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Library Anxiety of Law Students: A Study Utilizing the Multidimensional Library Anxiety Scale

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LIBRARY ANXIETY OF LAW STUDENTS: A STUDY UTILIZING THE MULTIDIMENSIONAL LIBRARY ANXIETY SCALE

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Abstract

The purpose of this study was to determine whether law students experienced library anxiety and, if so, which components contributed to that anxiety. The Multidimensional Library Anxiety Scale (MLAS) developed by Dr. Doris Van Kampen was used to assess library anxiety levels of law students. The MLAS is a 53 question Likert scale instrument that measures the construct of library anxiety. Participants in the study were law students enrolled in a private midwestern university during the 2009-2010 academic year who completed the survey instrument.

Law students are a unique graduate school population who undergo an extremely rigorous and competitive course of study, which often involves detailed legal research. As a result, they frequently utilize the library, whether on-site or online. If law students suffer from high levels of library anxiety, it could impact their ability to complete assignments and achieve high academic excellence. Through better understanding of law students' library anxiety levels, law school educators and librarians may be in a position to begin reducing or alleviating those anxieties.

Due to the fact that this was the first time the MLAS was used with law students and only its second use, a confirmatory factor analysis was performed. The confirmatory factor analysis resulted in an inadequate fit. As a result, a principal components analysis was undertaken, which resulted in six components that were somewhat similar, but not identical, to the prior research study using the MLAS instrument. The six identified

components were named as follows: (i) general library and research anxiety (LibResearch); (ii) comfort with technology and online access (TechOnline); (iii) perceived value of the understanding how to use the library (ValueLib); (iv) comfort with the library as a physical place (ComfortLib); (v) perceived value of using the library in-person (LibInperson); and, (vi) comfort with the library staff (LibStaff).

The findings of this study indicated that law students exhibit moderate levels of overall library anxiety and varying levels of library anxiety on the six components. In particular, evening division law students had higher levels of library anxiety as it pertained to comfort with the library staff. Also, law students who used the library in person one or fewer times per semester encountered greater library anxiety as it pertained to general library and research anxiety. Additionally, law students who used the library online one or fewer times per semester had higher library anxiety related to comfort with technology and online access. Results indicated that overall library anxiety and on the six components did not differ based upon gender or year in law school. Lastly, library anxiety on the six components did not differ based upon law students' age or grade point average ranges.

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Chapter One: Introduction

Introduction to the Problem

Library anxiety is the fear or anxiousness that a student feels knowing that he or she has to enter a library to perform research or find information for a project (Mellon, 1988). Library anxiety can be so debilitating that a student is prevented from approaching an assignment in an effective manner or a logical fashion (Mellon). Students often do not know where or how to begin the search about their topics and what to do in order to locate information related to them (Mellon). This fear or anxiety that students encounter regarding the use of the library has a significant impact on how much they will be able to learn.

Jiao and Onwuegbuzie (1997b) noted that library anxiety is as debilitating for graduate students as it is for undergraduate students. In particular, library anxiety often makes it difficult for graduate students to engage in effective research (Jiao & Onwuegbuzie). Yet, graduate students are often required to engage in significant use of the library and its resources, whether on-site or remotely, to complete their courses of study. If these students suffer from extreme library anxiety, they may encounter problems in completing their graduate coursework.

Law students are a unique subset of the graduate student population. These students undergo a rigorous course of study that is also extremely competitive. They are often required to engage in detailed research of legal topics and case law. As a result, law

students must utilize the library and its resources extensively, whether on-site or off-site through the online catalog or electronic databases. If law students suffer levels of intense library anxiety similar to other graduate students, they may be unable to complete assignments to their optimal abilities, if at all. Consequently, library anxiety may prevent them from achieving their highest potentials in law school and impact their abilities to secure desired future employment.

Academic law libraries are special libraries which provide services to a unique group of people – predominantly the law students and faculty of that specific law school. Additionally, law libraries differ from other types of academic libraries due to their unique content, organization, and actual use (Levor, 2008). These libraries have a distinct arrangement and structure that is dictated by the manner in which legal information, whether in print or online, is organized, presented, and interlocked (Levor). As a result, specific expertise and skills are required to search and find needed legal information.

The ability of a law student to utilize the library and its specialized resources in order to engage in legal research is vital to a future career as a lawyer (Woxland, 1989). While law school focuses on teaching students to "think like a lawyer," that skill alone is not enough to succeed as a lawyer (Woxland). Lawyers must be able to do more than simply talk about the law; they must also have the skills to search out and find the law (Woxland). Yet, a frequent complaint of practicing attorneys and law firm librarians is that recent law school graduates lack the necessary and required research skills to perform their jobs effectively as new associates (Mersky, 2007). However, many of these same students arrive at and complete law school believing that they possess good "information-gathering skills" (Mersky, p. 399). Because these students are capable of

multi-tasking and efficiently utilizing computers and the Internet, they believe that these computer skills imply that they are efficient searchers with library resources and as such do not require additional research instruction (Mersky).

Need for the study.

I first encountered the concept of library anxiety while obtaining my master's degree in library and information science. While I did not begin exploring the concept in depth until I entered my PhD program, the theory of library anxiety continued to intrigue me. When I obtained my first professional library job in a law library, the concept resurfaced. I hold a law degree from the University of Denver (1992) and can empathize with the course of study my patrons are undergoing. While I do not remember all of my emotions regarding the library or the various tools available to perform legal research during my years as a law student, I remember experiencing severe levels of library and searching anxiety. Now that I work in an academic law library, I observe current law students' anxieties in the library first hand. In addition to observing library use anxiety in law students, on occasion I also personally encounter library anxiety in my own research. If I still encounter library and searching anxiety, despite having been trained in the profession of librarianship, I suspect that law students encounter even greater levels of library and research anxiety. While a number of studies have examined both undergraduate and graduate students' levels of library anxiety, no study has specifically examined law students' levels of library anxiety.

Assessing the library and search anxiety in law students is important for a variety of reasons. Law students often approach me to assist them with researching a particular legal topic or issue. In many cases, the student has attempted the search process on his or

her own, but has been unsuccessful in locating the needed information. Due to this inability to locate the information themselves, they are seeking help from a librarian. In order to truly assist students, it is crucial to understand library and research anxiety and the ways in which these anxieties impact a student's ability to engage in effective and efficient research so that he or she can complete the assigned task successfully. By understanding the nature and causes of library anxiety from which law students suffer, I may be able to assist them so that they can alleviate their anxieties and ultimately become better researchers.

In addition to working with law students in the library, I also interact with them in classroom settings. Routinely, I teach stand-alone classes such as Legal Databases Research or a Legal Internship section. On other occasions, I present tailored research skills instructions for specific law school courses, after which students are required to engage in a legal research and/or writing project. Additionally, I present research skills instructions as brown bag seminars for students or as a part of a summer associate orientation experience prepared and presented by law librarians in the community. By assessing library anxiety among law students, these instructions can be tailored to address and potentially alleviate some of that anxiety.

Mersky (2007) notes that our society relies on the exchange of information and knowledge and states that, "the practice and scholarship of law is predicated on easy and efficient access to information" (p. 401). Unlike other disciplines for which the library supplements the course of study, the law school library is the venue where law is studied and recorded in materials, whether print or electronic (Woxland, 1989). If a student is not able to effectively and efficiently use the library and its resources, his or her ability to

practice law will be minimized (Woxland, p. 464). Legal research is a crucial skill for lawyers. If law students experience severe levels of library anxiety, this may prevent them from developing effective searching skills and thus impact their career potentials.

Theoretical framework.

Mellon (1986) coined the term "library anxiety" and undertook her initial qualitative study of it among undergraduate students in the 1980s. Mellon found that library anxiety can be so incapacitating as to prevent students from approaching a research assignment logically or effectively. This fear can ultimately impact a student's ability to complete assignments and be successful. Subsequent to Mellon's initial investigations, Bostick developed the Library Anxiety Scale (LAS) in 1992 in order to measure library anxiety quantitatively. Since that time, a number of researchers have investigated library anxiety. These studies have examined the library anxiety of both undergraduate and graduate students. In particular, these studies have shown that library anxiety is distinct from the trait of general anxiety (Mech & Brooks, 1995). Additionally, library anxiety is correlated with age, gender, grades, and number of visits to the library (Jiao, Onwuegbuzie, & Lichtenstein, 1996). It has also been shown that library anxiety is related to learning modalities, self-perception, and perfectionism (Onwuegbuzie & Jiao, 1998; Jiao & Onwuegbuzie, 1998, 1999c).

In conjunction with the concept of library anxiety, in the 1980s Kuhlthau (1988) undertook a study that examined the library search process among high school seniors planning to attend college. She found that feelings of anxiety were highest at the beginning of the search process when students suffered from confusion and lack of certainty. In a second study, Kuhlthau (1991) also found that anxiety increased when the

user was unfamiliar with the resources and technologies. Based on her results, Kuhlthau set forth a six stage information search process model that delineated when students encountered higher levels of search anxiety.

Van Kampen (2003) subsequently built on Bostick's and Kuhlthau's research when she examined library anxiety among doctoral students in order to determine which aspects of the library or searching for information process caused the anxiety. As a part of her study, Van Kampen updated Bostick's original LAS to better reflect current trends in the library as a modern facility. Van Kampen's (2003, 2004) Multidimensional Library Anxiety Scale (MLAS) introduced factors such as the Internet, the wide availability of electronic databases, the ability to search library resources remotely, and students' comfort with computers. In her study, she found that while doctoral students encountered less anxiety in beginning the research process, they encountered higher levels of anxiety with regard to their comfort levels with using the library, seeking help from the librarians, and feeling comfortable in the library space (Van Kampen, 2003).

Research site details.

The research site for this study is a private law school located in the midwestern United States (COL). The COL is ranked in the top 100 law schools (Best Law Schools, 2009). The COL was founded in 1892 on the western frontier and accredited by the American Bar Association in 1925. It has operated continuously since its inception. In 1957, the COL merged with the another law school, which, at the time, provided the only evening program from Kansas City to the West coast. The COL continues to offer both a day and evening course of study for law students. Students admitted into the day division are deemed to be full-time students and they are expected to graduate in three years.

Students admitted into the evening division are considered to be part-time students and generally graduate in four years.

The law school's population in 2008 consisted of approximately 1,150 first, second, third, and fourth year law students. Of the total law student population approximately 75% of the students were members of the day division and 25% were members of the evening division. Approximately 43% of the law students were women and 57% men. Of the entire population of law students, almost 20% were of ethnic descent. Lastly, approximately 40% of the law student population was from the State of Colorado.

The Law Library (LL) is an integral part of the COL. The LL and its seven law librarians support the curriculum and research needs of the law school community, as well as alumni and local attorneys (Westminster Law Library, 2009). The library's collection consists of a mixture of print resources, electronic resources, audio-visual materials, and microform materials. The overall collection, including print and electronic resources exceeds 406,000 volumes and volumes equivalent. The library provides access to its electronic collections both on-site and remotely to specific patrons including students, faculty, and staff. The library maintains 18 on-site computers that can be utilized to access the library's online public access catalog, electronic fee-based databases, and the Internet. In addition, the library provides access to four print stations, two microform reader machines, and one digital scanning device.

The LL and its staff provide a number of services to its patrons. All library patrons can seek assistance from the reference desk, either in person, by phone, or by email, and can request materials through interlibrary loan. In addition, selected law

librarians provide legal research instruction in the forms of one-on-one meetings, brown bag seminars, in-class instructions, or stand-alone research courses for credit. The law librarians play a vital role in teaching legal research skills to the law students.

Statement of the Problem

The purpose of this study was to determine the overall library anxiety levels of law students at the COL and to assess the specific components of the MLAS that contributed to this phenomenon. This study also examined the relationships of overall library anxiety levels and specific components of the MLAS to gender, age, attendance in the day or evening division, year in law school, grade point average, and frequency of library use. This study responded to a gap in the research by examining for the first time library anxiety as it related to law students.

Research Questions

The specific research questions that guided this study were as follows:

1. What levels of library anxiety do law students exhibit?

    a. What is the difference in library anxiety levels of male and female law students?

    b. How much does the difference in library anxiety levels of law students vary according to enrollment in the day or evening division?

    c. How does the level of library anxiety differ among first, second, third, or fourth year law students?

    d. How much does the difference in library anxiety levels of law students vary according to age?

e. How much does the difference in library anxiety levels of law students vary according to a specific grade point average range?

f. How much does the difference in library anxiety levels of law students vary according to frequency of library use, both in-person and online?

Limitations

The researcher conducted this survey solely at the COL. As a result, the scope of the study is limited to law students attending the COL in either the day or evening division during the 2009-2010 academic year. Unlike other fields of study, law students do not select and are not categorized into a specific area of law as a specialization or concentration. As a result, it is not possible to stratify or segregate law students based upon a specific field of study (e.g. litigation, real estate, corporate, etc.). This survey was not intended for faculty or staff. The researcher used the MLAS to assess library anxiety in the sample population. Findings may not be generalized to other groups that consist of a different population.

Assumptions

The scope of this study assumed that law students had a reading and speaking comprehension of the English language. It assumed that all law students answered the survey accurately and honestly. It also assumed that the sample population was representative of the entire law student population at the COL.

Definition of Terms

Information Search Process: The process of formulating ideas through the search for information and as that information is processed and leads to further information until the search is completed (Kuhlthau, 1988, 1991). The six stages of the

information search process are (i) task initiation; (ii) topic selection; (iii) prefocus exploration; (iv) focus formulation; (v) information collection; and, (vi) search completion and presentation (Kuhlthau).

Library Anxiety: An anxiety experienced by many undergraduate and graduate students. It is characterized by feeling overwhelmed by the library, not understanding where to locate items in the library, lack of confidence about how to begin a research assignment, feelings of inadequacy, hesitancy to ask for help, and lack of knowledge regarding the equipment in the library including computers (Mellon, 1986, 1988).

Library Anxiety Scale (LAS): An instrument developed by Sharon Bostick (1992) in the early 1990s to quantitatively measure library anxiety. The LAS measured the construct of library anxiety through a 43 question Likert scale instrument. The scale measured five variables that impacted a person's level of library anxiety: (i) barriers with librarians and staff; (ii) emotional barriers; (iii) comfort with or safety in the library; (iv) familiarity with the library; and, (v) library equipment barriers (Bostick).

Multidimensional Library Anxiety Scale (MLAS): An instrument developed by Doris Van Kampen (2003) in 2001 that updated the original LAS instrument. The MLAS measured the construct of library anxiety through a 53 question Likert scale instrument. The scale measured six aspects of library anxiety: (i) comfort and confidence when using the library; (ii) the information search process and library anxiety; (iii) perceived barriers with staff; (iv) perceived importance of understanding how to use the library; (v) comfort level with technology as it applies to the library; and, (vi) comfort level while inside the library (Van Kampen).

COL: A private law school located in the midwestern United States with a day and evening division program of study.

LL: The Law Library, which is the law library at the private law school located in the midwestern United States.

Summary of Chapter One

In summary, library anxiety is a fear or anxiousness that students encounter when utilizing the library and its resources to perform research. This anxiety is as debilitating to graduate students as it is to undergraduate students. Understanding the levels and causes of library anxiety in law students may enable law librarians to devise methods and learning experiences that begin to reduce that anxiety and, thus, prepare law students to be more successful in their careers as students and lawyers. The current study examined the library anxiety of law students to determine the existence and levels of library anxiety, as well as the factors that trigger higher levels of such anxiety.

Chapter Two: Review of the Literature

Introduction

A review of the literature was conducted to investigate and summarize previous research regarding legal research skills and library anxiety. This chapter is divided into two main sections: legal research skills and their importance and library anxiety literature. The first section reviewed the literature regarding the importance of obtaining and mastering legal research skills for law students, including discussions of the MacCrate report, the shift to the predominance of online legal research, the Carnegie Foundations' report on legal education, and the importance of the law library. The second section reviewed the major trends and studies regarding library anxiety, including the development and validation of the Library Anxiety Scale (LAS) and the Multidimensional Library Anxiety Scale (MLAS).

Legal Research Skills and their Importance

In order to be successful, lawyers must know how to engage in effective research of the law (Sloan, 2003). Legal research is an underpinning of the practice of law (Bintliff, 2007). The American Bar Association (ABA) set forth standards for legal education and in particular, Standard 302(a) states that "A law school shall require that each student receive substantial instruction in (2) legal analysis and reasoning, legal research, problem solving, and oral communication…" (American Bar Association,

2009). As stipulated by the ABA in its standards, legal research is an essential skill for every law student.

What is legal research? Legal research includes a variety of factors such as locating relevant case law or finding the governing statute, rule, or regulation. Legal research can also include tracing legislative history and intent, locating a form, or engaging in background research. It is the underlying ability to locate the legal information needed for the particular topic, project, or case at hand. Major facets of legal research include understanding the problem to be researched, accessing the relevant resources, often through an index or table of contents, and evaluating the reliability and authority of the resources (Greenberg, 2007). These are essential pieces whether researching in print or electronic resources.

The MacCrate Report.

A seminal report regarding law school education and the legal profession was issued in 1992 by the American Bar Association's Section of Legal Education and Admissions to the Bar. Known as the MacCrate report, this document set forth statements regarding the fundamental skills and professional values that are essential for lawyers (American Bar Association, 1992). One of these statements listed legal research as a fundamental lawyering skill that all attorneys should posses and specifically stated, "In order to conduct legal research effectively, a lawyer should have a working knowledge of the nature of legal rules and legal institutions, the fundamental tools of legal research, and the process of devising and implementing a coherent and effective research design" (American Bar Association, p. 31).

The report went on to indicate that lawyers should understand not only how to engage in legal research, but also how to create and undertake an effective research plan (American Bar Association, 1992). In particular, lawyers should have the ability to identify legal issues and know which sources to utilize in order to locate information regarding a specific issue, including case law, statutes, administrative regulations, and more (American Bar Association). Lawyers should be knowledgeable about legal research tools and how to effectively use them, such as primary and secondary sources (American Bar Association). Lastly, lawyers should possess the skills to develop a research plan and carry that plan through to completion (American Bar Association). This fundamental skill set includes the abilities to determine potential research issues, identify various strategies that can be used to research those issues, and finalize and implement the research plan (American Bar Association).

Although the MacCrate report identified legal research skills as critical for a lawyer to be deemed competent, it noted that researching is more than simply reading information in a text (American Bar Association, 1992). Legal research is a complex skill that encompasses the entire process of identifying legal issues and implementing a research plan to locate information required to address specific issues (American Bar Association).

Yet, a common complaint of practicing attorneys and law librarians is that law students lack sufficient research skills. The literature reveals and reiterates the importance of legal research skills. However, there seems to be a disconnect between the stated

importance of legal research skills as discussed in the literature and the actual teaching and learning of these skills by law students.

Legal research literature.

Following on the heels of the MacCrate report, Dunn (1993) noted that practitioners and firm law librarians continued to articulate complaints regarding new lawyers' lack of basic research skills. Many of these new lawyers did not even have the ability to locate a case or statute, skills that should have been acquired during law school and that are essential to the practice of law (Dunn). One rationale for the lack of research skills was the increase in the focus on legal writing skills coupled with the decrease in focus on research skills during the preceding decades (Dunn). As legal writing requirements become more rigorous and required additional time, the attention dedicated to teaching legal research continued to diminish (Dunn). As a result, law students entering the profession lacked elementary research skills, a trend that continues into the current day.

The need for practical skills as outlined in the MacCrate report continued to be a focus of the literature. Silecchia (1995-1996) noted that the necessity for practical skills training in law schools is generally recognized, whether supported in earnest or not. Silecchia (1995-1996), taking into account the MacCrate report's statements, undertook a survey in 1995 to determine the type of legal skills training that first year law students were receiving. A primary course for most every first-year law student is research and writing. While the content and focus of that course varies from institution to institution, it is considered a fundamental skills course that first year law students should pursue

(Silecchia). While this first-year course is meant to teach both legal writing and legal research skills, its predominant focus is often on the writing skills component (Silecchia).

Silecchia's (1995-1996) survey confirmed that legal writing focus. The survey indicated that 85.4% of the law schools surveyed spent 30% or more of course time on teaching legal writing, whereas only 41.6% of those same schools spent 30% or greater course time on teaching legal research. Particularly telling is that only 6% of the law schools surveyed spent over 50% of the time teaching and discussing legal research, while 32.1% spent over 50% of the time teaching legal writing skills (Silecchia).

What is evident from these results is that the majority of law schools surveyed view legal writing skills as more crucial than legal research skills in the first year course. Yet, legal research skills, as noted by the ABA standards and the MacCrate report, are critical for a student's professional development and success. These skills become more complex and all the more important with the continued increase of information available, both in print and electronically. Additionally, law firms and other legal employers expect new lawyers to be proficient in these practical skills when they arrive at their first position (Silecchia).

Margolis (2007) notes that "locating relevant legal authority and evaluating it are fundamental skills every lawyer should possess" (p. 84). The ability to perform research is an essential skill for the practice of law and for a lawyer to be viewed as competent (Margolis). She points out that the Model Rules of Professional Conduct for lawyers reflect that legal research skills are necessary and that a lawyer can face detrimental consequences for performing inadequate or poor legal research (Margolis). This

perspective reiterates the need for law students to master effective legal research skills prior to entering the practice of law. Without those adequate skills, State legal bars and courts may consider these lawyers to be incompetent or unfit to practice (Margolis).

Shift to online legal research.

With the shift to more legal information available electronically, whether through Westlaw, LexisNexis, other fee-based databases, or the Internet, a gap now exists between those lawyers who learned how to conduct research using print materials and those current law students learning research skills predominantly in electronic resources (Berring, 2000). Due to this increase in electronically available information and the complexity of locating what is needed, students require even greater searching expertise to locate the needed resources (Berring). As a result, the necessity for students to become proficient researchers and master legal research skills is only increasing.

While the Internet and commercial databases have created the perception of a world in which locating information appears to be easy, often times law students do not really understand what it means to search for information (Keefe, 2005). This misconception can be reflected in their searches. Generally, these students formulate less structured and effective searches because the Internet has created a generation of searchers who do not plan and think first (Keefe, 2005).

The solution is to prepare current and future law students with improved online research skills so that they become efficient and effective information seekers (Keefe, 2005). Students must be taught to think beyond a simple keyword search and to select their search terms and develop a strategy prior to implementation. Law students also need

to learn how to navigate through the plethora of sources that are returned in online searches and to find those sources that are on point to their query (Keefe, 2005). As Keefe (2005) noted, "[law students] need to know how to think about legal research, not just how to perform it" (p. 128).

