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Gender and organizational citizenship behavior in library technology: Mixed methods study

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GENDER AND ORGANIZATIONAL CITIZENSHIP BEHAVIOR IN LIBRARY TECHNOLOGY: A MIXED METHODS STUDY

by

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Dedications

I would like to dedicate this manuscript to all the working women who face gender inequality. I believe that things will only improve if women are not complacent and demand gender equity in the workplace. Women are needed in the workforce and our voices are needed to reform the gendered organizational structures and misperceptions of women's role in the workplace.

I would also like to dedicate this manuscript to the working women of the future, which includes my nieces, Madeline "Maddy" Spiller and Bhumi Palkhiwala. My hope is that manuscripts such as mine will continue to shed light on gender inequality in the working world and will be a catalyst for improvement so that my nieces can pursue any profession without facing issues of role congruity.

This manuscript is also dedicated to my nephew, Vonnegut "Vonn" Davis, who will be an advocate for women and gender equality. He has a mom and three aunts who continue to affirm that women can be in any profession and achieve anything. My hope is that you will learn from us to speak up when you see something that is truly unjust and an advocate for women.

Lastly, I would like to dedicate this manuscript to the men that made me challenge how women should be perceived, which includes my grandfathers, Joseph Wadsworth and James Whitfield; and my father, James Whitfield.

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Abstract

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GENDER AND ORGANIZATIONAL CITIZENSHIP BEHAVIORS IN LIBRARY TECHNOLOGY: A MIXED METHODS STUDY
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Academic librarianship continues to be a feminized profession, yet there are specializations within the profession that tend to be gender segregated, such as library technology. In this mixed methods study, women technology librarians' behaviors are examined through the gendered lens of organizational citizenship behaviors (OCBs), which are discretionary, voluntary acts that are outside an employee's job description (Organ, 1988), but help shape the organizational culture and facilitate organizational functioning (Podsakoff & MacKenzie, 1997). This mixed methods study uses a survey to inform the extent of differences in organizational citizenship behaviors between men and women, and interviews to provide new insight on how women technology librarians describe their organizational citizenship behaviors. Acker's (1990) gender processing and Greenberg's (1996) organizational justice theories will be applied to their described organizational citizenship behaviors to reveal institutional barriers that creates a lack of perceived fairness within the organization. Finally, this mixed methods study assists in filling the void in research regarding gender and library technology, as well as gender, organizational citizenship behaviors, and library technology.

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Chapter 1

Introduction

Information and computing technology sectors have predominately been considered fields of work and interest that belong to men (Galyani Moghaddam, 2010; Rosenbloom, Ash, Dupont, & Coder, 2008; Wajcman, 2000; F. Wilson, 2003). Men have co-opted and monopolized technical skills creating gender stratification in their workplaces (Adam et al., 2006; Ricigliano & Houston, 2003). Academic libraries are not an exception to this practice.

Librarianship has been considered to be a feminized profession (Deyrup, 2013; Downey, 2010; Harris, 1999; Hildenbrand, 1999, 2000; Milden, 1977; Moran, Marshall, & Rathbun-Grubb, 2010; Piper & Collamer, 2001), due to its characterization as a semiprofessional field that is women-dominated in numbers, but are dominated by men in organizational control (Ivy, 1985). Furthermore, recent technological change has reduced the social barriers, which once existed for men entering librarianship (Charters & Grimes, 1997). Now, forty percent of men librarians identified their position as technology-based, which is more than double the amount of women who identify their position as technology-based (Ricigliano & Houston, 2003). Library technology departments have become enclaves for men (Ricigliano & Houston, 2003) creating gender stratification that results in traditional library services being devalued, which is reflected in the discrepancy between the lower-paying positions that are traditionally women librarian positions and those of higher paying men dominated technology-related positions (M. Deyrup, 2014).

Women technology librarians, who do enter the masculinized specialties, often are confronted with cultural and social bias, which stops them from ever excelling in these positions. In fact, organizational citizenship behaviors (OCB), which are considered to be a critical element in fostering a flexible and innovative library culture (Peng, Hwang, & Wong, 2010), are unknowingly used as a evaluative measurement for employees and demonstrate that women must not only perform the gendered behaviors of their profession, but also must perform the OCBs that are associated with their gender. Therefore, women technology librarians are expected to perform at a higher level than their counterparts who are men, which creates a lack of justice and fairness within the organization.

Occupational and job-level gender segregation is based on deeply ingrained ideas about gender difference (J. Acker, 1990) and may be particularly relevant to the intersection of library and IT work, given the gender stereotypes associated with these professions. Academic libraries have a history of being gendered organizations. Although the profession has been characteristically associated with women, libraries themselves are gendered by the history of men in library administration and the growing hegemony in masculinized specialties.

Gendered Organization

A gendered organization produces gender discrimination and gender segregation through work practices and cultural norms that appear to be unbiased but lead to subtle pattern of disadvantage for women (Sumner & Niederman, 2004). Although organizations are often seen as gender-neutral by most feminists, J. Acker (1990) argued that the nature of organizations produce gender inequality, through the division of labor,

cultural symbols, workplace interactions, individual identities, and organizational logic. Even librarianship, which has been considered a "feminized profession" (Garrison, 1972; Passet, 1993; Piper & Collamer, 2001), is a gendered organization.

Libraries as gendered organizations. Librarianship has had a history of gender stratification or the over representation of men in leading positions and in major specialties (Deyrup, 2013; Hildenbrand, 1999, 2000). The early ages of the profession were dominated by men (Biggs, 1982; Hildenbrand, 1999, 2000; Moran et al., 2010). Yet, the demand for more librarians, forced administrators who were men to look at women as potential source for inexpensive labor (Biggs, 1982; Moran et al., 2010). As women entered the profession as assistants under librarians who are men, the demographics of the position began to shift (Moran et al., 2010). By 1900, the profession was transformed from a profession that consisted of mostly men to one in which women compromised 75% of the workers (Moran et al., 2010).

Men, however, continued to dominate library administration until the 1970s when second wave feminists began to lead library organizations, such as the American Library Feminist Task Force (1970), followed by the Committee on the Status of Women in Librarianship (1976) (Deyrup, 2013; Hildenbrand, 2000). Deyrup (2004) found that women comprise 52.1% of all top administrators in Association of Research Libraries, which led Deyrup to ask if the gender revolution was over. While women have made significant progress in areas of library leadership, gender stratification continues to exist within library specialties, such as library technology.

In 1978, Pauline Wilson wrote about the impending change in library science education that technology would bring. P. Wilson (1978) believed that, in order to

improve library science education, students must become "practitioner, designer, evaluator, administrator, and in-service trainer… because that is the kind of product that will be needed." (p. 164). In response to calls to change the library science programs to include technology, information science emerged as a new program in the 1970's (Corrall, 2010). As information science courses were increasingly emphasized, other traditional library science courses, such as cataloguing or book history, were eradicated from the curricula (Quattrocchi, 1999). Course titles were altered to include "information" rather than the word library to attract men to the profession and increase inclusiveness (Hildenbrand, 1999). Faculty began to distance themselves from library science education for the emerging information science program (Hildenbrand, 1999). Between 1960 to 1980, there was also a decrease in women faculty from 55% to 41% as technology became an increasing emphasis for the library science curriculum (Hildenbrand, 1999).

The emergence of the information science program also led to gender stratification within the student population as men enrolled in information science programs and women enrolled in library science programs. Evidence of this gender stratification is presented in an unpublished enrollment report provided by the University of Pittsburgh's School of Library Information Science. In 1990, the men to women ratio for the information science program was 211:161; the men to women ratio for the library information science program was 16:39 (Brodt, 2017). A decade later the gender stratification did not improve significantly. In 2000, the men to women ratio for the information science program was 274:151; the men to women ratio for the library information science program was 5:18 (Brodt, 2017). Furthermore, the information

science program saw an increase in enrollment by more than fifty students; while the library information science enrollment stagnated or declined (Brodt, 2017).

Library science students who wanted to perform traditional library public services, such as answering reference questions or performing literature reviews, were now being taught by adjunct faculty members who were not adequately preparing future librarians in the fundamentals of librarianship, such as the philosophy of professional services and the ethics of the profession (Hildenbrand, 1999). As librarianship moved from a traditional, paper library to a digital library, traditional higher paid librarian positions that were once occupied by women librarians are now being occupied by paraprofessionals (Hildenbrand, 1999) and the librarian job market began to shift towards a stronger technologically driven type of librarianship. Many of the technology positions spun off of traditional library specialties, such as electronic resources librarians, instructional design librarians, and metadata catalogers. However, there has also been a rise in new technology specialist positions, such as digital collections librarians, web librarians, GIS librarians, and data research scientists (Thompson et al., 2009). Croneis and Henderson (2002) performed an analysis of library job announcements over the 11-year period and discovered four trends:

> an increasing number of "electronic" or "digital" position announcements, a greater diversity of functional areas involved, a wider variety of types of institutions placing advertisements, and the emergence of distinctions between "electronic" and "digital" positions in terms of job responsibilities (p. 233).

Even the traditional role of systems librarian, which was already a technology intensive position, now covers a broader array of technologies and has evolved from the

maintenance responsibilities of a "support technician" to become a systems operations manager and visionary library leader (Thompson et al., 2009).

Library technology as a gendered specialty. As libraries began to adopt technology, it became evident that library technology departments were masculine enclaves (Ricigliano & Houston, 2003). Upon graduating, men filled 56% of the library technology positions while only making up 21.4% of the graduates (Maatta, 2003). Men technology librarians also achieved 21% higher placement salaries than their women counterparts.

Similar to men in information technology, technology librarians who are men enjoy a silent technical privilege which allows them to work without anyone's interference or implicit discouragement (Guo, 2014). Men technology librarians work in enclaves, which is perpetuated by hiring and mentoring other librarians who are men while excluding women from these positions (Ricigliano & Houston, 2003). These enclaves that consist of men continue to exist because of a series of social and cultural biases that inhibit women from entering technology departments in libraries and in the workforce. As Williams (1995) stated "It is 'still a man's world' even though mostly women work in [libraries]" (p.1).

In 2001, men held approximately 37% of librarian positions in American Research Libraries (ARL) libraries overall, they held 66% of Systems Department Head positions (Ricigliano & Houston, 2003). This demonstrates that women technology librarians who manage to enter the masculinized enclave are systematically excluded from managerial positions, yet are over-represented in the lower echelons of library technology (Lamont, 2009). Conversely, women who do enter into technology positions

are confronted with a complex series of social, cultural, and organizational cues that make women feel less competent and less comfortable with technology (Lamont, 2009; Ricigliano & Houston, 2003; M. Wilson, 2016). Women technology librarians also experience higher levels of stress as they are asked to perform what are considered to be gender-congruent helping behaviors, as well as gender incongruent behaviors outlined in their positions, such as adopting new technologies or actively participating in meetings. Therefore, women technology librarians are expected to perform more organizational citizenship behaviors than their colleagues who are men.

Organizational Citizenship Behavior

Organizational citizenship behaviors (OCB), which have been traditionally explored and applied in business and finance, have recently been associated with effective college campuses (Lawrence, Ott, & Bell, 2012) and a higher service quality (Bell & Menguc, 2002). OCBs are discretionary, voluntary acts that are outside an employee's job description (Organ, 1988), but these behaviors shape the organizational culture and help to facilitate organizational functioning (P. M. Podsakoff & MacKenzie, 1997).

Organ (1988) identified five specific OCB categories: altruism, conscientiousness, sportsmanship, courtesy, and civic virtue. Altruism (e.g., helping new colleagues) is directed to other individuals and helps to enhance an individual's performance. Conscientiousness, through the consideration of others, contributes to the efficiency of both an individual and the group. Sportsmanship considers the organization as a team; therefore, complaints and petty grievances are avoided. Courtesy (e.g. giving forewarning about absences) helps prevent problems and maximizes use of time. Finally, civic virtue

(e.g., serving on committees), which serves the interests of the organization.

Typically, OCBs are performed to support the interests of the group or organization, such as helping co-workers with a job-related problem, giving timely, constructive feedback or promoting a work climate that is tolerable (Bateman & Organ, 1983). These behaviors may not directly lead to any individual benefit (Bateman & Organ, 1983), but employees who engage in OCBs and operate beyond their formal job responsibilities, do not expect recognition or compensation for those tasks. Employees' who engage in OCBs are considered to be "good citizens" (Allen, 2006) or "good soldiers" (Organ, 1988) because they may contribute to organizational success by enhancing coworker and managerial productivity; freeing up resources so they can be used for more productive purposes; reducing the need to devote scarce resources to purely maintenance functions; helping to coordinate the activities both within and across work groups; strengthening the organization's ability to attract and retain the best employees; and increasing the stability of the organization's performance (P. M. Podsakoff & MacKenzie, 1997).

Organizational citizenship behavior & gender. Much like organizations themselves, organizational citizenship behaviors are not gender neutral. In fact, organizational citizenship behaviors are highly gendered. Research indicates that consideration of OCBs during performance evaluation reinforces gender stereotypes and may result in women and men's job performance being evaluated using unfair standards (Allen, 2006; Kidder, 2002; Kidder & Parks, 2001). The implication is that women are expected to perform OCBs that are attributed to women, such as altruism, courtesy and conscientiousness. Since these traits are ascribed to women, when women perform these

behaviors, they are likely to be overlooked because they are considered in-role behaviors based on their gender norms (Kidder, 2002; Kidder & Parks, 2001; Lovell et al., 1999). Yet, these OCBs are not expected of men, but if men perform these OCBs they are considered an extra role so they are rewarded to a greater extent than OCBs performed by women (Allen, 2006).

Sportsmanship and civic virtue are OCBs that are considered to be masculine (Kidder & Parks, 2001). Therefore, it is expected that men perform these OCBs; however, there is no reciprocal acknowledgement for women who perform these masculine behaviors. Rather women who perform OCBs that are gender incongruent may face bias because they are perceived to threaten men's gender self-identity. Furthermore, women who are in gender incongruent roles are required to perform the gendered job behaviors and their own gender role behaviors (Kidder & Parks, 2001). Failure to perform gender roles may result in lower performance evaluations for women in gender incongruent positions (Kidder & Parks, 2001).

Organizational citizen behavior & women technology librarians. Within an academic library, librarians often go beyond formal job responsibilities, performing non-mandatory tasks with no expectation of recognition or compensation. In other words, librarians exhibit high levels of OCB (Peng, Hwang, & Wong, 2010). Yet, there is very limited research regarding the OCB in a masculinized library technology department.The only research that has been conducted regarding OCB and library technology was conducted by Lim (2007, 2008). Lim (2007, 2008) conducted research on a population that consisted of both technology librarians and library IT workers. The quantitative study focused primarily on the population's sense of belonging to their organization.

Participants composed of 91 (45.5%) women and 107 (53.5%) men, findings concluded that there was only a moderate sense of belonging, which may impact the participant's motivation, job satisfaction or job performance (Lim, 2007). Yet, Lim's study also indicated that the amount of respondents who are men outnumbered women respondents even though librarianship is a "female-dominated profession." (Lim, 2007, p. 494). Lim (2007, 2008) did not explore further how gender impacts a library technology worker's sense of belonging. While Lim (2008) reported women IT workers were more satisfied than their counterparts that are men, there is no indication as to why, which a qualitative research study would have provided. Furthermore, there is a disconnect between the findings that Lim (2007, 2008) suggests regarding the implications that gender has no role in OCB and the research studies that suggest that women technologists leave information technology fields because they feel as though it is men's work with a highly masculinized culture (Adam et al., 2006; Galyani Moghaddam, 2010; Guzman, Stam, & Stanton, 2008; Ricigliano & Houston, 2003; Rosenbloom et al., 2008; Sumner & Niederman, 2004; Trauth, 2002; F. Wilson, 2003; M. Wilson, 2016).

Problem Statement

Service to the academic community is the ethos upon which the library profession was built, but that service can no longer be rendered effectively without some investment in the use of technology (Sennyey, Ross, & Mills, 2009). Although technology has touched every aspect of librarianship (Grimes & Grimes, 2008), it has also produced gender segregation within the profession by devaluing traditional library services, which is reflected in the discrepancy between the lower-paying positions that are traditionally women's librarian positions and those of higher paying IT-related

specialties dominated by men (M. Deyrup, 2014)

Carson and Little (2014) ask, “If librarianship is 80% female and computing is 70% male, what does this mean for library technology?” (p. 105). Library technology has become a specialty of librarianship occupied predominately by men. Men filled 56% of the high-tech positions while only making up 21.4% of the graduates, and had a starting wage that averaged 28% higher than that of women (Maatta, 2003). Tennant, who frequently speaks and writes about library technology, has addressed gender concerns and stated that the profession needs to “[r]recruit and support women who are interested…more women are interested in a tech career than care to survive the cultural gauntlet to make it. We […] can help to change this”(Tennant, 2012, p. para 9). The idea that socialization processes and equal opportunity policies may change the cultural gauntlet does not grasp the structural barriers that women technology librarians face in their gendered organization.

Organizational citizenship behavior (OCB) is a construct in organizations that looks at the actions performed by employees that are not job requirements (Lovell et al., 1999). Although OCB is presented as gender-neutral, the construct has implicit bias and is representative of the structural barriers that women face in their gendered organization (Kark & Waismel-Manor, 2005). Women technology librarians, in particular, must walk a tight rope since they occupy a library specialty that has become masculinized and is gender-incongruent, while still operating in a feminized profession. The result is the expectation that these women perform both the in-role duties of their particular position as well as the extra roles (OCBs) that are gender-congruent (Kidder & Parks, 2001). Yet, gender congruent OCBs are often overlooked and less rewarded (Kark & Waismel-

Manor, 2005; Kidder, 2002; Kidder & Parks, 2001). This gendered mindset furthers gender segregation and inequity in librarianship.

Unlike other research that has treated gender as merely a variable (Kark & Waismel-Manor, 2005), this research study will focus on gender as a framework for understanding the librarianship. The study will explore women technology librarians' experiences through their OCBs in a gendered organization. The research will focus on how their gendered experiences with OCB create inequities and promote gender segregation within library technology specialties and the librarianship.

Purpose of the Study

This mixed method study will address issues of organizational justice for women technology librarians who experience the gendered-nature of organizational citizenship behaviors (OCB). An explanatory sequential mixed method design will be used for this study, which involves first collecting quantitative data and then using qualitative data to dialectically explain the results of the quantitative data (Creswell & Plano Clark, 2011). In this case, the quantitative approach will be a survey that uses a questionnaire to identify a specific population with determinants that answer the research question (Hesse-Biber, 2013). Quantitative data analysis may also prove the validity of the research hypothesis (Frankfort-Nachmias & Leon-Guerrero, 2010), which is that there are reported differences in organizational citizen behaviors based on the respondent's gender. Both men and women librarians will participate in the quantitative phase, with the qualitative phase focusing on women. The results will assist university administration and library professionals to understand how experiences in a gendered profession shape women

technology librarians' organizational citizen behaviors, as well as understand how these constructs perpetuate gender segregation and inequity within librarianship.

Research questions. The following research questions guided the study:

1. To what extent do women technology librarians' organizational citizenship behaviors differ from colleagues who are men?
2. How do women technology librarians describe their organizational citizenship behaviors within a gendered profession?
3. In what ways do the experiences of women technology librarians explain how organizational citizenship behavior perpetuates a lack of organizational justice, gender segregation and inequity within the contemporary academic library?

Definition of Terms

The following terms are defined for the purpose of the study:

Academic libraries. For the purposes of this study, an academic library refers to a library embedded in a higher education institution with the Carnegie Classification of public bac, which are institutions that offer at least 10% of undergraduate degrees as bachelor's degrees, award fewer than 50 master's degrees or 20 doctoral degrees (Cragg & Henderson, 2012)

Technology librarian. The term technology librarian, in this research study, encompasses positions that have skills that intersect between the fields of library science (e.g. acquisition, resource management, reference service) and information science (e.g. computer programming, networking, web development). Cox and Corrall (2013) identify the following positions as having the intersectionality between the fields: systems

librarian, electronic resource librarian, digital librarian, repository librarian and web manager.

Gender. Gender is defined as the process of bifurcating "human activities, practices, and social structures" between women and men (J. Acker, 1992). Since gender is socially constructed, gender is neither static nor universal (J. Acker & Van Houten, 1974), but it determines acceptable and unacceptable behaviors based on the gender characteristics of the individual (Britton & Logan, 2008).

Gender congruency. Gender congruency suggests a connection between identity, external feedback and behaviors (Maurer & Pleck, 2006). If a person identifies with a role and behaves in a gender-traditional way, they will be appraised positively; however, if the person identifies with a role and behaves in a non-traditional gender way, they will be appraised negatively because of their gender incongruence (Maurer & Pleck, 2006).

Organizational citizenship behaviors (Ocbs). Organ (1988) suggested that organizational functioning is facilitated when employees go beyond formal role requirements that are not explicitly required by job descriptions and formal reward systems. These voluntary or discretionary tasks, known as organizational citizenship behaviors (OCB), have been categorized into five OCB dimensions including conscientiousness, altruism, civic virtue, sportsmanship, and courtesy (Organ, 1988).

Theoretical Framework

According to Creswell and Plano Clark (2011), a theoretical framework may be employed to guide or provide a lens from which the study should be viewed. In this research study, several theoretical frameworks, including feminist theory, feminist

standpoint theory, gendered organization theory and organizational justice theory, are provided as lenses into the research problem.

Feminist theory. Feminist theory began as analysis of the injustices against women by studying the inadequacies of existing models that failed to give women a voice or neglects the women's experiences (Grosz, 2010; Hannigan & Crew, 1993). The result of the application of feminist theory is feminist scholarship and a new framework for rethinking the philosophies of organizations. A feminist theory framework applies pluralistic and self-reflexive methodologies that are relevant to the context of this research, such as bottom-up research, voice of care, constructed knowledge, and standpoint theory (Hannigan & Crew, 1993)**.**

Feminist standpoint theory. Feminist standpoint theory was shaped by the women's political movement in the 1960s and 1970s as evidence appeared that research in biology and the social sciences was androcentric (Harding, 2007). The feminist standpoint approach seeks out the narratives and perspectives of those who have been marginalized in a homogenized work force of men (Harding, 2007). According to Harding (2007), feminist standpoint research has produced more comprehensive accounts of social understanding for the following reasons: it demonstrates a consequence to how society is hierarchically structured; demonstrates how the dominant perceptions are made real; provides an outside perspective or standpoint and discusses how the understanding of the woman standpoints may help to reshape society. Exploring librarianship and organizational citizen behaviors using feminist standpoint theory allows me as the researcher to place women's experiences in the forefront of social inquiry. Also, this approach reaffirms the principles of feminist scholarship, which are to challenge not only

the scope of a situation and the context, but also the fields in which knowledge is being formed (Hannigan & Crew, 1993) and the structural inequality within the research itself (Harding, 2007).

Role congruity. While social role theory looks at the content of gender roles and their importance in promoting sex differences in behavior (Eagly, Wood, & Diekman, 2000), role congruity theory examines the congruity between gender and behaviors with potential consequences for prejudice and prejudicial behaviors (Eagly & Karau, 2002). Societal expectations for gender are deeply embedded in our society and in the gender roles assigned (Eagly & Karau, 2002). Those who are not congruent with their gender roles may face an uphill battle as they attempt to perform what are perceived as gender incongruent behaviors.

Gendered organizations. Inequality between men and women have led feminists to look at the gendering of organizations and organizational practice (J. Acker, 2006). Acker's theory of gendered organization was a response to gender segregation, income and status inequality between women and men, and the cultural norms of organizations (J. Acker, 1990). Acker asserted that the hierarchical nature of an organization was highly gendered because men had created the organizational structures within which women worked. When looking at an organization through this lens, the following three elements should be examined: the foundational composition of the organization that creates the inequality, the dissemination of gendered expectations, values and belief, and the process of desexualizing/de-humanizing individuals to fulfill organizational goals. Only by interrogating gendered organizations will there be a

transformative experience that dissolves the inequalities that shape organizations (Acker, 1990).

Organizational justice. Greenberg (1996) broadly defines organizational justice as perceived fairness that is expected to exist within organizations. If an employee feels a lack of fairness or justice within an organizational setting, it may have a negative effect on how an employee performs for the organization. Three dimensions of the organizational justice have been identified: distributive justice, perceived fairness of reward allocation; procedural fairness, a formal decision-making process that allows for employee complaints and appeals, and interactional justice, discusses the quality of the informal interpersonal relations or the social side of justice (Greenberg, 1996). Research has supported that there is causal relationship between organizational citizenship behavior and organizational justice (Moorman, 1991). This relationship finds that employees who believe that their supervisors are fair are more likely to behave as an organizational citizen (Moorman, 1991). These frameworks will be connected and explicated further in Chapter Two.

Limitations

As with all research, this study has some initial limitations that derive from the methods and design of the study. Firstly, this will be a sequential explanatory mixed methods design, which means that the outcomes or conclusions of the first strand help to shape the second strand (Teddlie & Tashakkori, 2009). In the case of this research study, the first strand of this research study is intended to find volunteers who will be willing to participate in the interview process; therefore, the sampling approach of the second strand is shaped by the outcomes of the first strand.

