May 2017

College Students and Career Information Seeking: Applying the Comprehensive Model of Information Seeking to Career Preparation

Michelle Andrea Fetherston
University of Wisconsin-Milwaukee

COLLEGE STUDENTS AND CAREER INFORMATION SEEKING: APPLYING THE COMPREHENSIVE MODEL OF INFORMATION SEEKING TO CAREER PREPARATION

by

Michelle Fetherston

A Dissertation Submitted in

Partial Fulfillment of the

Requirements for the Degree of

Doctor of Philosophy

in Communication

at

The University of Wisconsin-Milwaukee

May 2017

ABSTRACT
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Michelle Fetherston

The University of Wisconsin-Milwaukee, 2017
Under the Supervision of Professor C. Erik Timmerman

Issues with unemployment, underemployment, and inadequate preparation have raised concerns about what colleges are doing to ready students for post-graduate careers, but little discussion exists regarding students' roles in the process. Students play active roles in the vocational anticipatory socialization process, so this study examines the factors that influence college students to seek career information from two sources: the Internet and campus career centers. The Comprehensive Model of Information Seeking (CMIS) is used as the framework for the study. Data were collected from college students at two campuses, and all students were randomly assigned to respond to survey items about either the Internet or the campus career center. Structural equation modeling was used to test the hypothesized model. Results demonstrated a good fit to the model for the Internet as the information source when a theoretically reasonable path from perceived source quality to perceived source usefulness was added to the model. Internet experience exerted the strongest influence on participants' Internet self-efficacy, perceptions of information source quality, and, in turn, perceptions of information source usefulness and information seeking intentions. However, several proposed paths were not significant, suggesting the need for replication studies and further research. The data did not fit the model for the campus career center data, even when reasonable modifications were made to

the model. Results provide theoretical support for the CMIS as a viable framework beyond health information seeking and identify multiple practical applications and opportunities for future research on career information seeking.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGEMENTS

You know the expression "it takes a village to raise a child?" Well, I have come to the conclusion that expression applies to Ph.D. students as well. There is no way I would have made it this far without my village, and I owe each and every one of them my most heartfelt gratitude.

First, to my "dissertation dream team": thank you all for being such a great committee to work with and for the ways each of you have helped me along the way. Dr. Erik Timmerman, you have been a tremendous advisor, providing helpful feedback and encouragement since I was first admitted to the Ph.D. program. I have never once regretted my decision to join the program, and I believe that's in large part because you have been so helpful every step of the way. Dr. Erin Ruppel, you have taught me so much (literally—I took a lot of your seminar courses!) Reading about health comm. in your mediated communication seminar is what gave me the idea for this project. Dr. Sang-Yeon Kim, thank you, thank you, THANK YOU for your help as I navigated the wonderful world of structural equation modeling and helping me to realize I understood more than I thought I did. I may teach a research methods course yet! Dr. Xiaoxia Cao, thank you for sharing ideas, suggesting sources, and bringing the mass media perspective I wanted to incorporate (and especially for the incredibly timely *News that Matters*!). Dr. Scott D'Urso, when I took your org. comm. seminar thanks to the UWM/Marquette graduate student exchange program, I knew I had found my disciplinary home, so I can't thank you enough! I would also be remiss if I didn't thank Dr. Kathryn Fonner for her support, encouragement, and the opportunities she gave me to collaborate on research during her time at UWM.

To my parents, Craig and Gail Stark: I could fill twice as many pages as the rest of this dissertation with words about how amazing you both are, and it still wouldn't be enough. You have supported and encouraged me my entire life, no matter what I decided to do, and you have

been there for me during my time in this program even if you weren't entirely sure what I was doing exactly (data—lots and lots of data!) I literally would not be here without you. Thank you again for your love, support, and just always being there. I don't know what I would do without you. I also owe you for giving me such a wonderful and supportive sister: To Laura Stark, thank you for being both a sister and a friend (sisterfriend—ha!) throughout this process. You're the one who understands this whole academia thing best, and I am going to miss being "coworkers" with you at UWM!

That said, there is no one I owe more to than my husband, Jamie Fetherston. You agreed to let me take this journey and trusted that I had the budget figured out to make it work (and don't worry, I did—we are still in the black!). You've also supported me every step of the way, encouraging me, making sure I could take library time when I needed it, pitching in around the house more than any husband probably has ever, and just generally making everything better with your presence. I definitely could not have done this without you, and there's no one else I'd rather have by my side as I cross the finish line. Thank you, thank you, thank you.