Law students in the twenty-first century are far less likely to commence their legal research in print resources. These students generally turn to electronic resources first when searching for information (McKenzie & Vaughn, 2007). They often believe that all the answers can be found by utilizing the computer and online databases (Perlin, 2007). As a result, contemporary law students believe that whatever information is to be found will automatically be returned by the database or search engine they chose to utilize (McKenzie & Vaughn). They also think that if they cannot find the answer quickly, that there is no answer. However, not infrequently, the information located is not what is needed because the context for the information is lost as a result of full-text searching (McKenzie & Vaughn). The student may not even realize that they have accessed the wrong code or statute section because the table of contents, which would provide that clue or signpost, is not listed on specific results pages (McKenzie & Vaughn). Due to this shift in how law students search for and locate information, instructors need to teach students how to select the best possible databases for their research and how to understand and interpret their results (McKenzie & Vaughn). Additionally, instructors need to guide students in how to locate those clues that were much easier to find when using print resources, as well as when it is appropriate to utilize a print resource.

Law students also often fail to understand the importance and use of secondary resources, which are frequently only available in print, to assist in creating effective online search strings and strategies. In order to be successful researchers, law students must learn how to analyze the facts of the problem, determine the relevant issues, locate the law that pertains to the issue, analyze their findings, and finally clearly communicate those findings (Fitzgerald, 1996). Perlin (2007) goes on to note that "Legal research is perhaps the most important skill that law students will ever learn during their time in law school, and yet most students, law schools, and law firms do not put enough emphasis on it" (p. 21). Without these skills, a law student's chance for a successful career may be curtailed.

Nevers (2007) reflected on the importance of teaching computer assisted legal research to first-year law students and whether it should be taught by law librarians or the database vendors. With the continued shift of research to online databases and the Internet, it is even more important for librarians to teach research skills to law students. Extensive skill sets, understanding of information organization, and experience prepares librarians to instruct students in electronic legal research and to put that research into context (Nevers).

Another important reason for librarians to teach first-year law students legal research is to develop a relationship with them (Nevers, 2007). If law students are not comfortable approaching the librarian or believe that the librarian cannot assist them, a divide occurs (Nevers). As a result, a barrier to the library and its staff might be created which could result in an increase of library anxiety among law students.

However, if law students interact with librarians during their first year of law school, there is a greater possibility for those same students to seek out the librarian as they continue through law school and address more sophisticated and complex legal research issues. Unfortunately, law students often perceive legal research instruction as an unimportant skill – partially due to the fact that vendors frequently teach first-year students how to engage in some types of computer assisted legal research (Nevers, 2007). Were librarians to teach these essential skills, students might place more value on legal research, the law library, and its librarians.

A significant number of law students have utilized the Internet and online databases since high school or college. As a result, they generally perceive themselves as expert searchers because they know how to use a variety of search engines (Nevers, 2007). Yet, their skills are often inadequate due to the fact that they believe the results of their online search are complete and do not require follow-up in other databases or in print (Nevers). In addition, they do not recognize that these electronic research results, unlike print research, generally display little context or structural hierarchy (Bintliff, 2007). So, while law students are more than capable of searching online, they have not learned the necessary skills to parse that information and determine whether or not their search has been successful (Bintliff). They also need to understand how search results fit into an appropriate context for their particular research. If these students had pre-existing relationships with the law librarians, they might be more likely to seek research assistance from the librarians.

As the practice of law moves into the future, law students and lawyers will increasingly rely on online resources to perform legal research (Greenberg, 2007). These online resources run the gambit of large commercial database providers, such as Westlaw and LexisNexis, to smaller and medium-sized commercial database providers, such as BNA, HeinOnline, and LoisLaw, to free Internet resources. Due to these trends, legal research instruction must prepare law students to utilize online resources effectively, whether paid or free, as well as how to place the information returned in context (Greenberg).

When engaging in electronic legal research, students must have a clearer understanding of the law and the aspects of each particular research project then when undertaking print legal research (Greenberg, 2007). One of the main reasons is the lack of context that often exists with electronic results. While a law student or young lawyer may be certain he or she has located the relevant statute, it might turn out to be irrelevant when that statute is placed in context of the article and chapter within which it is contained (Greenberg). The index or table of contents is often unavailable or not easily available to the searcher when engaged in online research. It is crucial to select correct search terms when engaged in electronic research or the most relevant resource, whether a case, statute, or law review article may never be located. One way to select the most appropriate search terms is to utilize secondary resources for background information, whether those resources are in print or online (Greenberg, 2007). As Greenberg (2007) notes, “poorly designed online searches often drown the researcher in a sea of irrelevant results” (p. 261).

The Carnegie Foundation Report.

Recently, the Carnegie Foundation for the Advancement of Teaching's Preparation for the Professions Program undertook a study of law school education. This study indicated that during the twentieth century law schools moved away from teaching practical skills and focused on teaching legal doctrine, reasoning, and logic (Sullivan, Colby, Wegner, Bond, & Shulman, 2007). This lack of grounding in practical skills has resulted in a disservice to law students who may be trained to 'think like a lawyer," but lack the practical skills training to put those thoughts and analyses into action (Sullivan et al.). The study states that law school education should integrate both theoretical knowledge and practical skills in the curriculum (Sullivan et al.). In order to prepare well-rounded and competent lawyers, students must develop analytical thinking and analysis, as well as practical legal skills (Sullivan et al.). One such practical skill is the ability to engage in effective legal research.

In a program session regarding aspects of the Carnegie Foundation's report on Educating Lawyers, Lenz (2008) noted that the ability to engage in legal research and access the required information has become increasingly complex. As a result, law librarians have an integral role to play in teaching law students how to engage in research that works in today's predominantly electronic environment (Lenz).

Barkan (2007) reiterates the importance of lawyers being able to find the law or perform legal research, particularly as the "legal information environment becomes more complex and costly" (p. 403). It has been a struggle to assert the value of legal research skills in the law school curriculum (Barkan). While other practical lawyering skills have

gained importance, such as legal writing and clinical work, legal research skills remain the underdog. Barkan notes that one way to effectively change the importance of legal research in the curriculum, as well as to improve the teaching of legal research skills, would be to include the topic on the bar examination. This would create an incentive on both fronts and would reinforce to law students the importance of understanding how to engage in effective research and the import of those skills in their on-going career (Barkan).

Library Anxiety Literature

Library anxiety is the fear or anxiousness that a student feels knowing that he or she has to enter a library to perform research or find information for a project (Mellon, 1988). Library anxiety can be so debilitating that a student is prevented from approaching an assignment in an effective manner or logical fashion (Mellon). Students often do not know where or how to begin the search on their topics and what to do in order to locate information related to them (Mellon). This fear or anxiety that students encounter regarding the use of the library has a significant impact on how much the students will be able to learn (Mellon).

Mellon (1986) performed her ground breaking research in the area of library anxiety by examining the personal journals of approximately 6,000 undergraduate students at a southern university. These journals, which were collected over a two-year period, reflected the students' actual search processes as well as their feelings about the process (Mellon). The data were analyzed for reoccurring themes. Mellon found that 75-85% of the students labeled their initial response to the library as one of anxiety or fear.

The students often described library anxiety as confusion or feeling lost and helpless (Mellon). Students indicated that the feeling of being lost resulted from the large size of the library, not knowing where materials were located, uncertainty in regard to how to commence a research project, and not knowing what to do once in the library (Mellon, 1986).

Mellon (1988) found that this library anxiety or fear manifests in three particular ways: (i) students perceive that they are less competent in their library skills than other students; (ii) students are ashamed of their lack of library competence; and, (iii) students avoid asking questions so their lack of competence is not revealed. Mellon (1986), through her initial research, established the grounded theory that, "when confronted with the need to gather information in the library for their first research paper many students become so anxious that they are unable to approach the problem logically or effectively" (p. 163). Mellon's theory of library anxiety opened the door for additional research in this new area.

Mellon (1986) undertook her initial study in order to determine more effective ways of teaching search strategies during library instruction. However, the students rarely referred to search problems in their journal entries, but instead described the fear they encountered prior to commencing the search in the library. As a result of these insights, Mellon (1986) redesigned the library instruction session so that the students received a discussion of library anxiety, which assured them that this anxiety was reasonable and encountered by many learners. In addition, Mellon (1986) increased contact between the librarian and students, incorporated an element of "warmth" in the instruction, and

emphasized students' success at their tasks. She found that this type of library instruction reduced students' anxieties regarding the library and the initiation of the search process (Mellon, 1988). Additionally, Keefer (1993) recommended that academic librarians attempt to reduce students' library anxiety by helping them understand that their anxiety and frustration is normal. By engaging with students and offering assistance to those who appear troubled, librarians can strengthen the human connection and reduce students' levels of anxiety (Keefer).

Information Search Process Model.

Following Mellon's study and establishment of the theory of library anxiety, Kuhlthau (1988) undertook a study that examined the library search process of high school seniors planning to attend college. As opposed to utilizing Mellon's theories, Kuhlthau developed her own model that focused on the information search process of students.

Kuhlthau (1988) selected 26 college-bound seniors as subjects for her study. The students were observed in their high-school setting and were required to write two research oriented papers (Kuhlthau). Students kept journals during the first research paper assignment where they noted their feelings and thoughts regarding the research process, as well as conversations regarding the project (Kuhlthau). During the second research paper assignment, students kept research logs in which they noted the processes they used in their research, including the usefulness of the resources, but did not note their feelings (Kuhlthau). Lastly, six student participants were interviewed on six occasions and answered structured questions regarding their experiences (Kuhlthau). The data collected

were analyzed for patterns of common experiences by the students in the search process (Kuhlthau).

Based on this initial study, Kuhlthau (1988) developed a six stage model of the information search process. The six stages are initiation of the task, selection of the topic, exploration of information, focus in on the specific topic, collection of information, and conclusion of the search process (Kuhlthau). She found that feelings of anxiety were at their highest at the beginning of the search process when students suffered from confusion and lack of certainty. Students noted at the first stage of task initiation that they became upset, suffered anxiety, and experienced fear (Kuhlthau). Once they had selected their topics, those feelings dissipated and the students experienced greater confidence and a better sense of their courses of action (Kuhlthau). Students again became confused when searching for information on their topics and at this stage they often lost their senses of direction (Kuhlthau). Once students reached the fourth stage of specific topic focus, their confidence returned and they regained their senses of direction (Kuhlthau). Many students noted that stage four was a turning point in the search process and that their confidence and interest in the selected topic only grew from this point through conclusion of the search process (Kuhlthau).

Kuhlthau (1991) also found that anxiety increased when the user was unfamiliar with the resources and technologies utilized in the search process. Ultimately, the users' entire experiences, including their emotions and intellects, influenced their information seeking behaviors and the levels of anxiety encountered during the information search process (Kuhlthau, 1991). According to Kuhlthau, if interventions do not deal with the

emotional issues of search and library anxiety, then a large element of what is causing the anxiety remains ignored. Librarians who understand the information search process and its six stages can be more attuned to students' levels of anxiety and information needs and address those issues (Kuhlthau, 1988).

Utilizing Kuhlthau's research, Kracker (2002) designed a study in which students received a 30-minute orientation based on the information seeking process model to determine if the presentation reduced students' anxiety and negativity associated with the research process. The results of the study indicated that the presentation of the information seeking process model reduced students' anxiety regarding their research assignments (Kracker).

Development of the Library Anxiety Scale.

Bostick (1992) developed and validated the Library Anxiety Scale (LAS), the first quantitative measure of library anxiety, to measure and classify library anxiety in students attending two and four-year higher education institutions. Prior to the development of her scale, library anxiety had only been measured qualitatively. The LAS measures the construct of library anxiety through a 43 question Likert scale instrument. Bostick identified five variables that impacted a person's level of library anxiety: (i) barriers with librarians and staff; (ii) emotional or affective barriers; (iii) comfort with or safety in the library; (iv) familiarity with or knowledge of the library; and, (v) barriers with library equipment.

Onwuegbuzie, Jiao, and Bostick (2004) further defined the attributes of these variables. Barriers with staff refers to whether the library patron perceives the librarians

and staff as intimidating, unapproachable, or too busy to provide help (Onwuegbuzie, Jiao, & Bostick). Emotional or affective barriers refer to the patron's feelings of inadequacy or inability to use the library (Onwuegbuzie, Jiao, & Bostick). Comfort with the library refers to whether the library patron feels welcome in the library and views it as a safe and non-threatening environment, and familiarity with or knowledge of the library refers to how comfortable the library patron feels with the library and its resources (Onwuegbuzie, Jiao, & Bostick). Lastly, mechanical barriers relate to the patron's feelings that emerge as a result of relying on and using the library's equipment, such as computers and printers (Onwuegbuzie, Jiao, & Bostick).

Library anxiety research.

Since Mellon's initial two-year study in the 1980s and Bostick's development of the LAS in 1992, a number of researchers have investigated library anxiety utilizing the LAS. These studies have examined library anxiety levels of both undergraduate and graduate students.

Mech and Brooks (1995) sought to further document library anxiety and to determine if it was distinct from the trait of general anxiety. They undertook a study that examined undergraduate students at a comprehensive private college utilizing the LAS and the State-Trait Anxiety Inventory, which measures general anxiety. 153 students completed the LAS and the first 20 questions of the State-Trait Anxiety Inventory, which questions measure situational anxiety (Mech & Brooks). The researchers noted that they did not attempt to control for confounding variables, but believed the results were still instructive.

Mech and Brooks (1995) found that library anxiety was a separate construct from the state of general anxiety. This indicated that library anxiety was different or separate from the condition of general anxiety. The study found that freshmen and sophomore college students had higher levels of library anxiety than juniors or seniors (Mech & Brooks). Additionally, freshmen believed their library skills were inadequate compared to those of upperclassmen (Mech & Brooks). Mech and Brooks also reported that over one-third of freshmen students found the library intimidating, which reconfirmed Mellon and Bostick's previous findings. The results of this research indicated that there continues to be a need for strategies that reduce students' levels of library anxiety.

Jiao and Onwuegbuzie (1999a) followed up Mech and Brooks study by examining whether library anxiety was related to trait anxiety in graduate students. The researchers surveyed 115 graduate students at a mid-southern university who completed the LAS and State-Trait Anxiety Inventory (Jiao & Onwuegbuzie). The study confirmed the previous results reported by Mech and Brooks: library anxiety was independent of trait anxiety (Jiao & Onwuegbuzie). The study also indicated that graduate students who suffered from library anxiety were not necessarily anxious in other areas of their lives and vice versa (Jiao & Onwuegbuzie).

Jiao, Onwuegbuzie, and Lichtenstein (1996) examined characteristics of college students to determine which traits predicted levels of library anxiety. In this study, 493 students at a mid-southern and a northeastern university completed the LAS and a demographic information form created specifically for this study (Jiao, Onwuegbuzie, & Lichtenstein). The researchers found that library anxiety was correlated with age, gender,

year in college, language ability, grades, working status, quantity of library courses taken, and number of visits to the library. In particular, this study found that freshmen and sophomores experienced the highest levels of library anxiety and were the least likely to ask the librarians for assistance (Jiao, Onwuegbuzie, & Lichtenstein). Additionally, the study found that young men who did not speak English as their first language and who were high academic achievers, worked part-time or full-time, and rarely visited the library were more prone to library anxiety than other groups (Jiao, Onwuegbuzie, & Lichtenstein).

Subsequent research by Jiao and Onwuegbuzie (1997a, 1997b) investigated the reasons for library usage and the antecedents of library anxiety by examining the responses of 522 university students. The participants, both undergraduate and graduate students attending a mid-southern or a large northeastern public university, completed the LAS and a demographic information form created specifically for this study (Jiao & Onwuegbuzie, 1997a, 1997b).

The study found that approximately 75% of all students surveyed, whether undergraduate or graduate, used the library most frequently to locate a book or an article for a class assignment, which indicated that coursework played an important role in library usage (Jiao & Onwuegbuzie, 1997b). Additionally, more than 50% of the students indicated that they visited the library to prepare for an exam, to use the computers and online resources, or to read a course book (Jiao & Onwuegbuzie, 1997b). The study noted that the students who utilized the facility most frequently were older men who lived in close proximity to the academic library, preferred to study by themselves, and suffered

from low levels of library anxiety (Jiao & Onwuegbuzie, 1997b). The study also found that freshmen experienced greater levels of library anxiety than upperclassmen or graduate students, and that men experienced higher levels of library anxiety than women (Jiao & Onwuegbuzie, 1997a). However, upperclassmen experienced higher levels of library anxiety than underclassmen as it related to barriers with library equipment, such as computers (Jiao & Onwuegbuzie, 1997a). Additionally, students using the computers and online resources experienced the highest levels of library anxiety (Jiao & Onwuegbuzie, 1997a).

Jiao and Onwuegbuzie engaged in further research regarding the library anxiety levels of graduate students. In one study, Jiao and Onwuegbuzie (1998) sought to analyze whether there was a relationship between library anxiety and perfectionism. The researchers surveyed 108 graduate students at a small mid-southern university and had them complete the LAS and Multidimensional Perfectionism Scale, which measures three dimensions of perfectionism (Jiao & Onwuegbuzie, 1998). The study found that library anxiety and perfectionism were related and more specifically that graduate students with high levels of socially prescribed perfectionism traits generally had higher levels of library anxiety (Jiao & Onwuegbuzie, 1998). In another study, Onwuegbuzie and Jiao (1998) attempted to determine the types of learning modalities that were antecedents of library anxiety in graduate students. The researchers' surveyed 203 graduate students at a small mid-southern university who completed the LAS and the Productivity Environmental Preference Survey, which measures individuals' preferences in regard to performing school and work activities (Onwuegbuzie & Jiao, 1998). The study found that

graduate students who were less responsible, lacked perseverance, were visually oriented, and were kinesthetic learners were likely to suffer from higher levels of library anxiety (Onwuegbuzie & Jiao, 1998). Additionally, students who preferred greater structure had higher library anxiety levels (Jiao & Onwuegbuzie, 1999b).

Jiao and Onwuegbuzie (1999c) also examined the relationship between library anxiety and the self-perception of graduate students. 148 graduate students at a small mid-southern university completed the LAS and seven subscales of the Self-Perception Profile for College Students, which includes 13 scales that measure an individual's view of themselves (Jiao & Onwuegbuzie). The study found that graduate students who believed they had low academic capability, intellectual aptitude, creativity, and social approval had the highest levels of library anxiety as it pertained to the LAS factors of emotional or affective barriers and comfort with the library (Jiao & Onwuegbuzie).

Onwuegbuzie and Jiao (2000, 2001) engaged in further studies regarding library anxiety and the academic procrastination and study habits of graduate students. In examining the relationship between library anxiety and academic procrastination, the researchers had 135 graduate students complete the LAS and Procrastination Assessment Scale-Students (Onwuegbuzie & Jiao, 2000). The study found that overall academic procrastination was positively related to three components of library anxiety, computer equipment barriers, comfort with the library, and emotional barriers (Onwuegbuzie & Jiao, 2000). While the researchers noted a correlation between library anxiety and academic procrastination, it is not clear whether library anxiety increased academic

procrastination or procrastination caused greater library anxiety (Onwuegbuzie & Jiao, 2000).

Jiao and Onwuegbuzie (2001) also examined the relationship between graduate students' study habits and levels of library anxiety. In this survey, 133 graduate students completed the LAS and Study Habits Inventory, which is designed to assess the study behaviors of students (Jiao & Onwuegbuzie, 2001). The study found that those students who had strong study habits had lower levels of overall library anxiety (Jiao & Onwuegbuzie, 2001). The researchers postulated that library anxiety may cause students to avoid the library, thus resulting in weaker study habits and higher levels of library anxiety (Jiao & Onwuegbuzie, 2001).

Van Scoyoc (2003) examined the impact of face-to-face library instruction and computer-based library instruction on undergraduate students' levels of library anxiety. 238 participants were randomly assigned to one of three groups: the control group, the traditional library instruction group, or the computer-based library instruction group in a pre-test – post-test design (Van Scoyoc). The results of this study indicated that students who received traditional face-to-face library instruction had the lowest levels of library anxiety, followed by the computer-based instruction group, and finally the control group (Van Scoyoc). In particular, those students who received traditional library instruction had significantly lower library anxiety levels pertaining to barriers with library staff than those in the computer-based library instruction group (Van Scoyoc). This study also indicated that when students received some type of library instruction, their levels of library anxiety were reduced. In a similar study, Brown, Weingart, Johnson, and Dance

(2004) found that a freshman library orientation and instruction session reduced the students' levels of library anxiety.

Multidimensional Library Anxiety Scale.

Van Kampen (2003, 2004) developed and validated the MLAS, a 53 question five-point Likert scale instrument that measured overall library anxiety. The MLAS also measures six sub-factors: (i) comfort with and confidence in using the library; (ii) general library anxiety and the information search process; (iii) barriers with library staff; (iv) importance of understanding how to use the library; (v) comfort with technology in the library; and, (vi) comfort level while in the library (Van Kampen, 2003). "Comfort and confidence (library independence) when using the library" refers to a student's ability to use the library independently and to feel comfortable doing that (Van Kampen, 2003). "The information search process and general library anxiety" refers to Kuhlthau's six factor process regarding the search for information and a student's level of general library anxiety as defined by Mellon (Van Kampen, 2003). "Perceived barriers concerning staff" refers to a student's perception of the library staff and whether that staff is approachable or intimidating (Van Kampen, 2003). "Perceived importance of understanding how to use the library" refers to a student's perception of how important it is to understand how to use the library and whether there are feelings of inadequacy or discomfort (Van Kampen, 2003). "Comfort level with technology and as it applies to the library" refers to student's comfort levels with technology in the library including the online catalog, online databases, and the ability to engage in research on and off-site (Van Kampen, 2003).

Lastly, “Comfort level while inside the library building” refers to a student’s perception of the levels of comfort and safety within the library (Van Kampen, 2003).

The MLAS was developed by Van Kampen (2003) to examine library anxiety among doctoral students at a southern university in order to determine which aspects of the library or the information search process caused the anxiety. Additionally, the study examined whether students’ use of the library and its services was impacted by staff barriers, the library structure, and the availability of electronic resources (Van Kampen, 2003). As a part of her study, Van Kampen updated Bostick’s original LAS to better reflect current trends in the library. Van Kempten’s (2003, 2004) MLAS introduced questions that addressed the Internet, the wide availability of electronic databases, the ability to search library resources off-campus or remotely, and students’ comfort with computers.

Van Kampen (2003) developed an initial set of questions from a variety of sources, including the original LAS instrument, Kuhlthau’s works on the information search process, and other available library surveys. This initial set of questions was sent to academic librarian experts for their input and feedback (Van Kampen, 2003). After reviewing the feedback, Van Kampen (2003) revised some of the questions and sought additional feedback from library personnel and Bostick. Following receipt of this input, Van Kampen (2003) made further revisions to the instrument for use in her pilot survey. The pilot instrument consisted of 57 items and utilized a five-point Likert scale (Van Kampen, 2003). She conducted the pilot survey during the 2001 summer semester and

utilized a sample population of 18 doctoral students at a large southern metropolitan university with a test-retest method and a three-week interval (Van Kampen, 2003, 2004).