Semi-structured in-depth interviews will be used during the qualitative phase to collect women participant's description of their OCBs. Interviewing is not a perfect method of collection an, an unqualified interviewer, such as myself, may have a difficult time with allowing the balance of talk to favor the participant (Rossman & Rallis, 2011). This is why I will use an interview protocol for my interviews, which will help to elicit the participant's worldview without limiting topics that the participant brings up during the conversation (Rossman & Rallis, 2011). Interviewing may also limit proximity and distance of study participants. While face-to face interviewing can monitor non-verbal cues and clarify ambiguous responses (Maxwell, 2012), this technique limits a researcher's ability to capture a sample that may yield generalizability. For this reason, participants who are not available for face to face interviewing will be invited to participate in a virtual interview using a web conferencing technology. While this type of interaction can be construed as impersonal, all participants being interviewed should already be experienced with web conferencing technology.

Another limitation to both the quantitative and qualitative phase is that I am operating from the assumption that participants will answer questions honestly and they trust the researcher to record data accurately and to maintain confidentiality. However, women may be reluctant to open up about their feelings or perceptions for fear of reprisal from the hegemony (Oakley & Roberts, 1981). Also, researchers tend to objectify and "other" those who are not like them (Sprague, 2005). To ameliorate this limitation, I will build trust with participants by telling them their identity will be kept confidential during all phases of the research study; assuring participants that data will not be shared with anyone who is not involved in the study, performing member checks by asking

participants to review their interview transcripts, and sharing the results of the study with the study participants.

This study also had to limit the scope of voice in the research study. This study only collects data from librarians within the United States and during the qualitative phase, only gives voice to cis-normative women participants regarding their perceptions of their OCBs and their colleagues who are men. The qualitative phase lacks men's voice regarding their perceptions of their OCBs, as well as their perceptions regarding their women colleagues. Furthermore, both the quantitative and qualitative phases of the study were gender binary and did not include non-binary or third gender participants.

As an insider researcher, as both a women and also a technology librarian at an academic institution, my identities may hold different implications and challenges during the research process. I may have assumptions about the topic that must be both acknowledged and held in abeyance in order to produce rigorous results. This bias could emerge during the interview process and in data analysis. To alleviate this bias, I will practice bracketing through reflexivity and produce verisimilitude through the inclusion of a multiplicity of voices in the presentation of findings. Also, it is difficult to generalize an individual's experiences to their unique setting. This is why generalized statements will be avoided.

Significance of the Study

Women technology librarians are an integral part of librarianship and library technology. This research will provide current or aspiring women technology librarians a way to identify why gender segregation is happening within library technology. Identifying the why and working towards overcoming gender segregation will create a

more equitable working environment, which can ultimately increase the amount of women technology librarians. The following will consider the impact this study may have on policy, practice, and research.

Policy. In the 1970s, legislation such as Title IX began to address gender bias in public academic institutions ("Title IX," 2015). Title IX also addressed the gender segregation occurring within library leadership by allowing more women to advance into library leadership roles (Deyrup, 2013). Yet, Title IX administrators need to consider the gendered nature of organizations within their required self-evaluations or tenure process. Institutions must consider whether administrators' views on OCBs have led to disparate treatment of their women technology librarians. This research will demonstrate why it is urgent for Title IX administrators to address gender and OCBs that bias administration and create an unequal playing field for women employees in federally funded academic institutions.

Practice. S. G. Harding (1987) stated that there "isn't such a thing as problem without a person (or groups of them) who have this problem" (p. 6), but there is a failure to identify the problem if we only inquire from the perspective of those in power (Sprague, 2005). Inquiry of a profession through a less-privileged theoretical lens may expose the inequity that is creating gender segregation within library technology specialties.

As a result of this study, administrators will have information that can create a fair outcome system and fair treatment within the area of library technology. Employees that perceive their environment to be fair will be more likely to engage in more OCB, which will benefit the organization (S. Williams, Pitre, & Zainuba, 2002). Women technology

librarians that perceive their conditions to be fair and just will be more likely to continue in a field that is already highly gender segregated. This research will also empower women technology librarians to identify gender inequities related to their organizational citizenship behaviors. By identifying inequities, women technology librarians can seek out measures to create a transformation within their academic institution that ensures organizational justice.

One of the most enduring technological inequalities continues to be the gender divide (Dixon et al., 2014). Research has detailed a variety of ways in which women lag behind men in technological skills. One reason for this lag is that technology is typically designed by men and for men (Rakow, 1988; Wajcman, 2000). Without women technology designers, women students may continue to lag behind their colleagues who are men because the design is not intuitive to their gender (Wajcman, 2000). This is why it is essential that women continue to be involved with library technology. Women patrons must have the same opportunity to use library technology to access information.

Research. OCB research has continued to grow in popularity, but little research conducted focuses on the implications of the framework and its possible gendered consequences on theory and practice (Kark & Waismel-Manor, 2005). By examining OCB through feminist theory and through the practice of librarianship, we will be able to unveil OCB as a not being gender neutral, which is how it has been consistently portrayed in past research studies (Kark & Waismel-Manor, 2005). Despite calls from Kark and Waismel-Manor (2005) to explore OCB and gender through more "diverse research methods" (p. 911), OCB research continues to only be conducted using quantitative approaches, which limits our understanding of the gendered dynamics of

OCB. In response to Kark and Waismel-Manor (2005) call for more diverse research methods, this research study will be conducted using a mixed methods approach, which will provide a better understanding of the research issues than either quantitative or qualitative alone (Clark & Creswell, 2011; Palinkas et al., 2015)

Although OCB research continues to grow in popularity, OCB research has never had a significant impact or been emphasized in the existing library and information science literature (Peng et al., 2010). What little research does exist regarding OCB and libraries tends to focus on job satisfaction or job autonomy (Lin, 2008a, 2008b; Peng, 2014; Peng et al., 2010). Research is needed to understand how the practice of measuring OCBs in academic libraries, a gendered organization, creates organizational injustice that leads to gender segregation in library specialties.

Finally, this research study will add to the body of scholarship in the research areas of OCB, gender and library science.

Organization of the Dissertation

This study is designed to present an understanding of women technology librarians' experiences that shape their organizational citizen behavior. Chapter Two of this document will be an abridged literature review, which will synthesize the scholarship gender in libraries and organizational citizen behaviors, as well as the detrimental impact of gender segregation in library technology departments and further explore the role of the theoretical framework. In addition, I will explain the context of the research. Chapter Three will explain the methodology of the study. Chapter Four of this study will present the findings. Finally, Chapter Five will be a scholarly publication and Chapter Six will be a practical publication.

Chapter 2

Literature Review

The purpose of this mixed methods study is to explore the issues of organizational justice for women technology librarians who experience the gendered-nature of organizational citizenship behaviors (OCB). Due to the dialectic nature of the explanatory sequential mixed methodology, the data must inform what literature may be needed to inform and support the findings. In addition, due to use of the manuscript option (a type of dissertation format), two articles will be produced in place of the traditional Chapter Five and Chapter Six. Each article will have an individual literature review that focuses on the scope of the article. This chapter does require an identification of topics that may be included in the individual article's literature review and an overview of these topics and the literature that falls under each category. The categories of literature selected are based upon the research questions provided above and are defined as: academic libraries, computing technology, gender, and organizations.

Academic Libraries

Literature defines academic libraries as the type of libraries that supports higher education (R. E. Rubin, 1998), which includes universities, four year colleges, and community and junior colleges These libraries are embedded within the larger academic institutions and primarily serve student and faculty, and to lesser extent administrators, staff and the local community (R. E. Rubin, 1998). Academic libraries do not have an independent purpose rather an academic library mirrors the mission and the priorities of the higher education institution that it serves (Weiner, 2005). The academic library also fills the role of "intellectual ombudsman" (Kaufman, 2005) by bringing all disciplines

together so that learning and research are unrestrained. Overall, the scholarship states that academic libraries support the needs of higher education institutions.

Research suggests that the trends that affect higher education are mirrored in the academic library of the higher education institution. Several current trends of the 21st century that are shaping higher education institutions are also shaping academic libraries. These trends include: higher levels of administrative authority, globalization, increased emphasis on self-service and personalized services, flat or declining budgets and movement towards making information more accessible through technology (R. E. Rubin, 1998). While all of these trends are impacting academic libraries in some capacity, the trend of using computing technology to make information more accessible has had a profound impact on the academic library and academic librarianship, in the following areas: new service models, library viewed as virtual place; and changes in actual librarian positions and the requirements needed to perform those positions.

As computing technology became more ubiquitous in libraries, the research literature reflected the impact that technology would have on new library service models. Prior to computing technology and the digital era, library collection development was a complex intellectual process, which required an examination of the materials' relationship to the collection prior to selection (Gorman & Miller, 1997) and evaluated their collection based on the number of books on its shelves, the quantity of journals that they subscribed, and circulation statistics (Freeman et al., 2005). Once technology displaced paper and search engines changed information-seeking behaviors, the research reflected that academic libraries of the twenty-first century transformed their collections by migrating their analog collections to digital collections; moving their physical

collections to off-site locations; transitioning from local development of collections to selecting resources in aggregate or in a consortia model; relinquishing local ownership for subscription-based access and evaluating their collections based on usage statistics (Kyrillidou, 2000; Smith, 2006). According to Gorman and Miller (1997), "Today, collection development is more about access to information than about the quality of knowledge" (p. xv).

With the growth of search engines and library electronic resources, the research reflects that the university community found new study spaces, gate counts (measure physical space use) declined (Regazzi, 2012) and circulation of traditional materials began to decrease (Carlson, 2001). Also, the digital environment began to make a collection's physical location irrelevant and the boundaries of the collection are amorphous, which makes the library collection difficult to define (Sennyey et al., 2009). Research also supports that many patrons of academic libraries prefer accessing the library's resources online rather than visiting the physical library (Pinto, Fernández-Marcial, & Gómez-Camarero, 2010). As the library becomes more digital, library as place continues to be shaped by the needs of the community.

Computing Technology

Computing technology can be classified into five generations of development defined as: the formative years dating from 1946 to the mid-60s; the growth period from the mid-60s to the late 80s prior to the internet becoming a main communication distribution network, and the most recent 20 years with the coming of the age of the Internet (Hussey, Kennedy, & Spencer, 2015). During the growth period, the invention of the silicon chip, the integrated chip, and the microprocessor, allowed for the

miniaturization of mainframe computers into personal computers or microprocessors. The creation of the personal computers created a paradigm shift for computing. Computers became more affordable to ordinary users, created a demand for software development, and changed the way that millions of individuals work and study.

The subsequent introduction of the internet (World Wide Web) and development of e-software made computing ubiquitous. Computer users could now "surf" the web and follow hyperlinks to obtain information more easily. No single computer controlled the internet nor was there a physical location. With the development of e-software, organizations, such as universities, began to use their websites to market their services and conduct business.

Computing technology in universities. As computing technology became ubiquitous, it was not surprising that computing technologies began to proliferate onto university campuses. In 2000, 86% of college students have gone online, as compared with 59% of the population overall, and over 59% of all college courses were using electronic mail, up from 44% in 1998 and 20% in 1995 (K. C. Green, 2001). However, unlike large corporate organizations that reframed their organizations to use technology, higher education institutions used technology as a way to restructure existing processes. The restructuring of process by computing technology first concentrated on the business offices, administration, and libraries, which tend to be departments that generate expenditures rather than revenue.

Computing technology and librarianship. Service to the academic community is the ethos that librarianship was built upon, but that service can no longer be rendered effectively without some application of computing technology (Sennyey et al., 2009). Starting with the innovation of the online public access catalog (OPAC) in 1975, technology has touched every aspect of librarianship (Grimes & Grimes, 2008). The research literature suggests that computing technological innovations in information collection, synthesis, storage, and retrieval have altered librarianship in these three areas: library science education programs, the librarian job market and the gender composition of the profession.

While librarianship has been historically a feminized profession, the research literature suggests that library technology has become a specialty of librarianship predominately occupied by men. Gender stratification in library technology mirrors the stratification in most areas of information technology, which is considered to adopt a masculine culture (F. Wilson, 2003). The rationale for why women do not enter information technology department consist of: hiring discrimination, barriers to career advancement, lack of skill recognition and the feeling of tokenism (i.e. being the only women) (Sumner & Niederman, 2004). However, there is a gap in the literature that makes it unknown whether women do not enter library technology positions because of those same rationales, even though the library science profession is characteristically feminine. Nor is there sufficient literature that reflects whether women technology librarians leave those positions because of the double-standard women in masculine professions report.

Computing technology and gender. In the 1980's, feminists began to look at the gendered nature of computing technology (Wajcman, 1991) and the findings were conflicting regarding the gendered nature of computing technology. Researchers who use subjective ratings, such as masculinity and femininity, as their measurement found that computing technology is gender neutral (Clarke & Chambers, 1989; Wilder, Mackie, & Cooper, 1985). However, when the research study reports the actual rates of participation of men and women in the career field and in higher education, it appears that the profession is highly masculinized. In the United States, for example, women make up only 27 percent of computer and mathematical occupations (Rosenbloom et al., 2008).

Wajcman (1991) argues that computing technology has a masculine culture and that the culture is reflected by the gendered division of labor-with men occupying the highest paying positions and women occupying the lowest paying positions. Further argument suggests that women who do enter the masculinized field of computing technology will have difficulty advancing in their career (Wajcman, 1991) which is evident by women leaving IT, despite campaigns to attract women and increasing adoption of equal opportunity policies (Trauth, 2002)

Although women make-up nearly half of the present-day labor force, they remain substantially under represented across a range of technical and scientific fields. Women represent less than 20% of most engineering professions, 27% of environmental scientists, 31% of chemists, and 27% of computer and mathematical occupations (Rosenbloom et al., 2008). Despite the significant growth in technical and sciences sectors, the field of information technology (IT) is facing a significant skills crisis due to a lack of qualified IT professionals. This skills crisis is due in part to certain segments,

such as women, continuing to be underrepresented in IT (H. Ward, 2001). The literature reveals that there are a few significant reasons for a lack of women in technology fields, which include the gendered nature of technology (Faulkner, 2001; Galyani Moghaddam, 2010; Rakow, 1988; Trauth, 2002; Wajcman, 2000) and the gender stratification in technology departments (Adams & Weiss, 2011; Ricigliano & Houston, 2003; Rosser, 2005; Sumner & Niederman, 2004).

Research has detailed a variety way that women lag behind men in IT. Women and men have different attitudes when it comes to technology (Faulkner, 2001; Wajcman, 2000). Women tend to be less likely to own computing equipment, believe themselves to be less experienced with technology and did not see a positive relationship between technology and their academic studies or career trajectory (Galyani Moghaddam, 2010). Gender differences may also be perceived in the way that women and men use email; the amount of time women and men spend online, and the amount of technology classes men take versus women (Cooper & Weaver, 2003; Correa, 2010; Fallows, 2005; Losh, 2004). While much of the research has focused on the differences in technology use between men and women in everyday life, consideration must be given regarding why technology has been considered masculinized.

Although social scientists fail to acknowledge the gendered nature of technology (Rakow, 1988), two schools of thought developed to explain the differences between the perceptions of women and men in IT. The essentialist perspective focuses on the presumption of inherent differences between women and men to explain the perception of IT men's domain (Trauth, 2002). Essentialist theorists use observed behaviors between how men and women interact with IT as evidence to support their view that women are

underrepresented due to biological reasons (Feenberg, 2000; Trauth, 2002; Wajcman, 2000). Essentialism is typically supported by studies that view gender as a variable (Trauth, 2002). Venkatesh, Morris, and Ackerman (2000), for example, conducted a longitudinal study that looked at individual technology adoption. Their findings, which were based on perceived observations, supported that gender shapes the initial decision process for new technology adoption and usage behavior. Yet, there was no consideration on why or what may have influenced women to be more reluctant than men to adopt new technologies. Essentialism fails to examine or delve into the history of why men have these inherent differences.

The other perspective is social construction, which believes that although women have the desires to pursue a field of interest, it is the social structure or social construction that continues to influence behaviors and perceptions about IT (Dixon et al., 2014). Feminist researchers such as Cynthia Cockburn, Judith Wajcman and Wendy Faulkner discuss how technology has been masculinized throughout history creating a social construct. Cockburn (1985) demonstrated how men have positioned themselves historically into key technological roles, such as metal working in feudal times and machine tooling in industrial times. These historical positions have allowed men to continue to dominate certain technological roles and continue the perception that those roles are men's work. Wajcman (1991, 2000) concluded that technologies were supporting and directed by powerful institutions and interests that were dominated by men. Faulkner (2001) believed that technology is gendered because the key actors are predominately men; there are strong gender divisions based on technology; technological artifacts are gendered into hard artifacts, such as computers, and soft artifacts, such as

kitchen appliances, which are traditionally used by women; and the culture images of technology that are masculinized.

According to the social constructivist view, the social shaping of IT as masculine, places IT outside the domain of women. It is argued that technology is anchored in masculine values, such as objectivity, progress, rationality, productivity and competition (Van Zoonen, 1992). Values that are associated with women such as caring, emotionality, intuition are considered to be at odds with the masculinized values that technology is anchored (Van Zoonen, 1992). Women who then participate in IT may face gender conflict because women are challenging men by gaining masculinized skills. Women in IT are also challenging their own gender identities and must develop strategies to cope (Adam et al., 2006). Failure to perform or to develop strategies to cope their own gender identity may result in negative reinforcement for their style (Trauth, 2002).

One such coping strategy may be found in the gender distribution or gender segregation in the IT profession. Historically, the IT workforce is a vertically and horizontally stratified labor market (Rosser, 2005; H. Ward, 2001; J. Ward, 2004). Men occupy the highest-paid positions and predominate the decision-making and design sectors of the IT labor force (Rosser, 2005; Sumner & Niederman, 2004; H. Ward, 2001; M. Wilson, 2016). Women are over represented in the lower ranks of the IT profession (Rosser, 2005; H. Ward, 2001; M. Wilson, 2016). For example, 34% of computer programmers are women and 33.7% are system analysts, but only 5% of IT upper management are women (Sumner & Niederman, 2004) . These statistics reflect that there is a glass ceiling that keeps women from attaining these higher-level IT jobs and

continues the gender stratification of the IT profession (Rosser, 2005; Shuttleworth, 1992; Sumner & Niederman, 2004; M. Wilson, 2016).

According to Sumner and Niederman (2004), women have complicated paths to leadership in a men-dominated sector, such as IT. Firstly, women who enter IT often find themselves without mentors in the field. Men in IT have a silent privilege because managers who identify as man would rather mentor protégées who are men (Kvasny, 2006; Sumner & Niederman, 2004). Secondly, although men and women who aspire to be technology leaders are more similar than different in regard to time spent, expertise used and preference for work role, women who aspire to be technology leaders are not perceived as a technologist, but rather as a business leader. Furthermore, women who aspire to be technology leaders must adopt masculine leadership styles in order to advance within their department (Eagly & Carli, 2007).

Since women are among the under-represented population in computing technology (Serenko & Turel, 2016; Trauth, 2002, 2013), computing technology will continue to be constructed from a masculine perspective, which results in continued gender imbalance. Women who do enter the computing technology profession often feel as though they receive negative reinforcement if they exhibit behaviors that are acceptable by their colleagues who are men, such as being forceful or competitive (Beyer, 2008; Clayton, von Hellens, & Nielsen, 2009; Trauth, 2002), which perpetuates the double-standard women in masculine professions report.

Gender, Workplace and Academia

Gender in the workplace is still framed through the differences between men and women. These differences are a result of the hegemonic "masculinized" structures that continue to empower men in the workplace, but limit the opportunity and power of women in the workplace (J. Acker, 2006; Kanter, 1977; Reskin, 1988). Scholars have often described the concept of ideal workers who are available continuously because they have few or no responsibilities for housework or childcare. These ideal workers are rational, strong leaders, and are committed to work (Brumley, 2014, 2019; Sobering, 2016). Unfortunately, women, especially mothers, are often viewed as less than ideal, due to the cultural norms that expect women to assume most, if not all, domestic duties. Women are perceived as less rational, more expressive, unable to work long hours, and less committed to work. This perception continues the prevailing culture of gender bias that inhibits people's expectations about women's ability to participate in paid work (Ridgeway & Correll, 2004a, 2004b). Moreover, these expectations reinforce traditional masculine-role expectations that constrain available position opportunities to women (Elton et al., 2007) and reinforce gender inequality in the workplace (J. Acker, 1998; Ridgeway & Correll, 2004; Risman, 2004).

Perrons (2009) finds that cultural boundaries, cultural practices, and gendered social norms that uphold and reinforce existing practices and understandings of appropriate roles for women and men and the value of different activities. Cultural boundaries and understandings have become deeply rooted in our society through repeated practice despite legislation mandating equality. These practices become ubiquitous to the extent that certain social groups or identities are no longer suitable for

certain positions or professions. Thus, the gender of people in the position becomes identified with the position. This is how professions become gender stereotyped and while the boundaries are permeable, the societal expectations that shape our thinking creating rigidity, making people reluctant to transgress by entering gender incongruent occupations.

Woman faculty in higher education. The field of higher education is not immune to development of the same construct of gender divisions in academic departments or the ideal worker. Evidence of the construct of gender divisions and ideal worker, which are often viewed as inequalities, is available throughout higher education literature. The higher education literature that explores gender focuses largely on five dimensions that are barriers to women in higher education. These five dimensions are outlined as: dual standards and opportunities, sexists attitudes, informal socializing, balancing work and personal life, and remediation policies and practices (Stokes, Riger, & Sullivan, 1995). Due to the limitations of this section, I will focus the paper on the dual standards and opportunities dimension and how this dimension creates a chilly environment for women faculty members.

Although more women have been appointed to faculty positions, women faculty encounter dual standards. Women tenure tracked faculty members are less likely to receive advice or support (Bagilhole, 1993; Chesler & Chesler, 2002; Steele & Fisman, 2014) than their counterparts who are men. Women faculty may also lack available mentors in certain disciplines (Chesler & Chesler, 2002; O'Leary & Mitchell, 1990; Sonnert & Holton, 1995; Steele & Fisman, 2014; Waltman, 2001) and inability to gain access to resources that are available to faculty members who are men (Lawler, 1999;

O'Leary & Mitchell, 1990; Sonnert & Holton, 1995; Valian, 2005; Y. J. Xu, 2008; Y. J. Xu & Martin, 2011). While faculty members who are men can focus on their research which is tenable for tenure and promotion, women faculty are expected to be good campus citizens and participate in service obligations (August & Waltman, 2004; Bagilhole, 1993; Misra, Lundquist, Holmes, & Agiomavritis, 2011; Park, 1996; Stack, 2004; Winkler, 2000). Policies that promote gender equality on campus governance committees often result in more service requests due to the need for women service representation (S. Acker & Feuerverger, 1996; Bagilhole, 1993; Lawrence et al., 2012). While these opportunities allow women to become more involved in the campus community, the service obligations may negatively impact research productivity for women faculty (S. Acker & Feuerverger, 1996; August & Waltman, 2004; Stack, 2004; Winkler, 2000).

Another double standard is the expectation by colleagues and students that women faculty members provide student services that are perceived as caring and nurturing (S. Acker & Feuerverger, 1996; Bagilhole, 1993; Bartulović, Kušević, & Širanović, 2012; Lehrke & Sowden, 2017; Lester, 2008; Probert, 2005). Women faculty are expected to balance behaviors that students and colleagues who are men perceive as traditional women roles that provide emotional support to students and colleagues, such as advising and mentoring (S. Acker & Feuerverger, 1996; Bagilhole, 1993; Lester, 2008, 2011; Park, 1996; Probert, 2005; Rodriguez, 2018; Tierney & Bensimon, 1996). Much like service obligations, this role offers minimal benefit to women faculty members who are seeking tenure or promotion (S. Acker & Feuerverger, 1996; Mitchell & Hesli, 2013; Park, 1996; Pyke, 2011; Winkler, 2000). Between the service obligations and the

expectation for women faculty to be caring and nurturing, there is a gendered division of labor that leaves women faculty members to assume their gendered responsibility of caring for the young, in this case students, and men, while receiving little credit (S. Acker & Armenti, 2004; Allen, 2006; Bagilhole, 1993). This obligation requires women faculty to work harder than colleagues who are men to prove themselves (Poole, Bornholt, & Summers, 1997; Toren, 1991), which results in dissatisfaction and frustration since women faculty members, on average, earn less than their counterparts who are men (Johnson & Taylor, 2018; Sosin, Rives, & West, 1998; Spelke, 2005).