Finally, to my daughter Lila: Peanut, you have taught me that I am capable of many things I never thought possible. (Unfortunately, some of them have been grosser than others…but I digress!) Thank you for your love, joy, and smiles, and I hope this dissertation shows you that you can do anything you want if you put your mind to it and are willing to work hard. This dissertation is also going to be your bedtime story for the next 6 months, so I really hope you like it (just kidding!)

Introduction

Many students enroll in colleges and universities each year for reasons related to future job prospects. More than 85% of first-year students rated the ability to get a better job as a very important factor in their decision to attend college (Eagan, et al., 2016) However, many recent graduates face high levels of unemployment and underemployment, or working in jobs that do not require a degree (Thompson, 2015). In addition, many employers believe that new college graduates are not adequately prepared for the professional workforce (Payscale, 2016; Pew Research Center, 2016). The aforementioned issues have raised concerns about what colleges are doing to prepare students for careers, but comparatively little discussion exists regarding students' roles in the process, particularly their efforts to seek career preparation information. Investigating students' behaviors regarding career preparation could help higher education institutions better bridge this perceived preparation gap.

Transitioning from college student to post-graduate employee is a pivotal part of organizational socialization and assimilation, an ongoing process of finding, pursuing, and maintaining a career. The earliest phase is Vocational Anticipatory Socialization (VAS), or the process of learning about and choosing careers. Existing VAS research tends to focus on career seekers as passive recipients of socialization messages, rather than focusing on their own actions and responses to these messages (Jahn & Myers, 2014). This time period can be filled with uncertainty for many students, but experiencing uncertainty does not necessarily drive all individuals to seek information as a way to address the uncertainty (Brashers, 2001; Brashers, Goldsmith, & Hsieh, 2002; Kramer, 2004).

Considerable research addressing information seeking in organizational contexts focuses on newcomers who have already been hired by organizations (Jablin, 2001). However,

individuals who have not yet established employment relationships with specific organizations face information options, dynamics, and challenges that differ from individuals who have already secured employment, and existing information seeking frameworks have yet to be applied to VAS. In addition, the impact of technology on existing information seeking frameworks remains underexplored (Berkelaar, 2013). Technology is particularly important to anticipatory socialization, as growing percentages of the population turn to the Internet, smartphones and social media to find and apply for jobs (Smith, 2015). Understanding the factors that influence college students' career information seeking behaviors, particularly those involving technology, can help colleges and universities optimize their career preparation communication to better facilitate student information seeking. Additionally, organizations interested in hiring new college graduates can benefit by targeting their recruitment communication based on factors that influence students to seek specific career information.

The Comprehensive Model of Information Seeking (CMIS; Johnson & Meischke, 1993) offers a framework to further examine career information seeking. The model proposes that characteristics of the potential information seeker, such as demographics, salience, and beliefs, predict perceptions of a particular information source, which in turn influence information seeking behaviors. The model has primarily been applied to health communication research, particularly cancer-related information seeking, but has been tested in organizational communication contexts as well (Johnson, Donohue, Atkin, & Johnson, 1995). An extension of the model incorporates self-efficacy, or individuals' beliefs in their abilities to achieve desired outcomes associated with specific behaviors (Bandura, 1977), as a key mediating variable in the process (Rains, 2008b). Self-efficacy holds relevance in career preparation as well; job search

self-efficacy positively predicted job search behaviors in a study of recent college graduates (Saks & Ashforth, 1999).

CMIS research also examines health information seeking via the Internet. The Internet includes an extensive array of health information of varying degrees of credibility (Cline & Haynes, 2001), and individuals facing health concerns may choose not to seek information based on relationship demands, cultural differences, and other context-based concerns (Brashers et al., 2002). Likewise, the Internet contains a variety of career information, and students pursuing careers may choose strategies other than information seeking to manage uncertainty associated with career preparation. The aforementioned similarities suggest the CMIS, with the incorporation of self-efficacy as advanced by Rains (2008b), would be equally relevant to career information seeking.

The goal of this dissertation is to apply the CMIS to purposive college student career information seeking by examining two information sources: the Internet and campus career centers. In addition to examining the applicability of the CMIS in a new context, testing the model on both information sources will help identify individual background and perceptual differences that might influence students' usage of different sources. Findings have the potential to advance the CMIS as a theoretical framework, as well as provide practical communication insights for higher education institutions and organizations wishing to recruit new graduates. The following sections review VAS and organizational information seeking research as they relate to the proposed study.

