT equipment use. It is also necessary to point out that this is the only category in which at least one respondent from each year of the study has reported severe anxiety.

With an overall level of 2.82, resources barriers factor poses as the second main source of library anxiety among Croatian students. Students point out their concern about the fact that the library does not purchase a sufficient number of new books (statement F3) and that library has too few copies of the most popular titles (statement F5). Undergraduate students reported resource barriers anxiety level of 2.84 in comparison to 2.79, which is the level reported by graduate students. These results are coherent with the findings of Swigon (2011), Song et al. (2014) and SeddiqAbdoh (2021), who have also found resources

barriers to be a major source of library anxiety and in opposition to results from Shoham and Mizrachi (2001), who have found that resources pose as the lowest factor of library anxiety among Israeli students. Furthermore, in contrast to the other categories, the level of library anxiety connected to resources barriers do not tend to decline in parallel with the higher year of the study. This indicates that resources barriers are a major antecedent of library anxiety regardless of the year of study.

Practical implications and limitations

Considering the fact that researchers are still proposing new models of library anxiety and thoughts on its origins, it is clear that library anxiety remains a subject worth investigating. In the last three decades, academic libraries, as well as society as a whole, have undergone fundamental changes, and the redefinition of the library anxiety term needs to be considered. In that regard, we would like to encourage researchers of library anxiety to propose a new, augmented definition of the term "library anxiety".

Second, as stated earlier in the paper, the aim of this paper is to raise awareness among Croatian university librarians on library anxiety phenomena. This study has provided a valid and reliable tool that could be used in future research on library anxiety among Croatian students.

Having said that, this study has some limitations. Due to the unfavorable ratio of male and female participants in this study, it was not possible to reliably check the influence of gender on library anxiety occurrence among students at the University of Zadar. Moreover, it is not possible to draw conclusions on causality because of the cross-sectional research design.

Future studies should be conducted using larger and more diverse samples in order to obtain even more relevant insight into library anxiety occurrence among students at Croatian universities. Bearing these limitations in mind, the authors would like to encourage other researchers to conduct even more comprehensive studies of library anxiety among Croatian students that should be focused on the narrower aspects of library anxiety, such as the occurrence of library anxiety among international students, the relationship between personality traits and library anxiety, and the role of reference and/or teaching librarians in library anxiety prevention and alleviation. Finally, it would also be interesting to compare library anxiety level between Croatian students and students from neighboring countries (i.e., Slovenia, Bosnia and Herzegovina) concerning similar education systems and cultural environments.

Conclusion

In this study, we have proved the existence of library anxiety among students at the University of Zadar. To conduct the first systematic and coherent research on library anxiety phenomena among Croatian students, authors have constructed, validated, and applied an instrument called Croatia-Library Anxiety Scale (CRO-LAS). By utilizing CRO-LAS, which showed good internal consistency and construct validity, the authors have determined the level of library anxiety to be 2.38, which indicates a low level of library anxiety. Specifically, however, results have shown that IT equipment barriers and resources barriers do pose a source of mild library anxiety. On the other hand, students have reported no anxiety regarding library staff and library comfort. Positive perception of library staff and the library as a place to stay and study, along with the fact that the majority of students are not constrained by affective barriers, should be used as a starting point in the creation of compelling library programs that will draw even more students to the library. Implementing such programs ensures proactive action in the prevention of library anxiety.

Appendix A. List of initial statement used in creation of Croatian Library Anxiety Scale (CRO-LAS) – translated into English. Note: items marked with asterisk (*) are reverse-scored

A Staff barriers
A1. Librarians are not approachable.
A2. In the library, I don't get help in time.
A3. Librarians do not encourage students to ask questions when they do not understand something or when they need help.
A4. Librarians don't have time to help me, because they are too busy.
A5. Librarians are kind and willing to help.
A6. I do not have the opportunity to communicate with librarians online (e-mail, chat, WhatsApp, etc.) and via social networks (Facebook, Instagram).
A7. Librarians are not communicative enough.

B Library rules barriers
B1. The book loan period is too short.
B2. Not enough books can be loaned in the library.
B3. The working hours of the library are adjusted to the needs of students. *.
B4. I am not familiar with the library rules and regulations.
B5. Library rules related to the consumption of beverages in reading rooms are too strict.