Dual standards, as well as the aforementioned barriers, have been reported to create a chilly climate for women faculty (S. Acker & Feuerverger, 1996; Collins, Bayer, & Hirschfeld, 2006; Hagedorn & Laden, 2001; Hall & Sandler, 1982; Maranto & Griffin, 2011). Maranto and Griffin (2011) describe a chilly climate for women faculty members, which exist because of organizational structures that leave women faculty members feeling isolated by the informal networks of academia. Women faculty members, particularly in certain disciplines, find that they lack access to collaborators within their own department (Benenson, Markovits, & Wrangham, 2014; Koenig, Eagly, Mitchell, & Ristikari, 2011), which results in women faculty becoming dependent on external networks for collaboration and to retain their professional identity (Fox, 2001; Fox & Colatrella, 2006; Gibson, 2006; O'Leary & Mitchell, 1990). Women faculty members may also choose to not work with other women for fear of being labelled a feminist or being perceived as not safe by colleagues who are men (O'Leary & Mitchell, 1990), which further isolates women faculty members from the department and the community.

Gender in libraries. Librarianship was one of the earliest professions to accept women into the profession (Moran, Leonard, & Zellers, 2009). Due to women's early entry into librarianship, it became a women dominated profession by 1900 (Moran et al., 2009)The profession continues to be dominated by women, which is reflected in the constant rate of women graduates from library school, which remains between 81.3% and 79% (Piper & Collamer, 2001). Yet, the literature also reflects a history of gender stratification, or the overrepresentation of men in library administration and in certain specialties, as the profession became increasingly feminized (Hildenbrand, 2000).

Throughout the twentieth century, the literature has represented women who enter librarianship using an old maid stereotype (Piper & Collamer, 2001) in which the professional is seen as orderly, fussy and sexually repressed. Men, who are the gender minority in librarianship, contend with their own stereotypes. The three most common stereotypes for men in librarianship are that they are: effeminate/possibly gay, powerless or socially inept and that they are not ambitious (Carmichael, 1994; Piper & Collamer, 2001). Research suggests that stereotypes of men in librarianship has a dual effect on the profession. First, the stereotype has stigmatized the profession so that men choose to not enter librarianship and second, men who do enter librarianship tend to seek out more masculine roles, such as management and technology (Carmichael, 1994; Gordon, 2004; Piper & Collamer, 2001; Record & Green, 2008).

Although women dominate the profession, men continue to lead library administrations as a way of checking the feminization of library work as a profession (Hildenbrand, 1999). Elite programs were established at both Columbia and the University of Chicago to develop men who were library leaders that would oversee

women librarians (Hildenbrand, 1999). The Carnegie Corporation, between the years 1929 to 1942, awarded library leadership fellowships disproportionately to men in the hopes that the fellowships would attract men into the profession (Hildenbrand, 1999). Studies conducted on this time period found "not a single, but a dual career structure for librarians differentiated on the basis of sex-an accelerated library career for the minority, composed of men, and a basic library career established within considerably lower limits for the majority, who are women" (Bryan, 1952; Hildenbrand, 2000). Women that did enter librarianship quickly discovered there would unequal reward for equal work (Moran et al., 2010) a status decline and meager opportunities for advancement (Milden, 1977).

The hegemony continued to be dominated by men in librarianship until the 1970's when second wave feminists began to lead library organizations, such as the American Library Feminist Task Force in 1970, followed by the Committee on the Status of women in Librarianship in 1976 (Deyrup, 2013; Hildenbrand, 2000). In addition to the library organizations, legislation such as Title IX began to ensure that women were able to advance into library leadership roles (Deyrup, 2013). In 2004, Deyrup found that women comprise 52.1 percent of all top administrators in Association of Research Libraries, which led Deyrup to ask if the gender revolution is over (Deyrup, 2004).

Conflicting literature finds women academic librarians suffer the same barriers as other women faculty members. Chapman (1991) interviewed men who served on a search committee that were tasked with finding an experience applicant for chief librarian position. Through the interviews, Chapman (1991) found over 42% negative remarks were made about the women applicants, including the description of the women applicants as "not the right man for the job" or "token applicants" (p. 2). The research

suggests that men who are librarians, similar to other disciplines in higher education, are also more likely to be published, are more likely to be academic librarians with faculty status, and have greater job satisfaction than their women colleagues (Galbraith, Fry, & Garrison, 2016). The literature does lack significant qualitative studies that document how gender and their expected organizational citizenship behaviors factor into the tenure and promotion processes, but it would be reasonable to surmise that women librarians face similar systematic barriers to tenure and promotion as other women faculty members since women librarians would encounter the same dual standards by students and colleagues who are men.

Organization

Robbins (1983) defined an organization as a consciously coordinated social entity, with a relatively identifiable boundary that functions on a relatively continuous basis to achieve a common goal or set of goals. In order to achieve these goals, delegation must occur and the act of delegating requires a formal method of coordination and control (Selznick, 1948). Selznick (1948) states that formal structures do not suppress non-rational dimensions, which is other organization theorists expound upon that definition by stating that organizations should have both a formal and informal element. The formal element of an organization includes the formal structure of the organization and the people, in their roles, are willing participants or designees in their area of the cooperative system (Selznick, 1948). Deviation from this formal system may create unwritten rules that make up the more informal element or unconscious culture of the organization. This unconscious organizational culture establishes certain attitudes, understandings, customs,

habits, and it creates the conditions under which the formal organization may arise (Barnard, 1938).

Schein (1985) suggested that organizational culture is a "pattern of shared basic assumptions that a group learns as it solves its problems of external adaptation and internal integration" (p.102). Through the dilemma of external adaptation and internal integration (Schein, 1985) organizations use culture as both a product and process to control and influence people's behavior (Jelinek, Smircich, & Hirsch, 1983; Kuh & Whitt, 1988; Obendhain & Johnson, 2004). Organizational culture may be used to not only solve organizational processes but may be a product of the problem-solving process. Since organizational culture establishes a shared understanding, organizational culture may continue gender inequity by creating processes that work against women in the workplace.

Higher education as organization. Scholars believe that higher education is similar to other organizations that are viewed as a group of people who are working towards a common commitment within a formal structure (Birnbaum, Bensimon, & Neumann, 1989; A. Kezar & Eckel, 2004; Masland, 1985; Mohnot & Shaw, 2017; Smerek, 2013) . Distinction must also be drawn since colleges and four-year universities describe distinguishing characteristics, such as serving long-standing missions (A. Kezar & Eckel, 2004; A. J. Kezar, 2004; Toma, 2007), representing close ties to ongoing societal needs (B. R. Clark, 1984; Fox Garrity, 2015; A. Kezar & Eckel, 2004; A. J. Kezar, 2004; Toma, 2007), and reflecting the norms and socialization processes of institutional members (Bray, 2008; A. Kezar & Eckel, 2004; Lawrence et al., 2012). These characteristics have often led scholars to describe the organizational structure of

colleges and four-year universities as ambiguous, loosely coupled, open systems (Fusarelli, 2002; Goldspink, 2007; J. Green & Swanson, 2011). As a loosely coupled system, some aspects of an organization persist to foster perseverance, but this system also allows for more self-determination (Weick, 1976), which is why higher education has a unique organization governance structure that requires members to move in and out of the decision-making process. This loosely-coupled organizational structure, which is less hierarchical and bureaucratic than corporate organizations, has been indicative of problematic goals and unclear mechanisms (Baldridge, 1978; Birnbaum et al., 1989; Cohen & March, 1986; Etzioni, 2000; Weick, 1976, 1979).

Like other organizations, colleges and four year universities have developed an informal element, known as organizational culture that is unique to their institution. B. R. Clark (1980) states that the lofty doctrines associated with colleges and universities elicit create four cultural spheres that affect academic life. Those spheres are: the cultures of specific academic disciplines, the culture of the academic profession, institutional cultures, and the cultures of national systems of higher education(Keup, Walker, Astin, & Lindholm, 2001; Lee, 2004). These spheres may also create an organizational saga, which is a "collective understanding of unique accomplishment in a formally established group"(B. R. Clark, 1972, p. 179). Organizational sagas are a set of beliefs and values that strengthen the organizational commitment between the organization and students, alumni, faculty, and staff (B. R. Clark, 1972; Hocking, 1995; Masland, 1985; Metcalfe, 2012; Sporn, 1996). The creation of the saga; thus, shapes and controls the behavior of those involved with the organization.

Like other organizations, higher education organizations created both their structure and their culture with an implicit bias against women. The literature documents that women within a higher education organization are often expected to perform functions that are congruent with their gender roles and organizational citizenship behaviors.

Academic libraries as organization. Although academic libraries do not have a separate purpose (R. E. Rubin, 1998), they do mirror the organizational structure, organizational culture and process of their college or university. Therefore, both the positive and negative aspects of their higher education organization are reflected in the library since it is a subunit of the higher education organization. Women within this subunit would be expected to conform to the organizational culture that perpetuates gender inequity and enforces role congruity.

Gender and organization. Feminist research literature explores the role of gender within an organization. Ferguson (1984) pioneered the idea that bureaucracy creates subordination by creating positions, such as managers, workers, and clients in a position that enforces subordination, dependence, and powerlessness. J. Acker (1990) extended Ferguson's position by explaining that organizational structure is not gender neutral because assumptions about gender underlie the essence of organizations. Abstract jobs and hierarchies assume a disembodied worker, but the assumptions made about the worker's relationship to procreation and paid work make it clear that the assumed worker is a man. J. Acker (1990) discusses five interactive processes that gender organizations: 1) Construction of divisions along lines of gender--divisions of labor, of allowed behaviors, of locations in physical space, of power (p.146); 2) Construction of symbols

and images that explain, express, reinforce, or sometimes oppose these divisions (p. 146); 25 3) Interactions between gendered individuals in the organization, including patterns of dominance and submission; 4) Gendered components of individual identity, (p.147) including choice of appropriate work, language use, clothing, and presentation of self; 5) Gender is implicated in the fundamental, ongoing processes of creating and conceptualizing social structures (p. l47). Gender, therefore, is an element in the creation of organizational logic that underlies the assumptions in most work organizations. Furthermore, the exclusion of concepts such as sexuality, emotions, and procreation support Acker's theory of the disembodied self and the exclusion of the "woman" worker.

Acker's theory has been applied to a number of practical research studies that have supported Acker's theory regarding five interactive processes that gender organization. Research reveals that gender is a central theme of power and domination in the workplace that is sustained through social interactions that convey dominance and submission (J. Acker, 1990, 1992; Cockburn, 1991). Woman's work is typically perceived as work that requires nurturing and caring skills. These skills have consistently been devalued and the literature support that those in those careers are paid less than work than is deemed to be more masculine in nature (S. Acker, 1989; Gibelman, 2003; Guy & Newman, 2004; Hogue & Lord, 2007). Further research reflects that the image of the strong leader as a forceful white man (Eagly & Carli, 2007; Kanter, 1977), while women must be perceived as both feminine and strong in the eyes of their supervisors and subordinates (Eagly & Carli, 2007; Jamieson, 1995; J. T. Wood & Conrad, 1983). Fletcher (2001) who explored organizations from a feminist lens documented continued

silencing and disappearing behaviors that are associated with women and are perceived as feminine, relational, or so-called softer side of organizational practice, again to keep the disembodied worker, masculine. Finally, sex segregation is deeply embedded in an organization's processes. For example, recruiting and promoting processes reinforce occupational sex segregation and keep women at the lowest levels of the organization (Cockburn, 1985, 1991; Collinson, Knights, & Collinson, 1990).

Conclusion

This literature review has affirmed that women face many challenges in gendered organizations and gendered professions. One such example is the lower rate of women who receive tenure or promotion in higher education. With the growth of computing technology, even a profession, such as librarianship, that was once "feminized," may face growing challenges as technology shifts the profession to become more "masculine" creating increases in gender segregation, inequality and enforcement of role congruity that is consistent with the organizational culture. Using organizational citizenship behavior, as a framework, will help to answer my research questions that were designed for this study will help to shed light and identify issues of organizational justice for women technology librarians by viewing these issues through the gendered lens of organizational citizenship behaviors.

Chapter 3

Methodology

This mixed method study will address issues of organizational justice for women technology librarians who experience the gendered-nature of organizational citizenship behaviors (OCB). Previous research studies that were conducted on organizational citizenship behaviors were conducted using only a quantitative methodology and the studies treated gender as a variable rather than an area of study. Peng (2014) findings reported that there was a link between organizational citizenship behaviors and job satisfaction, but the quantitative study disregarded gender and work responsibilities. Lim (2008) reported findings that women library technology workers were significantly more satisfied than their counterparts who are men. Yet, Lim's findings were based purely on quantitative data collection and provide no meaning on why women library technology workers are more satisfied. Furthermore, these findings contradict the findings of research studies reported in other technology areas that found women to have less job satisfaction than their colleagues who are men (Adam et al., 2006; Trauth, 2002).

Morse (1991) believes that the explanatory sequential method may be useful when unexpected results arise from a quantitative study, which in this case would be the results of the Lim (2008) survey. Data collection for the study will be conducted in two phases. Phase I will follow a quantitative methodology (e.g. survey). Phase II will follow a qualitative methodology (e.g. interviews). The results of this study may shed light on organizational justice issues for women technology librarians. The following research questions guided the research study:

1. To what extent do women technology librarians' organizational citizenship behaviors differ from colleagues who are men?
2. How do women technology librarians describe their organizational citizenship behaviors within a gendered profession?
3. In what ways do the experiences of women technology librarians explain how organizational citizenship behavior perpetuates a lack of organizational justice, gender segregation and inequity within the contemporary academic library?

Rationale for Mixed Methodology

Quantitative and qualitative research methodologies have different approaches on how they collect and analyze data. Quantitative approaches look at phenomena, through numerical values and statistical analysis, as a way to determine a causal effect and make future predictions. Qualitative approaches, on the other hand, aim to understand behaviors and the culture of individuals and their groups "from the point of view of those being studied" (Bryman, 2003, p. 46) . Qualitative approaches look to comprehend why something is happening through the reconstruction of perspectives and experiences of the individual actor. Yet, only using a quantitative approach may silence and flatten the lived experiences of women (Hesse-Biber, 2013), only using qualitative data may lead to findings that are not generalizable.

Greene, Caracelli, and Graham (1989) provide five specific reasons that a research may want to use mixed methods: triangulation, complementarity, development, initiation and expansion. While all five reasons are applicable to this research study, the primary reasons mixed methods will be used are complementarity. Complementarity

allows the researcher to gain a fuller understanding of the research problem and to view different facets of the phenomenon.

Sequential explanatory design process. Creswell and Plano Clark (2011) describe two variants of the sequential explanatory design: follow-up explanations and the participant selection model. Both models have an initial quantitative phase followed by a qualitative phase but differ in how the phases interact and which phase has priority. Priority refers to which approach, quantitative or qualitative (or both), a researcher gives more weight throughout the data collection and analysis process in the study (Creswell, Plano Clark, Gutmann, & Hanson, 2003; Morgan, 1998; Morse, 1991). Priority is typically decided based on which phase may answer the research questions. The follow-up explanations model prioritizes the quantitative phase by using the finding to identify areas of further research. The participant selection model gives the qualitative model priority by using the quantitative information to identify and purposefully select participants for a follow-up phase (Creswell & Plano Clark, 2011). The qualitative phase of the study will then further explain the quantitative database through in-depth interviews with a subset of participants (J. Creswell, 2015).

This research study will use the participant selection variant of the sequential explanatory model; therefore, the sampling approach in the qualitative phase is dependent upon participants that completed the questionnaire, agreed to participate in an interview, and provided their contact information. The notation of this research study design is quan → QUAL. The notation reflects that the qualitative strand is the priority (Creswell & Plano Clark, 2011); therefore, the qualitative strand has more relative importance in answering the research question. The quantitative data will help to characterize certain traits, which

will then help in the purposeful sampling of participants in the qualitative study. The qualitative approach, which is the priority of the study, will be conducted through semi-structured in-depth interviews of a subset of participants.

Although Teddlie and Tashakkori (2009) and Creswell and Plano Clark (2011) discuss that mixed methods research should mix both the quantitative and qualitative to integrate the findings and draw inferences, this research study is being conducted from a feminist lens. Rather than mixing the quantitative and qualitative approaches, which may be scrutinized by feminist researchers (Hesse-Biber, 2013) , the approaches to data collections and data analysis will follow the dialectical model that allows for data to traverse, but keeps the methodologies apart (Hesse-Biber, 2013).

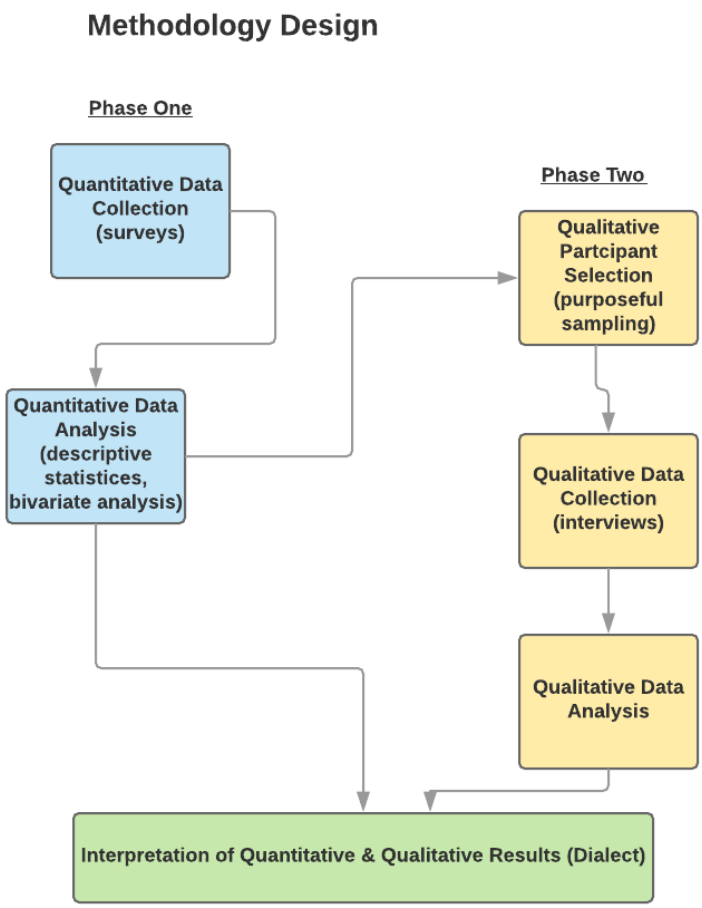

Figure 1. Methodology Design

Phase I- Quantitative Phase

The initial phase of this study is quantitative. According to quantitative research requires the researcher to ask specific, narrow questions that will collect numeric data from participants; which will then be analyzed using statistics. The primary focus for the quantitative phase of this research study will also be to identify participants that may be used in the qualitative phase of the study; however, as a secondary focus, the quantitative

findings may be used to create insight into the first research question that inquires about differences of men and women librarians.

Sampling approach. In quantitative research, the intent of sampling is to choose individuals that are representative of the population being studied so that the results may be generalized to a larger population. Since my sampling approach for the quantitative phase will allow me to conduct purposeful sampling in the qualitative strand, I will use volunteer sampling which asks for volunteers to participate in the study (Fink, 2013; Teddlie & Tashakkori, 2009). Volunteer sampling is one of the two types of convenience sampling techniques that consists of recruiting participants from areas that are easily accessible to the participant (Miner-Rubino & Jayaratne, 2007). Volunteer sampling will allow me to obtain a large sample size that may be purposefully characterized into traits.

To conduct volunteer sampling, an invitation to participate email will be sent to the Library Information Technology Association (LITA) - a technology division of the American Library Association- distribution list. The membership of the LITA distribution list must opt-in to participate in the distribution list. Currently, the distribution list consists of over 3,339 participants (Levine, 2016). It is unknown how many of the distribution list membership identify as women or have their master's degree from an American Library Association-accredited program, which are criterion to participate in the qualitative phase of the research study.

While it has been acknowledged that very few email-only surveys have been found to have a high response rate (Stern, Bilgen, & Dillman, 2014), a researcher may apply certain aspects of the social-exchange theories to decrease non-respondent errors (Dillman, 2007). The first method to increase participation is to increase the benefit of

participation by considering perceived rewards (Dillman, 2007). This is why the invitation to participants will provide information about why the research is being conducted; it will address the limited amount of time to complete the questionnaire (2 weeks); it will discuss how their help may benefit the profession and advance the scholarship of libraries and organizational citizenship behaviors, and will thank them in advance for completing the survey. Another method to decrease non-respondent errors to reduce any perceived cost to the participant (Dillman, 2007). To decrease the personal cost to the participant, the questionnaire will minimize request for any personal or identifying information that is not needed for the research study; it will be easily accessible by clicking a link within the email invitation, and it will be easy to complete (take between 10-20 minutes). A final method for increasing non-respondent errors is to establish trust (Dillman, 2007). To establish trust, the invitation will provide contact information for my dissertation chair and affiliate institution and it will ensure the confidentiality of their information.

Although Dillman (2007) cautions that repetitions for appeals to complete the survey diminishes its effectiveness, research performed by (McPeake, Bateson, & O'Neill, 2014) demonstrate that sending at least two reminder emails that include the current response rate will increase the overall response rate. This is why I will follow-up the initial survey email by sending a reminder email 1 week before the survey closes and a second email two days before the survey closes. Again, thanks for their consideration and participation will be expressed in each email.

Data collection. Surveys will be the data collection strategy employed for the quantitative phase of this research study. Surveys are a data collection technique to obtain information provided from people and about people (Fink, 2013). Although feminist research scholars are often critical traditional positivist survey methods because women and gender (Leckenby, 2007), this survey, using the participation selection model, will be used only to identify willing woman participants to illuminate gender through information rich stories.

Scales and indexes or composite measures use multiple indicators and are often used in social and policy research to operationalize a construct (Remler & Van Ryzin, 2010). In this case, the construct is organizational citizenship behaviors, which will capture the participant's perception of one's self as a good citizen within their organization. Five indicators will be used for each organizational citizenship behaviors: altruism, conscientiousness, civic virtue, courtesy and sportsmanship (see Appendix B). The indicators will use a Likert-item or agree-disagree approach (Remler & Van Ryzin, 2010) and will ask participants to rate their level of agreement with the statements. Similar to other social constructs like self-esteem that are latent (Remler & Van Ryzin, 2010), a person's view of their organizational citizenship behaviors intensity or level may be derived for their pattern of agreement to the statements.

The survey will use a variety of levels of measurement. Levels of measurement help to decide how to interpret the data from the variable (Frankfort-Nachmias & Leon-Guerrero, 2010). For the demographic block that asks the participant about gender, their type of institution, their academic position, their faculty rank, tenure status, number of people in their technology department and gender composition of their department will be

assigned a nominal or categorical level of measurement since the categories may be arranged in any order. This level of measurement will allow the researcher to assign a number to a set of categories. All demographic information will use the Qualtrics forced response validation feature, which makes the question a required field. The scales that measure each of the organizational citizenship behavior constructs (see Appendix B) : altruism, conscientiousness, civic virtue, courtesy and sportsmanship; will use the following interval level of measurement: “Strongly disagree” (SD) answers earned a score of 1;“Disagree” (D) answers earned a score of 2; “Neither agree or disagree” (NAD) answers earned a score of 3; “Agree” (A) answers earned a score of 4 and “Strongly Agree” (SA) answers earned a score of 5.

Participants of the LITA distribution list will be emailed a Rowan Institutional Review Board (IRB) approved scripted invitation and a link to participate in the survey. Consent forms will be included as the first page of the web-based survey and included general information about the study, such as brief information about gender and organizational citizenship behaviors. Participants must select ‘I agree’ (required field) in order to provide consent and continue to take the survey. Participants are allowed to stop taking the survey at any time. All participant data will be self-reported using Rowan’s instance of Qualtrics, a web-based survey program. At the end of the questionnaire, participants will be asked to check a box if they agree to participate in a follow-up interview at a later date. If the participant places a check in the box, selecting ‘yes’, the participant will be prompted to enter their contact information. Participants who identify as willing to participate in a follow-up and rank higher than the median score of 63 ((25 (number of questions) * 5 (highest value of the Likert scale)+1/2.

Instrumentation. The instrument of the quantitative phase of this study is a cross-sectional online survey that consists of a questionnaire that will be sent to the identified population. The questionnaire will require approval from Rowan's IRB and will be developed in Rowan's Qualtrics system, an online survey creation system.

Fowler Jr (2013) states that if a proven valid, established measure already exists in the relevant literature that it is preferable to use that measure. This is why the questionnaire items (see Appendix A) will be based on a previous survey instrument designed by NicDomhnaill (2006) and who has performed research on organizational citizenship behavior in the past. The questionnaire will consist of primarily closed ended questions that will measure key study variables of gender identity, education, work demographics, organizational citizenship behaviors and contact information. Since the research study focuses on gender, working in library technology, and academic libraries, the questionnaire will use the Qualtrics Survey Flow feature. If the participant is unwilling to identify their gender, does not work with library technology, or does not work in an academic library, the Survey Flow feature will allow me to thank the participant and end the survey. The questionnaire also uses several instances of the Qualtrics Display Logic feature, which allows certain questions to only be visible if the question pertains to the participant. The following questions will only be displayed if the participant identifies as faculty: how would you define your faculty rank and what is your tenure status. If the participant does not select 'only me' for the question how many people are in your library technology department, the following question will be displayed: "who makes up your library department." The participant will only be asked,

"Would you be willing to participate in a 60-minute follow-up interview?", only if the participant identifies their gender as women. Finally, the question that asks the participant to provide their email address will only be displayed if the participant, answers 'yes' to be willing to participate in a 60-minute follow-up survey. Using both the survey flow and display logic features may again reduce non-respondent errors because the survey will be tailored to the respondent and their knowledge.