Exploratory factor analysis was utilized on the initial pilot study answers to determine the interrelationships among the variables (Van Kampen, 2004). The initial factor analysis resulted in 11 factors after 23 iterations (Van Kampen, 2004). A number of the items were moved from one factor to another based on the researcher's own personal opinions and those of experts in the field (Van Kampen, 2003). After examining correlations for each factor, the researcher found that most items were significant at the .05 level (Van Kampen, 2003). She then made final revisions to the instrument to utilize in her full study (Van Kampen, 2003).

The final MLAS instrument contained 53 items and was mailed during early 2002 to 554 graduate students enrolled at a southern university (Van Kampen, 2003). A follow-up postcard was sent approximately two weeks after the initial mailing (Van Kampen). Of the total surveys mailed, 278 were returned and used in the final research analysis for an approximate return rate of 50% (Van Kampen). The researcher used exploratory factor analysis on the survey data to examine relationships and correlations among the variables (Van Kampen). After examining the results, the researcher removed any factor with a value less than .30 (Van Kampen). The initial analysis yielded 16 components after 31 iterations (Van Kampen). However, after examining the scree plot, the researcher forced the factors into seven components (Van Kampen). Upon further examination, Van Kampen decided to combine two components due to significant variable overlap and forced the factor analysis into her final six components (Van

Kampen). Each remaining component had a minimum of three significant loadings and an eigenvalue greater than 1.0 (Van Kampen). The Cronbach's Alpha for the entire MLAS instrument was .88 and provided evidence of reliability and internal consistency (Van Kampen). The researcher also computed a Cronbach's Alpha for each of the six components and found the following results: Factor One (comfort and confidence when using the library) had a score of .86; Factor Two (information search process and library anxiety) had a score of .87; Factor Three (barriers with staff) had a score of .73; Factor Four (importance of understanding how to use the library) had a score of .79; Factor Five (comfort with technology in the library) had a score of .73; and, Factor Six (comfort and safety in the library) had a score of .74. Based on her results, the researcher concluded that library anxiety in an academic setting could be measured with this instrument, the overall instrument and each of the six factors reflected sufficient internal consistency, and the instrument should be sufficiently stable to use with other similar populations (Van Kampen).

Van Kampen (2003) ultimately found that doctoral students exhibited evidence of library anxiety. In particular, doctoral students encountered less anxiety in knowing how to begin the research process, but greater anxiety in their comfort level with using the library, seeking help from the librarians, and feeling comfortable in the library space (Van Kampen). Additionally, those doctoral students in the early stages of the dissertation were less confident regarding their library skills and likely to suffer from higher levels of library anxiety than those students further along in the dissertation process (Van Kampen).

Further library anxiety research.

Jiao and Onwuegbuzie (2004) examined the relationship between students' attitudes towards computers and levels of library anxiety. They surveyed 94 African-American graduate students at a historic Black university in the east using the LAS and Computer Attitude Scale (Jiao and Onwuegbuzie). The study found a strong multivariate relationship between computer attitudes and library anxiety (Jiao and Onwuegbuzie). Jiao and Onwuegbuzie noted that negative attitudes towards computer use potentially impacted a student's use of library resources and elevated their levels of library anxiety. The researchers pointed out the limitations of their study due to the restricted sample population.

Malvasi, Rudowsky, and Valencia (2009) undertook a study to test the effectiveness of various library instruction treatments in reducing library anxiety levels of freshman. The researchers found that some type of intervention, whether one-on-one library instruction, group library instruction, or an online library tutorial resulted in reduced library anxiety levels versus no intervention (Malvasi, Rudowsky, & Valencia). Additionally, they found that the control group, who received no type of library instruction, had increased levels of library anxiety based on the pre and post-test scores on the LAS (Malvasi, Rudowsky, & Valencia).

Summary of Chapter Two

This chapter reviewed the literature regarding legal research skills and library anxiety. The first main theory discussed was the importance of learning and mastering legal research skills for law students in regard to their success as a student and as a

lawyer. The second main theory discussed was library anxiety, including the development of the LAS, subsequent research studies that utilized the LAS, and finally the development of the MLAS.

Chapter Three: Methodology

Research Purpose and Questions

The purpose of this study was to examine the overall level of library anxiety present among law students at the COL and to determine which specific dimensions of the Multidimensional Library Anxiety Scale (MLAS) contributed more to this phenomenon. The study also examined library anxiety levels related to specific MLAS factors regarding law students' gender, age, attendance in the day or evening division, year in law school, grade point average, and frequency of library use. In order to address these issues, the researcher asked the following research questions:

1. What levels of library anxiety do law students exhibit?

    a. What is the difference in library anxiety levels of male and female law students?

    b. How much does the difference in library anxiety levels of law students vary according to enrollment in the day or evening division?

    c. How does the level of library anxiety differ among first, second, third, or fourth year law students?

    d. How much does the difference in library anxiety levels of law students vary according to age?

    e. How much does the difference in library anxiety levels of law students vary according to specific grade point average ranges?

f. How much does the difference in library anxiety levels of law students vary according to frequency of library use, both in person and online?

Subjects

The researcher surveyed law students from the COL for this study. All the subjects of this study were students enrolled in the COL in either the day or evening division during the 2010 spring semester.

A total of 157 students participated in the study. The following three tables set forth detailed breakdowns of the study participants:

Table 1

Percentage of Participants by Year in Law School and Gender

Year in Law School	**Men**	**Women**
First Year	22.8%	14.8%
Second Year	12.1%	16.8%
Third Year	15.4%	12.7%
Fourth Year	2.0%	3.4%

Table 2

Percentage of Participants by Gender and Age Range

Age Range	**Men**	**Women**
20-24	7.3%	11.3%
25-29	24.0%	25.3%
30-34	9.3%	6.7%
35-39	5.3%	2.7%
40-44	3.3%	0.0%
45 or older	2.7%	2.0%

Table 3

Percentage of Participants by Gender and GPA Range

GPA Range	Men	Women
3.50 – 4.00	2.8%	8.3%
3.00 – 3.49	25.7%	25.0%
2.50 – 2.99	21.5%	11.8%
2.00 – 2.49	2.1%	2.8%

Instrument

The MLAS was used to collect data for this study (See Appendix A). The instrument employs a five-point Likert response scale and consists of 53 closed-ended statements (Van Kampen, 2003). The Likert scale response options were "strongly agree", "agree", "undecided", "disagree", and "strongly disagree." In addition, demographic questions were added to elicit information to address the specific research questions.

The Likert scale is a commonly utilized measurement scale that was developed by Rensis Likert. It measures specific attitudes of respondents who indicate their level of disagreement or agreement with statements. The Likert scale assigns a numerical value to the level of disagreement or agreement, typically using a five-point scale (Vogt, 1993).

Van Kampen (2003) developed the MLAS in 2002 as a part of her dissertation work. Van Kampen's MLAS updated Bostick's original LAS, which consisted of 43 statements (Bostick, 1992). The MLAS better reflects current trends in the library and introduced factors such as Internet use, the wide availability and use of electronic databases, the ability to search library resources off-campus or remotely, and students' comfort with computers (Van Kampen, 2003, 2004).

The MLAS instrument contains six factors or subscales that measure components of library anxiety. An example of an item that addresses comfort and confidence in the library would ask the participant if materials could be easily located (Van Kampen, 2003). In regard to the Internet search process and general library anxiety, a sample item might ask if the student feels overwhelmed using the library and performing research (Van Kampen). In evaluating the barriers with staff dimension, a sample item might ask if the participant is comfortable approaching a library staff member (Van Kampen). A sample item addressing the perceived importance of the library might ask if a student views the library as an important element in their research (Van Kampen). In regard to assessing the comfort level with technology in the library, a sample item might be whether the student is confident utilizing the library's website or online databases (Van Kampen). Lastly, an example of an item addressing comfort with the library building might ask whether the library feels too large (Van Kampen). The final sum of the scaled MLAS overall score ranges from 53 points to 265 points. An overall *low* score indicates *high* levels of library anxiety and an overall *high* score indicates *low* levels of library anxiety. A lower score on any subscale represents higher anxiety as it pertains to that particular factor.

Van Kampen (2003) reported the reliability of the overall instrument at .88 (Cronbach's alpha). She developed the MLAS through multiple phases (Van Kampen). During the initial phase, Van Kampen reviewed various existing instruments and determined that the best course of action was to update the pre-existing LAS instrument. She sent the initial version of the MLAS to experts in the field of academic librarianship,

including Bostick, to solicit feedback (Van Kampen). Based upon these experts' input, Van Kampen revised the instrument and shared the new version with Bostick, library personnel, and her doctoral dissertation committee (Van Kampen). She made further revisions based on that additional feedback and conducted a test/re-test pilot study with 18 doctoral students. As a result of the pilot study, Van Kampen further revised the MLAS and conducted her full study.

Based on the results of the full study, six subscales were identified which measured aspects of library anxiety: comfort with using the library (13 items); general library or information search anxiety (16 items); barriers with staff (9 items); perceived importance of knowing how to utilize the library (7 items); comfort with library technology (6 items); and, comfort with the physical library (6 items) (Van Kampen, 2003). Selected MLAS items overlapped on more than one subscale and in most cases Van Kampen removed the overlapping variables and in limited cases she included the overlapping variables in two of the six subscales (Van Kampen). Van Kampen retained the overlapping variable based on whether it was of interest to her research questions and based on her judgment. The reliability of each subscale ranged from a low of .73 for barriers with staff and comfort with library technology to a high of .87 for general library or information search anxiety. The reliability of perceived importance of knowing how to utilize the library was .79, of comfort with the physical library was .74, and of comfort with using the library was .86.

According to Gliner and Morgan (2000), validity deals with establishing evidence that an instrument can be used in a particular setting or that the instrument measures what

it is presumed to measure. There are different types of validity: face, content, criterion-related, and construct (Gliner & Morgan).

Face validity exists if the instrument appears to be reasonable in regard to its stated purpose, though face validity alone is not sufficient to establish an instrument's validity (Thorndike, 2005). Van Kampen's MLAS instrument appears to have face validity as the content or items that make up the survey seem to be appropriate for an instrument that purports to measure library anxiety.

Content validity refers to the actual content of the instrument and whether that content is appropriate for the concept that is being measured (Gliner & Morgan, 2000). No statistical measure exists to establish the content validity of an instrument. Generally, content validity is established through a precise definition of the concept to be measured, an extensive literature review to determine how that concept is represented in the existing literature, and the generation of items to measure the concept, which are often shared with experts in the field (Gliner & Morgan). In regard to content validity, Van Kampen (2003) defined her concept of library anxiety founded on Mellon's original theory and based on an extensive literature review. Utilizing the original LAS instrument as her base, Van Kampen generated a list of potential items that would modify and extend the LAS. These new items addressed the concepts of online resources and the information search process (Van Kampen). Van Kampen developed her MLAS items from the original LAS, from Kuhlthau's (1991) research regarding the information search process, from other available library surveys, and from academic librarians. She then sought the opinions of experts in the field to determine whether her items or content appeared to

measure the concept of library anxiety (Van Kampen). Van Kampen incorporated this feedback into her final MLAS instrument (Van Kampen).

Criterion-related validity is the process of validating the instrument against external criterion that is measurable (Gliner & Morgan, 2000). Two main types of criterion-related validity evidence exist: predictive and concurrent. Van Kampen (2003) did not present evidence of criterion-related validity as a part of her research.

Construct validity refers to an instrument's ability to measure the constructs or variables that it proposes to measure (Thorndike, 2005). Three ways to establish construct validity are to show convergent, discriminant, or factorial evidence (Gliner & Morgan, 2000). Factorial evidence is generally established if the clustering of items, through factor analysis, supports the theory underlying the grouping of the items (Gliner & Morgan). Van Kampen (2003) utilized exploratory factor analysis with a principal components extraction method to extract latent variables and explore correlations. Each of the six factors retained had a minimum of three significant loadings, had an absolute value of greater than .30, and had an eigenvalue greater than 1.0 (Van Kampen). In addition, the cumulative variance accounted for by the six factors was 43.396% (Van Kampen). The inter-correlations for all 53 items were also high, with the majority of correlations greater than .6 (Van Kampen). No support for convergent or discriminant validity was reported by Van Kampen.

Based upon her results and analyses, Van Kampen (2003) found the MLAS instrument to be valid for measuring library anxiety in an academic setting. In addition, she noted that the instrument was sufficiently stable to measure library anxiety of other

populations. Van Kampen also stated that further validation studies should be conducted in regard to the MLAS instrument.

While Van Kampen's MLAS instrument requires additional validation studies, one thing to note is that the MLAS is based upon the original LAS instrument, which has undergone significant validation. Many of Van Kampen's MLAS items are very similar to Bostick's LAS items. As a result, it can be argued that validation of the LAS also indicates validity of the MLAS.

In order to establish construct-related validity, Bostick undertook an additional exploratory factor analysis specifically utilizing maximum likelihood estimation to confirm the number of factors underlying the LAS scale (Onwuegbuzie, Jiao, & Bostick, 2004). Consistent with her original study, the maximum likelihood analysis procedure identified the same five factors (Onwuegbuzie, Jiao, & Bostick). Jerabek, Meyer, and Kordinak (2001) subjected the LAS to a confirmatory factor analysis in their study regarding library and computer anxiety and found the same five factors as Bostick identified in her original work. In addition, Onwuegbuzie and Jiao conducted a confirmatory factor analysis on the LAS that verified Bostick's original five-factor LAS model (Onwuegbuzie, Jiao, & Bostick). As is evident from these studies, the LAS has been shown to have factorial validity.

In regard to criterion-related validity, a variety of studies have addressed this type of evidence. In particular, a number of studies established that library anxiety was statistically significantly related to computer anxiety, statistics anxiety, and research anxiety (Onwuegbuzie, Jiao, & Bostick). In addition, library anxiety has been shown to

be separate from trait anxiety in both undergraduate and graduate student populations (Jiao & Onwuegbuzie, 1999a; Mech & Brooks, 1995). Onwuegbuzie (1997) also found that LAS scores predict students' abilities to write research proposals. As a result of these and other studies, criterion-related validity of the LAS has been supported.

Research Procedures

To date, library anxiety levels among law students have not been measured and analyzed. By utilizing the MLAS to measure library anxiety of law students at the COL, law librarians will better understand students' levels of library anxiety. In addition, the results will indicate which factors create the greatest levels of anxiety.

Dr. Van Kampen (personal communication, May 4, 2009), in a phone conversation with the researcher, granted permission to use the MLAS. The University of Denver's Institutional Review Board granted permission pertaining to the involvement of human subjects' research for this study (Appendix B). The names of the subjects were not gathered in this study and, thus, responses were anonymous.

Between January, 2010, and February, 2010, during the spring semester at the COL, the researcher surveyed law students (See Appendix C for advertising flyer). The MLAS was administered in a number of specifically selected classrooms and as an optional attendance event. Classes were selected to ensure representation of day and evening students, as well as students in various years of law school. The final selection of classes was also based on permission of the COL administration and the professors. The administration of the MLAS involved only those students attending the class on the day

of administration or those students who volunteered to complete the instrument at the optional attendance events.

The researcher provided instructions regarding the questionnaire to the students in the informed consent attached to the instrument itself (Appendix D). Students were requested to complete and return the questionnaire and informed consent signature page to the researcher during the class time. Questionnaires took an average of 10 to 15 minutes to complete.

In order to incentivize the requests for students to invest the time to complete the survey, they had the option of entering their name and email address, separate from the MLAS instrument, in a random drawing in order to be eligible to win one of 20 $5.00 Starbuck's gift cards. A separate box was taken to each survey administration for students to place entries for eligibility in the random drawing. The slips of paper containing the student's name and email were not tied to their anonymous MLAS survey form. After completion of all the surveys, the researcher randomly selected 20 entry slips from the drawing box. Those students whose names were selected received an email notifying them that they had won a Starbuck's gift that could be picked up at the LL's circulation desk.

Data Analysis

After the completed surveys were collected, data were coded and input into SPSS. Descriptive statistics were used to analyze and report the data collected in this study.

In her development of the MLAS, Van Kampen (2003) undertook a factor analysis. As the MLAS instrument was being used for the first time with law students, the

researcher conducted a confirmatory factor analysis with maximum likelihood estimation. Confirmatory factor analysis tests whether the correlations among the variables are consistent with the hypothesized factor structure or whether the model fits the data (Tabachnick & Fidell, 2007). Confirmatory factor analysis was carried out using AMOS.

Due to the fact that a model fit with the current data could not be established in the confirmatory factor analysis, a principal components analysis was undertaken. Principal components analysis was used to determine latent variables for this particular data set.

Based on the final results of the principal components analysis, the researcher summed each participant's responses on the MLAS instrument to create a composite mean score for overall library anxiety and for each of the six components. Negatively worded items were reversed to create the composite mean scores.

ANOVA tests were performed to determine if there were significant differences in levels of overall library anxiety and across the six MLAS components: (i) between male and female law students; (ii) between day and evening law students; and, (iii) among first, second, third, and fourth year law students.

ANOVA tests were performed to determine if there significant differences in levels of library anxiety across the six components: (i) among various age ranges of law students; (ii) among various grade point average ranges of law students; (iii) among various frequencies of in-person library use of law students; and (iv) among various frequencies of online library use of law students.

Due to the fact that the MLAS was only being used for the second time and for the first time with law students, the researcher undertook a large number of tests. As a result, a Bonferroni adjustment was not made for Type I error inflation. The researcher relied on a significance level of $p < .01$ to allow for some type of Type I error adjustment.

Summary of Chapter Three

This chapter set forth the research questions to be analyzed for this study. In addition, the MLAS instrument was discussed, including the reporting of its overall reliability and its reliability on the six components, and its validity. Lastly, the statistical analyses to be used by the researcher were set forth and discussed.

Chapter Four: Results

Introduction

The main purpose of this study was to determine the extent to which library anxiety was present in law students at a private law school in the midwestern United States. The study also examined which factors of library anxiety made the greatest contribution to overall library anxiety. This chapter presents the results of the study using the Multidimensional Library Anxiety Scale (MLAS) with law students for the first time. There are five main sections to this chapter. The first section sets forth demographic descriptive statistics; the second section addresses data screening; the third section reports the results of a confirmatory factor analysis; the fourth section reports the results of an exploratory principal components analysis; and, the fifth section reports the results of the survey and the analysis of the data in regard to the research questions based upon the principal component analysis findings.

Demographic Statistics

The following demographic data were collected from respondents: gender, age range, day or evening division law student, year in law school, grade point average range, frequency of library use in person, and frequency of library use online. Demographic statistics were determined using the SPSS frequencies function. In some cases, respondents did not provide demographic data and so it was not included in the descriptive statistics. The distribution of demographic data is shown in Table 4 below.

Table 4

Demographic Descriptive Statistics

Item	Frequency	Percentage
Gender		
Male	77	52.4%
Female	70	47.6%
Age Range		
20-24	28	19.0%
25-29	72	49.0%
30-34	23	15.6%
35-39	12	8.2%
40-44	5	3.4%
45 or older	7	4.8%
Law School Division		
Day	87	59.2%
Evening	60	40.8%
Year in Law School		
First	54	37.0%
Second	43	29.5%
Third	42	28.8%
Fourth	7	4.8%
Grade Point Average Range		
1.00-1.49	0	0.0%
1.50-1.99	0	0.0%
2.00-2.49	7	5.0%
2.50-2.99	47	33.3%
3.00-3.49	71	50.4%
3.50-4.00	16	11.3%
Frequency of Library Use in Person		
1 or more times per week	66	44.9%
Once every 2-3 weeks	35	23.8%
Once a month	19	12.9%
Once every 2-3 months	11	7.5%
One or fewer times per semester	16	10.9%
Frequency of Library Use Online		
1 or more times per week	34	23.1%
Once every 2-3 weeks	33	22.4%
Once a month	33	22.4%
Once every 2-3 months	12	8.2%
One or fewer times per semester	35	23.8%

In order to determine whether there were any associations among the various demographic variables, a series of cross tabulations were undertaken in SPSS and the chi-square statistic was examined for significance at the $p < .01$ level. Significant associations were found to exist between the various age ranges of law students and whether they were in the day or evening division, their year in law school (first, second, third, or fourth), and their grade point average ranges. In particular, older law students in the age ranges of 30-34, 35-39, 40-44, and 45 or older, were more likely to be in the evening division. Older students were also more likely to be in the third or fourth year of law school. Lastly, older law students, particular those in the age ranges of 35-39, 40-44, and 45 or older, were more likely to have the lower grade point average ranges of 2.00-2.49 and 2.50-2.99.

In addition, there was a significant association between whether a law student was in the day or evening division of law school and their year in law school. Overall, there were more day division students in the second, third, and fourth years of law school than evening division students, which is tied to the fact that there are proportionally more day division students than evening division students.

Data Screening

Prior to data analysis, all data were screened using SPSS 18.0 for statistical assumption violations. The survey garnered a total of 157 cases. Of these cases, 136 provided complete data for the entire survey instrument and demographic items. This resulted in 21 cases or 13.4% of the total cases with some type of missing data. A total of 149 respondents or 94.9% answered all the MLAS survey items.

The majority of the missing data was found in the demographic questions and not in the survey instrument items. In particular 13 respondents, 8.3%, did not provide a grade point average range. Utilizing a dummy variable and examining correlations, the missing data were found to be missing at random.

Analysis of the data for skewness and kurtosis indicated that the data met the normality assumption. Analysis of univariate outliers was examined using histograms and normality curves in SPSS. While some of the items were slightly skewed, there were no clear univariate outliers for any of the variables. Mahalanobis distance was utilized to determine potential multivariate outliers and three cases were identified. Based on t-test statistics, these three cases had a significant mean difference at the $p < .01$ level on six of the 53 variables. These three cases were removed to ensure that normality assumptions were not violated.

One hundred forty-three cases were utilized in the confirmatory factor analysis. In addition to the three deleted outlier cases, nine additional cases with missing data on survey items were deleted prior to undertaking the confirmatory factor analysis in AMOS. AMOS cannot provide modification indices when data are missing. Because it was a limited amount of cases, as opposed to imputing values for the missing data, the cases were deleted prior to undertaking the confirmatory factor analysis.

Confirmatory Factor Analysis

A confirmatory factor analysis with maximum likelihood estimation performed in AMOS was undertaken as the initial data analysis procedure for this study. Confirmatory factor analysis is used to examine the construct validation of a measure and whether that

measure is unchanging across different groups or populations (Harrington, 2009). As the MLAS was used for the first time with law students, confirmatory factor analysis was utilized to determine the factorial validity of the instrument with a new population (Harrington). Sample size requirements for confirmatory factor analysis vary; however, a rule of thumb is that a sample size of less than 100 is small, a sample size of 100-200 is considered medium, and a sample size greater than 200 is considered large (Kline, 2005). In this case the sample size was 146 cases and so is minimally adequate for running a confirmatory factor analysis according to Kline's rule of thumb. In assessing adequacy of fit of a model, Brown (2006) recommends specific guidelines. He indicates that RMSEA should be close to or less than 0.06, that CFI should be close to or greater than 0.95, and that TLI should be close to or greater than 0.95.