C Affective barriers
C1. I feel uncomfortable because I don't know how to use library and its services.
C2. I felt uncomfortable during my first visit to the library.
C3. When I am in the library and I don't know what to do – I am anxious.
C4. I am ashamed of my lack of knowledge related to the use of electronic catalogues, databases, etc.
C5. I like the library and I love spending time in it. *
C6. I feel so uncomfortable in the library that I can't use it at all.
C7. I feel ashamed when I have to ask a question to librarians.
C8. I always feel uncomfortable when I am going to the library or thinking about going there.
C9. Other students use the library and library services much better than I do.
C10. I cannot use the library either in person or online.

D Technological barriers
D1. I am not effective in using electronic databases which I have access through university library.
D2. I don't know how to order a book in the library via library electronic catalogue.
D3. I am not effective in using library electronic catalogue.
D4. I don't know how to access databases outside of university.
D5. Computers for library users are outdated and software runs slow.
D6. I am confused by the large number of options while searching databases.
D7. I will rather use the library in person, not on-line.
D8. In the library, there are not enough computers for students.
D9. Library web site is informative and user-friendly. *.
D10. In the library, it is complicated to access wireless internet network.

E Library knowledge barriers
E1. I don't know how to begin a search in the library.
E2. During my studies I was not sufficiently informed and educated about the library and its services.
E3. It is complicated to use the library and its services.
E4. I don't know what inter-library loan is.
E5. I don't know where the library rooms are (loan department, reading rooms etc.).
E6. There is a lack of library instruction for students.
E7. I like learning new things about the library and its services.
E8. When I am trying to find something in the library, usually I can't find it.

F Library comfort barriers
F1. Library is not comfortable place to spend time in.
F2. In the library, there are not enough rooms for silent work.
F3. In the library, there are not enough spaces for group work.
F4. Library signage and orientation system is confusing.
F5. If I can, I'd rather use library services from home (online) than come to the library in person.

F6. The library is a comfortable place to stay and study. *

F7. The library is spatially poorly organized (layout of reading rooms, branches(departments?), information desks).

F8. Lighting in the library is not adequate.

F9. The furniture in the library (chairs, tables, etc.) is worn and uncomfortable.

F10. I don't like the library at all.

G Resources barriers

G1. The library doesn't own/purchase books which I need.

G2. The library doesn't subscribe to journals which I need.

G3. The library doesn't purchase sufficient number of new books.

G4. A lot of books in the library are overdue.

G5. The library has too few copies of the most popular titles.

G6. Too many books in the library are too old and damaged.

G7. The electronic catalogue is unfathomable and unreliable.

G8. The library does not purchase access to databases which I need.

G9. I am not familiar with the possibility of using content stored in digital repositories.

G10. I am not familiar with the possibility of using content stored on digital network platforms.

G11. There are always materials which I need in the library (books, journals etc.) *.

G12. The library doesn't have enough electronic books.

Appendix B. The results of exploratory FA with factor loadings, communalities and correlations

Item	Factor						Communalities	r_{it}
	1	2	3	4	5	6		
Staff1				0.751			0.615	0.377
Staff2				0.618			0.453	0.370
Staff3				0.701			0.571	0.416
Staff5				−0.572			0.394	0.369
Staff7				0.719			0.586	0.448
Affective1			0.646				0.601	0.604
Affective2			0.619				0.465	0.487
Affective3			0.677				0.631	0.608
Affective4	0.543						0.547	0.566
Affective6			0.541				0.604	0.562
Affective7			0.736				0.644	0.540
Affective8			0.725				0.6789	0.563
Affective9			0.506				0.443	0.522
Tech1	0.706						0.563	0.511
Tech2	0.694						0.532	0.416
Tech3	0.841						0.741	0.493
Tech4	0.733						0.590	0.506
Tech5						0.655	0.494	0.194
Tech6	0.680						0.544	0.572
Tech8						0.595	0.402	0.230
Comf1					0.646		0.636	0.596
Comf5					0.512		0.352	0.393
Comf6					−0.621		0.472	0.428
Comf10					0.750		0.661	0.484
Res1		0.704					0.538	0.441
Res2		0.764					0.63	0.467
Res3		0.771					0.685	0.450
Res4		0.664					0.508	0.419
Res5		0.682					0.519	0.413
Res8		0.606					0.517	0.551
Res9	0.561						0.399	0.473
Res11		−0.542					0.341	0.398
LibKnow1	0.513						0.472	0.593

Appendix C. Croatian Library Anxiety Scale (CRO-LAS) – translated into English. Note: items marked with asterisk (*) are reverse-scored

A Staff barriers

A1. Librarians are not approachable.