Data analysis. To perform data analysis, answers collected within Qualtrics will be imported to SPSS where the data will be cleaned and normalized using a developed codebook that discusses coding instructions. Normalized data will then be analyzed using descriptive methods. Descriptive methods help to summarize the data so that trends and patterns may emerge from participant data, while also summarizing the results to ease communication and understanding (Teddlie & Tashakkori, 2009). Descriptive statistics methods produce measures of central tendency (mean, mode, median), frequency tables (nominal measurement), and correlations (Teddlie & Tashakkori, 2009). Through tables produced, a researcher may visually describe and explore their data.

In order to answer the following research question: to what extent do women technology librarians' organizational citizenship behaviors differ from colleagues who are men, I will need to explore differences between two groups (e.g. men and women). This is why both a univariate and multivariate design will be used to assess the effect of single variables as well as the relationship of several variables to each other (Teddlie & Tashakkori, 2009). Since all of the organizational citizenship behavior Likert items are interval scaled data, a parametric version of test is appropriate. Furthermore since I have two groups, an analysis of variance technique may be used. Two example techniques that

may aid in the exploration of data are the multivariate analysis of variance and analysis of covariance. A multivariate analysis of variance or MANOVA may provide a preliminary analysis to compare a number of different, but related dependent variables (Pallant, 2013). Analysis of covariance (ANCOVA) is used when you want to determine what variable may be influencing the relationship between your independent and dependent variable (Pallant, 2013).

Reliability and Validity of the Quantitative Phase

Reliability and validity may affect the quality of the data obtained (Pallant, 2013). In order to minimize threats to the quality of data, reliability and validity issues must be considered. Reliability ensures that the measurement yields consistent results each time the test is ran (Fink, 2013; Frankfort-Nachmias & Leon-Guerrero, 2010; Pallant, 2013). There are three different types of reliabilities: test-retest, equivalent and internal consistency (Fink, 2013). This research study will use the test-retest and internal consistency types to determine reliability.

The test-retest reliability type is typically administered by giving the same survey on two different occasions (Fink, 2013; Pallant, 2013). I will deploy the survey to 5 participants that are former colleagues that work in a library but are not members of the LITA distribution-list. The selected colleagues will be informed that their participation will help to test reliability of the survey. The participants must be willing to take the survey on two separate occasions approximately two weeks apart. The participant's scores will then be correlated. The survey will be considered reliable if the correlation of the results is high. Furthermore, the internal consistency of the scale will be tested using

the statistic, Cronbach's coefficient alpha. The Cronbach's coefficient alpha provides an indication of the average correlation of the items within the scale (Pallant, 2013).

Validity in a quantitative study is measured by the extent measure indicate what is intended to be measured (Frankfort-Nachmias & Leon-Guerrero, 2015; Pallant, 2013). Yet, there is no one indicator that a scale is valid, which is why there must be empirical evidence of its use (Pallant, 2013). There are various methods to determine validity. In this study, we will discuss the validity of the survey using the following approaches: face validity, and convergent validity (a type of construct validity).

A test is determined to be face valid if the test measures what it claims to measure (Kline, 1993). The Likert items in this study claim to measure the level of agreement that a participant has with the statement. These statements are similar to statements that have been used in previous tests (NicDomhnaill, 2006; P. Podsakoff, Ahearne, & MacKenzie, 1997) and have been found to measure a participant's organizational citizenship behavior. Based on the use of these measures in previous tests, it may be surmised that the statements have face validity.

Convergent validity refers to the degree the measurement outcomes and the construct agree with other similar constructs (Teddlie & Tashakkori, 2009). As stated previously, there are 5 Likert items that will measure the same organizational citizenship behavior construct; therefore, convergent validity may be explored by examining the correlation between Likert items that measure the same organizational citizenship behavior construct. If the correlation is high (.75 to 1.0), the construct may be considered to be convergent valid and demonstrate construct validity.

Phase II- Qualitative Phase

The second phase of this study is qualitative. According to Rossman and Rallis (2012), qualitative inquiry has two unique features: the researcher is the means to conduct the study and the purpose is to learn about some aspect of the social world. For this research study, the qualitative phase of the study will be the priority.

Sampling approach. In the participation selection variant, the researcher must specify the criteria for the selection of participants during the qualitative phase of the research (Wachira, 2015). Selection criteria for the qualitative phase required purposeful intensity sampling. Patton (2002) defined intensity sampling as selecting very informative cases that represent a phenomenon of interest. For this study, the phenomenon of interests are gender, employed in an academic library, and self-reported organizational citizenship behaviors that were above the mean scores. Furthermore, the sampling approach in the qualitative phase is dependent upon participants that completed the questionnaire, agreed to participate in an interview, and provided their contact information.

After completing the surveys, participants will indicate if they were willing to participate in a follow-up interview for qualitative phase of the study by selecting 'yes' and supplying contact information. Survey responses will then be cross-referenced, so that only participants who indicated willingness and those eligible based on reporting organizational citizenship behaviors that were higher than the median score of 63 ((25*5) +1/2). Other factors that determined participant selection will be gender, employment in an academic library, graduation from an ALA accredited master's degree program and composition of library technology department.

Qualitative studies literature has several debates about what sample size is necessary to reach saturation. Saturation is defined as the point when the data collection process offers no relevant data (Dworkin, 2012) or no further themes may be developed from the data (Fusch & Ness, 2015). Bernard (2012) stated that there was no way to predict how many interviews would be necessary to reach saturation, but that having consistent interview questions that are asked to multiple participants will help the researcher to achieve data saturation (Fusch & Ness, 2015). Since interviewing will be used in data collection, an interview protocol will be used to help achieve data saturation.

Data collection. Based on participants' availability and preference, individual telephone interviews or internet interviewing will be scheduled. Although (H. J. Rubin & Rubin, 2011) caution researchers about the slowness of internet interviewing, internet interviewing using web conferencing tools allows the research to not only record the conversation, but also allows the participant to be located at a distance from the researcher.

The interview style will be semi-structured, in-depth. Hesse-Biber (2007b) identifies in-depth interviewing as a way of understanding the lived experiences of marginalized members of society, such as women. In-depth interviewing allows the researcher to explore certain topics, A semi-structured interview is conducted with a specific interview protocol that provides questions that the researcher needs to cover within a particular interview (Hesse-Biber, 2007b). The semi-structured interview style will allow a novice researcher, which I am, to have some control while still allowing for additional questions. The interview protocol was developed using previous research regarding gender and organizational citizenship behaviors (Allen, 2006; Allen & Rush,

1998; Farrell & Finkelstein, 2007; Kidder, 2002; Kidder & Parks, 2001; Lin, 2008a, 2008b; Lovell et al., 1999). The interview protocol will act as open-ended prompts that will guide the participant to discuss the following themes: gender, academic libraries, technology, organizational justice and organizational citizenship behaviors agency. Select sample questions from the interview protocol are: describe your colleagues and how they work, during your professional career, how have you adapted your work to align with organizational or collegial expectations and how would you describe the work functions that your organization or your colleagues' value. Also prior to deploying the interview protocol, I will pilot test the interview protocol on at least two library colleagues who are not members of the LITA distribution list. I will then make any adjustments to the protocol questions and IRB application, as necessary.

In addition to the interview protocol questions, conversational management probes, such as steering probes that will guide the conversation back on track, clarification probes that ask the interviewer to explain something further, and elaboration probes that ask for more information about topic will be used during the interview process (H. J. Rubin & Rubin, 2011). The designed interview protocol is included as Appendix C.

During in-depth interviewing, H. J. Rubin and Rubin (2011) suggest recording interviews for later analysis. This is why all phone interviews will be recorded using Another Call Recorder (ACR), which may be installed on any mobile device. Internet interviews will be conducted using WebEx and will be recorded through the WebEx application. All interviews will then be transcribed in Word and stored on my home desktop computer.

After data transcription and analysis is performed, member checks will be conducted. Member checking reduces the risk of data misinterpretation (Maxwell, 2012). Participants will be given the opportunity to member check by reviewing the transcription and researcher notes. At that time, participants may provide additional input or context into the interview. As an additional mechanism for data collection, as the researcher, I will also use the approach of researcher as instrument, observational notes and will perform memoing. Further information is provided in the qualitative instrument section.

Instrumentation. Semi-structured, in-depth interviews have been used as a method of data collection because they have three characteristics: it allows the researcher to look for rich and detailed information; the participant is able to answer freely; and the questions are not fixed, meaning the interviewer can ask questions as new interests come to light (H. J. Rubin & Rubin, 2011). Feminist researchers find that interviewing is a valuable form of data collection because the methodology allows feminist researchers to uncover hidden experiences (Hesse-Biber, 2007b). The goal of the interviewing process is to elicit is to detailed accounts of the phenomenon, which will act as an antidote to only hearing a man's voice (Reinharz & Davidman, 1992).

The researcher. The researcher as instrument is a distinctive feature of qualitative research (Lincoln & Denzin, 2003; M. A. Xu & Storr, 2012) and refers to the researcher as being an active participant in the research process (Hammersley & Atkinson). This feature of qualitative research requires the researcher to be fully aware how their own knowledge, perspective, and subjectivity may affect the research process (Pezalla, Pettigrew, & Miller-Day, 2012; M. A. Xu & Storr, 2012). The data that the researcher collects may depend on the researcher's perceptual acuity and capacity to elicit detail

from respondents in a semi-structured interview (Barrett, 2007). The researcher strives to capture aspects of a phenomena using consistent with fidelity by selecting important aspects of the shared experience (Barrett, 2007). Yet, data are mediated through the researcher as instrument; therefore, relevant aspects of the researcher, including biases, experiences, and assumptions, are described to qualify her ability to conduct the research (Greenbank, 2003). Furthermore, it is the researcher's own questioning and reflection that raises the level of analysis and understanding (Lincoln & Denzin, 2003). The researcher's role subjectivity statement is included later in this chapter.

Observation Field Notes & Memos. Observation field notes will be taken during the interview. Observation field notes have two major components: the running record and observer comments (Rossman & Rallis, 2012). The running record captures the descriptive data, such inaudible data, such as body language, silence, and facial expressions (Rossman & Rallis, 2012). Observer comments capture the researcher's comments about the process and the researcher's reflections (Rossman & Rallis, 2012). Both the running record and observer notes will be taken during the semi-structured, in-depth interview.

Memoing, throughout the qualitative data collection process, will also be used as an instrument. Memoing assists the researcher to interpret and extract meaning from the raw data, creating ideas that may explain the research phenomenon (Birks, Chapman, & Francis, 2008). Memos may include reflections on relevant readings, current issues, ideas, and personal reactions to interviews, conversations, and methodological issues (Maxwell, 2012). Memos may work alongside the transcript and provide a snapshot of the research process (Birks et al., 2008).

Data analysis. Interviews will be audio recorded and then the words of the interview will be transcribed. Transcripts will then be read and re-read to familiarize so that the data becomes familiar. Data will also be pre-coded, which is a technique that allows the researcher to become familiar with the data through circling or highlighting information as a demarcation (M. Wood, 1984). Pre-coding will also be used as a methodology to help organize the data. After pre-coding, I will apply my approach to coding to the qualitative instruments.

Patton (2015) states that because each qualitative study is unique; thus, the method for the analytic approach should be different. During the research study, relevant memos and observation notes will be used as a qualitative instrument and will be integrated into the construction of themes. Techniques for identifying codes that will be used are repetition, the identification of topics that occur and reoccur (Ryan & Bernard, 2003), the research study's research questions, theory-related material, and similarities and differences (Ryan & Bernard, 2003). The data in these documents will be data-driven coded (DeCuir-Gunby, Marshall, & McCulloch, 2011; Ryan & Bernard, 2003) using two cycles.

The interviews will be coded using several different coding approaches. Descriptive coding will be the first approach used. Descriptive coding summarizes transcript paragraphs into a word or short phrase to help the understand what is happening (Saldaña, 2015). Attribute coding, another approach, allows the researcher to code participant information (Saldaña, 2015). Since the interview instrument is expected to have multiple participants, attribute coding will allow for the notation of basic descriptive information about the participant. Another coding approach for this research

study will be emotion coding, which allows for the coding of inferred emotions by the participant (Saldaña, 2015). Feminist scholars recognize that emotions give meaning to life and contribute to our survival (Brooks & Hesse-Biber, 2007), which is why it is particularly important to capture emotions during a sensitive interview about the participant's gender and work behaviors. Lastly, values coding will also be used as method of data analysis. Since organizational citizenship behaviors are often attributed to behaviors that have been socialized to a particular gender (Dixon et al., 2014; Ely & Meyerson, 2000; Faulkner, 2001; Kidder & Parks, 2001), participants may reveal this data through values, attitudes and beliefs of their worldview.

Pattern coding will be used as the second cycle of coding for the memos, observation notes and interviews. The purpose of this second cycle is to detect reiterating experiential patterns within the data, as well as to reduce the number of initial codes (Saldaña, 2015). During pattern coding, I will look for both the convergence and divergence. According to Patton (2002), qualitative researchers must deal with the challenge of convergence of data or reveal patterns. By identifying convergent themes, I can link them into groups to then generate a new code that more ineptly summarizes the pattern. Divergence is the mirror opposite (Patton, 2002). Rather than look for areas that fit together, the researcher looks for areas where the codes diverge, which may result in splitting codes into two different patterns. Pattern coding allowed themes to emerge. Saldaña (2015) defines themes as the outcome of coding, categorization, or analytic reflection. Identifying themes creates a framework that provides meanings to the phenomenon.

Validity of the Qualitative Phase

In qualitative research, threats to validity are mitigated when the researcher checks for accuracy of the findings (J. Creswell, 2015; Maxwell, 2012). Both J. Creswell (2015) and Maxwell (2012) provide 8 strategies for checking qualitative validity. J. Creswell (2015) defines the following as primary strategies for checking validity: triangulation, member checking, use of rich, thick description, clarification of bias, present negative or discrepant information, spend prolonged time, peer debriefing and external auditor (p. 201). Maxwell (2012, p. 129) provides the following as steps for a validity checklist: intensive long involvement, rich data, respondent validation, intervention, searching for discrepant evidence and negative cases, triangulation, numbers, and comparison (p. 129). In order to validate this research study, a combination of Creswell's strategies and Maxwell's checklist will be used.

Firstly, I will use member checking or respondent validation to solicit participant feedback about data and conclusions. Member checking will be performed by emailing participants in the study and allowing them to comment on my findings. A second strategy to test for validity will be to use the numbers from the quantitative study to support quasi-statistic or numerical data derived from qualitative findings (Maxwell, 2013). Maxwell (2013) states that using number allows the researcher to test the amount of evidence in the data that yields a particular conclusion. A third strategy for validity will be to continue to clarify personal bias through reflexivity, which requires that the researcher document how their findings may be shaped by their personal background (J. Creswell, 2015). A reflexive journal, a method of bracketing (Tufford & Newman, 2012), will be used to document any preconceived notions of the researcher, as well as

information on how I as the researcher react to a finding. A final strategy will be to provide discrepant evidence and negative cases. Participants that are interviewed will not share the same experiences or perceptions, which is why it is crucial for the researcher to provide information on when participants contradict. J. Creswell (2015) states that by providing contradictory evidence, the findings align with real life experiences; thus, becoming more valid.

Validity of Mixed Methods Research

Since mixed methods uses both a quantitative and a qualitative phase, it is essential to address validity issues of each phase (Creswell & Plano Clark, 2011). Yet, it is also important to discuss the validity of the entire mixed methods research process by addressing potential issues and potential strategies to minimize the threat. Creswell and Plano Clark (2011) discuss a number of threats when connecting data in the sequential explanatory methodology during the data collection, data analysis and data interpretation phase.

During data collection, threats may occur by selecting inappropriate individuals, using inappropriate sample sizes, choosing inadequate participants for the follow-up and not designing an instrument with sound psychometric properties (Creswell & Plano Clark, 2011, p. 242). To mitigate these threats to my this mixed methods study, the individuals selected for the quantitative study will be participants that are members of the library and information technology association distribution list, which is a distribution list that focuses on leading edge technology and applications for librarians and information providers (American Library Association, 2018). Therefore, by the very nature of being subscribed to the LITA distribution list, the recipient may either have an interest in

library technology or work with library technology, which is why the individuals who subscribe to LITA would be the appropriate individuals to participate in the survey. Of course, their appropriateness is based on the presumption that those who receive the invitation to participate will be honest and forthcoming about their role in library technology

According to Creswell and Plano Clark (2011), the sample size must be large enough to meet the requirements of statistical tests. Furthermore, Fowler Jr (2013) states that large samples reduce sampling errors. The quantitative phase of the research has a sample size of over 3,000 based on data from LITA (Levine, 2016). A smaller sample size will be used for the qualitative phase. Participants will be purposefully selected based upon demographic information and their score on the organization citizenship behavior scale that are provided in the quantitative phase. By creating a metric for whom I will follow-up, I am ensuring adequate participants to explain the phenomenon. Furthermore, follow-up with individuals will continue until saturation or no further themes are revealed. To mitigate the threat of not designing an instrument with sound psychometric properties, although the survey is based on previous research, I will use rigorous procedures to test the survey for internal validity during the quantitative phase. I will use the above outlined data collection and I will follow the outlined researcher checks to ensure validity to the qualitative phase of the research.

Data analysis issues may also threaten the validity of mixed methods research. Creswell and Plano Clark (2011, p. 242) discuss the following issues that threaten validity: choosing weak quantitative results to follow up qualitatively, choosing weak qualitative results to follow up on quantitatively and including qualitative data in an

intervention trial. Although the last two of the data analysis threats are not relevant to this study, this study may face an issue of choosing weak quantitative results to follow up qualitative. In order to mitigate this threat to validity, this research study will use participation selection, which is a variant of sequential explanatory. Participant selection variant will allow me to purposefully select participants to follow-up. Again, since I will be approaching the interpretation of results dialectically, the quantitative phase will not play a significant role on the options for follow-up.

Data interpretation issues are the final threat to validity according Creswell and Plano Clark (2011). Creswell and Plano Clark (2011, p. 243) list six data interpretation issues: comparing two data set when they are intended to build rather than merge, interpreting the data in reverse order, not taking full advantage of qualitative data finding for intervention, not interpreting the mixed methods in light of the advocacy or social science lens, not relating the stages in a multiphase study to each other and irreconcilable differences among different researcher. Not all of these interpretation issues are relevant to this study, but I will address the ones that may threaten the validity of this mixed methods study. The data from the quantitative and qualitative data will be used to build and answer the research questions rather than be merged. Since the study will be performed sequentially, the interpretation of the quantitative data will be conducted first, followed by the data collection, analysis and the interpretation of the qualitative, which is appropriate for the sequential explanatory design. The research study will consistently be viewed from a feminist lens and will help to produce calls for action that are significant to the findings of this study. Finally, a conceptual framework using organizational

citizenship behavior, gendered organization, role congruity theory and feminist theory will connect the two phases of the study.

Role of the Researcher

Since feminist researchers use experiences to explore and grasp issues they are studying (Hesse-Biber, 2007c), my own personal understanding of the issues may be an advantage when conducting the research. However, I as the researcher must be cautious and practice reflexivity. Reflexivity is a process that requires the researcher to recognize, examine and understand their own social background and assumptions (Hesse-Biber, 2007b). J. Creswell (2015) states that practicing reflexivity also requires that the researcher examine how their personal background may shape the direction of the study.

Tennant (2012), a library technologist who identifies as a man, addressed issues of gender and technology leadership. This article evoked a strong reaction from many women technology librarians who were outraged that the tone of the article was condescending to women. Tennant was unable to bring discussion about this topic to the forefront because he has an etic perspective since he is not a woman and would have difficulty exploring such a sensitive topic.

As the researcher, it is vital that I understand that I am both the researcher and the researched. This role provides me with access to emic perspectives regarding women, technology and librarianship. This emic perspective provides a sense of familiarity with the participants that men as outsiders would not have. Through my own lived experiences, I am privy to examples of women technology librarians are treated differently. I often have to balance this role of exerting my expertise and not appearing too aggressive for fear of being perceived as “bitchy”. I have been trained that not only

do men, but women colleagues have a perception of how women librarians should behave. This is why I have become an expert at appearing to perform gender congruent roles by practicing caring and nurturing behaviors, such as mentoring colleagues, training/helping colleagues and listening to students. Yet, these behaviors are not expected of men who are my technology colleagues nor are they penalized if they do not exhibit these behaviors. In fact, if they exhibit these behaviors they are often rewarded, raising concerns of fairness and justice

I recognize how my lived experiences and professional practice may shape my thought processes and expectations during this research study. Because of this, I aim to put my personal own beliefs and assumptions to accurately describe the participants' personal and professional input. I will remain open to their responses and keep any subjective observations and reactions separate. Furthermore, I will carefully reflect on my thoughts before, during and after the interviews, transcription and analysis. Member checking of the transcribed interview and observation notes will also be employed as an effective way of ensuring that I have accurately represented the participant's response (Creswell & Plano Clark, 2011; Maxwell, 2012). I acknowledge myself within the context of this research, but believe that this constructed relationship between the researcher and participants can generate a collaborative knowledge that contributes to personal and social transformation (Maxwell, 2012).

Ethical Considerations

Ethical considerations appear in every aspect of the research process (Miner-Rubino & Jayaratne, 2007). Feminist researchers believe that one approach to conducting ethical research is to create a more equal relationship between the researcher

and the participant or to redefine research as mutual process rather than treat the participant as an object (Miner-Rubino & Jayaratne, 2007). Rowan University's Institutional Review Board mission also addresses the importance of ethical conduct for human subject study. The feminist research lens, my own personal ethical substance, and the Rowan University mission will guide the ethical considerations of this research study.

Prior to the commencement of this study, IRB approval is necessary. In addition to IRB approval, participants will be fully aware of the intended purpose of the study and they will be asked to provide both verbal and written consent for the data that was used. Research study participation is not mandated, nor will it be rewarded. Finally, participants may decide to decline to answer any question or withdraw from participation at any time.

Privacy and Confidentiality

Sensitivity to participants issues of privacy and confidentiality have been considered during the research design. Since participants will be sharing stories that pertain to their professional experiences, it is important that their identity cannot be extracted from the findings and will remain confidential. In order to protect the participant's confidentiality, a list of the participants' names, contact information, and pseudonyms were kept in a secure location with access to it by me only and then will be destroyed at the completion of the study. I will also fully disclose the purpose of my study and disclose any foreseeable risks or benefits of participating from the start. Lastly, participants will be able to review manuscripts about their data prior to seeking publication outside of the dissertation.

Conclusion

This chapter reviewed the methodology and strategy of inquiry for this explanatory sequential mixed methods research study. The research study has two phases: quantitative and qualitative. This chapter reviewed aspects of each phase, which included how participants were selected, data collection strategies, methods for data analysis, validation, and ethical considerations. Chapter Four of this study will discuss the findings of the research study using the explanatory sequential mixed methodology.

Chapter 4

Overview of Findings

The purpose of this mixed methods study is to explore the issues of organizational justice for women technology librarians who experience the gendered-nature of organizational citizenship behaviors (OCB). This research study was conducted in two phases. During the first phase, the quantitative portion of the study, the survey collected data that provided insight into participant's demographic information, their levels of organizational citizenship behaviors, and interest in participating in the study. Furthermore, this data also helped to answer how women technology librarians' organizational citizenship behaviors differ from their colleagues who are men. The data collected in the quantitative phase also provided a better understanding of how gender and organizational citizenship behaviors are connected, which assisted in forming follow-up questions during the qualitative phase of the study. The second or qualitative phase of the study was completed through semi-structured interviews, which used open-ended questions that would provide further understanding or would expand upon the quantitative findings. These interviews were conducted via web conferencing tools or phone since participants were located throughout the United States.

This chapter will provide an overview of the findings from the analysis performed on both the quantitative and qualitative data collected for the study, using the research questions to guide the study. Chapter 4 is divided into two parts. The first part will present an overview of the quantitative findings through the use of descriptive statistics methods, chi-square tests and bivariate analysis. Furthermore, the overview will address changes to the methodological framework of the quantitative phase of the study. The

second part of this chapter will discuss themes developed from interview data collected during the qualitative phase, as well as changes to methodological framework of the study. Finally, this chapter will serve as springboard for the subsequent two chapters, which will be presented as articles for publication.

Quantitative Phase Overview

The first phase of the study collected survey data to examine the research question: to what extent do women technology librarians' organizational citizenship behaviors differ from colleagues who are men? The survey was distributed using Qualtrics and sent electronically to technology librarians via the American Library Association's Library and Information Technology Association (LITA) distribution list. Although there were a number of survey participants from the LITA distribution list who expressed their willingness to participate in the survey, when invited most participants did not respond to the invitation. In order to attract more survey participants who would be willing to participate in the interviews, the survey was sent to Code4lib, which is a list for developers and technologists within a library setting.