In order to evaluate the validity of the MLAS, a path diagram in AMOS was created (where circles represent latent variables and rectangles represent measured variables; see Appendix E). In her exploratory factor analysis with the original MLAS, Van Kampen settled upon six latent variables and 47 measured variables in her final solution. The initial analysis with the current study's data indicated an inadequate fit of the data to the model, x^2 (1011) = 1935.301, p < .001, CFI = .660, TLI = .637, RMSEA = .079. The modification indices for the initial model indicated adding paths between measured variables and additional factors, as well as adding covariances between various error terms. Post hoc model modifications were performed in an attempt to develop a better fitting and more parsimonious model.

In the first model modification, the measured variable, “the library is confusing” was deleted as it indicated an association with five of the six latent variables. The analysis after this modification indicated an inadequate fit with x^2 (955) = 1804.458, p < .001, CFI = .681, TLI = .658, RMSEA = .077. In the second model modification, the measured variable, “the library is an important part of my research” was deleted as it also indicated an association with five of the six latent variables. This confirmatory factor analysis also indicated an inadequate fit with x^2 (922) = 1688.405, p < .001, CFI = .700, TLI = .678, RMSEA = .075. Three additional model modifications were made by first adding a covariance between e3 and e11 (M.I. = 49.308), second adding a covariance between e22 and e23 (M.I. = 39.600), and third adding a covariance between e26 and e27 (M.I. = 33.096). Even after these three additional modifications, the overall fit of the model was still unacceptable with the fifth and final version indicating an inadequate fit of x^2 (919) = 1542.590, p < .001, CFI = .756, TLI = .737, RMSEA = .068. Because the researcher could not establish a model fit with the current data without undertaking significant modifications to the model, a principal components analysis was conducted.

Principal Components Analysis

Principal components analysis (PCA) was utilized on the survey data to determine latent variables and to examine correlations. PCA’s objective is to examine a set of variables in order to evaluate the underlying structure and relationship among the variables. PCA is a technique applied to a set of variables to determine which variables are correlated with one another to form factors or components (Tabachnick & Fidell, 2007). According to Tabachnick and Fidell, the goal of PCA is, “to reduce a large

number of observed variables into a smaller number of factors" (p. 608). Prior to beginning the PCA, Bartlett's test of sphericity and Kaiser-Meyer-Olkin measure of sampling adequacy were analyzed to ensure that the data were appropriate for a factor analysis. Both of these statistical tests examine correlations among variables to indicate whether a factor analysis is appropriate (Tabachnick & Fidell). The Bartlett's test of sphericity was significant, x^2 (1378, N=153)= 3924.994, $p < .001$ and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy yielded a value of .782. According to Tabachnick and Fidell, a KMO value of .6 or higher is required for a good factor analysis. Results from the Bartlett's test of sphericity and the KMO measure of sampling adequacy indicated the presence of correlations among the variables and confirmed that factor analysis was appropriate for these data.

The 53 items of the MLAS were downloaded into SPSS and a PCA with varimax rotation was undertaken to identify the underlying structure of the MLAS as it pertained to law students in this study. Varimax, which is an orthogonal rotation, is the most common rotation used in PCA as its goal is to maximize the variance of factor loadings (Tabachnick & Fidell, 2007). The researcher deleted three outliers prior to performing the PCA, however cases with missing data were not deleted as the missing data were at random and the researcher desired to maintain the sample size. The initial PCA resulted in 14 components with eigenvalues greater than 1.0. An eigenvalue of less than 1.0 indicates an unimportant component (Tabachnick & Fidell). The 14 components accounted for 68.47% of the cumulative variance as shown in Table 5 below. The initial result in a factor analysis solution extracts the greatest number of factors or components

as the more factors that are extracted results in a greater percent of the variance explained (Tabachnick & Fidell). However, the researcher's goal is to retain enough factors to create a good fit without loss of parsimony (Tabachnick & Fidell).

Table 5

Initial Eigenvalues and Loadings for Original Principal Components Analysis Solution

Total Variance Explained

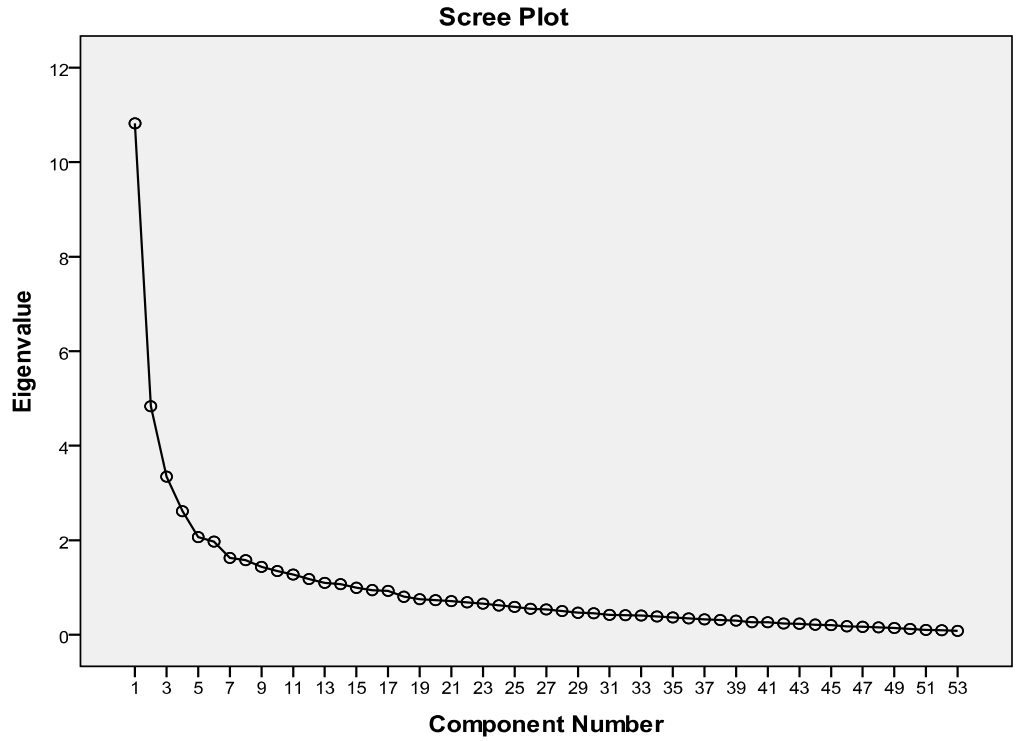
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.820	20.416	20.416	10.820	20.416	20.416
2	4.837	9.126	29.542	4.837	9.126	29.542
3	3.347	6.315	35.857	3.347	6.315	35.857
4	2.617	4.938	40.796	2.617	4.938	40.796
5	2.067	3.901	44.697	2.067	3.901	44.697
6	1.974	3.725	48.421	1.974	3.725	48.421
7	1.628	3.071	51.493	1.628	3.071	51.493
8	1.581	2.983	54.476	1.581	2.983	54.476
9	1.439	2.715	57.190	1.439	2.715	57.190
10	1.347	2.541	59.732	1.347	2.541	59.732
11	1.274	2.404	62.136	1.274	2.404	62.136
12	1.182	2.230	64.365	1.182	2.230	64.365
13	1.101	2.077	66.443	1.101	2.077	66.443
14	1.072	2.023	68.466	1.072	2.023	68.466

Extraction Method: Principal Components Analysis

While the initial analysis indicated 14 components, examination of the scree plot, shown in Figure 1 below, indicated six components. The scree plot displays the components on the x-axis and the eigenvalues on the y-axis. A rule of thumb is to exclude components that start after the plot's elbow or where the points on the plot

change slop (Tabachnick & Fidell, 2007). Since the scree examination is somewhat subjective, it was only used as a guideline in the final component solution.

Figure 1: Initial Scree Plot for Original Principal Components Analysis Solution



In addition to examining the eigenvalues, scree plot, and rotated component matrix, the researcher also took into account prior theory in settling on a six-component solution. The previous study by Van Kampen utilizing the MLAS also indicated a six component solution. Based on these examinations, the researcher determined that six components identified the underlying structure of the MLAS for this study. A second PCA was undertaken with a varimax rotation where the researcher forced the factor analysis to six components. This solution, set forth in Table 6, indicated that each of the six components had an eigenvalue greater than 1.0 and the components combined accounted for 48.42% of the total variance.

Table 6

Initial Eigenvalues and Loadings for Six Component Solution

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.820	20.416	20.416	10.820	20.416	20.416
2	4.837	9.126	29.542	4.837	9.126	29.542
3	3.347	6.315	35.857	3.347	6.315	35.857
4	2.617	4.938	40.796	2.617	4.938	40.796
5	2.067	3.901	44.697	2.067	3.901	44.697
6	1.974	3.725	48.421	1.974	3.725	48.421

Extraction Method: Principal Components Analysis

The rotated components matrix, included in Appendix F, was examined for variables that cross-loaded on multiple components and for variables that did not fit the underlying theory of the MLAS. The researcher's ultimate component solution did not allow any variable to cross-load on two separate components. When a variable cross-loaded, the researcher examined the strength of the loadings and made a decision as to which component to allow that variable to load on based on its strength, underlying theory, and researcher's judgment. In addition, based on the researcher's review of the literature and theories of library anxiety, four variables were removed entirely from the components as they did not fit with the specific component on which they loaded. Also, one variable did not load on any component and was dropped entirely. A new variable was created for each of the six components using the COMPUTE feature in SPSS. Initially, there were at least five items per each component. The six component solution accounted for 48.42% of the variance in the data. Component One accounted for 20.42% of the variance (eigenvalue = 10.82), Component Two accounted for 9.13% of the

variance (eigenvalue = 4.84), and Component Three accounted for 6.32% of the variance (eigenvalue = 3.35). Components Four, Five, and Six accounted for 4.94%, 3.90%, and 3.73% of the total variance, respectively (eigenvalues = 2.62, 2.07, and 1.97, respectively).

Seventeen of the items loaded on Component One with loadings ranging from .37 to .75. Of those 17 items, eight cross-loaded on other components. A total of 15 items were retained with loadings ranging from .43 to .75. Examples of items retained in this component were, “When I think about my research as it relates to the library, I feel stressed” and “I feel intimidated when I walk into the library.” This component was labeled General Library and Research Anxiety.

Component Two consisted of 20 items of which 11 cross-loaded on other components. Nine items were retained with loadings of .37 to .70. Items included were, “I am not comfortable using the library’s website” and “I am not comfortable using the library’s catalog.” This component was labeled Comfort with Technology and Online Access.

Ten items loaded on Component Three with three of those items cross-loading. Five items were retained with loadings of .47 to .84. Examples of items retained included, “Knowledge of how to look for specific information is valuable” and “Knowledge of the library is valuable.” This component was labeled Perceived Value of Understanding How to Use the Library.

Component Four consisted of eight items of which two cross-loaded. Seven items with loadings of .49 to .69 were retained. Examples of items retained on this component

were, “I feel at ease in the library” and “I feel safe in the library.” This component was labeled Comfort With the Library as a Physical Place.

Five items loaded on Component Five with no cross-loadings. All five items were retained and had factor loadings ranging from .45 to .72. An example of an item was, “I would rather use the library in person.” This component was labeled Perceived Value of Using the Library In-Person.

Component Six consisted of seven items of which only one cross-loaded. All seven items were retained with loadings of .33 to .70. An example of a retained item was, “The staff at the reference desk is helpful.” This component was labeled Comfort with Library Staff.

Component labels were established based upon an examination of the specific item loadings on each component, as well as prior research in this area. Some of Van Kampen’s labels were retained if they made sense in regard to the current data and study. When Van Kampen’s prior labels did not fit, a new label was assigned. The six components were identified and labeled as follows:

1. Component One: General Library and Research Anxiety (LibResearch)
2. Component Two: Comfort with Technology and Online Access (TechOnline)
3. Component Three: Perceived Value of Understanding How to Use the Library (ValueLib)
4. Component Four: Comfort with the Library as a Physical Place (ComfortLib)

5. Component Five: Perceived Value of Using the Library In-Person (LibInperson)

6. Component Six: Comfort with the Library Staff (LibStaff)

The initially retained variables and their respective component loadings are set forth in Table 7 below.

Table 7

Loadings on Initial Six Component Structure

Component One: General Library and Research Anxiety (LibResearch)	**Loading**
When I think about my research as it relates to the library, I feel stressed	0.75
When I think about using the library, I feel anxious	0.72
I feel intimidated when I walk into the library	0.69
There are too many possible sources of information	0.67
When I use the library for research, I feel overwhelmed	0.67
The library is not easy to use	0.60
The library is confusing	0.59
There is so much information available, I am sure I will miss something important	0.56
I feel very capable when doing research in the library	0.55
It is not easy to locate materials I need in the library	0.54
In general, I think my ability to use the library has affected my research negatively	0.54
Narrowing my research topic is not easy	0.53
I understand how to begin my research in the library	0.48
I can usually find things I need in the library	0.43
Locating information for my research has been a comfortable process	0.44

Component Two: Comfort with Technology and Online Access (TechOnline)	
I am comfortable using my computer at home to access the library's resources	0.70
I am not comfortable using the library's website	0.65
I can use interlibrary loan for access to materials not in my library	0.62
I am comfortable using interlibrary loan to get materials from a different library	0.58
I know what resources are available in the library	0.57
I am not comfortable using the library's catalog	0.49
I do not understand how to connect from home to the library databases	0.42
I am not aware that the library offers online reference services for students	0.40
I am comfortable using a computer	0.37
Component Three: Perceived Value of Understanding How to Use the Library (ValueLib)	
Knowledge of how to look for specific information is valuable	0.84
Being comfortable using the computer for searching the library's resources is valuable	0.76
Knowledge of how to access the library's website is valuable	0.73
Knowledge of the library is valuable	0.72
I value knowledge of services offered by the library for students	0.47
Component Four: Comfort with Library as a Physical Place (ComfortLib)	
The library is a comfortable place to study	0.69
I feel at ease in the library	0.67
I feel safe in the library	0.62
I value being comfortable using the library	0.51
Instructions on how to use the computers in the library are helpful	0.50
Instructions on using my home computer to access the library are helpful	0.50
The library is well organized	0.49

Component Five: Perceived Value of Using the Library In-Person (LibInperson)	
I would rather use the library in person	0.72
I enjoy using the library to find information	0.65
The library is an important part of my research	0.65
I would rather use the library online	0.62
I know what to do next when a book I need is not on the shelf	0.45
Component Six: Comfort with Library Staff (LibStaff)	
The staff at the reference desk is helpful	0.70
I am not comfortable asking for help from a staff member	0.70
The people at the circulation desk are helpful	0.65
I would not ask staff for help if I didn't know how to use a machine in the library	0.61
The staff in interlibrary loan is helpful	0.49
I am comfortable calling the library for help	0.34
I value having a library staff member give one-on-one instruction for my research needs	0.33

Internal consistency.

Cronbach's Alpha indicates how well each group of items demonstrates internal consistency and reliability (Gliner & Morgan, 2000). The Cronbach's Alpha for the entire 53-item Multidimensional Library Anxiety Scale, was .91. This indicated a high level of internal consistency for the entire scale. Because the reliability coefficient was high, it implied that the items on the scale were reliably measuring the same construct with this sample of law students. Upon analyzing the item-total statistics output in SPSS (See Appendix G), it was determined that none of the items, if deleted, would increase the reliability coefficient by more than .002.

Cronbach's Alpha values were estimated for each of the six components. All components demonstrated Cronbach's Alpha estimates of .70 or higher. Component One

had an alpha of .91; Component Two had an alpha of .79; Component Three had an alpha of .83; Component Four had an alpha of .76; Component Five had an alpha of .71; and, Component Six had an alpha of .72. After examining the item-total statistics output in SPSS for each component (See Appendices H-M), it was determined to delete one item (I value knowledge of services offered by the library for students) from Component Three, which increased the Cronbach's Alpha to .86 and to delete one item (I know what to do next when a book I need is not on the shelf) from Component Five, which increased the Cronbach's Alpha to .73. No other modifications or deletions were made as a result of the reliability analysis. The final six component solution and its variables and loadings are set forth in Table 8 below.

Table 8

Loadings on Final Six Component Structure

	Loading
Component One: General Library and Research Anxiety (LibResearch)	
When I think about my research as it relates to the library, I feel stressed	0.75
When I think about using the library, I feel anxious	0.72
I feel intimidated when I walk into the library	0.69
There are too many possible sources of information	0.67
When I use the library for research, I feel overwhelmed	0.67
The library is not easy to use	0.60
The library is confusing	0.59
There is so much information available, I am sure I will miss something important	0.56
I feel very capable when doing research in the library	0.55
It is not easy to locate materials I need in the library	0.54
In general, I think my ability to use the library has affected my research negatively	0.54
Narrowing my research topic is not easy	0.53
I understand how to begin my research in the library	0.48
I can usually find things I need in the library	0.43
Locating information for my research has been a comfortable process	0.44
Component Two: Comfort with Technology and Online Access (TechOnline)	
I am comfortable using my computer at home to access the library's resources	0.70
I am not comfortable using the library's website	0.65
I can use interlibrary loan for access to materials not in my library	0.62
I am comfortable using interlibrary loan to get materials from a different library	0.58
I know what resources are available in the library	0.57
I am not comfortable using the library's catalog	0.49
I do not understand how to connect from home to the library databases	0.42
I am not aware that the library offers online reference services for students	0.40
I am comfortable using a computer	0.37

Component Three: Perceived Value of Understanding How to Use the Library (ValueLib)	
Knowledge of how to look for specific information is valuable	0.84
Being comfortable using the computer for searching the library's resources is valuable	0.76
Knowledge of how to access the library's website is valuable	0.73
Knowledge of the library is valuable	0.72
Component Four: Comfort with Library as a Physical Place (ComfortLib)	
The library is a comfortable place to study	0.69
I feel at ease in the library	0.67
I feel safe in the library	0.62
I value being comfortable using the library	0.51
Instructions on how to use the computers in the library are helpful	0.50
Instructions on using my home computer to access the library are helpful	0.50
The library is well organized	0.49
Component Five: Perceived Value of Using the Library In-Person (LibInperson)	
I would rather use the library in person	0.72
I enjoy using the library to find information	0.65
The library is an important part of my research	0.65
I would rather use the library online	0.65
Component Six: Comfort with Library Staff (LibStaff)	
The staff at the reference desk is helpful	0.70
I am not comfortable asking for help from a staff member	0.70
The people at the circulation desk are helpful	0.65
I would not ask staff for help if I didn't know how to use a machine in the library	0.61
The staff in interlibrary loan is helpful	0.49
I am comfortable calling the library for help	0.34
I value having a library staff member give one-on-one instruction for my research needs	0.33

Research Questions and Analysis

This study explored seven main research questions focused on the levels of library anxiety in law students. Due to the fact that this was only the second time the MLAS had been utilized and that it was the first time the MLAS had been utilized with law students, the researcher examined a large number of research questions. The researcher relied on a significance level of $p < .01$ to examine the results without any Type I error adjustment such as a Bonferroni adjustment. If a Type I error adjustment had been utilized with the number of tests in this study, it is likely that there would have been no significant results. As the MLAS was being used for the first time with a population of law students, the researcher opted to use a $p < .01$ level to test for significance as that provided a minimal adjustment to address potential Type I error as a result of the large number of statistical tests undertaken. The study specifically addressed the following questions:

1. What levels of library anxiety do law students exhibit?
    a. What is the difference in library anxiety levels of male and female law students?
    b. How much does the difference in library anxiety levels of law students vary according to enrollment in the day or evening division?
    c. How does the level of library anxiety differ among first, second, third, or fourth year law students?
    d. How much does the difference in library anxiety levels of law students vary according to age?

e. How much does the difference in library anxiety levels of law students vary according to a specific grade point average range?

f. How much does the difference in library anxiety levels of law students vary according to frequency of library use, both in-person and online?

In order to address question one, a total score was created in SPSS for overall library anxiety and the six sub-components. The descriptive statistics feature was used to examine frequencies and means of the composite scores. In order to assess questions two through seven, separate one-way analysis of variances (ANOVA) were conducted to determine whether the means of the dependent variables were significantly different among the listed groups. When significant effects were demonstrated in the one-way ANOVA tests, post-hoc comparisons were conducted. In particular, the researcher utilized the Tukey HSD to evaluate the differences in mean levels when appropriate.

A univariate ANOVA assesses the mean differences between independent groups on a dependent variable (Tabachnick & Fidell, 2007). ANOVA examines the differences among scores within each group and examines the group means to determine if the variances are different (Tabachnick & Fidell). If the differences are not significant the null hypothesis that the group means are the same is not rejected. However, if the differences are significant, the null hypothesis is rejected and post-hoc tests are utilized to examine the differences.

Question 1.

The first research question examined what levels of library anxiety law students exhibited. A total mean score was computed in SPSS for overall library anxiety, which

included all 53 items on the MLAS. Certain questions were reverse coded prior to creating the composite score (see Appendix N). A total composite mean score was also computed for each of the six components based on the final six component solution. Table 9 below sets forth the number of items that made up the overall library anxiety composite variable and the low, high, and mean scores on that variable. A lower score on overall library anxiety or any of the six components indicated that a student had higher levels of library anxiety and less confidence than a student who had a higher score on that same composite variable (Van Kampen, 2002). For instance, a score of 5.00 on overall library anxiety indicated low levels of library anxiety whereas a score of 2.00 indicated high levels of overall library anxiety.