A2. In the library, I don't get help in time.

A3. Librarians do not encourage students to ask questions when they do not understand something or when they need help.

A4. Librarians are kind and willing to help. *

A5. Librarians are not communicative enough.

B Affective barriers

B1. I feel uncomfortable because I don't know how to use library and its services.

B2. I felt uncomfortable during my first visit to the library.

B3. When I am in the library and I don't know what to do – I am anxious.

B4. I feel so uncomfortable in the library that I can't use it at all.
B5. I feel ashamed when I have to ask a question to librarians.
B6. I always feel uncomfortable when I am going to the library or thinking about going there.
B7. Other students use the library and library services much better than I do.

C Technological barriers
C1. I am not effective in using electronic databases which I have access through university library.
C2. I don't know how to order a book in the library via library electronic catalogue.
C3. I am not effective in using library electronic catalogue.
C4. I don't know how to access databases outside of university.
C5. I am confused by the large number of options while searching databases.
C6. I am ashamed of my lack of knowledge related to the use of electronic catalogues, databases, etc.
C7. I am not familiar with the possibility of using content stored in digital repositories.

D IT equipment barriers
D1. Computers for library users are outdated and software runs slow.
D2. In the library, there are not enough computers for students.

E Library comfort barriers
E1. Library is not comfortable place to spend time in.
E2. If I can, I'd rather use library services from home (online) than come to the library in person.
E3. The library is a comfortable place to stay and study. *.
E4. I don't like the library at all.

F Resources barriers
F1. The library doesn't own/purchase books which I need.
F2. The library doesn't subscribe to journals which I need.
F3. The library doesn't purchase sufficient number of new books.
F4. A lot of books in the library are overdue.
F5. The library has too few copies of the most popular titles.
F6. The library does not purchase access to databases which I need.
F7. There are always materials which I need in the library (books, journals etc.) *.

Appendix D. Library anxiety levels of undergraduate and graduate students in each category calculated per year of study (N = 266)

Variable	Year	*M*	*SD*	*Min*	*Max*
Staff	1U	1.68	0.613	1.00	3.40
	2U	1.84	0.607	1.00	3.20
	3U	1.69	0.691	1.00	3.60
	1G	1.87	0.649	1.00	3.20
	2G	1.79	0.686	1.00	4.00
Affective	1U	2.72	1.005	1.14	5.71
	2U	2.65	0.983	1.14	5.14
	3U	2.36	0.790	1.14	4.57
	1G	2.34	0.844	1.14	4.71
	2G	2.12	0.747	1.14	4.29
Technical	1U	3.18	0.795	1.88	5.00
	2U	2.89	0.902	1.00	4.88
	3U	2.77	0.763	1.13	4.88
	1G	2.70	0.876	1.00	4.38
	2G	2.22	0.902	1.00	4.75
ITEQ	1U	3.06	0.860	2.00	5.00
	2U	3.09	0.831	1.00	5.00
	3U	3.35	0.864	1.50	5.00
	1G	3.33	0.803	1.50	5.00
	2G	3.54	0.862	2.00	5.00
Comfort	1U	2.06	0.805	1.00	4.75
	2U	2.02	0.784	1.00	4.25
	3U	1.95	0.770	1.00	4.00
	1G	2.13	0.646	1.00	3.50
	2G	1.88	0.656	1.00	4.25
Resources	1U	2.65	0.724	1.00	4.43
	2U	2.93	0.746	1.29	4.71
	3U	2.87	0.796	1.00	4.43
	1G	2.85	0.646	1.14	4.43
	2G	2.73	0.848	1.00	4.86
Library anxiety	1U	2.50	0.559	1.63	4.34
	2U	2.50	0.583	1.13	3.91
	3U	2.38	0.546	1.22	3.66
	1G	2.41	0.497	1.19	3.50
	2G	2.18	0.463	1.06	3.63

Note: 1U – first year undergraduate study; 2U – second year undergraduate study; 3U – third year undergraduate study; 1G – first year graduate study; 2G – second year graduate study.

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