The survey, which was based off a previous questionnaire designed by NicDomhnaill (2006) and P. Podsakoff et al. (1997), used a Likert-style approach to ask participants to rank their level of agreement to each organizational citizenship behavior question, with Strongly Agree being the highest level of agreement and Strongly Disagree being the lowest level of agreement. Since the statements of this survey are similar to the OCB survey statements used in a survey by NicDomhnaill (2006) and P. Podsakoff et al. (1997) and have been found to measure a participant's organizational citizenship behavior, the survey may be considered face valid. Additionally, participants

were asked to identify gender, their level of library science education, their institution type (e.g. academic, public), their position status (e.g. professional, faculty), and numerical value of those within their technology department, gender composition of their technology department and an optional entry of their email address.

The data collected during the survey was primarily intended to identify a selection of willing participants for the qualitative phase, as well as answer the research question: To what extent do women technology librarians' organizational citizenship behaviors differ from colleagues who are men? The primary focus of the study is to look at the issues of organizational justice for women technology librarians who experience the gendered-nature of organizational citizenship behaviors (OCB), which is why there is a more detailed overview of the quantitative data findings found.

One hundred and seventy-nine surveys were completed. Seventy surveys were not considered for analysis based on failure to identify their gender (n=34), lack of master's level library science education (n=10), or their institution type was not academic in nature (n=33). An additional 37 participants abandoned the survey before completing the questions. Three participants identified as non-binary or third gender and did not meet the gender identification scope for this study. The remaining sixty-nine finished surveys were considered for analysis. Of those that completed the survey ten were men and 59 identified as women.

Twenty-nine of the participants identified their institution type as 'private academic research library' and forty-two identified their institution type as 'public academic research library.' Twenty-eight participants identified their position type as 'faculty', three identified as 'other and the remaining thirty-eight participants identified

as ‘professional.’ The composition of their technology departments consisted of: 2-5 people (46.38%), 5-10 people (18.84%), 10-20 people (15.94%), 1 (10.14%) and 20+ people (8.6%). When asked about the gender composition of their department, 21 participants answered, ‘equal amount of men and women’, 27 answered ‘mostly women’ and 21 answered ‘mostly men.’

Table 1

Survey Participants Demographic

Characteristic	Women (n=59)	Men (n=10)
Institution Type		
Public Academic	35	5
Private Academic	24	5
People in Department		
1-10	42	10
11-20	11	0
20+	6	0
Gender Composition		
Mostly Men	18	3
Mostly Women	23	4
Equal parts men and women	18	3

Results

Firstly, the survey did serve its primary importance, which was to identify participants for the qualitative phase of the study. Three participants were identified as willing participants for the qualitative phase. Participants in the quantitative phase then aided in identifying forty-seven other individuals who may be willing to participate in the study.

For the survey data collected, independent T-tests were performed to acquire the mean and standard deviation so that the effect size could be determined using Cohen's d suggested guidelines. Descriptive statistics analysis methods were applied to the survey questions using the five indicators used for each organizational citizenship behaviors: altruism, conscientiousness, civic virtue, courtesy, and sportsmanship (see Appendix B). The analysis looked at the level of agreement frequency by a specific gender and mean scores. Finally, chi square test was performed to look for statistical significance.

By running the independent T-test, a small effect size (>.2) was found for the altruism, courtesy and sportsmanship indicators; however, no significant difference was found conscientiousness and civic virtue. Women who participated in the survey had a higher mean score on statements that were assigned the courtesy and conscientiousness indicators and men performed better than women on statements assigned the altruism, civic virtue and sportsmanship indicators. The results of the chi-square test are not reportable since no significant relationships were found between gender and any of the OCB indicators; therefore, gender and OCBs are statistically independent; thus, have no statistical significance.

One reason for the lack of statistical significance is that a larger sample size is needed. Another explanation for the lack of statistical significance is how the survey was designed. Although the survey statements were based on previous instruments created by NicDomhnaill (2006) and P. Podsakoff et al. (1997) and the created instrument was tested and re-tested for reliability, a consistency motif problem caused by self-reports may have invalidated any statistical significance. Consistency motif problem is created because people have theories of how personality, behavior, and organizational

environments are interrelated (Podsakoff & Organ, 1986); therefore, participants self-report based on their understanding of theories. Consistency motif problem was further aggravated because many of the OCB indicators were too similar in content. Remedial approaches that may have mitigated consistency problems is by eliminating statements that may be socially desirable and trimming the scale (Podsakoff & Organ, 1986)

Although the chi-square test found no statistical significance, the effect size, which measures magnitude of a treatment effect (Becker, 2000) was found to have small significance according to Cohen's d, which is the difference between the two means divided by standard deviation (Becker, 2000). Altruism (-0.312), courtesy (0.366) and sportsmanship (-0.41) were found to have an effect size of, which is considered to be a small effect size (>.2).

The remaining quantitative analysis uses descriptive statistics analysis methods, by looking at the frequency of respondents to each OCBs individual statements based on gender, as well the mean score of each OCB. Women exhibited higher frequency in their level of agreement of the altruism indicator by selecting 'Strongly Agree' or 'Agree' as their response to the following statements: 'I help colleagues with heavy workloads' (71.19%), 'I help colleagues who have been absent from work' (76.27%), 'I go out of my way to help students' (72.88%). Yet, men exhibited higher frequency in their level of agreement of the altruism indicator by selecting 'Strongly Agree' or 'Agree' as their response to the following statements: 'I go out of my way to help new staff and faculty' (80%) and 'I help colleagues with work-related problems' (100%). Overall men exhibited higher frequency in their level of agreement of the altruism indicator by selecting 'Strongly Agree' or 'Agree' as their response 77.33% of the time; women overall

selected Strongly Agree' or 'Agree' as their response 76.84% of the time. Furthermore, men had higher mean scores on the altruism indicators for the following statements: 'I go out of my way to help new staff and faculty' (4.00) 'I help colleagues with work-related problems' (4.30) and 'I go out of my way to help students' (4.60). Women had higher mean scores on the altruism indicator for the following statements: 'I help colleagues with heavy workloads' (3.76) and 'I help colleagues with work-related problems' (3.88). Additionally, men (4.06) who participated in the survey had a higher combined mean score for their responses to statements assigned the altruism indicator than women who participated (3.92).

For the conscientiousness indicators, women expressed a higher frequency in their level of agreement to the following statement: 'I conserve and protect organizational property' (64.9%). While women and men both expressed high level of frequency in their level of agreement to the statement, 'I pass along information to my colleagues,' women indicated 'Strongly agree' (64.4%), whereas the rate of frequency of men who responded 'Strongly agree' was 60%. The final conscientiousness indicator 'I plan and prepare work meeting content' men (50%) indicated a slightly higher level of frequency to indicate 'Strongly Agree' than women (49.2%). Also, while women had a higher mean score on the following statements, 'I conserve and protect organizational property' (3.90) and 'I pass along information to my colleagues' (4.64), men had a higher mean score for the statement 'I plan and prepare work meeting content' (4.50). Woman (4.32) participants scored an overall higher combined mean score on their answers to statements assigned the conscientiousness indicator than men (4.23) who participated.

According to DiPaola and Tschannen-Moran (2014), courtesy may help to prevent problems and maximizes use of time within an organization. Men and women participants had high frequencies in their level of agreement. For the statement, ‘I spend time encouraging other colleagues when I perceive them to be "down."’, 80% of men who participated indicated their level of agreement as ‘Strongly agree’ or ‘Agree’, which is a slight majority over the 72.88% of women who selected the same levels of agreement. One hundred percent of men who participated indicated their level of agreement as ‘Strongly agree’ or ‘Agree’ to the statement, ‘I share my expertise with colleagues’; again, it is a slight majority over the 98.3% of women who selected the same levels of agreement. Men who participated also had higher level of agreement by indicating ‘Strongly Agree’ or ‘Agree’ ninety percent of the times to the following statement: ‘I take preventive steps to try to prevent problems with my colleagues’ when 86.44% women participants only expressed their level of agreement as ‘Strongly Agree’ or ‘Agree.’ Yet, women had higher frequencies of their level of agreement by indicating ‘Strongly Agree’ or ‘Agree’ to the statement: ‘I organize recognition events for colleague's excellent performance or other achievement’ (33.89%), whereas, 0% of men indicated that they ‘Strongly Agree’ and only 10% of men indicated that their level of agreement as ‘Agree.’ Women were also more likely to express higher frequencies of their levels of agreement to the statement: ‘I take preventive steps to try to prevent problems with my colleagues.’ Women participants indicated 52.88% that their level of agreement as either ‘Strongly agree’ or ‘Agree’; men indicated that level of agreement 40%. Although men higher levels of agreement to the following statements: ‘I spend time encouraging other colleagues when I perceive them to be "down,"’ ‘I share my expertise

with colleagues' and 'I take preventive steps to try to prevent problems with my colleagues', women participants achieved a higher mean to all statements with the exception of 'I spend time encouraging other colleagues when I perceive them to be "down"'; in this case, the mean score was equal between women and men who participated. For statements assigned the courtesy indicator, women (3.78) participants had a higher combined mean score than men (3.60) who participated.

The civic virtue indicator, which is typically considered a masculine OCB (Kidder & Parks, 2001), tests commitment to the organization. In this survey, men had higher frequencies in their level of agreement by indicating 'Strongly Agree' or 'Agree' to the following statements: 'I attend and actively participate in committee/working group meetings.' (100%), 'I engage in work for organizational or ad hoc committees.' (100%), and 'I find that my personal values align with the university/college library values' (70%). Women had higher frequencies in their level of agreement by indicating 'Strongly Agree' or 'Agree' to the following statements: 'I engage in work for professional boards or committees (outside my organization)' and 'I talk up the university/college library as a great place to work'. Overall men (4.06) who participated had a higher combined mean score over women (4.02) who participated.

The sportsmanship indicator determines whether an individual is maximizing the total amount of time on constructive endeavors that would benefit the organization (DiPaola & Tschannen-Moran, 2014). With that definition in mind, the following questions were recoded so that 'Strongly disagree' was set to the numeral value of 5; ' Disagree' was set to the numeral value of 4, 'Neither agree nor disagree' was set to the numeral value of 3, 'Agree' was set to the numeral value of 2, and 'Strongly agree' was

set to the numeral value of 1: ‘I focus on what is wrong with the situation, rather than the positive side.’, ‘I consume a lot of time complaining about trivial matters’, and I find fault with what other colleagues/staff are doing’.

In this survey, men had higher frequencies in sportsmanship based on their level of agreement to by indicating ‘Strongly Agree’ or ‘Agree’ to the following statements: ‘I provide constructive suggestions about how committees I am involved with can improve’ (90%). Men also demonstrated higher frequencies in their level of disagreement by indicating ‘Strongly Disagree’ or ‘Disagree’ to the following statement: ‘I consume a lot of time complaining about trivial work matters’ (100%). Women had higher frequencies in their level of agreement by indicating ‘Strongly Agree’ or ‘Agree’ to the following statements: ‘I am willing to put a great deal of effort beyond that normally expected in order to help the university’ (59.32%) and demonstrated higher frequencies in their level of disagreement by indicating ‘Strongly Disagree’ or ‘Disagree’ to the following statements : ‘I focus on what is wrong with the situation, rather than the positive side’ (57.63%) , and ‘I find fault with what colleagues are doing’ (45.76%).

As a result of the recoding, men had a higher mean score for the following questions: ‘I provide constructive suggestions about how committees I am involved with can improve’ (4.30), ‘I focus on what is wrong with the situation, rather than the positive side’ (3.10), and ‘I find fault with what colleagues are doing’ (3.30). Women, on the other hand, had a higher mean score for the following questions: ‘I am willing to put a great deal of effort beyond that normally expected in order to help the university’ (3.78) and ‘I consume a lot of time complaining about trivial work matters’ (2.03). Overall men

(3.18) had a higher combined mean score than women (3.00) for the statements assigned the sportsmanship indicator.

Since this research study was conducted using a sequential mixed methodology, the quantitative findings were used to plan the qualitative phase. J. D. Creswell (2014) states that the quantitative findings may inform the sampling procedure, and that is the case of this research study. The primary intent of the quantitative phase was to identify willing participants for the qualitative phase. However, only three willing participants were identified during the quantitative phase. Furthermore, the survey results were used to corroborate qualitative findings (Greene et al., 1989)

Qualitative Phase Overview

The second phase of the research study was qualitative, and the data collection included semi-structured interview transcripts. While the participant selection variant of the sequential explanatory model was intended to aid in the selection of the participants for the qualitative model, it was found to be an insufficient approach for participant selection. Although there were over 25 individuals who completed the questionnaire, agreed to participate in an interview, and provided their contact information, only four of the invited 25 responded to their email invitation. Since the participant selection variant did not work for this research study, I adopted a new the sampling strategy for the qualitative phase of the study to identify more participants to investigate the phenomenon at the heart of this study in more depth.

The qualitative phase of this study used a snowball or chain sampling approach, which uses recommendations from participants to identify willing participants (Patton, 2005; Teddlie & Tashakkori, 2009). Using this approach, I invited 47 technology

librarians who identified as a woman to participate in the study via an email invitation that outlined the purpose and nature of this research project. Fourteen of the 47-woman technology librarians responded and were scheduled for either phone or a web conference. The fourteen participants were asked to talk about how they became a technology librarian, work place experiences, and advice for future women technology librarians. The duration of interviews lasted anywhere from 40 minutes to 90 minutes. Each interview was audio recorded and then transcribed. After the interview was transcribed each participant was assigned a pseudonym (see Table 2) and was sent the transcription so that they could perform a member check of the transcript.

Table 2

Interview Participant Demographic Matrix

Pseudonym	Carnegie Classification	Area of the US	Job Area
Kathleen	R1	Western	Emerging Technologies
Lisa	R2	Southern	Technology Administration
Debra	High Transfer-High Traditional	Northern	Systems, Electronic Resources
Diana	R1	Western	Technology Administration
Lee	M1	Northern	Repository
Emma	D/PU	Northern	Web Technologies
Theresa	R1	Northern	Library Administration
Jane	M1	Northern	Systems
Michelle	R1	Northern	Repository

Table 2 (continued)

Pseudonym	Carnegie Classification	Area of the US	Job Area
Pamela	M2	Central	Systems
Rose	R1	Southern	Web Technology
Bonnie	R1	Central	Technology Administration
Cheryl	R1	Southern	Technology Administration
Skye	M1	Northern	Electronic Resources

The qualitative data were analyzed using two cycles of coding. The first cycle used descriptive coding methods. The descriptive coding method looks for topics within a transcript and uses a word or short phrase to summarize the data (Saldaña, 2015). The descriptive coding iteration identified 39 different topics within the data (see Table 3). Pattern coding was used as the second cycle of coding for the memos, observation notes and interviews. The purpose of this second cycle is to detect reiterating experiential patterns within the data, as well as to reduce the number of initial codes (Saldaña, 2015). The following themes emerged from the analysis: relationship building with colleagues; gender differences in communication; gendering documentation; limiting service to the community; doing/not doing what is good for the team; and proving yourself technology skills. These themes are associated with the research question: How do women technology librarians describe their organizational citizenship behaviors within a gendered profession and In what ways do the experiences of women technology librarians explain how organizational citizenship behavior perpetuates a lack of organizational justice, gender segregation and inequity within the contemporary academic

library? Below is a summation of these findings. Chapter 5 and Chapter 6 will provide a more detailed discussion of the each finding, using data to illustrate participant experience with the phenomenon under investigation and to enable the reader to determine the veracity of the analysis.

Findings

Using the code map format developed by Anfara Jr, Brown, and Mangione (2002), the following code map (see Table 3) displays the iterations of analysis and serves as a picture of the process of the aforementioned findings. The map uses a bottom-up approach and begins at the initial coding of data and ends at the third iteration of mapping the interpretation of the data to the research questions that guide the study.

Table 3

Code Map for Gender and OCB in Library Technology

Code Mapping for Gender and OCB in Library Technology	
RQ2: How do women technology librarians describe their organizational citizenship behaviors within a gendered profession?	RQ3: In what ways do the experiences of women technology librarians explain how organizational citizenship behavior perpetuates a lack of organizational justice, gender segregation and inequity within the contemporary academic library?

(Third Iteration: Application to Data Set/Interpretation)
Women describe their OCBs in a number of ways, such as through building relationships, communicating with others, training and documentation, service to the community, and overcoming problems. In addition, women technology librarians experience a number of ways that their OCBs and the need to prove themselves creating inequity within the academic library, which include gendered expectations, lack of reward for OCB, and gendered interactions.

(Second Iteration: Pattern Variables/Themes)

2A. Relationship building with colleagues.	2C. Gendering documentation	2E. Doing/Not doing what is good for the team
2B. Gender differences in communication.	2D. Limiting service to the community	3A. Proving your technology skills

(First Iteration: Descriptive)

2A. Helping	2B. Email	2C. User Interactions
2A. Colleague Relationship	2B. Face to Face	2C. Training
2A. Mentor Relationship	2B. Approachability	2C. Work-Process
2A. Servant Relationship	2B. No Communication	2C. Slower Implementation
2A. No Help/No Relationship	2B. Unaware	2C. Conscientiousness
2A. Collaboration	2B. Listening	2C. No Reward
2A. Trust	2B. Abrasive	
	2B. Understanding	3A. Outsider
2D. Barriers	2B. Informing	3A. Anger/Regret
2D. Volunteering	2E. Solution	3A. Unconfident
	2E. Change	3A. Bias
2D. Growth		
2D. Guilt	2E. Motivation	3A. University IT
	2E. Supportive Relationship	3A. Library IT
		3A. Mansplaining

Relationship building with colleagues. Women technology librarians that were interviewed reflected on the importance of building relationships with others. These reflections on how they worked towards these relationships were often characteristics of what Organ (1988) would define as the altruism organizational citizenship behavior. Participants outlined their relationships into three types: peer-to-peer, mentor-mentee, and servant leader-employee.

Responses indicated that the peer-to-peer relationship was the most common relationship formed. Participants described peer-to-peer relationship using the following terms: someone to bounce ideas off of; someone to vent to when things aren't going your way; and someone you may have a hard conversation with but still support by offering your assistance. Participants stated that they were able to form these peer-to-peer relationships because they were willing to help someone without the other person feeling like that help needed to be reciprocated. Furthermore, participants talked about approachability, charisma and inclusiveness as being a major factor in helping to form peer-to-peer relationships.

The mentor-mentee relationship was yet another way that participants help their colleagues. Participants who are in leadership roles discussed how there is less of feeling of competitiveness within librarianship; therefore, it was easier to develop a mentor-mentee relationship. This relationship was described by participants as a guiding relationship in which they work on developing a person's professional strengths. Participants also discussed how forming a mentor-mentee relationship also provided them with support when they had to make a difficult decision that would impact their organization.

Servant leader-employee relationship was yet another relationship that participants had developed. Participants described this relationship in the following ways: ensuring that my employees have everything that they need to be a success, stepping aside to allow a subordinate to achieve their desired career path, and allowing their employees to make independent decisions about what they believe is best for the organization. Participates also related that the servant-employee relationship required a lot of input from employee in order to yield the best result for the employee and the organization.

When asked how participants formed relationships, they talked about their work style or their leadership style as being collaborative. Participants talked about using people's strengths and skills to collaborate on a project. Other participants looked for inefficiencies within technology to bring people together to create change and build relationships.

Participants were also open in expressing that women in library technology may have a more difficult time than colleagues who are men in forming professional technology relationships and getting help. Participants discussed how they were left out of group events by colleagues who are men and often felt like an outsider within the department. Participant felt that men may ask questions without fear of asking the wrong question or looking stupid, women in library technology have a hard time engaging in conversations that may put their expertise in doubt. Participants acknowledged that there is inequity in how relationships are formed within library technology. Furthermore, women participants who failed to build relationships at their organization during their first year of employment often related how they had had a more difficult time creating

change and persuading people to buy-in or adopt changes. Although women participants commented on having a more difficult time forming relationship and being left of work events, women participants did not believe that colleagues who are men were conscious of their feelings.

Gender differences in communication. Participants equated communication to be as important as the implementation of a technology. Responses for why they considered communication to be so important included: inefficient communication creates a breakdown in service; failure to communicate change creates a more resistant culture, and it is just the collegial thing to do. Although most participants communicated via email, some participants liked to communicate change face-to-face by meeting with individuals who have resistant to change in the past. Participants stated that they never received complaints about their over communication; however, other participants did receive complaints about not communicating change as thoroughly as anticipated.

Listening, as a part of communication, was a common theme among participants. Participants talked about how failure to listen to stakeholders especially often yielded ineffective library technologies and also resulted in negative relationships. Some participants expressed that they had to develop their listening skills in order to understand why someone might be resistant changes, whereas, others expressed that they had an innate ability to make people feel instantly comfortable with them.

Participants referenced that women had to communicate differently than colleagues who are men. Participants related that colleagues who are men could get mad during meetings and still be respected and taken seriously, but women could not. Other participants talked about how their perception that women technology librarians had to

‘massage’ a situation or message in a way that would deliver a difficult message in a more delicate way. Furthermore, participants lamented that they did not receive adequate communication from central I.T departments, which tended to be masculinized. One participant put in succinctly, ‘men don’t communicate.’

Gendering documentation. Participants discussed the importance of approaching any issue analytically by looking at the problem through several different lenses. Analysis suggested that participants performed user studies to understand user behaviors, approached stakeholders for their input, and designed workflows in order to understand how the problem is affecting library technology services. Participants would then design processes or checklists that may aid in the implementation and also add to the transparency of any issue.

During interviews, participants discussed the importance of documentation to understand the problem, help to resolve the problem, and also use it as a training deliverable for library faculty and staff who are in non-technology roles. Interview responses provided specific examples of documentation that the participants would produce such as LibGuides (library software for guides), screencasts, tutorials and step-by-step instructions with screenshots. Participants also believed that their ability to analyze and document the problem helped them to be more efficient in their work performance.

Participants specifically spoke about colleagues who are men that had previously performed similar work but did not document issues. They related how the failure to document affected continuity in their business process. Furthermore, if the colleague who was a man had documented an issue, the documentation was often sparse in details and

did not create transparency on why the problem occurred. Also, the documentation could not be used as training material for library faculty or staff who held non-technology roles because the documentation was not written for the purpose of educating. However, it was unclear whether the detailed documentation that participants produced was valued, nonetheless, participants believed it was important to have the documentation.

While participants acknowledged that their approach, helped them to be more efficient and, thus, more conscientious about technology issues and adoption, there was also an acknowledgement that women technology librarians tend to slow down implementation of resolutions. Participants acknowledge that their colleagues who were men may 'plow' forward with a resolution, but that they were more reluctant. Participants reflected that they had to truly analyze an issue or the impact a resolution may have on stakeholders prior to any implementation. Furthermore, participants also discussed that if they attempted to just 'plow' forward with a resolution they may face more resistance because of their gender.

Limiting service to the community. Participants frequently discussed how they must limit their participation in committees and set barriers. While some participants limited their service after receiving tenure, others limited their service so that they could better manage staff.

Reflections on advice from their mothers or other working women regarding volunteering were also present in the interviews. Participants talked about how they received advice to not always be the first to raise their hand, but to "sit on their hands." Some participants acknowledged that it was difficult to not serve or step up, while others

lamented how service created more strain on their work-life balance and forced participants to choose between their professional obligations and their family obligations.

Responses also expressed how participants wanted to do their share, but to not to exceed it. Participants discussed how they practiced selective involvement by choosing to only serve on committees that they believed they would be most effective in serving or that would personally benefit them in some way, such as developing more professional contacts, enhancing their skill set or they had a personal interest. Participants also discussed how important it was to be able to say no and ensure that the person to whom they are saying no to understands why they have declined the offer.

While participants discussed how it is necessary to limit participation and set barriers, their responses also included reflections on how they valued those who did volunteer for service. Reflections included how volunteers created a more social organization, a more positive work culture and help build more positive relationships. Yet, there was also a recognition that women who volunteered did not receive any extrinsic reward for their service and that their time would be better devoted to work practices that would help to advance their career.

Doing/Not doing what is good for the team. Interview responses indicated that participants practiced a solution-focused method, which is descriptive a style of sportsmanship. Participants discussed how rather than focusing on the problem; they stay solution focused and work towards way of achieving their desired outcome. Governance structures and using the strategic plan as a living document, often allowed participants to work toward an agreed solution that would benefit the organization. Furthermore, the use of such structures allowed participants to look for things they can change, rather than

focusing on things that that can't change. Participants stated that in order to find a solution to a problem there must be a clear understanding of how organizations and people interoperate. There was also discussion about not being too invested in one solution to a problem.

Relationships also affected how people might approach a solution. Participants discussed how keeping the relationship intact was more important than having to capitulate on certain details. Participants voiced that there was not a desire to be autocratic or argumentative because that do not resolve any problems. Rather participants considered how to continue to have a good relationship, which may equate to better resolutions in the future.