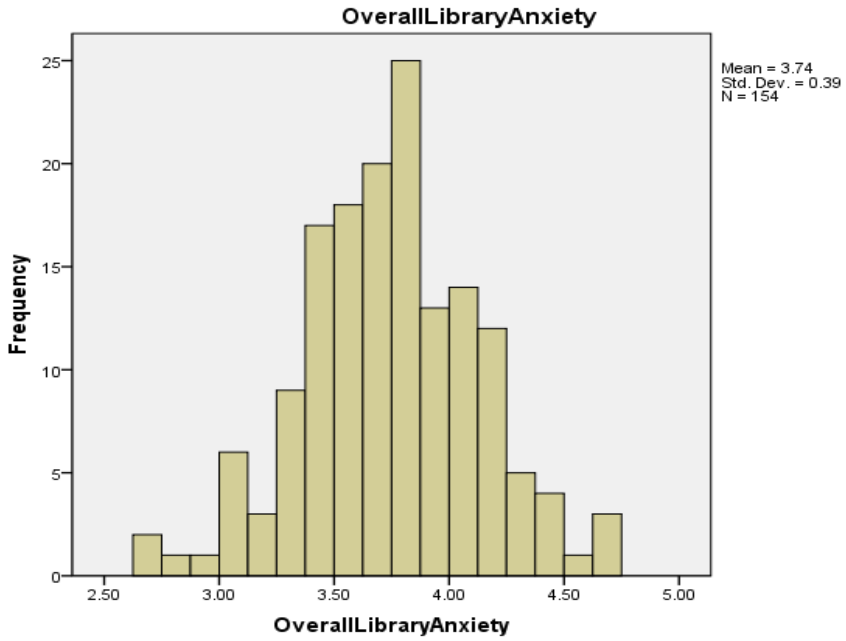
Table 9

Potential Low, High, and Mean Scores and Standard Deviation, Skewness, and Kurtosis for Overall Library Anxiety

Composite Variable	**Number of Items**	**Low Score**	**High Score**	**Mean Score**	**Std. Dev.**	**Skewness**	**Kurtosis**
Overall Library Anxiety	53	2.68	4.72	3.74	.39	-.044	.171

In regard to overall library anxiety, law students' mean scores ranged from a low of 2.68 to a high of 4.72 with a mean score of 3.74. This indicated that law students experienced some level of library anxiety and that the anxiety appeared to be moderate. Figure 2 sets forth a histogram reflecting overall library anxiety of law students.

Figure 2: Histogram of Overall Library Anxiety of Law Students



Descriptive statistics were also analyzed for the six components and Table 10 below sets forth the low, high, and mean scores for each of the six components. Law students appeared to exhibit some levels of anxiety on the six components. In particular, based on the mean score for each component, law students appeared to exhibit moderate levels of library anxiety in regard to LibResearch (general library and research anxiety), TechOnline (comfort with technology and online access) and LibInperson (perceived value of using the library in-person). Figures 3-5 below reflect histograms for each of these components. Law students appeared to exhibit lower levels of library anxiety in regard to ValueLib (perceived value of understanding how to use the library). It should be noted that scores on all components were approximately normally distributed.

Table 10

Low, High, and Mean Scores and Standard Deviation, Skewness, and Kurtosis for the Six Components

Composite Variable	Number of Items	Low Score	High Score	Mean Score	Std. Dev.	Skewness	Kurtosis
LibResearch	15	1.27	4.87	3.34	.65	-.553	.296
TechOnline	9	1.78	5.00	3.84	.60	-.457	.198
ValueLib	4	3.00	5.00	4.52	.55	-.851	-.176
ComfortLib	7	2.29	5.00	4.06	.54	-.593	.470
LibInperson	4	1.00	5.00	3.21	.82	-.213	-.491
LibStaff	7	2.14	5.00	4.03	.53	-.353	.439

Figure 3: Histogram for LibResearch Component

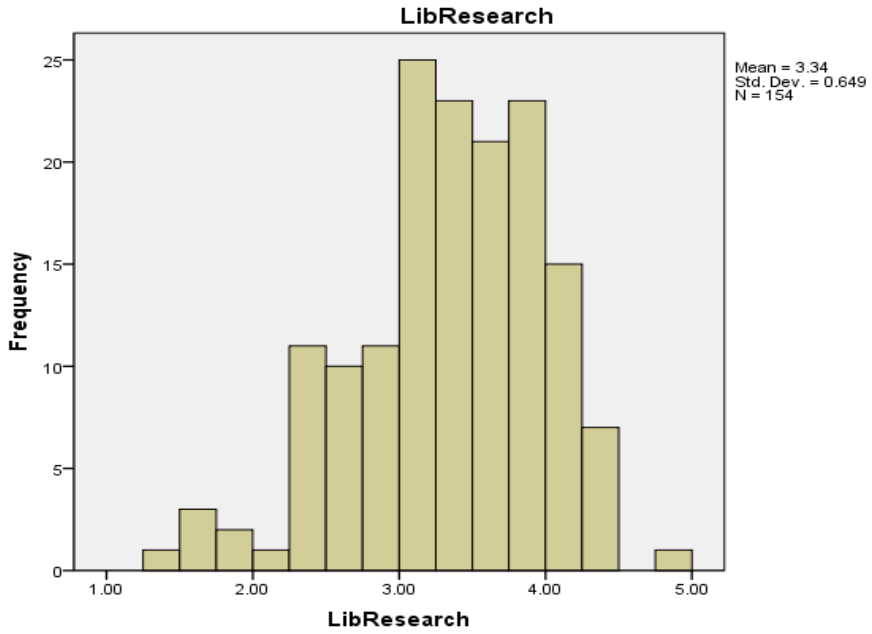


Figure 4: Histogram for TechOnline Component

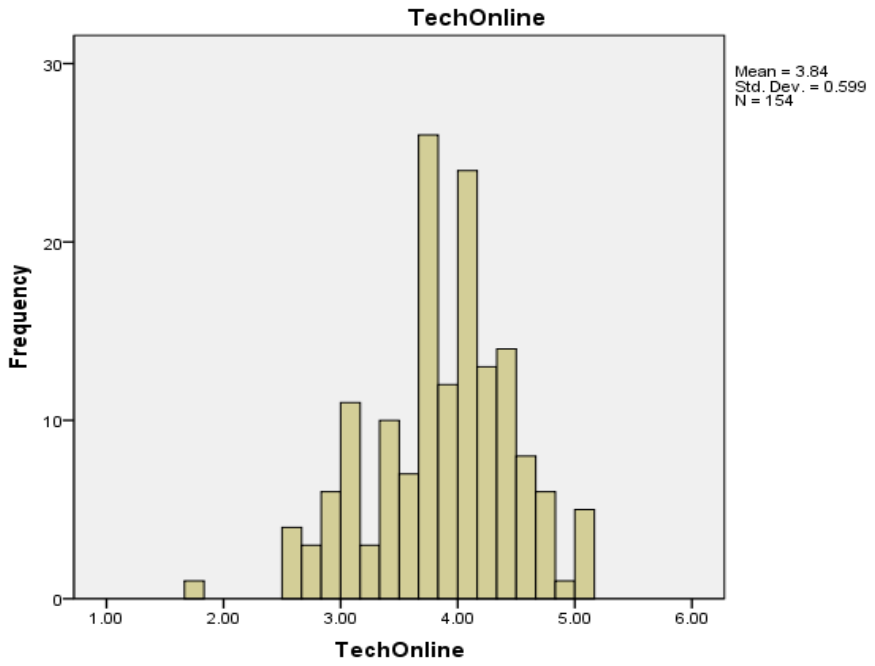
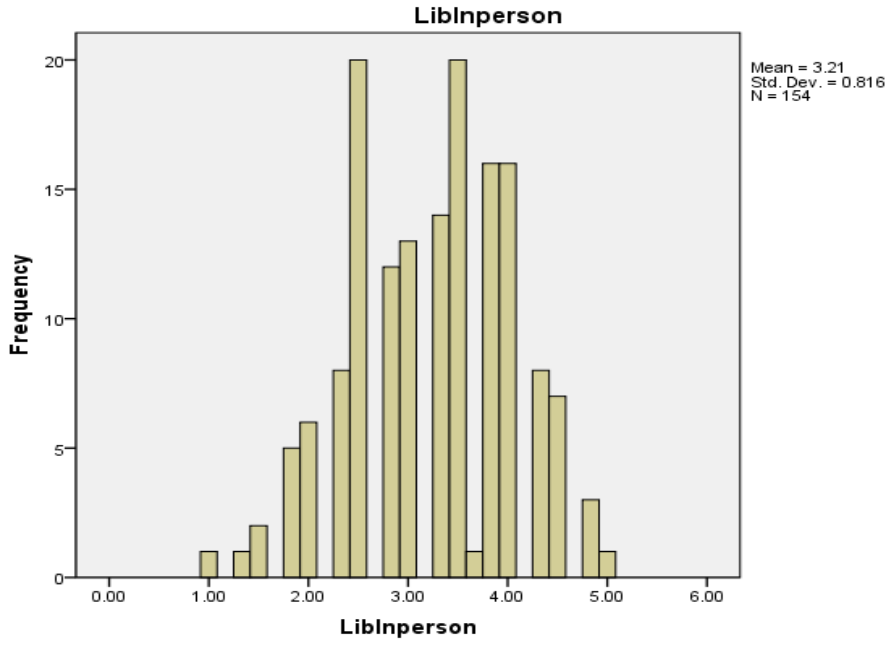


Figure 5: Histogram for LibInperson Component



In order to determine if there were significant differences in the mean scores across the six components, a repeated measures ANOVA was undertaken, using the most

conservative approach. This analysis, with a lower-bound estimate of effects, set forth in Table 11 below, indicated that there were significant differences in the mean scores of the six components.

Table 11

Repeated Measures ANOVA Across the Six Components

Source: Scale		Type III Sum of Squares	df	Mean Square	F	Sig.
	Lower-bound estimate	184.157	1.000	184.157	122.845	≤.001

Due to the significant results, the researcher undertook a series of paired *t*-tests to determine the statistical significance of mean differences among the six components. Based on the paired samples *t*-test, many of component mean scores were found to be significantly different at the $p < .01$ level. The paired *t*-tests, discussed more fully below, indicated that there were differences in the library anxiety levels of law students across the six components.

Based on the paired samples *t*-test, the LibResearch mean score was found to be significantly different than the TechOnline, ValueLib, ComfortLib, and LibStaff mean scores. In each instance the LibResearch mean score was lower (See Table 12 below). A lower mean score indicated higher levels of library anxiety on that particular component. As a result, law students appeared to exhibit higher library anxiety on the LibResearch component as compared to the other components, with the exception of LibInperson.

Table 12

Paired Samples t-Test for LibResearch and the Other Five Components

		t	df	Sig. (2-tailed)
Pair 1	LibResearch – TechOnline	-10.335	153	≤ .001
Pair 2	LibResearch – ValueLib	-16.447	153	≤ .001
Pair 3	LibResarch – ComfortLib	-12.479	153	≤ .001
Pair 4	LibResearch – LibInperson	1.861	153	.065
Pair 5	LibResearch – LibStaff	-12.291	153	≤ .001

The paired samples *t*-test indicated that the TechOnline mean score was significantly different from the LibResearch, ValueLib, ComfortLib, LibInperson, and LibStaff mean scores (See Table 13 below). Based on the mean scores, law students appeared to exhibit greater library anxiety in regard to TechOnline than with ValueLib, ComfortLib, and LibStaff. Conversely, law students appeared to exhibit less library anxiety in regard to TechOnline than with LibResearch and LibInperson.

Table 13

Paired Samples t-Test for TechOnline and the Other Five Components

		t	df	Sig. (2-tailed)
Pair 1	TechOnline – LibResearch	10.335	153	≤ .001
Pair 2	TechOnline – ValueLib	-11.404	153	≤ .001
Pair 3	TechOnline – ComfortLib	-3.808	153	≤ .001
Pair 4	TechOnline – LibInperson	8.066	153	≤ .001
Pair 5	TechOnline – LibStaff	-4.014	153	≤ .001

Based on the paired samples *t*-test, the ValueLib mean score was found to be significantly different from the LibResearch, TechOnline, ComfortLib, LibInperson, and LibStaff mean scores (See Table 14 below). In all instances, the ValueLib mean score was higher, which indicated that law students had less library anxiety in regard to the ValueLib component than in regard to the other five components.

Table 14

Paired Samples t-Test for ValueLib and the Other Five Components

		t	df	Sig. (2-tailed)
Pair 1	ValueLib – LibResearch	16.447	153	≤ .001
Pair 2	ValueLib – TechOnline	11.404	153	≤ .001
Pair 3	ValueLib – ComfortLib	8.868	153	≤ .001
Pair 4	ValueLib – LibInperson	17.271	153	≤ .001
Pair 5	ValueLib – LibStaff	8.702	153	≤ .001

The paired samples *t*-test indicated that the ComfortLib mean score was significantly different from the LibResearch, TechOnline, ValueLib, and LibInperson mean scores (See Table 15 below). The specific results indicated that law students had less library anxiety in regard to the ComfortLib component as compared to the LibResearch, TechOnline, and LibInperson components. Conversely, law students exhibited greater library anxiety in regard to ComfortLib than they did in regard to ValueLib.

Table 15

Paired Samples t-Test for ComfortLib and the Other Five Components

		t	df	Sig. (2-tailed)
Pair 1	ComfortLib – LibResearch	12.479	153	≤ .001
Pair 2	ComfortLib – TechOnline	3.808	153	≤ .001
Pair 3	ComfortLib – ValueLib	-8.868	153	≤ .001
Pair 4	ComfortLib – LibInperson	12.503	153	≤ .001
Pair 5	ComfortLib – LibStaff	.559	153	.577

Based on the paired samples *t*-test, the LibInperson mean score was found to be significantly different than the TechOnline, ValueLib, ComfortLib, and LibStaff mean scores (See Table 16 below). In all instances, the LibInperson mean score was lower,

which indicated that law students had greater library anxiety in regard to the LibInperson component than in regard to TechOnline, ValueLib, ComfortLib, and LibStaff.

Table 16

Paired Samples t-Test for LibInperson and the Other Five Components

		t	df	Sig. (2-tailed)
Pair 1	LibInperson – LibResearch	-1.861	153	.065
Pair 2	LibInperson – TechOnline	-8.066	153	≤ .001
Pair 3	LibInperson – ValueLib	-17.271	153	≤ .001
Pair 4	LibInperson – ComfortLib	-12.503	153	≤ .001
Pair 5	LibInperson – LibStaff	-11.587	153	≤ .001

Lastly, the paired samples *t*-test indicated that the LibStaff mean score was significantly different from the LibResearch, TechOnline, ValueLib, and LibInperson mean scores (See Table 17 below). Based on the mean scores, law students appeared to exhibit less library anxiety in regard to LibStaff than with LibResearch, TechOnline, and LibInperson. Conversely, law students appeared to exhibit greater library anxiety in regard to LibStaff than with ValueLib.

Table 17

Paired Samples t-Test for LibStaff and the Other Five Components

		t	df	Sig. (2-tailed)
Pair 1	LibStaff – LibResearch	12.291	153	≤ .001
Pair 2	LibStaff – TechOnline	4.014	153	≤ .001
Pair 3	LibStaff – ValueLib	-8.702	153	≤ .001
Pair 4	LibStaff – ComfortLib	-.559	153	.577
Pair 5	LibStaff – LibInperson	11.587	153	≤ .001

Question 1a.

The second question examined the differences in overall library anxiety levels and on each of the six components between male and female law students. Prior to the

ANOVA test, Levene's test of equality was used to evaluate the assumption that the population variances for the two groups were equal on overall library anxiety and the six components. The results of these tests set forth in Table 18 indicated that homogeneity of variance can be assumed.

Table 18

Levene's Test of Equality - Gender

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
LibResearch	.299	1	144	.585
TechOnline	.401	1	144	.528
ComfortLib	.012	1	142	.914
LibStaff	.903	1	140	.344
ValueLib	.024	1	145	.878
LibInperson	.278	1	144	.599
TotalLibraryAnxiety	.018	1	137	.894

In determining the impact of gender on overall library anxiety and on each of the six components, an ANOVA was conducted. Table 19 indicated that none of the tests were significant at the $p < .01$ level. As a result, the null hypotheses that there were no differences between the overall level of library anxiety and on each of the six components between male and female law students failed to be rejected. This indicated that overall library anxiety and on each of the six components is equal for men and women.

Table 19

Analysis of Variance for Overall Library Anxiety and the Six Components and Gender

ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
LibResearch	Between Groups	24.372	1	24.372	.252	.617
	Within Groups	13943.190	144	96.828		
	Total	13967.562	145			
TechOnline	Between Groups	33.821	1	33.821	1.144	.287
	Within Groups	4256.617	144	29.560		
	Total	4290.438	145			
ComfortLib	Between Groups	3.291	1	3.291	.232	.631
	Within Groups	2014.459	142	14.186		
	Total	2017.750	143			
LibStaff	Between Groups	4.434	1	4.434	.334	.564
	Within Groups	1858.157	140	13.273		
	Total	1862.592	141			
ValueLib	Between Groups	2.912	1	2.912	.625	.431
	Within Groups	675.755	145	4.660		
	Total	678.667	146			
LibInperson	Between Groups	.035	1	.035	.003	.955
	Within Groups	1586.382	144	11.017		
	Total	1586.418	145			
TotalLibraryAnxiety	Between Groups	10.110	1	10.110	.024	.878
	Within Groups	58349.977	137	425.912		
	Total	58360.086	138			

Question 1b.

The third question examined the differences in overall library anxiety levels and on each of the six components between day and evening division law students. Prior to the ANOVA test, Levene's test of equality was used to evaluate the assumption that the population variances for the two groups were equal on overall library anxiety and the six

components. The results of these tests set forth in Table 20 indicated that homogeneity of variance can be assumed.

Table 20

Levene's Test of Equality – Day/Evening Division

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
LibResearch	.164	1	144	.686
TechOnline	.835	1	144	.362
ComfortLib	5.716	1	142	.018
LibStaff	.202	1	140	.654
ValueLib	1.975	1	145	.162
LibInperson	.002	1	144	.965
TotalLibraryAnxiety	2.145	1	137	.145

In determining the impact of being a day or evening division law student on overall library anxiety and on each of the six components, an ANOVA was conducted. Table 21 indicated that only one of the tests was significant at the $p < .01$ level. As a result, the null hypotheses that there were no differences between the overall level of library anxiety and on each of the following five components (LibResearch, TechOnline, ComfortLib, ValueLib, and LibInperson) between day and evening divisions law students failed to be rejected.

Table 21 indicated that the ANOVA test for LibStaff was significant F (1, 140) = 10.915, $p < .01$. As a result, the null hypothesis that there were not differences between library anxiety in regard to the LibStaff component between day and evening division students was rejected. This indicated that day law students and evening law students had

differing levels of library anxiety as it pertained to the comfort with library staff component (LibStaff).

Table 21

Analysis of Variance for Overall Library Anxiety and the Six Components and Day/Evening Division

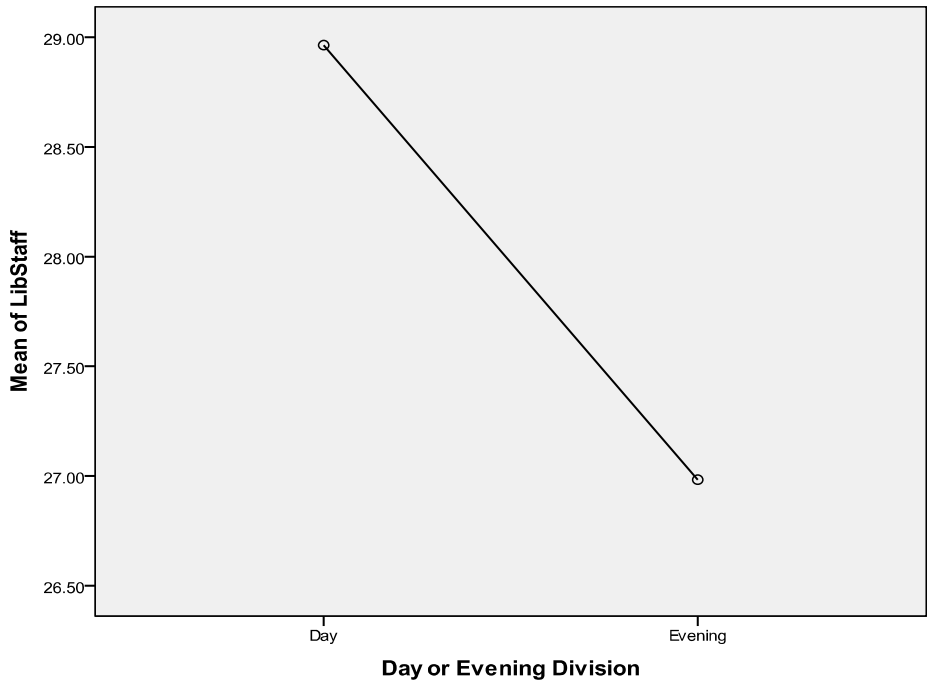
ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
LibResearch	Between Groups	169.014	1	169.014	1.764	.186
	Within Groups	13798.547	144	95.823		
	Total	13967.562	145			
TechOnline	Between Groups	124.122	1	124.122	4.290	.040
	Within Groups	4166.316	144	28.933		
	Total	4290.438	145			
ComfortLib	Between Groups	1.357	1	1.357	.096	.758
	Within Groups	2016.393	142	14.200		
	Total	2017.750	143			
LibStaff	Between Groups	134.716	1	134.716	10.915	.001
	Within Groups	1727.876	140	12.342		
	Total	1862.592	141			
ValueLib	Between Groups	2.139	1	2.139	.458	.499
	Within Groups	676.528	145	4.666		
	Total	678.667	146			
LibInperson	Between Groups	4.425	1	4.425	.403	.527
	Within Groups	1581.993	144	10.986		
	Total	1586.418	145			
TotalLibraryAnxiety	Between Groups	1877.884	1	1877.884	4.555	.035
	Within Groups	56482.202	137	412.279		
	Total	58360.086	138			

The researcher examined the mean values and found that evening division students (mean = 26.98) experienced higher levels of library anxiety as it pertained to Component Six: Comfort with Library Staff than did day division law students (mean =

28.96). A lower score on the component indicated a higher level of library anxiety related to that component. This indicated that evening law students encountered greater anxiety with the library staff than did day division law students (See Figure 6 below).

Figure 6: Means Plot for Comfort with Library Staff – Day/Evening Division Law Students



Question 1c.

The fourth question examined the differences in overall library anxiety levels and on each of the six components among first, second, third, and fourth year law students. Prior to the ANOVA test, Levene's test of equality was used to evaluate the assumption that the population variances for the two groups were equal on overall library anxiety and the six components. The results of these tests set forth in Table 22 indicated that homogeneity of variance can be assumed.

Table 22

Levene's Test of Equality – Year in Law School

Test of Homogeneity of Variances				
	Levene Statistic	df1	df2	Sig.
LibResearch	.333	3	141	.801
TechOnline	.310	3	141	.818
ComfortLib	.525	3	139	.666
LibStaff	.191	3	137	.902
ValueLib	.429	3	142	.733
LibInperson	.330	3	141	.804
TotalLibraryAnxiety	.136	3	134	.938

In determining the impact of year in law school on overall library anxiety and on each of the six components, an ANOVA was conducted. Table 23 indicated that none of the tests were significant at the $p < .01$ level. As a result, the null hypotheses that there were no differences between the overall level of library anxiety and on each of the six components between first, second, third, and fourth year law students could not be rejected.

Table 23

Analysis of Variance for Overall Library Anxiety and the Six Components and Year in Law School

ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
LibResearch	Between Groups	205.389	3	68.463	.705	.551
	Within Groups	13698.611	141	97.153		
	Total	13904.000	144			
TechOnline	Between Groups	54.802	3	18.267	.608	.611
	Within Groups	4235.405	141	30.038		
	Total	4290.207	144			
ComfortLib	Between Groups	16.699	3	5.566	.395	.757
	Within Groups	1956.853	139	14.078		
	Total	1973.552	142			
LibStaff	Between Groups	21.904	3	7.301	.546	.652
	Within Groups	1832.535	137	13.376		
	Total	1854.440	140			
ValueLib	Between Groups	2.779	3	.926	.195	.900
	Within Groups	675.879	142	4.760		
	Total	678.658	145			
LibInperson	Between Groups	50.932	3	16.977	1.599	.192
	Within Groups	1496.627	141	10.614		
	Total	1547.559	144			
TotalLibraryAnxiety	Between Groups	761.245	3	253.748	.598	.618
	Within Groups	56906.212	134	424.673		
	Total	57667.457	137			

Question 1d.

The fifth question examined the differences in library anxiety levels on each of the six components among various age ranges of law students. Prior to the ANOVA test, Levene's test of equality was used to evaluate the assumption that the population

variances for the two groups were equal on the six components. The results of these tests set forth in Table 24 indicated that homogeneity of variance can be assumed.

Table 24

Levene's Test of Equality – Age Range

Test of Homogeneity of Variances				
	Levene Statistic	df1	df2	Sig.
LibResearch	.401	5	140	.848
TechOnline	.764	5	140	.577
ComfortLib	.939	5	138	.458
LibStaff	.316	5	136	.903
ValueLib	1.002	5	141	.419
LibInperson	1.219	5	140	.304

In determining the impact of age ranges of law students on each of the six components, an ANOVA was conducted. Table 25 indicated that none of the tests were significant at the $p < .01$ level. As a result, the null hypotheses that there were no differences between the levels of library anxiety on each of the six components between various age ranges of law students failed to be rejected.

Table 25

Analysis of Variance for the Six Components and Age Ranges of Law Students

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
LibResearch	Between Groups	696.723	5	139.345	1.470	.203
	Within Groups	13270.839	140	94.792		
	Total	13967.562	145			
TechOnline	Between Groups	134.860	5	26.972	.909	.477
	Within Groups	4155.579	140	29.683		
	Total	4290.438	145			
ComfortLib	Between Groups	47.382	5	9.476	.664	.652
	Within Groups	1970.368	138	14.278		
	Total	2017.750	143			
LibStaff	Between Groups	40.162	5	8.032	.599	.700
	Within Groups	1822.430	136	13.400		
	Total	1862.592	141			
ValueLib	Between Groups	15.459	5	3.092	.657	.656
	Within Groups	663.208	141	4.704		
	Total	678.667	146			
LibInperson	Between Groups	102.533	5	20.507	1.935	.092
	Within Groups	1483.884	140	10.599		
	Total	1586.418	145			

Question 1e.

The sixth question examined the differences in library anxiety levels on each of the six components among law students with various grade point average ranges. Prior to the ANOVA test, Levene's test of equality was used to evaluate the assumption that the population variances for the two groups were equal on the six components. The results of these tests set forth in Table 26 indicated that homogeneity of variance can be assumed for all components except ValueLib.

Table 26

Levene's Test of Equality – Grade Point Average

Test of Homogeneity of Variances				
	Levene Statistic	df1	df2	Sig.
LibResearch	.692	3	136	.559
TechOnline	.829	3	136	.480
ComfortLib	.494	3	134	.687
LibStaff	2.417	3	132	.069
ValueLib	2.780	3	137	.043
LibInperson	.334	3	136	.801

In determining the impact of the grade point average ranges of law students on each of the six components, an ANOVA was conducted. Table 27 indicated that none of the tests were significant at the $p < .01$ level. As a result, the null hypotheses that there were no differences between the level of library anxiety on each of the six components and the various grade point average ranges of law students failed to be rejected.

Table 27

Analysis of Variance for the Six Components and Grade Point Average Ranges of Law Students

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
LibResearch	Between Groups	275.333	3	91.778	.929	.429
	Within Groups	13437.602	136	98.806		
	Total	13712.936	139			
TechOnline	Between Groups	23.885	3	7.962	.261	.853
	Within Groups	4149.907	136	30.514		
	Total	4173.793	139			
ComfortLib	Between Groups	59.749	3	19.916	1.423	.239
	Within Groups	1875.069	134	13.993		
	Total	1934.819	137			
LibStaff	Between Groups	44.515	3	14.838	1.109	.348
	Within Groups	1765.889	132	13.378		
	Total	1810.404	135			
ValueLib	Between Groups	8.961	3	2.987	.643	.588
	Within Groups	635.989	137	4.642		
	Total	644.950	140			
LibInperson	Between Groups	51.244	3	17.081	1.598	.193
	Within Groups	1453.499	136	10.687		
	Total	1504.743	139			

Question 1f.

The seventh question, which consisted of two parts, examined the differences in library anxiety levels on each of the six components among law students with various frequencies of in-person library usage and on each of the six components among law students with various frequencies of online library usage.

In-person library usage.

Prior to the ANOVA test, Levene's test of equality was used to evaluate the assumption that the population variances for the two groups were equal on the six components in regard to in-person library usage. The results of these tests set forth in Table 28 indicated that homogeneity of variance can be assumed.

Table 28

Levene's Test of Equality – In-Person Library Use

Test of Homogeneity of Variances				
	Levene Statistic	df1	df2	Sig.
LibResearch	2.045	4	141	.091
TechOnline	2.237	4	141	.068
ComfortLib	.661	4	139	.620
LibStaff	.440	4	137	.779
ValueLib	1.014	4	142	.402
LibInperson	.808	4	141	.522

In determining the impact of in-person library usage on the library anxiety level of each of the six components, an ANOVA was conducted. Table 29 indicated that only two of the tests were significant at the $p < .01$ level. As a result, the null hypotheses that there were no differences between the level of library anxiety on the four components TechOnline, ComfortLib, LibStaff, and ValueLib between level of in-person library usage of law students failed to be rejected.

Table 29 indicated that the ANOVA test for LibResearch was significant F (4, 141) = 4.300, $p < .01$. As a result, the null hypothesis that there were not differences between library anxiety in regard to the LibResearch component based on frequency of in-person library usage of law students was rejected.

Table 29 also indicated that the ANOVA test for LibInperson was significant $F(4, 141) = 9.575$, $p < .01$. As a result, the null hypothesis that there were not differences between library anxiety in regard to the LibInperson component based on frequency of in-person library usage of law students was rejected.

Table 29

Analysis of Variance for the Six Components and In-Person Library Use

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
LibResearch	Between Groups	1518.549	4	379.637	4.300	.003
	Within Groups	12449.013	141	88.291		
	Total	13967.562	145			
TechOnline	Between Groups	247.871	4	61.968	2.161	.076
	Within Groups	4042.568	141	28.671		
	Total	4290.438	145			
ComfortLib	Between Groups	40.343	4	10.086	.709	.587
	Within Groups	1977.407	139	14.226		
	Total	2017.750	143			
LibStaff	Between Groups	113.329	4	28.332	2.219	.070
	Within Groups	1749.262	137	12.768		
	Total	1862.592	141			
ValueLib	Between Groups	9.044	4	2.261	.479	.751
	Within Groups	669.623	142	4.716		
	Total	678.667	146			
LibInperson	Between Groups	338.874	4	84.719	9.575	≤.001
	Within Groups	1247.544	141	8.848		
	Total	1586.418	145			

Because the overall *F*-test was significant for the LibResearch component, follow-up tests were conducted to determine differences among frequency of in-person library usage. Of the post hoc procedures available, the Tukey test was selected as equal variances were assumed for this analysis. The results of the post hoc comparison are

shown in Table 30 below. Using the Tukey test, those law students who used the library in-person one or fewer times per semester differed significantly from those law students who used the library in-person one or more times per week or once a month in regard to Component One: General Library and Research Anxiety ($p < .01$).

Table 30

Post Hoc/Tukey Test for LibResearch and Frequency of In-Person Library Use

Multiple Comparisons

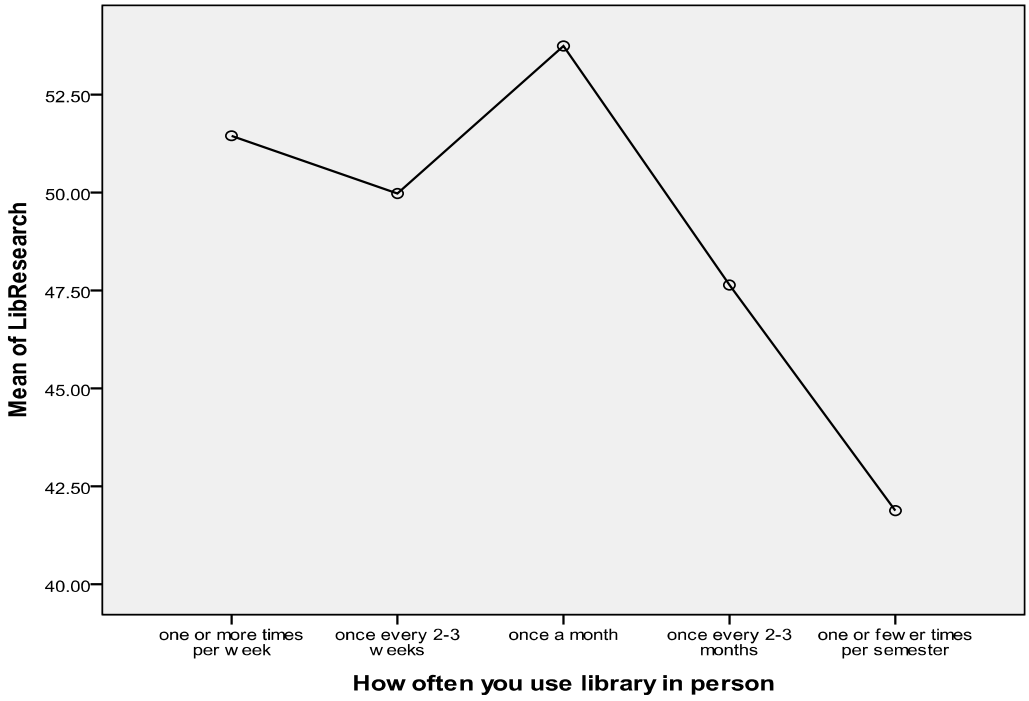
LibResearch
Tukey HSD

(I) How often you use library in person	(J) How often you use library in person	Mean Difference (I-J)	Std. Error	Sig.
one or more times per week	once every 2-3 weeks	1.47473	1.97000	.945
	once a month	-2.29069	2.45055	.883
	once every 2-3 months	3.80979	3.06346	.726
	one or fewer times per semester	9.57115*	2.62231	.003
once every 2-3 weeks	one or more times per week	-1.47473	1.97000	.945
	once a month	-3.76541	2.67759	.625
	once every 2-3 months	2.33506	3.24793	.952
	one or fewer times per semester	8.09643	2.83563	.039
once a month	one or more times per week	2.29069	2.45055	.883
	once every 2-3 weeks	3.76541	2.67759	.625
	once every 2-3 months	6.10048	3.55996	.429
	one or fewer times per semester	11.86184*	3.18827	.003
once every 2-3 months	one or more times per week	-3.80979	3.06346	.726
	once every 2-3 weeks	-2.33506	3.24793	.952
	once a month	-6.10048	3.55996	.429
	one or fewer times per semester	5.76136	3.68030	.522
one or fewer times per semester	one or more times per week	-9.57115*	2.62231	.003
	once every 2-3 weeks	-8.09643	2.83563	.039
	once a month	-11.86184*	3.18827	.003
	once every 2-3 months	-5.76136	3.68030	.522

* The mean difference is significant at the o.01 level

While the post-hoc test indicated a difference in those law students who used the library in person one or fewer times per semester as compared to students who used the library in person at least once a month or one or more times per week, it did not indicate the specific difference. As a result, examination of descriptive statistics for in-person library usage on the LibResearch component indicated that those students who used the library one or fewer times per semester had a lower mean score of 41.88 on the LibResearch component than other library users. In particular, those law students who used the library in person one or more times per week had a mean score of 51.45 and those students who used the library in person once a month had a mean score of 53.74 (See Figure 7 below). Since a lower score indicated higher levels of library anxiety, those students who used the library one or fewer times per semester had greater library anxiety as it pertained to general library or research anxiety (LibResearch).

Figure 7: Means Plot for Frequency of In-Person Library Use and LibResearch Component



Because the overall *F*-test was significant for the LibInperson component, follow-up tests were conducted to determine differences among frequency of in-person library usage. Of the post hoc procedures available, the Tukey test was selected as equal variances were assumed for this analysis. The results of the post hoc comparison are shown in Table 31 below. Using the Tukey test, those law students who used the library in-person one or more times per week differed significantly from those law students who used the library in-person once a month or one or fewer times per semester in regard to Component Five: Perceived Value of Using the Library In-Person ($p < .01$).

Table 31

Post Hoc/Tukey Test for LibInperson and Frequency of In-Person Library Use

Multiple Comparisons

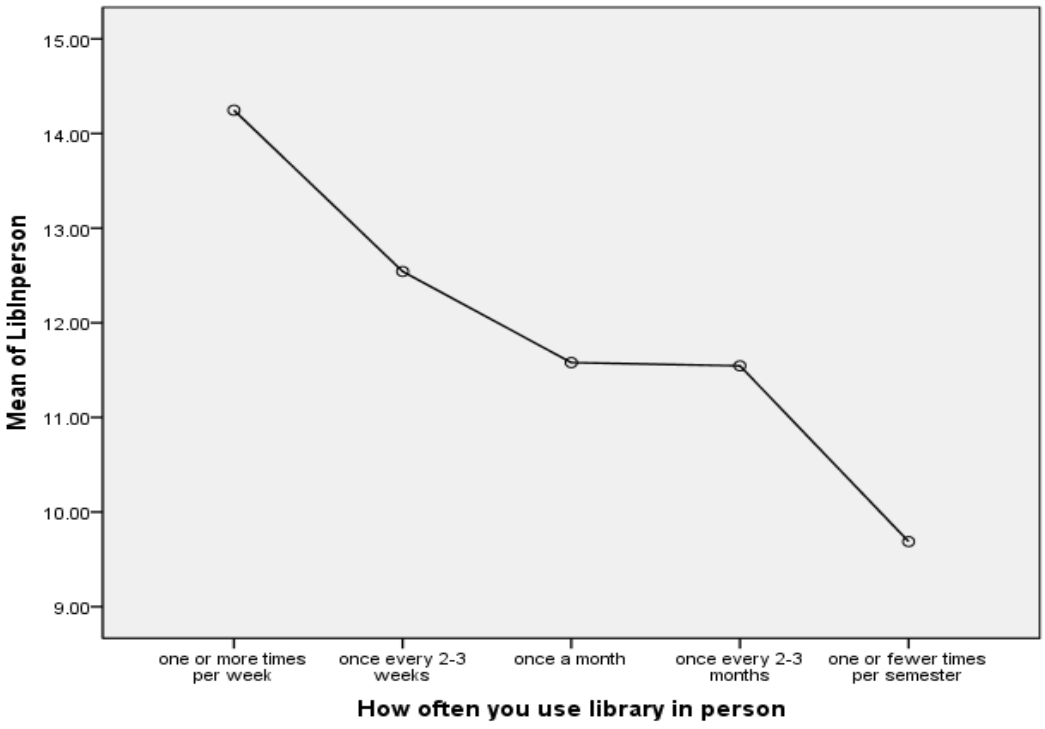
LibInperson
Tukey HSD

(I) How often you use library in person	(J) How often you use library in person	Mean Difference (I-J)	Std. Error	Sig.
one or more times per week	once every 2-3 weeks	1.70330	.62363	.054
	once a month	2.66721*	.77575	.007
	once every 2-3 months	2.70070	.96978	.047
	one or fewer times per semester	4.55865*	.83013	.000
once every 2-3 weeks	one or more times per week	-1.70330	.62363	.054
	once a month	.96391	.84763	.787
	once every 2-3 months	.99740	1.02817	.868
	one or fewer times per semester	2.85536	.89765	.015
once a month	one or more times per week	-2.66721*	.77575	.007
	once every 2-3 weeks	-.96391	.84763	.787
	once every 2-3 months	.03349	1.12695	1.000
	one or fewer times per semester	1.89145	1.00929	.336
once every 2-3 months	one or more times per week	-2.70070	.96978	.047
	once every 2-3 weeks	-.99740	1.02817	.868
	once a month	-.03349	1.12695	1.000
	one or fewer times per semester	1.85795	1.16505	.503
one or fewer times per semester	one or more times per week	-4.55865*	.83013	.000
	once every 2-3 weeks	-2.85536	.89765	.015
	once a month	-1.89145	1.00929	.336
	once every 2-3 months	-1.85795	1.16505	.503

* The mean difference is significant at the 0.01 level

As the post-hoc tests did not indicate the specific difference, descriptive statistics were examined for in-person library usage on the LibInperson component. Those law students who used the library one or more times per week had a mean score of 14.25, whereas those students who used the library once a month had a mean score of 11.58 and those students who used the library one or fewer times per semester had a mean score of 9.69 (See Figure 8 below). A higher score indicated lower levels of library anxiety. As a result, law students who use the library one or more times per week appeared to encounter lower library anxiety in regard to perceived value of using the library in-person component (LibInperson).

Figure 8: Means Plot for Frequency of In-Person Library Use and LibInperson Component



Online library usage.

Prior to the ANOVA test, Levene's test of equality was used to evaluate the assumption that the population variances for the two groups were equal on the six components in regard to online library usage. The results of these tests set forth in Table 32 indicated that homogeneity of variance can be assumed.

Table 32

Levene's Test of Equality – Online Library Use

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
LibResearch	1.012	4	141	.403
TechOnline	2.965	4	141	.022
ComfortLib	1.107	4	139	.356
LibStaff	1.119	4	137	.350
ValueLib	1.331	4	142	.261
LibInperson	.607	4	141	.658

In determining the impact of online library usage on the library anxiety level of each of the six components, an ANOVA was conducted. Table 33 indicated that only one of the tests was significant at the $p < .01$ level. As a result, the null hypotheses that there were no differences between the level of library anxiety on the five components LibResearch, ComfortLib, LibStaff, ValueLib, and LibInperson based on frequency of online library usage of law students failed to be rejected.

Table 33 indicated that the ANOVA test for TechOnline was significant F (4, 141) = 9.109, $p < .01$. As a result, the null hypothesis that there were not differences between library anxiety in regard to the TechOnline component based on frequency of online library usage of law students was rejected.

Table 33

Analysis of Variance for the Six Components and Online Library Use

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
LibResearch	Between Groups	692.949	4	173.237	1.840	.124
	Within Groups	13274.612	141	94.146		
	Total	13967.562	145			
TechOnline	Between Groups	881.060	4	220.265	9.109	.000
	Within Groups	3409.379	141	24.180		
	Total	4290.438	145			
ComfortLib	Between Groups	12.592	4	3.148	.218	.928
	Within Groups	2005.158	139	14.426		
	Total	2017.750	143			
LibStaff	Between Groups	88.057	4	22.014	1.700	.154
	Within Groups	1774.535	137	12.953		
	Total	1862.592	141			
ValueLib	Between Groups	7.014	4	1.754	.371	.829
	Within Groups	671.652	142	4.730		
	Total	678.667	146			
LibInperson	Between Groups	49.497	4	12.374	1.135	.342
	Within Groups	1536.921	141	10.900		
	Total	1586.418	145			

Because the overall *F*-test was significant for the TechOnline component, follow-up tests were conducted to determine differences among frequency of online library usage. Of the post hoc procedures available, the Tukey test was selected as equal variances were assumed for this analysis. The results of the post hoc comparison are shown in Table 34 below. Using the Tukey test, those law students who used the library online one or fewer times per semester differed significantly from those law students who used the library online one or more times per week, once every 2-3 weeks, or once a month in regard to Component Two: Comfort with Technology and Online Access ($p < .01$).

Table 34

Post Hoc/Tukey Test for TechOnline and Frequency of Online Library Use

Multiple Comparisons

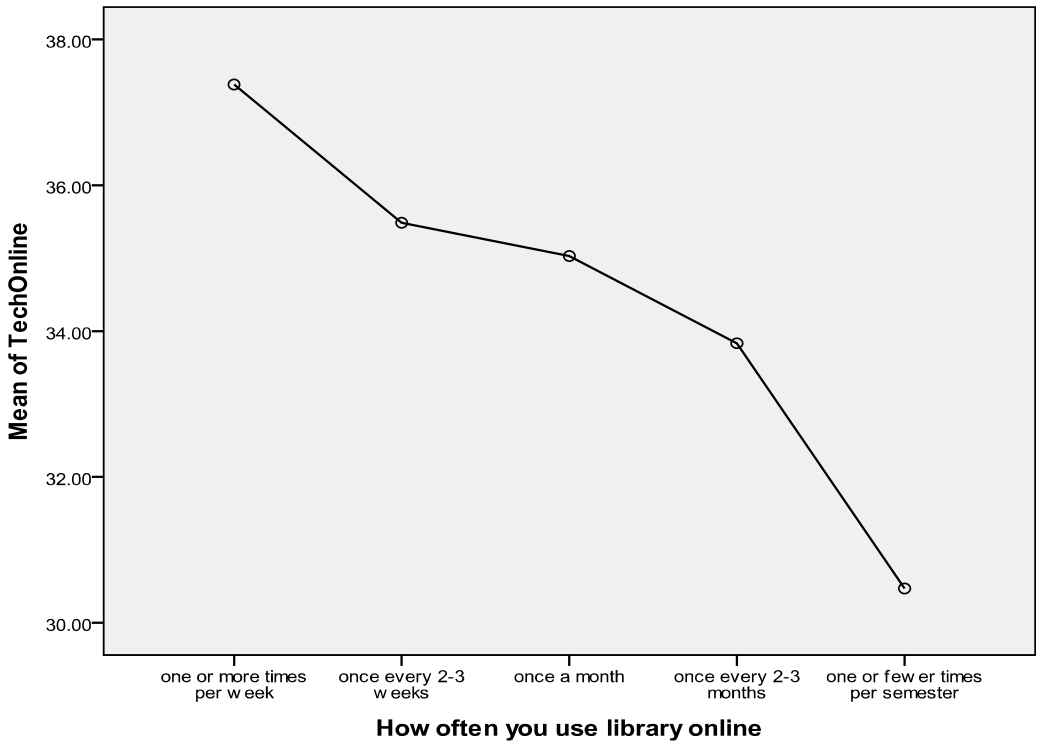
TechOnline
Tukey HSD

(I) How often you use library online	(J) How often you use library online	Mean Difference (I-J)	Std. Error	Sig.
one or more times per week	once every 2-3 weeks	1.89750	1.20163	.513
	once a month	2.35205	1.20163	.292
	once every 2-3 months	3.54902	1.65111	.205
	one or fewer times per semester	6.91176*	1.19262	.000
once every 2-3 weeks	one or more times per week	-1.89750	1.20163	.513
	once a month	.45455	1.21056	.996
	once every 2-3 months	1.65152	1.65763	.857
	one or fewer times per semester	5.01426*	1.20163	.000
once a month	one or more times per week	-2.35205	1.20163	.292
	once every 2-3 weeks	-.45455	1.21056	.996
	once every 2-3 months	1.19697	1.65763	.951
	one or fewer times per semester	4.55971*	1.20163	.002
once every 2-3 months	one or more times per week	-3.54902	1.65111	.205
	once every 2-3 weeks	-1.65152	1.65763	.857
	once a month	-1.19697	1.65763	.951
	one or fewer times per semester	3.36275	1.65111	.254
one or fewer times per semester	one or more times per week	-6.91176*	1.19262	.000
	once every 2-3 weeks	-5.01426*	1.20163	.000
	once a month	-4.55971*	1.20163	.002
	once every 2-3 months	-3.36275	1.65111	.254

* The mean difference is significant at the 0.01 level

The post-hoc tests did not indicate the specific difference. As a result, descriptive statistics were examined in regard to online library usage as it pertained to the TechOnline component. Those law students who used the library online one or fewer times per semester had a mean score of 30.47, whereas those students who used the library online one or more times per week, once every 2-3 weeks, or once a month had mean scores of 37.38, 35.48, and 35.03, respectively (See Figure 9 below). Since lower scores indicated higher levels of library anxiety, these results appeared to indicate that those law students who used the library online one or fewer times per semester encountered higher library anxiety in regard to comfort with technology and online access (TechOnline).