While participants expressed a solution-focused practice of sportsmanship, there were some participants who had negative consequences to their style of sportsmanship. Many participants discussed how the nature of their work required them to make 'executive' decisions to move their organization forward. As a result of the 'executive' decisions, participants were often the target of failed organizational change. Some participants were able to not focus on the negative opinions, but rather see how their implementations and solutions may help their career options in the future. Others received harsher consequences such as denial of tenure, lack of support from their administrators, forced documentation and mapping of projects, and inability to advance.

Proving your technology skills. Participants talked openly about the hardships of being a women technology librarian. There were repeated references to the perception that women technology librarians had to work harder and know more about technology than their colleagues who are men. Repeatedly, the women participants advised future

women technology librarians to have depth and breadth in their technology skills and that their skills would have to surpass their colleagues who were men. Many participants stated that there was a perception by their university colleagues that men in technology fields just have to show up to meetings and it is believed that they know about technology; whereas, women had to prove their technology skills. Furthermore, participants, who were highly skilled technology librarians, referenced how their colleague who are men in their university's central information technology departments or vendors who are men would often 'mansplain' or talk in a condescending tone to their women colleagues about rudimentary technology concepts, such as how the network works or what internet protocol (I.P.) does. There was also discussion of the term "alpha geek" or the idea that men had to subjugate others by demonstrating that they knew more about a certain technology. Yet, most participants did not have a clear way of dealing with the "alpha geek mentality" besides acquiring more technology skills.

Despite their advanced education many participants internalized the feeling that they still did not know enough about technology and felt as though they were "imposters" during meetings with members of their university's information technology (I.T.) departments. The concept of 'imposter syndrome' or the fear of being a fraud came up during many of the interviews. Their self-doubt in their own skills was evident as many of the women technology librarians referred to the idea that they weren't able to talk the I.T. language or were afraid to use I.T terms for fear that they may derail the conversation. Yet, many of the participants had second master's degrees within fields that involved technology or extensive knowledge of technology. When prompted for advice

for future women technology librarians, many advised for women in technology to be confident or to 'fake' their confidence.

Participants referenced missed opportunities to advance library technology because they were unable to collaborate or lacked a desire to prove themselves to their university's I.T. departments, which had a gender composition primarily consisting of men. Others talked about not being able to acquire the permissions from I.T to perform their work. While some participants were able to have their dean or other administrator assist in coming to a resolution with central I.T, others were not. Although avoidance of central I.T and vendors is difficult for women technology librarians, participants referenced that it became their coping strategy with masculinized I.T departments. Yet, there was also acknowledgement that that tactic did not allow them to advocate effectively for their patrons or their systems.

When discussing the participants' interactions with central I.T or vendors, there were several emotions present. Some participants expressed anger and disgust at how they were treated by men in central I.T and by vendors. Other participants seemed sad and exhausted by this constant feeling of having to prove themselves. While these emotions were present in the interview, participants also recounted how they believed that the men in library technology were better than the men in other areas of technology. Participants recounted how men in library technology 'got it'; that they understood more what it was like to be a woman in technology and were able to recognize misogyny and the difficulties that women technology librarians had with proving themselves to outsiders.

Conclusion

This chapter summarized both the quantitative and qualitative findings for this study. The final two chapters of this dissertation are written in manuscript format for publication and will provide a more comprehensive examination of the study's finding. Chapter 5, entitled "Women Technology Librarians and Gendered Organizational Citizenship Behaviors: A Mixed Method Study" is an empirical article that connects the concepts of gender and library technology to the theoretical frameworks of organizational citizenship behaviors and organizational justice. This article adheres to the publication guidelines for *Gender, Work and Organization*, which is a peer-reviewed, scholarly journal focused on empirical research that furthers the understanding of gender relations and the gendering of organizations.

Chapter 6, entitled "Women Technology Librarians As Good Citizens" is a practice-based article that highlights and informs how women technology librarians use their organizational citizenship behaviors to add to their organization's success. This article was written specifically to aid practitioners and administrators in ways to foster women into library technology roles by recognizing the benefits of women in library technology, while also addressing mechanisms to overcome organizational justice issues. This article will adhere to the publication guidelines for *On the Horizon,* which creates a forum for issues about technology in post-secondary education

Both manuscripts are co-authored by Dr. Ane Turner Johnson, who served as my dissertation chair. The dissertation concludes with a comprehensive list of references, which includes all citations used within the first four chapters, as well as references included within the following two manuscripts (Chapter 5 and Chapter 6).

Chapter 5

Women Technology Librarians and their Gendered Organizational Citizenship Behaviors: A Mixed Methods Study

Introduction

Service to the academic community is the ethos upon which librarianship was built, but that service can no longer be rendered effectively without some investment in the use of technology (Sennyey et al., 2009). Although technology has touched every aspect of librarianship (Grimes & Grimes, 2008), it has also produced gender segregation within the profession by devaluing traditional library services, which is reflected in the discrepancy between the lower-paying positions that are traditionally librarian positions occupied by women and those of higher paying IT-related specialties dominated by men (M. Deyrup, 2014). Carson and Little (2014) ask, "If librarianship is 80% female and computing is 70% male, what does this mean for library technology" (p. 105)? Library technology has become a specialty of librarianship dominated by men. Men filled 56% of the high-tech positions while only making up 21.4% of the graduates, and had a starting wage that averaged 28% higher than that of women librarians (Maatta, 2003). Tennant, who frequently speaks and writes about library technology, stated that the profession needs to"[r]ecruit and support women who are interested…[and that] more women are interested in a tech career than care to survive the cultural gauntlet to make it. We […] can help to change this"(Tennant, 2012, p. para 9). The idea that socialization processes and equal opportunity policies may change this "cultural gauntlet" for women in academic libraries does not grasp the structural barriers that women technology librarians face in gendered organizations, like universities (S. Acker & Feuerverger, 1996).

Since academic libraries do not have a separate purpose from the university (R. E. Rubin, 1998), the library mirrors the gendered organizational structure, organizational culture and process of their college or university. Universities are gendered institutions; they were historically developed by men (Solomon, 1985) and continue to be dominated by men at major research institutions (National Center for Education Statistics, 2017) . For universities, men are the ideal worker. The ideal worker is the unencumbered worker who does not have outside obligations (Acker, 1990); therefore, in this case, the ideal worker is entirely devoted to the university (Lewis & Humbert, 2010; Sallee, 2012). The notion of the ideal worker ideology produces the gendered components of the individual identity (Acker, 1990), thus creating a gendered organization that is not fair or equitable for women. Furthermore, the higher education literature focuses largely on five dimensions that are barriers to women in higher education: dual standards and opportunities, sexists attitudes, informal socializing, balancing work and personal life, and remediation policies and practices (Stokes et al., 1995). These barriers that exist at the university level for women also exist for women librarians.

The purpose of this mixed methods study was to explore the issues of organizational justice for women technology librarians in universities who experience the gendered-nature of organizational citizenship behavior (OCB). Organizational citizenship behavior (OCB) is a gendered construct in organizations that identifies actions performed by employees that are not associated with job requirements (Lovell et al., 1999). Although OCB is presented as gender-neutral, the construct has implicit bias and is representative of the structural barriers that women face in gendered organizations (Kark & Waismel-Manor, 2005). Women technology librarians, in particular, must occupy a

library specialty that has become masculinized and is gender-incongruent, while still operating in a feminized profession. The result is the expectation that these women perform both the in-role duties of their particular position as well as the extra roles (OCBs) that are gender-congruent (Kidder & Parks, 2001). Yet, gender congruent OCBs are often overlooked and less rewarded (Kark & Waismel-Manor, 2005; Kidder, 2002; Kidder & Parks, 2001). This furthers gender segregation, inequity, and organizational injustice for women in the librarianship.

Unlike other research studies that treat gender as merely a variable (Kark & Waismel-Manor, 2005), this research study focused on gender as a framework, using the construct of organizational citizenship behaviors. Organizational citizenship behaviors will then be examined through the lens of Acker's gendering process and Greenberg's organizational justice theory to structural barriers and the cultural gauntlet that women technology librarians encounter at universities.

Background: Organizational Citizenship Behavior in Universities and in Libraries

OCBs are discretionary, voluntary acts and behaviors that are outside an employee's job description (Organ, 1988), yet shape the organizational culture and help to facilitate organizational functioning (P. M. Podsakoff & MacKenzie, 1997). Organ (1988) identified five specific OCB categories: altruism, conscientiousness, sportsmanship, courtesy, and civic virtue. Altruism (e.g., helping new colleagues) is directed to other individuals and helps to enhance an individual's performance. Conscientiousness, through the consideration of others, contributes to the efficiency of both an individual and the group. Sportsmanship considers the organization as a team; therefore, complaints and petty grievances are avoided. Courtesy (e.g. giving forewarning

about absences) helps prevent problems and maximizes use of time. Finally, civic virtue (e.g., serving on committees) serves the interests of the organization.

Scholars assert that employees' who engage in OCBs are considered to be "good citizens" (Allen, 2006) or "good soldiers" (Kidder & Parks, 2001; Organ, 1988). The literature reflects that by performing OCBs, employees may contribute to organizational success by enhancing coworker and managerial productivity; freeing up resources so they can be used for more productive purposes; reducing the need to devote scarce resources to purely maintenance functions; helping to coordinate the activities both within and across work groups; strengthening the organization's ability to attract and retain the best employees; and increasing the stability of the organization's performance (Allen & Rush, 1998; Bateman & Organ, 1983; Bell & Menguc, 2002; MacKenzie, Podsakoff, & Fetter, 1991; Organ, 1988; P. M. Podsakoff & MacKenzie, 1997).

Someone's gender may affect the salience of the OCB (Allen, 2006; Kidder, 2002; Kidder & Parks, 2001). Gender-role stereotypes presume that women have high levels of helping behaviors (Eagly et al., 2000), which are attributed to individuals who engage in OCB categories such as altruism, courtesy, and conscientiousness (Allen, 2006; Kidder & Parks, 2001). Yet, Allen (2006) asserted the employee that is viewed as the ''good soldier'' in an organization, is dependent on what is expected of employees and whether their gender is congruent with the job and the behaviors. Kark and Waismel-Manor (2005), Kidder (2002), and Kidder and Parks (2001) have shown that gender congruent OCBs performed by women are often overlooked and less rewarded. Therefore, the consideration of OCBs during performance evaluation reinforces gender stereotypes and

may result in women and men's job performance being evaluated using unfair standards (Allen, 2006; Kidder, 2002; Kidder & Parks, 2001).

Organizational citizenship behaviors, which have been traditionally explored and applied in business and finance, have recently been associated with effective college campuses (Farooqui, 2012; Lawrence et al., 2012; Rose, Miller, & Kacirek, 2016) and a higher service quality (Bell & Menguc, 2002). In fact, Hatfield (2006) highlighted that several of the OCB dimensions can be explicitly or implicitly found in the languages regarding collegiality, which may be a component of tenure at an academic institution; thus, ensuring that academic colleagues work together more effectively. Yet, the consideration of OCBs in performance evaluations, such as tenure, may restrict opportunities to women who do not conform gender stereotypes and do not perform gender congruent OCBs (Allen, 2006; Kidder, 2002; Kidder & Parks, 2001). Skarlicki and Latham (1995) were able to positively correlate faculty members' OCBs, directed at colleagues and coworkers, and their number of publications. This research suggests that OCBs may create a more effective college campus but may also lead to less diversity in the faculty population.

Even though there is growth in research on OCB on college campuses, there has been a paucity of investigation within the field of librarianship, even though libraries thrive on achieving a higher service quality associated with OCB (Shaughnessy, 1995) . The research that has been performed on OCB in libraries is limited to the scope of job satisfaction and OCB (Lin, 2007, 2008; Peng, 2014; Peng et al., 2010); leaving gender just to be a variable. Lin (2007, 2008) performed the only research study regarding OCB

and library technology and found that women IT workers were more satisfied than their counterparts who are men but was limited in scope due to a quantitative methodology.

Unlike Lin's (2007, 2008) study, this research study will use a feminist research approach, which Roberts (2013) defines as research concerned with not only making women visible, but with theoretical and methodological issues that address problems with the language of the research findings and the ways in which they are published. Furthermore, this research study uses Acker's gendered organization and gendered processing theory to analyze the participant's experiences using the construct of OCBs to determine if there is a perceived lack of fairness using Greenberg's (1996) organizational justice theories. Application of these theories will capture the structural barriers and "cultural gauntlet" that women technology librarians must contend with in gendered university settings. Furthermore, it may also reveal how librarianship is gendered and what organizational injustices may exist.

Theoretical Framework

Gendered organizations. Inequality between men and women have led many gender scholars to look at the gendering of organizations and processes that bolster and further reproduce these inequalities. Acker's theory of the gendered organization was a response to gender segregation, income and status inequality between women and men, and the cultural norms of organizations (J. Acker, 1990). Acker asserted that the hierarchical nature of an organization was highly gendered because men had created the organizational structures within which women worked. When looking at an organization through this lens, the following three elements should be examined: the foundational composition of the organization that creates the inequality, the dissemination of gendered

expectations, values, and beliefs, and the process of desexualizing/de-humanizing individuals to fulfill organizational goals (1990).

J. Acker (1990, 1992) also identified four distinct, but interrelated gendering processes. The first gendering process is *gender practices and structures*, which looks at the division in labor markets, the family, and the state (J. Acker, 1992). The second gendering process is *gendering cultures*, which looks at the symbols, images, and expressions that explain and reinforce gender divisions (J. Acker, 1990, 1992). *Gendering interactions* is the third process and it manifests in the processes around every day work interactions, including interactions that enact portrayals of dominance and submission (J. Acker, 1990, 1992). The fourth gendering process is the *gendered individual identity,* which is process that sets expectations for how a specific gender should appear and behave (J. Acker, 1990, 1992). By applying Acker's (1990) gender processes, we can uncover gendered organizational structures and practices and interrogate them to create a transformative experience that dissolves the inequalities that shape organizations (Acker, 1990).

Organizational justice. Greenberg (1996) broadly defined organizational justice as the perceived fairness that is expected to exist within organizations. If an employee feels a lack of fairness or justice within an organizational setting, it may have a negative effect on how an employee performs for the organization. Three dimensions of organizational justice have been identified: distributive justice, the perceived fairness of reward allocation; procedural fairness, a formal decision-making process that allows for employee complaints and appeals; and interactional justice, the quality of the informal interpersonal relations or the social side of justice (Greenberg, 1996). Moorman (1991)

discovered a causal relationship between organizational citizenship behavior and organizational justice (Moorman, 1991). This relationship finds that employees who believe that their supervisors are fair are more likely to behave as an organizational citizen.

Methodology

Despite calls from Kark and Waismel-Manor (2005) to explore OCB and gender through more "diverse research methods" (p. 911), OCB research continues to be pursued via quantitative means, thus limiting our understanding of the gendered dynamics of OCB. In response this call, the research reported here used a sequential explanatory mixed methods approach, which involves first collecting and analyzing quantitative data (first phase) and then using qualitative data (second phase) to dialectically explain the results of the quantitative data (Creswell & Plano Clark, 2011). Since this research investigated OCB through a feminist lens, the unit of analysis were women technology librarians in an academic library. The study was guided by the following research questions:

1. To what extent do women technology librarians' organizational citizenship behaviors differ from colleagues who are men?
2. How do women technology librarians describe their organizational citizenship behaviors within a gendered profession?
3. In what ways do the experiences of women technology librarians explain how organizational citizenship behavior perpetuates a lack of organizational justice, gender segregation and inequity within the contemporary academic library?

Participants

For the purpose of this study, a technology librarian, was defined as someone in a position that requires skills that intersect between the fields of library science (e.g. acquisition, resource management, reference service) and information science (e.g. computer programming, networking, web development) within a university setting. Cox and Corrall (2013) identified the following positions as possessing this intersection: systems librarian, electronic resource librarian, digital librarian, repository librarian, and web manager. For the quantitative phase of this research study, the participants were anyone who subscribed to the Library Information Technology Association (LITA) - a technology division of the American Library Association- distribution list or Code4lib distribution list- a list for developers and technologists within a library setting; identified as someone who worked with library technology; were willing to identify their gender; had a master's degree in library science, and worked in an academic library setting.

One hundred and seventy-nine surveys were submitted. Seventy surveys were not considered for analysis based on failure to identify their gender (n=34), lack of master's level library science education (n=10), or their institution type was not academic in nature (n=33). An additional 37 participants abandoned the survey before completing the questions. Three participants identified as non-binary or third gender and did not meet the gender identification scope for this study. The remaining sixty-nine finished surveys were considered for analysis. Of those that completed the survey 10 were men and fifty-nine identified as women.

Twenty-nine of the participants identified their institution type as 'private academic research library' and 42 participants identified their institution type as 'public

academic research library.' Twenty-eight participants identified their position type as 'faculty', three identified as 'other and the remaining 38 participants identified as 'professional.' The composition of their technology departments consisted of: 2-5 people (46.38), 5-10 people (18.84%), 10-20 people (15.94%), 1 (10.14%) and 20+ people (8.6%). When asked about the gender composition of their department, 21 participants answered, 'equal amount of men and women', 27 answered 'mostly women' and 21 answered 'mostly men' (see Table 4).

Table 4

Survey Participant Demographic

Characteristic	Women (n=59)	Men (n=10)
Institution Type		
Public Academic	35	5
Private Academic	24	5
People in Department		
1-10	42	10
11-20	11	0
20+	6	0
Gender Composition		
Mostly Men	18	3
Mostly Women	23	4
Equal parts men and women	18	3

For the qualitative phase, the unit of analysis were women technology librarians. The criteria to be considered a woman technology librarian was that the participant self-identified as a woman, worked in an academic library setting and worked in a position that Cox and Corrall (2013) identifies as possessing the intersection between the fields of

library science and information science. Participants for the qualitative phase were identified using a snowball or chain sampling approach, which uses recommendations from participants to identify willing participants (Patton, 2005; Teddlie & Tashakkori, 2009). Using this approach, I invited 47 technology librarians who identified as a woman to participate in the study via an email invitation that outlined the purpose and nature of this research project. Fourteen of the 47 potential participants responded and were scheduled for either phone or web conferencing emails. The following table provides an overview of individual participants' demographics and pseudonyms (see Table 5).

Table 5

Interview Participant Demographic Matrix

Pseudonym	Carnegie Classification	Area of the US	Job Area
Kathleen	R1	Western	Emerging Technologies
Lisa	R2	Southern	Technology Administration
Debra	High Transfer-High Traditional	Northern	Systems, Electronic Resources
Diana	R1	Western	Technology Administration
Lee	M1	Northern	Repository
Emma	D/PU	Northern	Web Technologies
Theresa	R1	Northern	Library Administration
Jane	M1	Northern	Systems
Michelle	R1	Northern	Repository
Pamela	M2	Central	Systems
Rose	R1	Southern	Web Technology
Bonnie	R1	Central	Technology Administration
Cheryl	R1	Southern	Technology Administration
Skye	M1	Northern	Electronic Resources

Data Collection

Since this research study was conducted in two phases, there were multiple methods for data collection. A survey was the data collection strategy employed for the quantitative phase (first phase). The survey, which was based off a previous questionnaire designed by NicDomhnaill (2006) and P. Podsakoff et al. (1997), used a Likert-style approach to ask participants to rank their level of agreement to each organizational citizenship behavior question, with Strongly Agree being the highest level of agreement and Strongly Disagree being the lowest level of agreement. To test the reliability of the scale, a reliability statistics table was generated using the 23 OCB indicators statement. The Cronbach's alpha coefficient value was found to be acceptable since the value was over .7 (Pallant, 2013). In the current study, the Cronbach alpha coefficient was .781.

Since the statements of this survey are similar to the OCB survey statements used in a survey by NicDomhnaill (2006) and P. Podsakoff et al. (1997) and have been found to measure a participant's organizational citizenship behavior, the survey may be considered to have face validity. The rationale for surveying participants was to understand the extent women technology librarians' organizational citizenship behaviors differ from colleagues who are men.

To answer the research questions, participants had to describe or explain their own personal experiences. Therefore, data collection for the qualitative phase (second phase) was semi-structured interviewing. Hesse-Biber (2007b) identified in-depth interviewing as a way of understanding the lived experiences of marginalized members of society, such as women. In-depth interviewing allows the researcher to explore certain topics; whereas, a semi-structured interviewing is conducted with a specific interview

protocol that allows for additional probes into individual participant experiences (Hesse-Biber, 2007b).

Data Analysis

Data analysis was also conducted in two sequential phases. The first phase, which was quantitative, collected survey data. The survey data was analyzed using several different methods, including chi-square test, independent t-test to measure effect size, and descriptive statistics analysis.

For the second phase, the qualitative data were analyzed using two cycles of coding. The first cycle used descriptive coding methods. The descriptive coding method looks for topics within a transcript and uses a word or short phrase to summarize the data (Saldaña, 2015). The descriptive method allowed for an inventory of data content (Saldaña, 2015). The descriptive codes that were developed from the interpretation of data were clustered together to aid the second cycle, pattern coding.

Pattern coding was used as the second cycle of coding for the memos, observation notes and interviews. The purpose of this second cycle is to detect reiterating experiential patterns within the data, as well as to reduce the number of initial codes (Saldaña, 2015). Themes developed during this cycle were mapped to the following research questions: How do women technology librarians describe their organizational citizenship behaviors within a gendered profession and In what ways do the experiences of women technology librarians explain how organizational citizenship behavior perpetuates a lack of organizational justice, gender segregation and inequity within the contemporary academic library? Finally, the primary codes of the qualitative analysis were written into a narrative format to see how the codes fit together (Saldaña, 2015).

Results

Below we report analyses of survey data followed by results of the interviews study. Because the interviews were designed to act dialectically with the survey data, we will present the findings that bear on the survey results; thus, the primary focus of the article will be the themes that emerged as a result of the data interpretation and the survey results will corroborate qualitative findings.

Quantitative results. The primary purpose of the survey was to identify willing participates for the qualitative phase of the research study. The survey identified three willing participants that were willing to take part in the qualitative phase of the study. Those three individuals helped to identify 47 additional women technology librarians to contact to participate in the research study.

Further findings of the survey were that the gender and OCB variables were found to be statistically independent through a chi-square test. Although the chi-square test found no statistical significance, the effect size, which measures magnitude of a treatment effect (Becker, 2000) was found to have small significance according to Cohen's d, which is the difference between the two means divided by standard deviation (Becker, 2000). Altruism (-0.312), courtesy (0.366) and sportsmanship (-0.41) were found to have an effect size of, which is considered to be a small effect size (>.2).

The descriptive statistics findings are presented looking at the overall mean score of an overall OCB indicator by gender. Men who participated in the survey had a higher combined mean score than women's mean score for their responses to statements assigned the altruism indicator. Woman participants scored higher combined mean score on their answers to statements assigned the conscientiousness indicator, than men who

participated. For statements assigned the courtesy indicator, women participants had a higher combined mean score than men who participated. Overall men who participated had a higher combined mean score for civic virtue than women who participated. Finally, men had a higher combined mean score than women for the statements assigned the sportsmanship indicator (see Table 6).

Table 6

OCB Combined Mean Scores by Gender

OCB Behavior	Women (n=59)	Men (n=10)
Altruism	3.92	4.06
Conscientiousness	4.32	4.23
Courtesy	3.78	3.60
Civic Virtue	4.02	4.06
Sportsmanship	3.00	3.18

Qualitative findings. Interview transcripts were analyzed for themes using two cycles of coding, descriptive and pattern coding. The findings from these interviews are presented through themes, with data elicited from the participants, which serves to exemplify the themes and provide the participants' personal experiences. Furthermore, Acker's (1990, 1998, 2006) theories on gendered organization and gendering processes, as well as Greenberg's organizational justice theory were used as lenses to analyze the data.

Relationship building with colleagues. Although men indicated had higher combined mean score (4.06), women technology librarians also reflected on helping behaviors, but described those helping behaviors in terms of relationship**.** These

reflections on how they worked towards these relationships were often characteristics of what Organ (1988) would define as the altruism organizational citizenship behavior. Participants outlined their relationships into three types: peer-to-peer, mentor-mentee, and servant leader-employee.

Responses indicated that the peer-to-peer relationship was the most common relationship formed. Our participant, Pamela expressed, “If I have what might be a stupid question or like a sanity check question, I'm not going to send that out to the whole list…I'm going to check with one of my friends first and get their help first.” Theresa describes, “They are my friends, so I turn to them when I need help or don’t understand something…and they turn to me. It works well for us.” Lee states, “When I can’t figure something out, my colleagues and I will meet and go through the problem… they help me see the problem from a different perspective. I don’t know what I would do without their help.” Based on these statements, women engage in peer-to-peer relationship and exhibit the altruism OCB by helping each other through technology problems. These statements also reflected on how important the peer-to-peer relationship is to women technology librarians.

The mentor-mentee relationship was yet another way that participants help their colleagues. Emma voiced:

> I was fortunate to have a really strong female mentor supervise me. She was the systems and web applications librarian. So, I got quality full-time mentorship from her and then that's kind of how I got started… There was a staff member in circulation who said to me that she really wanted to learn how to build a Web site. And so, I started mentoring her five hours a week for a year and a half or so…

> And now she's been hired full time in our library I.T. department. I'm so proud of her.