Figure 9: Means Plot for Frequency of Online Library Use and TechOnline Component



Summary of Chapter 4

This chapter summarized the sample data and described the analyses used to test the seven primary hypotheses for this study. Additionally, this chapter described the confirmatory factor analysis and the inadequate fit of the data to the previous model that lead to the subsequent principal components analysis. This chapter set forth the six component structure determined by the researcher based on the exploratory factor analysis utilizing principal components analysis. Based on the six component model, it was found that law students appear to exhibit moderate levels of overall library anxiety, as well as varying levels of library anxiety on the six components.

In particular, it was found that law students in the evening division experienced higher levels of library anxiety as it pertained to comfort with the library staff (LibStaff) than did day division students. It was discovered that law students who used the library in person one or fewer times per semester encountered greater library anxiety as it pertained to general library and research anxiety (LibResearch) and law students who used the library in person one or more times per week had lower levels of library anxiety as it pertained to the perceived value of using the library in-person (LibInperson). Additionally, it was found that law students who used the library online one or fewer times per semester had higher library anxiety as it pertained to comfort with technology and online access (TechOnline).

It was discovered that levels of overall library anxiety and on the six components did not differ based upon gender or year in law school. It was also found that levels of

library anxiety on the six components did not differ based upon law students' age ranges or grade point average ranges.

Chapter Five: Conclusion

Although researchers have examined library anxiety across many populations, no one had examined library anxiety in law students. The ultimate purpose of this study was to determine whether law students experienced library anxiety and, if so, which components differentially contributed to that anxiety. This chapter summarizes the findings of the study, the potential limitations of the study, and potential future research directions.

Summary of Research Findings

The goal of this study was to assess the extent to which library anxiety was present in law students at a private law school in the midwestern United States. A confirmatory factor analysis was undertaken to determine if this study's results fit the prior model established by Van Kampen in her original development of the MLAS. Since the current data did not result in a model fit, a principal components analysis was conducted. The principal components analysis identified six components of library anxiety, which were named as follows: (i) general library and research anxiety (LibResearch); (ii) comfort with technology and online access (TechOnline); (iii) perceived value of the understanding how to use the library (ValueLib); (iv) comfort with the library as a physical place (ComfortLib); (v) perceived value of using the library in-person (LibInperson); and, (vi) comfort with the library staff (LibStaff). While similar to Van Kampen's findings, this study's identified six components differed from her initial

findings in regard to the items which loaded on each component, as well as in some instances the names assigned to each component.

Question 1 – what levels of library anxiety do law students exhibit?

In order to examine library anxiety overall and on the six components, composite mean scores were computed for the entire 53-item MLAS scale and for each of the six components that resulted from the principal components analysis. By creating composite mean scores to assess this question, library anxiety could be compared across the full scale and the six components as each composite mean score ranged from a low of 1.00 to a high of 5.00. A lower score on the overall library anxiety composite score or any of the six component composite scores indicated higher levels of library anxiety.

Law students clearly exhibited library anxiety overall and on the six components. The mean score for overall library anxiety was 3.74. This indicated that law students had moderate levels of overall library anxiety. In regard to the six components, levels of library anxiety ranged from a low of 3.21 on the perceived value of using the library in-person component to a high of 4.52 on the perceived value of understanding how to use the library component.

Law students had the greatest levels of library anxiety as it pertained to the perceived value of using the library in-person with a mean score of 3.21. Based on the items that comprise this component, law students appeared to have less comfort with using the library in-person and did not understand the value of spending time in the library.

Law students had mean scores of 3.34 and 3.84 for general library and research anxiety and comfort with technology and online access, which indicated that they had moderate anxiety as it pertained to those two components. The general library and research anxiety component score indicated that law students experienced anxiety in general as it pertained to the library and as it pertained to commencing their research activities. Based on the general library and research anxiety items, law students were anxious when they had to use the library and experienced stress when considering and undertaking their research projects. The comfort with technology and online access component score indicated that law students experienced library anxiety in regard to using technology to access the library's online catalog or online databases, as well as to request materials online through the interlibrary loan process.

Law students had the least amount of library anxiety as it pertained to comfort with library staff, comfort with the library as a physical place, and perceived value of understanding how to use the library. In particular, law students had a mean score of 4.52 as it pertained to perceived value of understanding how to use the library. This indicated that law students experienced little library anxiety in regard to understanding and valuing the importance of the law library.

A repeated measures ANOVA was performed to determine whether significant differences existed between the mean scores across the six components and this analysis confirmed that significant differences existed. Based on a series of follow-up paired samples *t*-tests, significant differences arose in the library anxiety levels of law students across the six components.

The perceived value of using the library in-person component mean score was significantly different and lower than the comfort with technology and online access, perceived value of understanding how to use the library, comfort with the library as a physical place, and comfort with library staff mean scores. The *t*-tests confirmed that the general library and research anxiety component mean score was significantly different and lower than the comfort with technology and online access, perceived value of understanding how to use the library, comfort with the library as a physical place, and comfort with library staff mean scores. Lastly, the *t*-tests indicated that the comfort with technology and online access component mean score was significantly different and lower than the other five components. These tests confirmed that law students experienced greater levels of library anxiety as it pertained to these three components.

Question 1a – what is the difference in library anxiety levels of male and female law students?

The data from this study indicated that male and female law students do not experience different levels of library anxiety overall or as it pertains to the six components. Previous studies have had mixed results as to whether or not library anxiety differed between men and women. Jiao, Onwuegbuzie, and Lichtenstein (1996) found that library anxiety was correlated with gender in their study that examined traits which might predict levels of library anxiety. In a follow-up study of undergraduate and graduate students in 1997, Jiao and Onwuegbuzie (1997a, 1997b), found that men experienced higher levels of library anxiety than did women. However, neither Bostick

(1992) nor Mech and Brooks (1995) found gender differences in levels of library anxiety in their studies.

Question 1b – how much does the difference in library anxiety levels of law students vary according to enrollment in the day or evening division?

Library anxiety differences of day and evening division law students were examined on library anxiety overall and across the six components. A significant difference was found between day and evening division students in their levels of library anxiety as it pertained to comfort with the library staff. Based on an examination of the composite scores for the comfort with library staff component, evening division law students had a lower score than did day division law students. This indicated that evening division law students had greater levels of library anxiety in regard to comfort with the library staff. One rationale for this finding may be that evening division students have less exposure to the professional library staff since many of those staff members are not present during the hours evening division students are often at the law school. As a result, this may increase evening division students' library anxiety as it relates to the library staff.

Question 1c – how does the level of library anxiety differ among first, second, third, or fourth year law students?

Law students traditionally attend law school for three years for those enrolled in the day division and four years for those enrolled in the evening division. As a result, the researcher hypothesized that library anxiety may differ across years in law school similar to differences in freshman, sophomores, juniors, and seniors in undergraduate programs.

However, the results of this study indicated that law students did not experience different levels of overall library anxiety or on the six components based upon their year in law school. This result differed from some previous studies that reviewed other student programs.

A number of prior studies identified differences in library anxiety based on year in college and based on undergraduate versus graduate students. In particular, Jiao, Onwuegbuzie, and Lichtenstein (1996) found that library anxiety was correlated with a student's year in college and that freshman and sophomore students experienced greater levels of library anxiety. In a follow-up study of undergraduate and graduate students in 1997, Jiao and Onwuegbuzie (1997a, 1997b), found that freshman experienced the highest levels of library anxiety. In their study of undergraduate students, Mech and Brooks (1995) found that freshman and sophomores had higher levels of library anxiety than juniors or seniors. Additionally, Bostick (1992) found in her study that graduate students had higher levels of library anxiety than did undergraduate students.

Question 1d – how much does the difference in library anxiety levels of law students vary according to age?

The data from this study indicated that law students' levels of library anxiety did not differ significantly according to various age ranges across the six components. However, prior studies found a relationship between library anxiety and age. These previous studies had mixed results as to whether or not library anxiety differed based on a student's age and whether anxiety was higher in older students or younger students. Jiao, Onwuegbuzie, and Lichtenstein (1996) found in their study that library anxiety was

correlated with age. In a follow-up study, Jiao and Onwuegbuzie (1997a, 1997b) determined that library anxiety declined as the age of the student increased. Additionally, Bostick (1992) found that students older than 50 had greater levels of library anxiety than did younger students. Yet, Shoham and Mizrachi (2001) found that younger students had higher levels of library anxiety than older students. One potential reason that significant differences were not found in regard to age ranges of law students may be due to the lack of older students in this study. Only 8.2% of the participants were 40 or older and only 16.4% were 35 or older.

Question 1e – how much does the difference in library anxiety levels of law students vary according to a specific grade point average range?

The results of the current study indicated that levels of library anxiety did not differ across the six components based on various grade point average ranges of law students. However, in a previous study, Jiao, Onwuegbuzie, and Lichtenstein (1996) found that library anxiety was correlated with grades and that grade point average predicted library anxiety in regard to comfort with the library and mechanical barriers, components of the original LAS instrument. One reason that grade point averages of law students may not result in differences in regard to library anxiety is that law students must maintain a specific grade point average in order to remain enrolled in law school. As a result of this requirement, no participants in this study had a grade point average of less than 2.00 and only 5.0% of the participants fell in the grade point average range of 2.00 – 2.49.

Question 1f – how does the difference in library anxiety levels of law students vary according to frequency of library use, both in-person and online?

The last question first examined differences in law students' library anxiety levels across each of the six components in regard to frequency of in-person library use. The results of the study indicated a significant difference in regard to general library and research anxiety and perceived value of using the library in-person based on frequency of in-person library use by law students.

In particular, those law students who used the library in-person one or fewer times per semester differed significantly from those law students who used the library in-person one or more times per week or once a month in regard to the general library and research anxiety component. Examination of results indicated that those students who used the library one or fewer times per semester had a lower score on the general library and research anxiety component than other users. This indicated that those students who used the library one or fewer times per semester experienced greater library anxiety as it related to general library and research anxiety.

Additionally, those law students who used the library in-person one or more times per week were found to be significantly different than those law students who used the library in-person once a month or one or fewer times per semester in regard to the perceived value of using the library in-person component. Examination of the results indicated that law students who used the library one or more times per week had a higher score on the perceived value of using the library in-person component, which indicated that they experienced less anxiety in regard to the perceived value of using the library in-

person component than did those law students who only used the library once a month or one or fewer times per semester.

The last question also examined differences in law students' library anxiety levels across each of the six components in regard to frequency of online library use. The results of the study indicated a significant difference in regard to comfort with technology and online access based on frequency of online library use by law students.

In particular, those law students who used the library online one or fewer times per semester differed significantly from those law students who used the library online one or more times per week, once every 2-3 weeks, or once a month in regard to the comfort with technology and online access component. Examination of the results indicated that those law students who used the library online one or fewer times per semester had a lower score on the comfort with technology and online access component than did the other law students. This indicated that those students who used the library online one or fewer times per semester had higher levels of library anxiety as it pertained to comfort with technology and online access than did those law students who used the library online one or more times per week, once every 2-3 weeks, or once a month.

An earlier study by Jiao, Onwuegbuzie, and Lichtenstein (1996) determined that there was a negative relationship between the frequency of library visits and a student's level of library anxiety. This seemed to indicate that those students who were anxious about using the library were the ones most likely to avoid using the library in-person (Onwuegbuzie, Jiao, & Bostick, 2004). It may also indicate that those students who avoid

using the library do not acquire adequate library skills and so experience greater levels of library anxiety (Jiao, Onwuegbuzie, & Lichtenstein).

Limitations of the Research

When examining the results of this study, several limitations should be noted and considered. This study was conducted solely at a private law school in the midwestern United States with both a day and evening division course of study for law students. As a result, findings may not be generalizable to law students at public law schools or law students at law schools with only day programs. Additionally, law students are a unique type of graduate student and so these results may not be generalizable to other types of graduate students.

The MLAS survey was only offered as a paper instrument and was presented in two ways, either in association with a particular class or as an optional attendance event. Those students in a specific class where the MLAS was offered were not required to complete the survey. Due to this, there may be a self-selection bias as those students most interested in the survey and the survey topic may have been more inclined to complete the survey.

In examining the descriptive statistics, it was apparent that the age ranges most represented in this study were those law students in the 20-24 (18.6%), 25-29 (29.3%), and 30-34 (16.0%) ranges. Proportionally, there were more students in the 25-29 age range than any other range. There were minimal numbers in the 40-44 (3.3%) and 45 or older (4.7%) age ranges. One of the reasons for such a large proportion of law students younger than 40 may be that students often enter law school immediately after or within a

few years of completing their undergraduate degrees. Due to the demographics, the results of this study may not represent accurate levels of library anxiety of older law students and may not be generalizable to law students who are 40 years of age or older.

Lastly, this study utilized the MLAS for the first time since its creation by Van Kampen and for the first time with law students. This should be taken into account when considering the results of this study, as well as the validity of the survey instrument.

Recommendations for Future Research

This study represents only the second time that the MLAS had been utilized to measure library anxiety. The first use of the MLAS was with doctoral students at the University of Central Florida and the second use was with law students. As a result, this instrument should be retested with a variety of other populations.

In conjunction with utilizing the instrument with other populations, further validation studies of the instrument should be conducted. In particular, additional confirmatory factor analyses and exploratory factor analyses should be undertaken. The data gathered in this study did not result in a model fit with Van Kampen's original factor analysis solution. While both studies that used the MLAS instrument resulted in a six component solution, the current study's components were slightly different than the original study's components. Because of this, additional studies should be completed with similar and non-similar populations to assess the construct validity of the instrument overall and on the six components.

This study was the first time that library anxiety of law students had been measured. As a result, further studies should be undertaken with various law school

populations. In particular, the MLAS should be used with both private and public law schools, as well as law schools with day only programs or day and evening programs. These future studies should undertake a confirmatory factor analysis to determine if this study's final six component solution results in model fits with other law school population data. In addition, the overall MLAS and the six component solution should be tested for validity and reliability in these future studies.

Future studies utilizing the MLAS and other measurement scales should be considered. In particular, future studies should examine whether there are relationships between library anxiety and (i) perfectionism; (ii) self-perception; and, (iii) attitudes towards computers. In previous studies with graduate students, Jiao and Onwuegbuzie (1998, 1999c) found that library anxiety and perfectionism were related, and library anxiety and college student self-perception were related. Jiao and Onwuegbuzie (2004) also found that library anxiety and computer attitudes were related and that negative attitudes towards computers increased students' levels of library anxiety. Due to these previous findings, future studies with law students should consider examining whether there are relationships between law students levels of library anxiety and perfectionism, self-perception, and attitudes towards computers in order to determine whether these other traits and characteristics might impact levels of library anxiety in law students. Additionally, these studies might be used to determine if there is a relationship between these traits and performance on the bar exam or success as a lawyer.

Lastly, studies should be constructed and undertaken to determine how best to reduce the library anxiety of law students. In particular, follow-up surveys could be used

to assess what methods of library and legal research instruction law students' desire and whether or not that library and legal research instruction reduces library anxiety. As noted previously, in order to be successful, lawyers must be able to engage in effective research of the law (Sloan, 2003). If future research examines ways in which to reduce library anxiety through legal research instruction, law students will possess a skill that is fundamental to the practice of law.

In order to determine which types of legal research instruction are effective in reducing library anxiety, researchers could utilize a pre-post test model with the MLAS before and after students undertake a library and legal research instruction course or workshop. Researchers might also consider studies that assess whether there is a difference in the reduction of library anxiety levels of law students depending on whether the library and legal research instruction occurs face-to-face in a classroom or online.

The Midwestern private university, which was the setting for this study, is currently undertaking law school wide strategic planning. As a part of that strategic planning process, a library committee (including the researcher) was formed to review and assess the library's strengths and weaknesses and to make recommendations regarding library services. The library committee plans to use information gathered from this research study to inform committee members. In particular, the library committee will use the significant findings regarding library anxiety of law students to make recommendations regarding additional legal research instructions and courses for credit and implementation strategies so that library anxiety levels of law students may be reduced. Additionally, the results of this research study prompted the library committee

to undertake a follow-up library survey to assess the types of legal research instruction law students prefer in order to assist it in its recommendations. That survey is currently in progress. Preliminary results suggest that law students desire additional legal research instruction, both for credit and as additions to other courses.

Summary of Chapter Five

The purpose of this study was to examine whether library anxiety was present among law students at a private university in the midwestern United States, and if present, which components were more likely to cause that anxiety. In particular, the researcher examined whether there was a difference in library anxiety levels based upon gender, enrollment in the day or evening division, year in law school, age range, grade point average range, and frequency of library use, both in-person and online. Lastly, the research proposed a number of future research directions.

The study indicated that overall library anxiety did exist among law students at this university. The mean scores on each of the six components indicated that law students experienced greater levels of library anxiety as it pertained to general library and research anxiety (LibResearch), comfort with technology and online access (TechOnline), and perceived value of using the library in-person (LibInperson).

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Appendix A

MULTIDIMENSIONAL LIBRARY ANXIETY SCALE

Below is a list of statements, which represent aspects of an academic library and the information search process that are most likely to cause anxiety in graduate/law students. Please rate the items using the following scale:

1= Strongly Disagree (S/D) 2=Disagree 3=Undecided 4=Agree 5=Strongly Agree (S/A)

(Circle the number that best fits your answer)

	S/D……..……S/A
I can usually find things I need in the library	1 2 3 4 5
I know what to do next when the book I need is not on the shelf	1 2 3 4 5
The people at the circulation desk are friendly	1 2 3 4 5
Instructions on how to use the computers in the library are helpful	1 2 3 4 5
I feel very capable when doing research in the library	1 2 3 4 5
I am not aware that the library offers online reference services for students	1 2 3 4 5
I value having a library staff member give one-on-one instruction for my research needs	1 2 3 4 5
The library is well organized	1 2 3 4 5
	S/D……..……S/A
The library is a comfortable place to study	1 2 3 4 5
I feel at ease in the library	1 2 3 4 5
I feel safe in the library	1 2 3 4 5
The library is too big	1 2 3 4 5
The library is confusing	1 2 3 4 5
I value being comfortable using the library	1 2 3 4 5
I value knowledge of services offered by the library for students	1 2 3 4 5

I know what resources are available in the library	1	2	3	4	5
I would rather use the library online	1	2	3	4	5
	S/D……..……S/A				
I understand how to begin my research in the library	1	2	3	4	5
There is so much information available, I am sure I will miss something important	1	2	3	4	5
The library is not easy to use	1	2	3	4	5
When I use the library for research, I feel overwhelmed	1	2	3	4	5
I enjoy using the library to find information	1	2	3	4	5
Narrowing my research topic is not easy	1	2	3	4	5
When I think about my research as it relates to the library, I feel stressed	1	2	3	4	5
There are too many possible sources of information	1	2	3	4	5
	S/D……..……S/A				
Locating information for my research has been a comfortable process	1	2	3	4	5
I feel intimidated when I walk into the library	1	2	3	4	5
When I think about using the library, I feel anxious	1	2	3	4	5
The library does not offer enough services for law students	1	2	3	4	5
The library is an important part of my research	1	2	3	4	5
I am comfortable using a computer	1	2	3	4	5
I am comfortable using my computer at home to access the library's resources	1	2	3	4	5
I am not comfortable using the library's online catalog	1	2	3	4	5
	S/D……..……S/A				
I am not comfortable using the library's website	1	2	3	4	5
I am comfortable using the computers inside the library	1	2	3	4	5
Knowledge of the library is valuable	1	2	3	4	5
Knowledge of how to look for specific information is valuable	1	2	3	4	5
Being comfortable using the computer for searching the library's resources is valuable	1	2	3	4	5

Knowledge of how to access the library's website is valuable	1	2	3	4	5
	S/D……..……S/A				
The library's resources for my area of interest are satisfactory	1	2	3	4	5
The staff in Interlibrary Loan is helpful	1	2	3	4	5
I would not ask staff for help if I didn't know how to use a machine in the library	1	2	3	4	5
I am not comfortable asking for help from a staff member	1	2	3	4	5
Instructions on using my home computer to access the library are helpful	1	2	3	4	5
I am comfortable calling the library for help	1	2	3	4	5
I do not understand how to connect from home to the library databases	1	2	3	4	5
	S/D……..……S/A				
The staff at the reference desk is helpful	1	2	3	4	5
I can use Interlibrary Loan for access to materials not in my library	1	2	3	4	5
I would rather use the library in person	1	2	3	4	5
If a book is checked out, it is difficult to get it back	1	2	3	4	5
It is not easy to locate materials I need in the library	1	2	3	4	5
I am comfortable using Interlibrary Loan to get materials from a different library	1	2	3	4	5
In general, I think my ability to use the library has affected my research negatively	1	2	3	4	5

Demographic Questions

The next set of questions is to assist in better understanding your answers. Please mark the appropriate response with
an "X".