Lisa stated, “I mentor people by helping them develop their individual strengths and skills of each person… I like to play the role when possible of mentor… I like to help them progress in their career, I give them advice.” Theresa stated:

> I try not to volunteer my staff…I want them to go out and find their own work and their own opportunities. When they come to me, I help them to see how it fits into the rest of their work and their career path.

Through the mentoring relationship, women participants were able to help others to gain strengths, skills, and look for new opportunities. Mentoring, in the case of our participant Emma, also helped to attract more women into the library technology field.

Lastly, the servant leader-employee relationship was based on helping behaviors. As stated by our participant, Bonnie:

> Part of it is that I know that this is the kind of work that [my employee] wants to continue doing… [and it] makes sense for her to do that... [and] it's my job to help her figure out how to get there right.

Kathleen, who works with students, stated:

> I’m here for the students so I try to provide them with what they need…I guide them…I get to know what's important to them and finding out what their key factors are and their happiness that’s how I get the best result from an employee.

While the servant-employee relationship was less commonly reported by participants, it exhibited the helping or altruism OCB in order to ensure that employees were able to

progress and gain new skillset for their organization. The servant-employee relationship that women participants reported demonstrated their willingness to put the needs of their employees before their own personal advancement.

While participants discussed how their relationships help, women participants also realized women in library technology have a more difficult time forming relationships than men. Michelle, discusses her relationship with colleagues who are men in IT, as "at first, [they] were not always willing to take in our requests or give permissions…they doubted me… so my [male] dean helped forge the relationship to have them be more responsive to us." Bonnie related:

> I have a male employee. He walked in, immediately jump in, and started forming relationships…that is totally normal behavior for him…. But I have a woman librarian… she doesn't want to look stupid… Because every woman has to work twice as hard to have the respect. And I hate to say it but it's true. For a woman to be able to feel like they can walk in and ask the same kinds of questions it's not realistic

Rose stated:

> I think you know the idea of it being a boy's club is definitely something that exists. And this one is a little frustrating…I'm not invited to play lunchtime board games. It would be nice to be invited. It is almost like a working meeting… it's a missed opportunity.

Through the lens Acker's (1990) third gendering process, gendering interactions, the described difficulties women have forming relationships reveal a subtle, unspoken practice that is difficult to document, but develops an individual's social, cultural and reputational

capital (J. Acker, 1990). Thus, the gendered interaction, which makes it difficult for women to form relationships with men, creates inequity in interactional justice because the quality of the informal interpersonal relations (Greenberg, 1996) is based on gender.

Gender differences in communication. Organ (1988) defines courtesy OCBs as behaviors that help prevent problems and maximizes use of time. The survey data shows that women participants had higher combined mean score for courtesy (3.78) statements than men. Women participants described their courtesy behaviors during the interview in terms of communicating about technology to their colleagues.

When asked about engaging with other librarians, participants often communicated to colleagues using email to help colleagues avoid problems with technology. Jane sends an "e-mail to everyone [in the library] …I'm going to do an upgrade, it will not affect you in any way. It might just take a few extra minutes for the software to load in the morning." Debra stated:

> I want to give more communication. [For an outage], I update on my status page. I sent an e-mail out everybody that was in the library... I contact the librarians about it. And then I sent an e-mail the minute it was fixed.

Lisa, like many participants, used email to communicate problems with projects:

> Oh, sure projects go wonky all the time. So, a big part of what I do is I send a lot of email to the stakeholders. [For instance], when we couldn't deliver because of a technical issue you know I made sure to communicate that out and say why we weren't going to be going forward.

By communicating via email about technology, women participants are sharing their expertise, taken preventive steps to avoid problems, and allowing colleagues to maximize their time because they can avoid troubleshooting a known issue.

Participants also reflected on how their communication style differed from colleagues that were men. Pamela stated, "It's like the whole thing you can't be angry, if you're a woman, but you're an angry guy that 'Oh well yes to him'." Debra lamented how the masculinized IT department, "never respond… They could be a little bit more transparent of who does what over [in I.T.] …that way if I have a server issue, I would know exactly who to contact… and could get my issue resolved quicker." One participant, Rose, put it succinctly, 'men don't communicate', which is indicative that how women participants communicated or behaved portray a different identity than their colleagues who were men, which Acker (1990) would define as a gendered individual identity. Furthermore, these examples corroborate the survey data that men are less likely to engage in courtesy OCBs than women.

Gendered differences in documentation. Conscientiousness behaviors contribute to the efficiency of others (Organ, 1988). On the survey, women participants indicated more agreement to conscientiousness statements by extent of 6.4% over colleagues that are men. During interviews, women participant described their conscientiousness behaviors through the development of training materials and documentation.

Participants described the development of documentation, as a way to ensure that the technology is efficient for others. Pamela designs workflows, a form of documentation, to "help me with a problem and we would go through the workflow to figure out the problem and talk through flow charts to become more efficient and have a

greater understanding." Rose stated, "We develop a quality assurance checklist so that when [technology] products [go out to the community] they meet a certain criterion… they are accessible, and they work in all browsers. It's a more efficient process then just rolling it out." Jane said:

> I write up all this documentation. I do training… That's not expected of me…[but] what if I'm going on vacation for two weeks… how are they [other librarians] going to operate without documentation…. What happens when you quit this job and the next person comes around and there's no documentation… it's a breakdown, it's not good practice.

Debra said:

> I write up a lot of documentation. Earlier this week, I sent a very unfortunately lengthy e-mail with lots of screenshots and arrows and circles in it about how to do something. I try to educate people instead of just say you figure out…it helps them to do their job better.

Overall, participants described their conscientiousness OCB by discussing development of training and documentation. Participants believed that by developing training and documentation they were creating more efficiency and business continuity within their organization.

Limiting service to the community. Organ (1988) defined civic virtue as an OCB that serves the interest of the organization. Survey data demonstrated that men had a higher combined mean score (4.06) than women who participated in the survey. The interview data describes why women may be less likely to engage in civic virtue.

When asked about volunteering, participants discussed receiving advice from other women about volunteering. Theresa related "my working mother said to me when I went off to school don't volunteer for anything...[that] was made loud and clear to me… so I use judgement [about volunteering]. For Diana the advice came from her former boss, "Stop volunteering for everything… I have to rein myself in all the time." While participants viewed the advice as well intended, the advice suggests that women limit their civic virtue OCBs, thus, limiting their contribution to shaping the organizational culture and organizational functioning (P. M. Podsakoff & MacKenzie, 1997).

Women participants also expressed a need to set barriers and work expectations as another way to limit their service to the community and consequently, their civic virtue behaviors. Jane sets work barriers by being "conscious about not picking up extra stuff, like I refuse to do social media... I'm not interested anymore …And I think [it is important] to be very upfront about it." After being in librarianship for over 10 years, Lisa stated "I learned to say no but learned to say no effectively… I say no a lot. But I also try to make sure that the person that I'm saying no to understands why that's so." After receiving tenure, Michelle stated that she "backed off of some committees. I mean just because I don't have that pressing need to be on all these committees. But I also I just don't have the time because there are so many things here." Yet, setting barriers and work expectations may also lead to a lack of participation in decision-making processes, keeping informed, and promoting innovative ideas that serve long-term organizational interests (Graham & Dyne, 2006) and prevents women from actively shaping and leading their workgroups and organizations (Schilt 2011; Schilt and Wiswall 2008; Wood and Eagly 2009). Furthermore, since women limit their civic virtue behaviors, it creates a

gendered culture, which embodies the gendered inequalities that are less visible (Ackers, 1990).

Doing/Not doing what is good for the team. According to Organ (1988), sportsmanship considers the organization as a team; therefore, complaints and petty grievances are avoided. Although men who participated in the survey had a higher combined mean score (3.18), women also provided a description of sportsmanship behaviors when overcoming technology problems.

Participants described a team/group focused approach to overcome technology problems. Cheryl described this approach as such "you move past the problem and focus on the solution…and you do what is best for everyone…I practice inclusiveness by involving as many people as I can." Jane described:

> [I] focus on things that you can change with my colleagues…I accept that I can't change everything and [I] focus on what we can change. You just kind of got to find like the little things you can do as opposed to focusing on the things you can't change.

Our participant, Bonnie, stated:

> I look for what makes the most sense for the group, I hold myself back from the idea that whatever I imagine is the best… you need to not have a lot of ego invested because that's the easiest way to lose friends and to not be productive and not solve problems.

Diana divulged, "I'm not a pushover as a manager …I'm very collaborative and I want to build goals together with people. You know here's the problem. Figure out how we're going to solve it. I don't enjoy being highly directive." Rose said, "We're a group. [I] like

having good relationships with my colleagues is ultimately going to give better results for maybe the next thing." Thus, women participants reported that they used a team/group styled type of sportsmanship OCB to produce change and overcome problems within their work environment.

Participants who did not operate as team or use a sportsmanship-style OCB were criticized by colleagues. Emma, received the following criticism by a colleague:

> [She said] when you came in [started the position] you were kind of a hot shot…you took some really strong stances on things…[we] felt like you were telling us what to do and I could totally see that… And yet it was really hard to hear… [now I] socialize the change and persuade people to work together.

Our participant, Skye stated, "My job is to drive innovation forward so I just take the resistance with a grain of salt…working as a team slows me down…[yet] they may be more likely to use the technology if I included them [colleagues]. Based on both Emma and Skye's statements, women technology librarians may have more success using sportsmanship to overcome technology problems than not using sportsmanship behaviors and moving forward with innovation without buy-in.

While women participants' colleagues expected that they engage in sportsmanship, our participants observed that their colleagues who were men were able to successful in avoiding sportsmanship behaviors. Cheryl, related:

> Men tend to plow forward. You know there's a few men I would say don't do that. I like literally [can] list them off on my hand. I think many of the women hold back and say well let's think about this… let's hear from others and work towards

> the best solution. Yet, men get away with plowing forward. No one questions them.

Diana, stated, “men can move forward and [it’s] accepted. I can’t. I need buy-in from everyone before I can even work on a project.” When viewed through the lens of Acker’s (1990) gendering process, the statements of Cheryl and Diana constitute what Acker referred to as gendered interactions. Gendered interactions may reveal subtle inequalities that are often subtle, unspoken expectations of the genders (Acker, 1990). These gendered interactions and may also create interactional injustice (Greenberg, 1996), since women’s interactions with their colleagues is perceived as different from colleagues who were men that women may view as unfair or unjust.

Discussion

Drawing on results from both surveys and interviews, it is clear that technology librarians engage in OCBs, which are discretionary, voluntary acts that are outside an employee’s job description (Organ, 1988). These behaviors shape the organizational culture and help to facilitate organizational functioning (P. M. Podsakoff & MacKenzie, 1997).

Survey findings revealed the extent of difference in OCB behavior between women and men. As predicted, women had a higher mean score for OCBs that were attributed to women, such as courtesy and conscientiousness; whereas, men had a higher mean score for OCBs attributed men, such as civic virtue and sportsmanship. However, the exception to the predictions of the scholarly literature, was altruism, which is an OCB normally attributed to women. Yet this research study’s findings reported that men had a higher mean score (4.06) over women (3.92) for the altruism indicator. One possible

reason is that both men and women who are librarians performed well in the altruism indicator because entry-level librarians must engage in effective socialization to transition from graduate school to the academic environment (Black & Leysen, 2002). Socialization has been broadly defined as the process where individuals learn and internalize the attitudes, values, and behaviors appropriate to persons as participating members of their society (Gecas, 2001). Socialization of librarians has been discussed in existing library literature in regards to how librarians assimilate the culture, values and perspectives of the library (Black & Leysen, 2002; B. M. Clark & Gaughan, 1979; Oud, 2008; Simmons-Welburn & Welburn, 2003), yet at the core of this socialization is the concept that librarianship is a field of service and helping the patron to find their desired resources ("Professional Ethics," 2017), therefore, men who are drawn into a profession of service and helping may demonstrate more altruism than a professional culture that does not have these core values.

The interviews revealed how the construct of OCBs contribute to a gendered organization, gendered processes, and organizational justice issues. Using Acker's analysis of gendered process (1990, 1992, 2006), we uncovered considerable links in women technology librarian's description of their OCBs and a gendered organization. Based on the results of the survey and the OCB descriptions during the interview, women in technology outperform men as a "good citizens" in many areas; therefore, providing an intricate role in the organization's success (DiPaola & Tschannen-Moran, 2014). Unfortunately, while women may outperform men in certain organizational citizenship behaviors, their performance is often unrecognized (Allen, 2006; Lovell et al., 1999); thus, creating inequity in distributive justice and a gendered organization that has work

practices and cultural norms that appear to be unbiased but lead to subtle pattern of disadvantage for women (Sumner & Niederman, 2004).

By viewing women technology librarians' OCBs through the lens of Acker's (1990) gendering process and Greenberg's (1996) organizational justice, we were able to reveal that there is a gendered organization. There is also a potential for change in the profession, which may be viewed in terms of policymaking, research and practice.

In terms of policy making, a mechanism needs to be created that normalizes distributive justice within organizations by recognizing women's organization contributions, through their gendered OCBs. While there appears to be little evidence in the literature that supports the recognition of rewarding gendered OCBs (Allen, 2006; Lovell et al., 1999) , there may be an economic argument for why more women are needed in library technology. If library technology departments are composed of only men and gender segregation of librarianship continues (M. Deyrup, 2014; Maatta, 2003) , the technology may not be reflective of patron diversity.

In terms of research, as with all research, this study has some initial limitations that derive from the methods and design of the study. The design of this study is sequential explanatory mixed methods design, which means that the conclusions of the first strand help to shape the second strand (Teddlie & Tashakkori, 2009). Therefore, the design of this study puts a greater emphasis on the qualitative phase to address the study's purpose. Collection of data for the qualitative phase was performed through semi-structured, in-depth interviews via phone or web conference, and interviewing is not a perfect method for data collection. Studies have demonstrated that women are often reluctant to open up about their feelings or perceptions for fear of reprisal (Oakley & Roberts, 1981). Also, due

to the nature of the sample and scope of the study, that the findings only address the perceptions of OCB, gender and librarianship within the United States.

Based on these limitations, there are a number of areas that need further exploration that would add to the body of scholarship surrounding gender, library technology and OCB. Firstly, this study's survey revealed that men technology librarians had a higher mean score than women technology librarians. In order to understand this phenomenon, more research regarding gender, librarianship and organizational citizenship should be conducted. Secondly, the scope of this research study was restricted to women technology librarians with an academic library, yet the field of library science is broader than the academia and many women who are employed in libraries are not librarians. In fact, when I sent the survey invitation to the Code4lib distribution list, I received an email from a non-librarian that expressed disappointment about the scope of the study because she had a desire to be heard. This is why I believe more research must be done regarding women and library technology. Thirdly, this research study had a cis-normative approach, therefore, the voice of individuals who identify as non-binary or third gendered individuals within the field of academic library technology was not heard. There is a lack of scholarly literature they gives a voice to non-binary or third gendered technology librarian and their stories must be and need to be heard.

For practitioners, by providing a new lens to look and interrogating librarianship as a gendered organization, library administration and librarians will be better prepared to recognize organizational justice, regarding distributive and interactional justice for women technology librarians. Therefore, library administrator and librarians are encouraged to use

these findings to reflect on how they can create a transformation to help women technology librarians tear down structural barriers and survive Tennant's (2012) cultural gauntlet.

Conclusion

This mixed methods study was conducted to explore the issues of organizational justice for women technology librarians in universities who experience the gendered-nature of organizational citizenship behavior (OCB). Findings from this study revealed how women technology librarians describe their organizational citizenship behaviors. This study fills the void in scholarly literature regarding gender, OCB, and library technology. Furthermore, this study indicates the gendered nature of OCBs. Through the gendering of behaviors, an organization is created that defies Greenberg's (1996) organizational justice.

Chapter 6

Women Technology Librarians As Good Citizens

Roy Tennant, who frequently speaks and writes about library technology, released an article about the gender disparity in library technology. He stated that the profession needs to "[r]ecruit and support women who are interested… [and that] more women are interested in a tech career than care to survive the cultural gauntlet to make it. We […] can help to change this"(Tennant, 2012, p. para 9). Yet, Tennant failed to recognize that women in library technology face a more challenging cultural gauntlet than men, one that can't just be overcome through socialization or equity policies. Furthermore, after Tennant released the 2012 article, the conversation regarding gender and library technology ceased. To create a transformation within our profession, we must interrogate and understand the structural and cultural barriers that currently exist so that library technology is more welcoming for women. This article is intended to resurrect the conversation within our profession regarding women in library technology.

Using the construct of organizational citizenship behaviors, this study explores the structural and cultural gauntlet that women technology librarians' experience. Organizational citizenship behaviors (OCB) are actions performed by employees that are not in their job description (Lovell et al., 1999). Five specific OCB categories are identified: altruism (helping behavior), conscientiousness (contributes to efficiency), sportsmanship (describes employees as team/group), courtesy (helps prevent problems), and civic virtue (serves the interest of the organization) (Organ, 1988). Employees' who engage in OCBs are often framed as "good citizens" (Allen, 2006) or "good soldiers" (Kidder & Parks, 2001; Organ, 1988), because these behaviors help shape the

organizational culture and facilitate organizational functioning (Podsakoff & MacKenzie, 1997)

OCBs are also a gendered construct since gender may affect the salience of the OCB Allen, 2006; Kidder, 2002; Kidder & Parks, 2001). Existing gender role stereotypes frame women to OCBs that are helping behaviors (Eagly et al., 2000), such as altruism, courtesy and conscientiousness (Allen, 2006; Kidder & Parks, 2001). Yet, women who perform these behaviors are often overlooked and less rewarded (Kark & Waismel-Manor, 2005; Kidder, 2002; Kidder & Parks, 2001). Therefore, even the unconscious consideration of someone's gender and their OCBs during a performance evaluation reinforces gender stereotypes and may result in women and men's job performance being evaluated using unfair standards (Allen, 2006; Kidder, 2002; Kidder & Parks, 2001).

Methods

A sequential explanatory methodology was chosen for this study; however, this article's scope will be limited only to the qualitative phase of the study. The qualitative phase of the study intended to answer the following research questions:

1. How do women technology librarians describe their organizational citizenship behaviors within a gendered profession?
2. In what ways do the experiences of women technology librarians explain how organizational citizenship behavior perpetuates a lack of organizational justice, gender segregation and inequity within the contemporary academic library?

While Tennant, as a man in library technology, had an outsider's perspective regarding women in library technology, being a woman technology is a lived experience

for me, the researcher, which could pose a bias dilemma. In order for the researcher to not impose my lived experience or personal feelings into the study, the researcher examined and managed personal bias by being open-minded and not allowing personal feelings or experiences to influence the research process. In addition, the research ensured accurate collection and interpretation of the interview data by asking follow-up or clarification questions. Finally, to offset possible researcher bias, the researcher received help from two colleagues, a women technology librarian and a technology librarian who is a man. These colleagues verified the coding of the interview data that the researcher performed; however, neither librarians were involved in the interpretation of the data.

Participants

To recruit participants for the interviews, a snowball or chain sampling approach, which uses recommendations from participants, in this case the quantitative phase, to identify willing participants (Patton, 2005; Teddlie & Tashakkori, 2009), for this research study. Through this approach, 47 technology librarians, who identified as a woman, were invited participate in the study via an email invitation that outlined the purpose and nature of this research project. Fourteen of the 47-woman technology librarians responded and were scheduled for either phone or web conferencing emails.

Collection & Analysis

Data collection was individual interviewing. The goal of the interviewing process was to uncover the hidden experiences and elicit a detailed account of the phenomenon (Hesse-Biber, 2007a), which will act as an antidote to only hearing the men's voice (Reinharz & Davidman, 1992).

The data was then analyzed using two cycles of coding, descriptive and pattern. The descriptive coding method looks for topics within a transcript and uses a word or short phrase to summarize the data (Saldaña, 2015). Pattern coding was used as the second cycle of coding and looked for reiterating experiential patterns within the data, as well as to reduce the number of initial codes (Saldaña, 2015). The following themes emerged as a result of the data interpretation: relationship building with colleagues, gender differences in communication, gendering documentation, limiting service to the community, and doing/not doing what is good for the team. A variant to these themes is discussed in the findings section.

Findings

The women participants described behaviors that may be attributed to altruism, courtesy, conscientiousness, civic virtue and sportsmanship. Through the description of their OCBs, women revealed the structural barriers and the challenging cultural gauntlet that women technology librarians encounter. This article will specifically focus on the following OCBs: courtesy, conscientiousness, civic virtue, and sportsmanship.

Reciprocating courtesy. Organ (1988) defines courtesy OCB as behaviors that prevent problems and maximize time. Throughout the interviews, women participants described their courtesy OCBs by describing how they communicate technology issues to their colleagues. One participant, Jane, sends an "e-mail to everyone [in the library] …I'm going to do an upgrade, it will not affect you in any way. It might just take a few extra minutes for the software to load in the morning." By performing this behavior, women participants are sharing their expertise, taken preventive steps to avoid problems,

and allowing colleagues to maximize their time because they can avoid troubleshooting a known issue.

Women participants also reflected on how their courtesy OCBs are not reciprocated by their colleagues who are men. Debra lamented how the masculinized IT department, "never respond… They could be a little bit more transparent of who does what over [in I.T.] …that way if I have a server issue, I would know exactly who to contact… and could get my issue resolved quicker." Participants, who are highly skilled technology librarians, referenced that they felt their colleagues who are men in their university's central information technology [I.T.] departments or vendors who are men would often 'mansplain' or talk in a condescending tone to their women colleagues about rudimentary technology concepts. Cheryl recounts a recent meeting with a man who oversees the network. She states, "He's like trying to explain [the network] in a non-technical way. And I was like 'Okay dude.' I just wanted to be like, 'Really?'" Furthermore, women participants expressed that colleagues who are men perform gatekeeping behaviors by not providing them permissions to technologies that they need to perform their jobs. While some participants were able to have their dean or other administrator assist in coming to a resolution with central I.T, others were not. In some cases, women participants avoided their central I.T department because of past experiences. Yet, there was also acknowledgement that that tactic did not allow them to advocate effectively for their patrons or their systems. Our participant, Debra explained:

> I could I be more effective if I did more with them [central IT] … If I crossed that border more often and said hey why don't we try to implement some new cutting edge, but…I don't want to go down that path with our I.T. people.

Women participants reports of the failure of colleagues who are men to reciprocate courtesy behaviors performed by women led to an environment that creates problems and inefficiencies.

Documenting conscientiousness. Conscientiousness OCBs, which are behaviors that contribute to the efficiency of others (Organ, 1988), were described by women through the development of training materials and documentation. Participants developed documentation to ensure that the technology is more efficient for others. While women participants acknowledged that it may not be expected of them, the development of the documentation ensured that there was not a breakdown in processes and helped their colleagues perform their job better.

Although women perceive the development of documentation as a positive, conscientious behavior, past studies have revealed that men perceive the development of documentation by women as an imposter behavior performed by women (Falkner, Szabo, Michell, Szorenyi, & Thyer, 2015). Michelle, says of her colleagues who are men, “They maintain and fix and program. They don’t document… I'm much better at doing workflows; looking at user behavior.” Jane said, “My friend who works on server ops, is the only woman in her departments she is the one who writes all the documentation because nobody else does.” Therefore, it appears that by engaging in this conscientiousness behavior of developing documentation, women are reinforcing men’s perceptions that women are imposters in technology.

A limiting virtue. Civic virtue, which is often considered to be an OCB attributed to men (Kidder & Parks, 2001), tests commitment to the organization. Women do not engage in civic virtue behaviors as often as men. The interview data describes why

women may be less likely to engage in civic virtue behaviors. Participants frequently discussed how they must limit their participation in committees and set barriers. Diana, expressed “Because of my family responsibilities, I have to be pretty selective because I like that I work for 40 hours a week and I don’t want it to become 60." Emma relates, “when there is a cake in in the office and you’re the only woman …you have to kind of sit on your hands and not be the first to jump up and cut the cake. Theresa relates “my working mother said to me when I went off to school don't volunteer for anything...[that] was made loud and clear to me… so I use judgement [about volunteering]. Based on the interview data, there are many reasons for women wanting to limit their civic virtue.

Throughout the interviews, women participants also related that women participants internalized the feeling that they still did not know enough about technology and felt as though they were “imposters” during meetings, which may be another reason for women limiting their civic virtue. Many participants stated that there was a perception by their university colleagues that men in technology fields just have to show up to meetings and it is believed that they know technology; whereas, women had to prove their technology skills. Diana expresses, “I think it can be exhausting… If you are always feeling like you have to prove yourself.” Rose states: “[If] I call something different than what they know it as... and then the conversation becomes about that and how I misspoke about that.” The need to prove yourself and have your expertise questioned based on your gender is an aspect of the cultural gauntlet that colleagues who are men do not face; thus, making women’s experiences in library technology more challenging.