Gender:

___ Male ___ Female

Age:

___ 20-24 ___ 25-29 ___ 30-34 ___ 35-39 ___ 40-44 ___ 45 or older

Day or Evening Division Student:

____ Day ____ Evening

Year in Law School:

___ First___ Second ___ Third ___ Fourth ___ Fifth

Grade Point Average Range:

___ 1.00 – 1.49
___ 1.50 – 1.99
___ 2.00 – 2.49
___ 2.50 – 2.99
___ 3.00 – 3.49
___ 3.50 – 4.00

Frequency of Library Use:

On average, how often do you use the library in person?

___ One or more times per week

___ Once every 2-3 weeks

___ Once a month

___ Once every 2-3 months

___ One or fewer times per semester

On average, how often do you use the library online?

___ One or more times per week

___ Once every 2-3 weeks

___ Once a month

___ Once every 2-3 months

___ One or fewer times per semester

Thank you for your time and attention to this survey.

Your assistance is very much appreciated.

Appendix B

IRB Approval Letter

University of Denver

Sylk Sotto-Santiago, MBA Tel: 303-871-4052
Manager, Regulatory Research Compliance

Certification of Human Subjects Approval

December 7, 2009
To,
Stacey Bowers, PhD

Subject: **Human Subject Review**
TITLE: Library Anxiety of Law Students: A Study Utilizing the Multidimensional Library Anxiety Scale
IRB# : 2009-1269

Dear Bowers,

The Institutional Review Board for the Protection of Human Subjects has reviewed the above named project. The project has been approved for the procedures and subjects described in the protocol at the 12/07/2009 meeting. This approval is effective for twelve months. We will be sending you a continuation application reminder for this project. This form must be submitted to the Office of Sponsored Programs if the project is to be continued. This information must be updated on a yearly basis, upon continuation of your IRB approval for as long as the research continues.

NOTE: Please add the following information to any consent forms, surveys, questionnaires, invitation letters, etc you will use in your research as follows: This survey (consent, study, etc.) was approved by the University of Denver's Institutional Review Board for the Protection of Human Subjects in Research on 12/07/2009. This information must be updated on a yearly basis, upon continuation of your IRB approval for as long as the research continues.

The Institutional Review Board appreciates your cooperation in protecting subjects and ensuring that each subject gives a meaningful consent to participate in research projects. If you have any questions regarding your obligations under the Assurance, please do not hesitate to contact us.

Sincerely Yours,

Susan Sadler, PhD
Chair, Institutional Review Board
for the Protection of Human Subjects

Approval Period: 12/07/2009 through 12/06/2010
Review Type: EXPEDITED - NEW
Funding: **SPO:**
Investigational New Drug :
Investigational Device:
Assurance Number: 00004520, 00004520

Appendix C

Advertisement Flyer

LAW STUDENT VOLUNTEERS NEEDED TODAY

Stacey Bowers, our Outreach and Access Services Librarian, is undertaking her dissertation research. The purpose of her study is to investigate library anxiety levels of law students. Please assist her with her research by attending one of the following events to complete the Multidimensional Law Anxiety Scale questionnaire:

January 28, 2010 at 12:00 pm in Room 170
January 28, 2010 at 7:30 pm in Room 125

The survey will take approximately 10-15 minutes of your time.

All participants completing the questionnaire may enter their name into a random drawing for a chance to win one of 20 $5.00 Starbuck's gift cards.

Cookies Provided.

Please direct any questions to Stacey Bowers at sbowers@law.du.edu or 303/871-6079.

This survey was approved by the University of Denver's Institutional Review Board for the Protection of Human Subjects in Research on 12/07/2009.

Appendix D

INFORMED CONSENT FORM

DISSERTATION RESEARCH

LIBRARY ANXIETY AMONG LAW STUDENTS:
A STUDY UTILIZING THE MULTIDIMENSIONAL LIBRARY ANXIETY SCALE

You are invited to participate in a study that will assess the library anxiety levels of law students by utilizing the Multidimensional Library Anxiety Scale. In addition, this study is being conducted to fulfill the requirements of dissertation research in completion of a PhD degree in Curriculum and Instruction through the Morgridge College of Education. The study is conducted by Stacey Bowers. Results will be used to write a dissertation in completion of the degree requirements. Stacey Bowers can be reached at sbowers@law.du.edu or 303/871-6079. This project is supervised by Stacey Bowers' dissertation committee chair, Dr. Sylvia Hall-Ellis, Associate Professor, Library and Information Science, Morgridge College of Education, University of Denver, Denver, CO 80208, 303/871-7881, shellis@du.edu.

Participation in this study should take about 10-15 minutes of your time. Participation will involve responding to 53 questions about library anxiety and 6 demographic related questions. Participation in this project is strictly voluntary. The risks associated with this project are minimal. If, however, you experience discomfort you may discontinue the questionnaire at any time. I respect your right to choose not to answer any questions that may make you feel uncomfortable. Refusal to participate or withdrawal from participation will involve no penalty or loss of benefits to which you are otherwise entitled.

Upon completion of the Multidimensional Library Anxiety Scale, you may complete a separate slip of paper that includes your name and email and place that slip of paper into the sealed box. This will place your name into a random drawing in order to be eligible to win one of 20 $5.00 Starbuck's gift cards. Entering the random drawing is at your discretion. After completion of all surveys as a part of this research study, I will randomly select 20 slips from the box and those students will be notified via email that they have won a Starbuck's gift card.

Your responses cannot be identified with you so the confidentiality of your responses is protected. Only the researcher will have access to your data and any reports generated as a result of this study will use only group averages. However, should any information contained in this study be the subject of a court order or lawful subpoena, the University of Denver might not be able to avoid compliance with the order or subpoena. Although no questions in this questionnaire address it, I am required by law to tell you that if information is revealed concerning suicide, homicide, or child abuse and neglect, it is required by law that this be reported to the proper authorities.

If you have any concerns or complaints about how you were treated during this research study, please contact Susan Sadler, Chair, Institutional Review Board for the Protection of Human Subjects, at 303-871-3454, or Sylk Sotto-Santiago, Office of Research and Sponsored Programs at 303-871-4052 or write to either at the University of Denver, Office of Research and Sponsored Programs, 2199 S. University Blvd., Denver, CO 80208-2121.

You may keep this page for your records. Please sign the next page if you understand and agree to the above. If you do not understand any part of the above statement, please ask the researcher any questions you have.

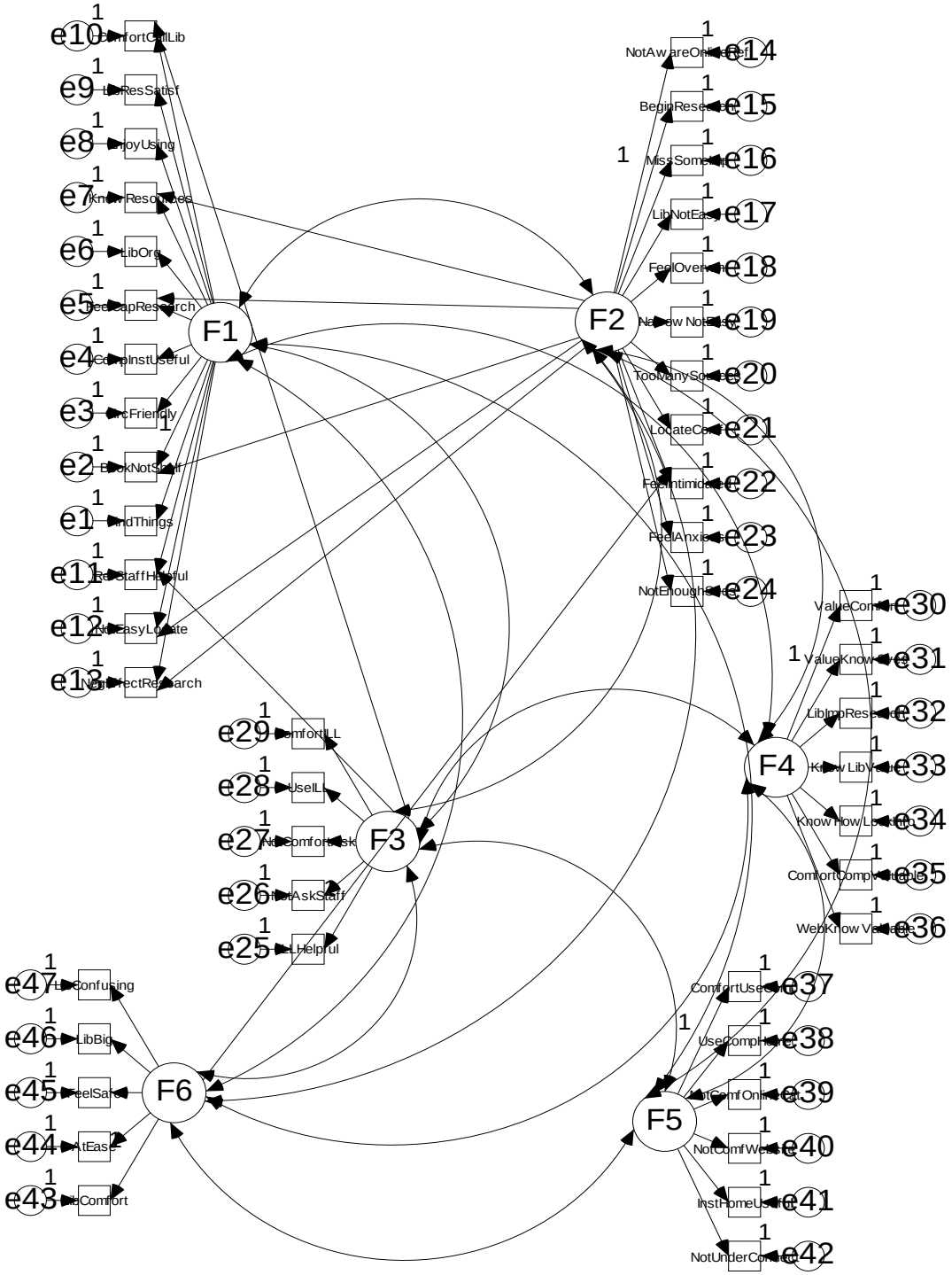
I have read and understood the foregoing descriptions of the study called Library Anxiety Among Law Students: A Study Utilizing the Multidimensional Library Anxiety Scale. I have asked for and received a satisfactory explanation of any language that I did not fully understand. I agree to participate in this study, and I understand that I may withdraw my consent at any time. I have received a copy of this consent form.

Signature _____ Date _____

____ I would like a summary of the results of this study to be mailed to me at the following e-mail address: _____.

Appendix E

AMOS Path Diagram



Appendix F

Rotated Component Matrix – Initial Six Component Solution

Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
When I think about my research as it relates to the library, I feel stressed	**.750**					
When I think about using the library, I feel anxious	**.722**					
I feel intimidated when I walk into the library	**.693**					
There are too many possible sources of information	**.673**					
When I use the library for research, I feel overwhelmed	**.670**					
The library is not easy to use	**.601**	.339				
The library is confusing	**.593**					
There is so much information available, I am sure I will miss something important	**.560**					
I feel very capable when doing research in the library	**.554**	.481				
It is not easy to locate materials I need in the library	**.539**	.462				
In general, I think my ability to use the library has affected my research negatively	**.537**	.412				
Narrowing my research topic is not easy	**.525**					

I understand how to begin my research in the library	**.476**	.430				
I Can usually find things I need in library	**.426**	.419				
I am comfortable using the computers inside the library	.373					
The library does not offer enough services for law students						
I am comfortable using my computer at home to access the library's resources		**.700**				
I am not comfortable using the library's website		**.648**				
I can use interlibrary loan for access to materials not in my library		**.619**				
I am comfortable using interlibrary loan to get materials from a different library		**.578**				
I know what resources are available in the library		**.574**				
Locating information for my research has been a comfortable process	**.443**	.536				
I am not comfortable using the library's catalog		**.490**				
The library's resources for my area of interest are satisfactory		.483				
I do not understand how to connect from home to the library databases		**.424**				
I am not aware that the library offers online reference services for students		**.396**				

Knowledge of how to look for specific information is valuable			**.839**			
Being comfortable using the computer for searching the library's resources is valuable			**.760**			
Knowledge of how to access the library's website is valuable			**.734**			
Knowledge of the library is valuable			**.723**			
The library is too big	.372		.511			
I value knowledge of services offered by the library for students			**.466**			
I am comfortable using a computer		**.373**	.410			
The library is a comfortable place to study			.304	**.689**		
I feel at ease in the library				**.673**		
I feel safe in the library				**.624**		
I value being comfortable using the library			.387	**.507**		
Instructions on how to use the computers in the library are helpful				**.495**		
Instructions on using my home computer to access the library are helpful				**.495**		
The library is well organized				**.492**		
If a book is checked out, it is difficult to get it back				.389		
I would rather use the library in person					**.718**	
I enjoy using the library to find information					**.654**	

The library is an important part of my research					**.653**	
ReverseUseLibOnline		-.322			**.645**	
I know what to do next when book I need is not on shelf		.402			**.454**	
The staff at the reference desk is helpful						**.701**
I am not comfortable asking for help from a staff member						**.695**
The people at the circulation desk are friendly						**.654**
I would not ask staff for help if I didn't know how to use a machine in the library						**.608**
The staff in interlibrary loan is helpful		.448				**.487**
I am comfortable calling the library for help						**.335**
I value having a library staff member give one-on-one instruction for my research needs			.325			**.334**

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 12 iterations.

Appendix G

Item Total Statistics for Overall Library Anxiety

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I Can usually find things I need in library	194.1370	404.974	.559	.	.909
I know what to do next when book I need is not on shelf	194.6575	401.468	.470	.	.909
The people at the circulation desk are friendly	193.4521	414.139	.290	.	.911
Instructions on how to use the computers in the library are helpful	194.4452	413.725	.280	.	.911
I feel very capable when doing research in the library	194.5753	400.577	.572	.	.908
I am not aware that the library offers online reference services for students	193.8562	407.214	.318	.	.911
I value having a library staff member give one-on-one instruction for my research needs	193.4932	418.859	.134	.	.912
The library is well organized	193.7671	408.290	.475	.	.909
The library is a comfortable place to study	193.7877	409.548	.323	.	.911
I feel at ease in the library	193.8493	410.446	.298	.	.911

I feel safe in the library	193.4452	414.000	.275	.	.911
The library is too big	193.5342	412.747	.333	.	.910
The library is confusing	194.2808	399.072	.609	.	.908
I value being comfortable using the library	193.4521	416.043	.267	.	.911
I value knowledge of services offered by the library for students	193.5000	416.666	.266	.	.911
I know what resources are available in the library	194.5205	403.382	.492	.	.909
I understand how to begin my research in the library	194.3767	397.933	.602	.	.908
There is so much information available, I am sure I will miss something important	195.4932	413.176	.224	.	.912
The library is not easy to use	194.3082	402.366	.642	.	.908
When I use the library for research, I feel overwhelmed	194.8699	402.045	.509	.	.909
I enjoy using the library to find information	194.5822	402.273	.531	.	.908
Narrowing my research topic is not easy	195.2397	411.356	.249	.	.912
When I think about my research as it relates to the library, I feel stressed	194.8493	401.536	.513	.	.909

There are too many possible sources of information	194.8219	407.196	.320	.	.911
Locating information for my research has been a comfortable process	194.6096	401.302	.640	.	.908
I feel intimidated when I walk into the library	194.0959	398.584	.605	.	.908
When I think about using the library, I feel anxious	194.2192	394.683	.662	.	.907
The library does not offer enough services for law students	193.9932	414.076	.252	.	.911
The library is an important part of my research	194.5068	403.328	.419	.	.910
I am comfortable using a computer	193.2055	414.937	.359	.	.910
I am comfortable using my computer at home to access the library's resources	193.6370	403.378	.509	.	.909
I am not comfortable using the library's catalog	194.1781	407.540	.333	.	.911
I am not comfortable using the library's website	193.9589	403.419	.509	.	.909
I am comfortable using the computers inside the library	194.3014	403.246	.454	.	.909
Knowledge of the library is valuable	193.3904	416.074	.269	.	.911
Knowledge of how to look for specific information is valuable	193.2397	419.121	.180	.	.911

Being comfortable using the computer for searching the library's resources is valuable	193.4041	416.808	.216	.	.911
Knowledge of how to access the library's website is valuable	193.3767	419.133	.137	.	.912
The library's resources for my area of interest are satisfactory	194.2397	410.804	.369	.	.910
The staff in interlibrary loan is helpful	194.2945	411.561	.346	.	.910
I would not ask staff for help if I didn't know how to use a machine in the library	193.8356	414.290	.207	.	.912
I am not comfortable asking for help from a staff member	193.7055	408.706	.397	.	.910
Instructions on using my home computer to access the library are helpful	194.0479	413.053	.292	.	.911
I am comfortable calling the library for help	194.5822	404.410	.429	.	.910
I do not understand how to connect from home to the library databases	194.1986	403.967	.398	.	.910
The staff at the reference desk is helpful	193.6507	409.815	.433	.	.910
I can use interlibrary loan for access to materials not in my library	194.2740	409.221	.393	.	.910

I would rather use the library in person	194.4247	412.812	.203	.	.912
If a book is checked out, it is difficult to get it back	194.8767	415.543	.221	.	.911
It is not easy to locate materials I need in the library	194.5205	397.975	.673	.	.907
I am comfortable using interlibrary loan to get materials from a different library	194.7123	407.172	.372	.	.910
In general, I think my ability to use the library has affected my research negatively	194.2329	397.904	.594	.	.908
ReverseUseLibOnline	195.2945	418.802	.065	.	.914

Appendix H

Item Total Statistics – LibResearch

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
When I think about my research as it relates to the library, I feel stressed	46.9935	81.178	.696	.575	.899
When I think about using the library, I feel anxious	46.3464	80.925	.699	.669	.899
I feel intimidated when I walk into the library	46.2484	83.412	.607	.600	.902
There are too many possible sources of information	47.0131	84.210	.464	.383	.908
When I use the library for research, I feel overwhelmed	47.0196	81.835	.686	.527	.899
The library is not easy to use	46.4706	85.080	.665	.508	.901
The library is confusing	46.4248	83.601	.615	.501	.902
There is so much information available, I am sure I will miss something important	47.6144	85.712	.442	.294	.908
I feel very capable when doing research in the library	46.7386	82.589	.682	.644	.900
It is not easy to locate materials I need in the library	46.6732	82.906	.683	.540	.900
In general, I think my ability to use the library has affected my research negatively	46.3791	82.540	.621	.451	.902

Narrowing my research topic is not easy	47.3987	85.254	.443	.328	.909
I understand how to begin my research in the library	46.5163	83.001	.606	.497	.902
I Can usually find things I need in library	46.3007	86.396	.561	.465	.904
Locating information for my research has been a comfortable process	46.7778	84.569	.628	.533	.902

Appendix I

Item Total Statistics – TechOnline

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I am comfortable using my computer at home to access the library's resources	30.3007	22.317	.649	.544	.748
I am not comfortable using the library's website	30.5686	22.615	.644	.553	.750
I can use interlibrary loan for access to materials not in my library	30.9085	23.794	.540	.536	.764
I am comfortable using interlibrary loan to get materials from a different library	31.3399	23.792	.427	.486	.779
I know what resources are available in the library	31.1373	23.422	.519	.300	.766
I am not comfortable using the library's catalog	30.7712	23.651	.406	.327	.783
I do not understand how to connect from home to the library databases	30.7908	22.324	.516	.293	.766
I am not aware that the library offers online reference services for students	30.4706	23.882	.346	.154	.794
I am comfortable using a computer	29.8431	26.673	.341	.232	.788

Appendix J

Item Total Statistics – Value Lib

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Knowledge of how to look for specific information is valuable	17.8182	4.071	.768	.654	.760
Being comfortable using the computer for searching the library's resources is valuable	17.9740	3.803	.686	.510	.776
Knowledge of how to access the library's website is valuable	17.9675	3.822	.650	.452	.788
Knowledge of the library is valuable	17.9675	3.953	.676	.569	.780
I value knowledge of services offered by the library for students	18.0649	4.767	.382	.147	.856

Appendix K

Item Total Statistics – ComfortLib

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
The library is a comfortable place to study	24.3245	9.207	.663	.657	.685
I feel at ease in the library	24.3841	9.491	.601	.638	.702
I feel safe in the library	23.9603	11.238	.465	.276	.735
I value being comfortable using the library	23.9801	11.633	.504	.296	.731
Instructions on how to use the computers in the library are helpful	24.9801	12.020	.301	.159	.766
Instructions on using my home computer to access the library are helpful	24.5762	11.499	.370	.218	.754
The library is well organized	24.2980	11.304	.473	.290	.733

Appendix L

Item Total Statistics – LibInperson

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I would rather use the library in person	12.5921	9.091	.560	.375	.628
I enjoy using the library to find information	12.7632	10.036	.534	.361	.646
The library is an important part of my research	12.7039	9.322	.529	.369	.641
ReverseUseLibOnline	13.4474	9.441	.443	.292	.679
I know what to do next when book I need is not on shelf	12.8355	10.708	.313	.118	.726

Appendix M

Item Total Statistics – LibStaff

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
The staff at the reference desk is helpful	23.9530	9.910	.590	.495	.648
I am not comfortable asking for help from a staff member	23.9933	9.399	.583	.473	.642
The people at the circulation desk are friendly	23.7450	10.651	.422	.405	.685
I would not ask staff for help if I didn't know how to use a machine in the library	24.1208	9.891	.398	.376	.692
The staff in interlibrary loan is helpful	24.5839	10.420	.430	.255	.683
I am comfortable calling the library for help	24.8725	9.747	.364	.192	.706
I value having a library staff member give one-on-one instruction for my research needs	23.7785	11.444	.253	.074	.720

Appendix N

Reverse Coded/Scored Questions

I am not aware that the library offers online reference services for students (NotAwareOnlineRef)
The library is too big (LibBig)
The library is confusing (LibConfusing)
I would rather use the library online (UseLibOnline)
There is so much information available, I am sure I will miss something important (MissSomeImp)
The library is not easy to use (LibNotEasy)
When I use the library for research I feel overwhelmed (FeelOverwh)
Narrowing my research topic is not easy (NarrowNotEasy)
When I think about my research as it relates to the library, I feel stressed (FeelStress)
There are too many possible sources of information (TooManySources)
I feel intimidated when I walk into the library (FeelIntimidated)
When I think about using the library, I feel anxious (FeelAnxious)
The library does not offer enough services for law students (NotEnoughSvcs)
I am not comfortable using the library's online catalog (NotComfOnlineCat)
I am not comfortable using the library's website (NotComfWebsite)
I would not ask staff for help if I didn't know how to use a machine in the library (NotAskStaff)
I am not comfortable asking for help from a staff member (NotComfortAsk)
I do not understand how to connect from home to the library databases (NotUnderConnect)
If a book is checked out, it is difficult to get it back (DiffRetrieveBook)
It is not easy to locate materials I need in the library (NotEasyLocate)
In generally, I think my ability to use the library has affected my research negatively (NegEffectResearch)