Gendering collaboration. Organ (1988) defines sportsmanship behaviors as team like behaviors. Sportsmanship behaviors are typically attributed to men (Allen, 2006; Kidder & Parks, 2001), but throughout the interviews, women also provided a description of sportsmanship behaviors when overcoming technology problems.

Participants described a team/group focused approach to overcome technology problems. Cheryl describes this approach as such "you move past the problem and focus on the solution…and you do what is best for everyone…I practice inclusiveness by involving as many people as I can." Rose says, "We're a group. [I] like having good relationships with my colleagues is ultimately going to give better results for maybe the next thing." Thus, women participants who used a team/group styled type of sportsmanship OCB were able produce change and overcome problems.

Even though women participants use sportsmanship behaviors to overcome technology problems, our participants observed that their colleagues who were men were successful in avoiding sportsmanship behaviors. Participant Emma, states:

> The person who did this before me was male. He could just take the [library] site offline for five minutes and then put it back up…when I did it… It was like the sky is falling…. Now, I have to schedule it with the head of reference and instruction and like days in advance…. this is something that the guys before me never had to do.

Regarding sportsmanship behaviors, women participants report another challenge to the cultural gauntlet that women perceive they must overcome that men do not.

Discussion & Recommendations

The interview data provided how women technology librarians describe their OCBs. Women technology librarians that participated in this research study describe behaviors that may be attributed to all OCBs; therefore, the women technology librarians who participated are "good citizens." Furthermore, as the interview data revealed, the women technology librarians face gendered interactions, such as mansplaining, which produces organizational injustice or a lack of fairness (Greenberg, 1996).

During the interviews, participants were asked what advice they would give to women entering library technology. Repeatedly, the women participants advised future women technology librarians to have depth and breadth in their technology skills and that their skills would have to surpass their colleagues who are men. Participants also discussed how women needed to work harder and know more about technology than their colleagues who are men, to be respected in their field. Both the interview data and the advice women gave provide a description of the structural barriers and the challenging cultural gauntlet that women face within library technology. Librarianship as a profession now needs to change practice, policy, and research as mechanisms to produce gender equity.

Recommendations

Practice. Practical issues regarding women in library technology issues may be broken down into the following categories: the role of LITA in the recruitment and retention of women technology librarians, combating imposter syndrome, and combating gender hostility within technology. The American Library Association's Library and Information Technology Association serves as the organization that is concerned with

"planning, development, design, application, and integration of technologies within the library and information environment" (American Library Association, 2018) .Yet, LITA lacks a committee that specifically addresses the structural barriers and challenging cultural gauntlet that women technology librarians face within their profession. LITA needs to do more.

LITA can play a more active role in the recruitment and integration of women into library technology. LITA should use its platform to solicit and generate ideas that will improve the working environment for women in library technology; they should develop a proactive vision statement that advocates for the recruitment, integration and retention of women technology librarians, and they should develop an action plan for the recruitment and retention of women faculty into library technology specialization courses for library science programs. Lastly, LITA should address ongoing concerns of women technology library leaders and become a leading organization in helping women to achieve gender equality in library technology and within universities.

Rather than working harder or knowing more than their colleagues who are men, women technology librarians need to focus on combating imposter syndrome. Individuals who exhibit imposter behaviors may become exhausted or risk burnout within their profession (Cowman & Ferrari, 2002; Ferrari & Thompson, 2006). Further, rewards or recognition from their work is tainted with the feeling of anxiety, stress and work-life balance issues (Cowman & Ferrari, 2002). Lastly, women risk their public image when they engage in self-handicapping behaviors because of imposter fears (Snyder, 1990). Therefore, women need a practical application to overcome this barrier.

According to Joshi and Mangette (2018), one way to combat imposter syndrome is to discuss the feelings and worries of inadequacy in an open, group setting. The group setting may help to identify commonalities between members while developing a supportive network (Joshi & Mangette, 2018). Self-talk, as well as lists (Sherman, 2013), may also be a good practice for women technology librarians to reinforce that they deserve to be heard and valued in any technology meeting. Yet, imposter syndrome fails to be addressed at a departmental, organizational, local, or national level, which leads to the continued perception by women technology librarians that they do not belong in the room with their technology colleagues who are men.

According to Henwood (1998), when women enter fields that are not `merely different' from that which they would be expected to enter but also of higher status, associated with men, masculinity and power, this blurring of gender difference is perceived as a threat to men and leads to constant reassertion of difference in discourse. This constant reassertion of difference is perceived as hostile to those of the opposite gender (Henwood, 1998), in this case, women technology librarians. Yet, knowing that men may perceive women in technology as a threat is not enough; there needs to be an action plan to combat it. One simple step to combat the hostility is to have an open discourse regarding gender and technology. Discourse may be a powerful tool to understand and be instructive to understand power and power relations (Henwood, 1998). Furthermore, administrators should engage women in their department to find ways to equalize the power relations between men and women.

Policy. To ensure women have a full voice on policy issues related to gender and library technology, women technologists need access to the decision-making levels of national and institutional policy making boards. Furthermore, campus policy makers should be made aware of the subtle ways that gender-role stereotypes impede women technology librarians from being more efficient and effective in their position so that they may begin to interrogate their current policies for gender-stereotype bias in their evaluation process. Through interrogation, campus policy makers may work to reform their evaluation processes and restore organizational justice.

At a state level, for example, the New Jersey Law Against Discrimination (LAD) prohibits employment discrimination based on, among other things, an individual's sex (New Jersey Office of the Attorney General- Division of Civil Rights). Again, LAD does not take into account gender-stereotyping and needs to be transformed to reflect the literature regarding gender bias and organizational citizenship behaviors. At a national level, Title VII of the Civil Rights Act of 1964 prohibits employment discrimination based on, among other things, an individual's sex (United States Equal Employment Opportunity Commission). Title VII does not address the gender-stereotyping of organizational citizenship behaviors. In order to bring gender equity into job performance, organizational citizenship behaviors should be written into job descriptions. Men and women should then be evaluated on how well they performed those behaviors. Only after creating campus policies and revising state and nation laws will women technology librarians and women, in general, have a more equitable working environment.

Research. There are many holes in the existing research regarding gender and library technology, but there is a crevice in the existing research regarding gender, library technology and organizational citizenship behaviors. The scope of my research was limited to women technology librarians in universities; therefore, there were many women who make up library technology departments who were not included in this study, yet, their story needs to be heard. This is why gender, library technology and OCB research needs to be broadened so that the experience of women in library technology that are professional staff, women technology librarians in public and special libraries, and non-binary/third gender experiences may be heard. Due to the nature of the sample and scope of the study, the findings only address the perceptions of OCB, gender and librarianship within the United States; therefore, the findings may not be generalizable to librarians outside the United States. Overall, more research needs to be performed regarding gender and library technology, as well as gender, library technology and organizational citizenship behaviors.

Conclusion

Results from this study attempt to fill the gap or crevice in research on how women technology librarians are "good citizens." This study revealed that women engage in several behaviors that lead to organizational success. By exploring women's descriptions of their OCBs, as well as perceived gendered differences in OCB, the supports of the structural barriers and the challenges to the cultural gauntlet are revealed and interrogated so that a transformational process may begin.

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Appendix A

Organizational Citizenship Behaviors Scale

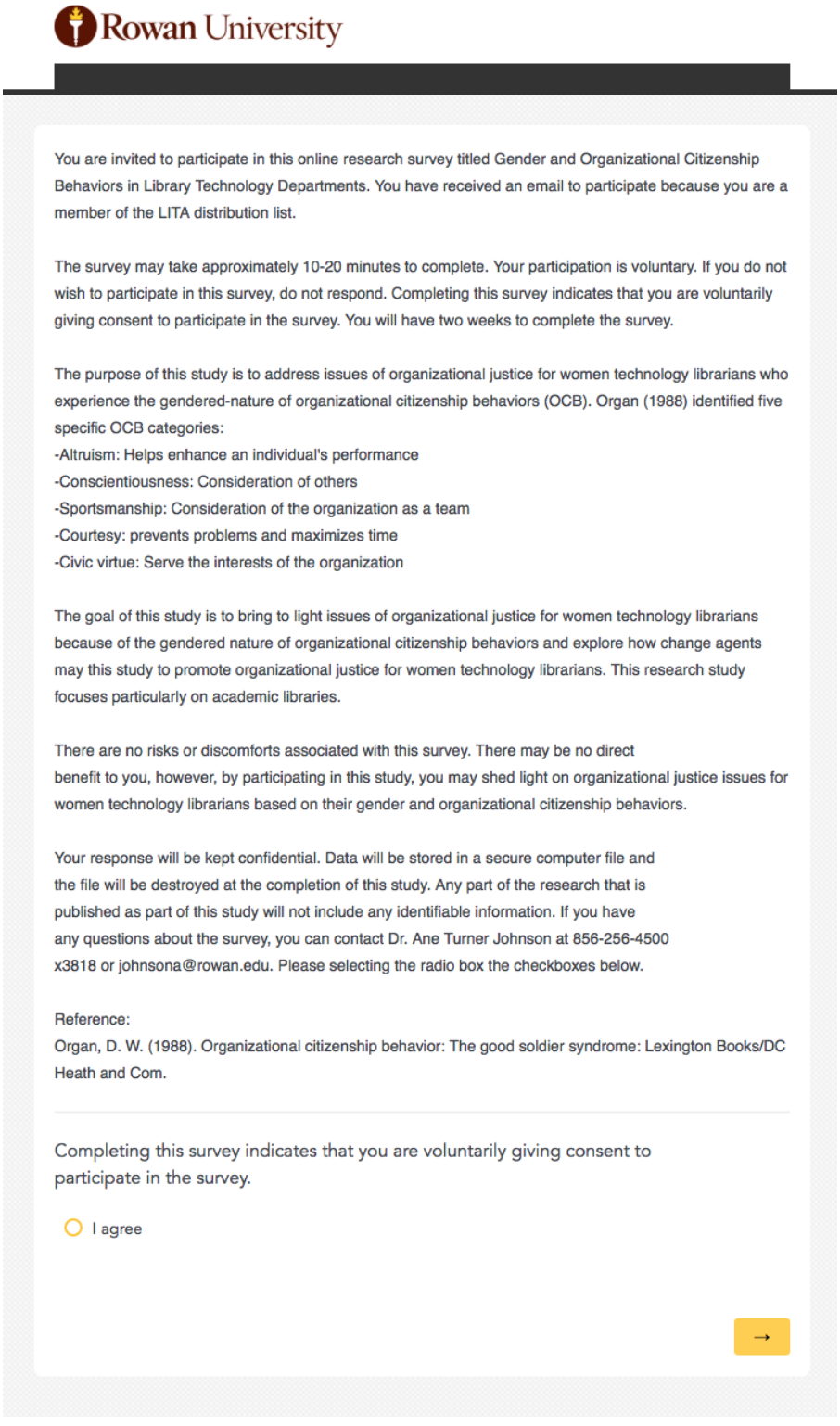
Scale denotes indicators for each organizational citizenship behavior construct. These are 5-point Likert items that asks the participant to select their level of agreement from Strongly disagree to Strongly agree.

Altruism	1. I go out of my way to help new staff and faculty. 2. I help colleagues with heavy workloads. 3. I help colleagues who have been absent from work. 4. I help colleagues with work-related problems. 5. I go out of my way to help students.
Civic Virtue	1. I attend and actively participate in committee/working group meetings. 2. I engage in work for organizational or ad hoc committees. 3. I engage in work for professional boards or committees (outside my organization). 4. I talk up the university/college library as a great place to work 5. I find that my personal values align with. the university/college library values.
Conscientiousness	1. I conserve and protect organizational property. 2. I pass along information to my colleagues. 3. I plan and prepare work meeting content.
Courtesy	1. I take preventive steps to try to prevent problems with my colleagues.

	2. I take on the role of peacemaker when my colleagues have disagreements. 3. I spend time encouraging other colleagues when I perceive them to be "down." 4. I share my expertise with colleagues 5. I organize recognition events for colleague's excellent performance or other achievement.
Sportsmanship	1. I am willing to put a great deal of effort beyond that normally expected in order to help the university/college be successful. 2. I provide constructive suggestions about how committees I am involved with can improve. 3. I focus on what is wrong with the situation, rather than the positive side. 4. I consume a lot of time complaining about trivial work matters. 5. I find fault with what other colleagues/staff are doing.

Appendix B

Qualtrics Questions


Rowan University

You are invited to participate in this online research survey titled Gender and Organizational Citizenship Behaviors in Library Technology Departments. You have received an email to participate because you are a member of the LITA distribution list.

The survey may take approximately 10-20 minutes to complete. Your participation is voluntary. If you do not wish to participate in this survey, do not respond. Completing this survey indicates that you are voluntarily giving consent to participate in the survey. You will have two weeks to complete the survey.

The purpose of this study is to address issues of organizational justice for women technology librarians who experience the gendered-nature of organizational citizenship behaviors (OCB). Organ (1988) identified five specific OCB categories:
-Altruism: Helps enhance an individual's performance
-Conscientiousness: Consideration of others
-Sportsmanship: Consideration of the organization as a team
-Courtesy: prevents problems and maximizes time
-Civic virtue: Serve the interests of the organization

The goal of this study is to bring to light issues of organizational justice for women technology librarians because of the gendered nature of organizational citizenship behaviors and explore how change agents may this study to promote organizational justice for women technology librarians. This research study focuses particularly on academic libraries.

There are no risks or discomforts associated with this survey. There may be no direct benefit to you, however, by participating in this study, you may shed light on organizational justice issues for women technology librarians based on their gender and organizational citizenship behaviors.

Your response will be kept confidential. Data will be stored in a secure computer file and the file will be destroyed at the completion of this study. Any part of the research that is published as part of this study will not include any identifiable information. If you have any questions about the survey, you can contact Dr. Ane Turner Johnson at 856-256-4500 x3818 or johnsona@rowan.edu. Please selecting the radio box the checkboxes below.

Reference:
Organ, D. W. (1988). Organizational citizenship behavior: The good soldier syndrome: Lexington Books/DC Heath and Com.

Completing this survey indicates that you are voluntarily giving consent to participate in the survey.

○ I agree

→

Rowan University

Your gender:

- ○ Women
- ○ Men
- ○ Prefer not to state

Do you work with library technology (e.g electronic resources, library systems, digital repository)?

- ○ Yes
- ○ No

Have you graduated with your masters' degree from an American Library Association (ALA) accredited program?

- ○ Yes
- ○ No

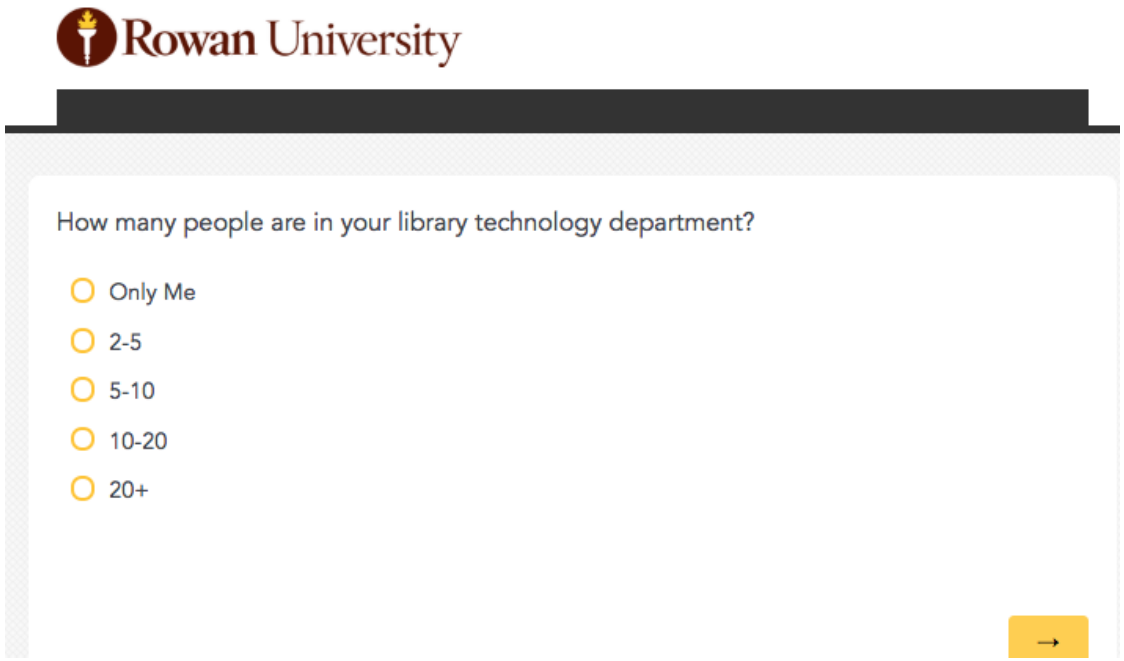
At what type of institution, do you work?

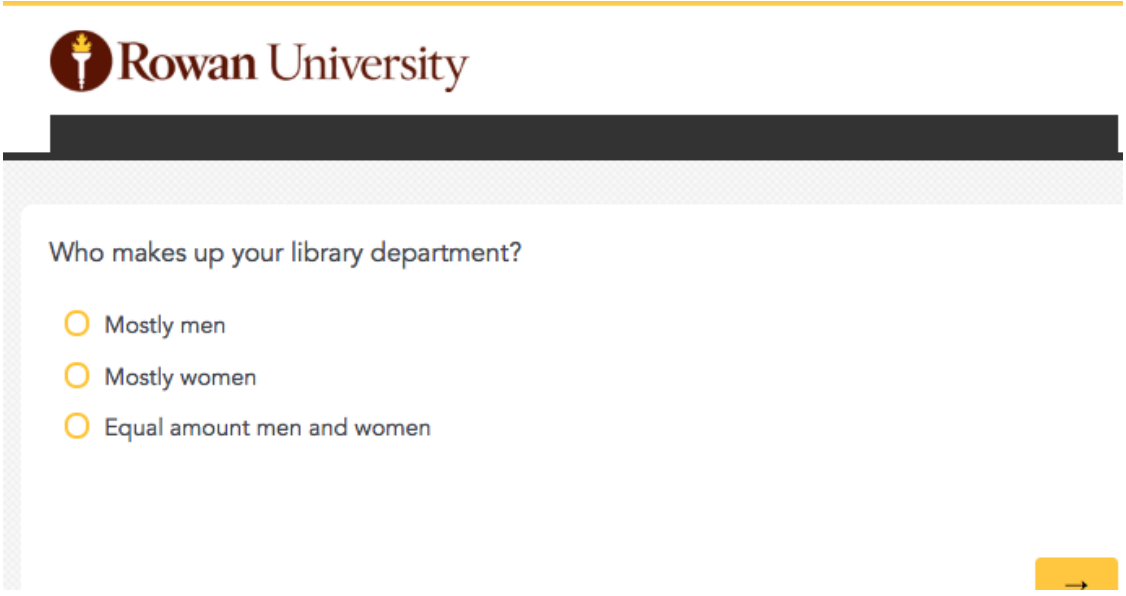
- ○ Public academic research library
- ○ Private academic research library
- ○ Public library
- ○ National library
- ○ Other

How would you define your academic position?

- ○ Paraprofessional
- ○ Professional
- ○ Faculty
- ○ Other (please specify):

→


Rowan University
How many people are in your library technology department?
Only Me
2-5
5-10
10-20
20+
→


Rowan University
Who makes up your library department?
Mostly men
Mostly women
Equal amount men and women
→

Rowan University

While considering your work performance, please rate your level of agreement with the following statements:

I spend time encouraging other colleagues when I perceive them to be "down."

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I share my expertise with colleagues

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

I am willing to put a great deal of effort beyond that normally expected in order to help the university/college be successful.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I organize recognition events for colleague's excellent performance or other achievement.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I provide constructive suggestions about how committees I am involved with can im

- ○ Strongly disagree
- ○ Disagree
- ○ Neither agree or disagree
- ○ Agree
- ○ Strongly agree

I take preventive steps to try to prevent problems with my colleagues.

- ○ Strongly disagree
- ○ Disagree
- ○ Neither agree nor disagree
- ○ Agree
- ○ Strongly agree

I attend and actively participate in committee/working group meetings.

- ○ Strongly disagree
- ○ Disagree
- ○ Neither agree nor disagree
- ○ Agree
- ○ Strongly agree

I focus on what is wrong with the situation, rather than the positive side.

- ○ Strongly disagree
- ○ Disagree
- ○ Neither agree nor disagree
- ○ Agree
- ○ Strongly agree

I consume a lot of time complaining about trivial work matters.

- ○ Strongly disagree
- ○ Disagree
- ○ Neither agree nor disagree
- ○ Agree
- ○ Strongly agree

I take on the role of peacemaker when my colleagues have disagreements.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I conserve and protect organizational property.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I pass along information to my colleagues.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I plan and prepare work meeting content.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I engage in work for organizational or ad hoc committees.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I engage in work for professional boards or committees (outside my organization).

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I go out of my way to help new staff and faculty.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I find fault with what other colleagues/staff are doing.

- Strong disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I help colleagues with heavy workloads.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I help colleagues who have been absent from work.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I help colleagues with work-related problems.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I talk up the university/college library as a great place to work.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

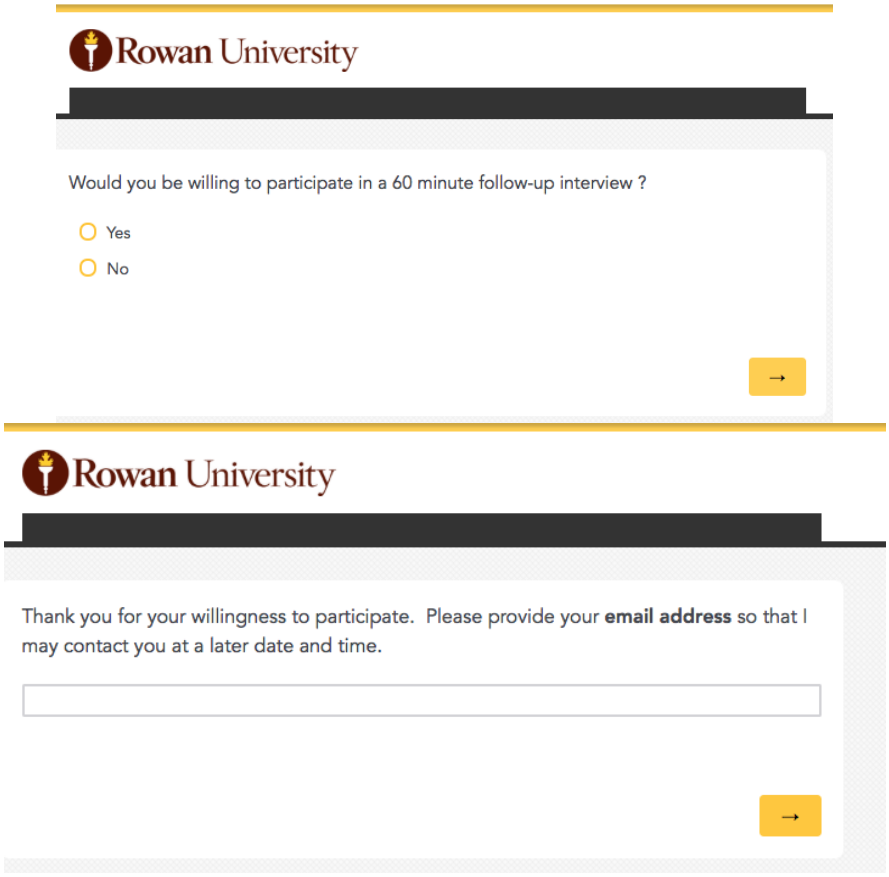
I find that my personal values align with the university/college library values.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I go out of my way to help students.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

→


Rowan University
Would you be willing to participate in a 60 minute follow-up interview ?
Yes
No
→
Rowan University
Thank you for your willingness to participate. Please provide your email address so that I may contact you at a later date and time.
→

Appendix C

Interview Protocol

Research Question	Part of Protocol: Interview Questions
RQ1. To what extent do women technology librarians' organizational citizenship behaviors differ from colleagues who are men?	1. Tell me about how you became a women technology librarian. 2. What attracted you to the technology area of librarianship? 3. Tell me about your work environment. 4. Describe your colleagues and how they work.
RQ2. How do women technology librarians describe their organizational citizenship behaviors within a gendered profession?	1. Describe how you work. 2. Tell me about certain tasks that you believe you are better at than your colleagues. (Follow-up) Why do you believe you are better at these tasks? 3. During your professional career, how have you adapted your work to align with organizational or collegial expectations? 4. Tell me about a time when you were asked to do something outside of your position description.
RQ3. In what ways do the experiences of women technology librarians explain how organizational citizenship behavior perpetuates a lack of organizational justice, gender segregation and inequity within the contemporary academic library?	1. Tell me about an experience when a colleague found it difficult to perform a work task and how did they overcome the difficulties? 2. Tell me about a time when you found it difficult to perform a

	work task. How did you overcome the difficulties? 3. Tell me about an experience when you feel you were treated unfairly by a student, colleague or administrator. 4. How would you describe the work that your organization or your colleagues' value?