Vocational Anticipatory Socialization

Beginning in early childhood, VAS is the earliest phase in the process of organizational socialization and assimilation, in which individuals learn the basic meanings of work and

potential career options. Past VAS research has primarily focused on the sources from which individuals receive information about careers and this literature identifies five main sources: family, school, friends, part-time jobs, and mass media (Jablin, 2001). These five sources directly and indirectly communicate information about different aspects of work, careers, and organizational membership. Message sources provide information about job requirements, positive and negative aspects of work, and career advice (Levine & Hoffner, 2006), which in turn shape students' perceptions of careers in general (Clair, 1996; O'Connor & Raile, 2015) and of specific types of occupations. In particular, a recent line of research has examined the types of messages students receive regarding science, technology, engineering, and math (STEM) and how those messages influence their perceptions of STEM careers (Jahn & Myers, 2014, 2015; Myers, Jahn, Gailliard, & Stoltzfus, 2011). In addition to messages from relevant sources, experiences such as volunteering and internships play a pivotal role in students' anticipatory socialization (Dailey, 2016; Gailliard & Jahn, 2014).

Generally speaking, VAS research has utilized a message sender's perspective rather than a receiver's (Jahn & Myers, 2014). However, students are not merely passive message recipients in the socialization process; they can play an active role and make choices about seeking work-related information (Jablin, 2001). Unfortunately, the ability to actively seek information is not synonymous with action, and not all college students are necessarily taking deliberate steps to seek information about careers (Carver, 2010). Gaining a better understanding of the factors that influence college students to take action and seek career preparation can help educational institutions improve the effectiveness of their career preparation information sources. Facilitating student career information seeking should, in turn, help students succeed in their post-graduate career pursuits.

Information Seeking During the Socialization Process

Much of the information seeking research related to socialization focuses on newcomers recently employed by organizations, rather than individuals still exploring career and employment options (for an exception, see Beenen & Pichler, 2014). This work examines different strategies individuals use to seek information (Miller, 1996; Miller & Jablin, 1991) and how preferred sources of information, such as supervisors and coworkers, vary by timing and situation (Chan & Schmitt, 2000; De Vos & Freese, 2011; Morrison, 1993; Settoon & Adkins, 1997; Sias & Wyers, 2001; Teboul, 1994; van der Velde, Ardts, & Jansen, 2005). Several studies have also examined individual and contextual factors that influence information seeking. Three factors particularly relevant to career exploration include self-efficacy, curiosity, and desire for control. Self-efficacy positively links with information-seeking behaviors (Gruman, Saks, & Zweig, 2006). Specific curiosity, such as the desire to solve a particular problem, is also positively associated with information seeking (Harrison, Sluss, & Ashforth, 2011), as is desire for control (Ashford & Black, 1996).

Although some individual factors influence information seeking choices, contextual factors also play a role. The most prominently studied contextual factor in organizational information-seeking research is the perceived social cost of seeking the information. Research indicates that perceived social costs influence information seeking choices (Fonner & Timmerman, 2009; Miller, 1996; Miller & Jablin, 1991; Teboul, 1995; Tidwell & Sias, 2005), although perceived value of the information is also important (Ashford, 1986). Impression management is a concern for many organizational newcomers, particularly with regard to feedback seeking, as they want to avoid appearing competent or insecure (Morrison & Bies, 1991). Perceived social costs may also increase the longer newcomers are in the organization,

because expectations that they understand organizational norms and policies begin to develop over time (Sias & Wyers, 2001). If students do not believe career information seeking will help them, and might in fact harm their self-presentation, they too may avoid seeking information for similar reasons.

Helping college students overcome perceived social costs is important because of the potential benefits associated with information seeking after joining organizations. Organizational newcomers' engagement in proactive behaviors, such as information seeking, relates positively to task mastery, role clarity and social integration when successful receipt of the desired information sought is taken into account (Saks, Gruman, & Cooper-Thomas, 2011). Thus, individuals and organizations may be able to better position college students for success in the workplace by gaining a deeper understanding of factors that influence career information seeking. One framework commonly used in health communication research, the Comprehensive Model of Information Seeking (CMIS; Johnson & Meischke, 1993), offers a useful lens through which to consider college students' career information seeking.

The Comprehensive Model of Information Seeking (CMIS)

The CMIS is rooted in three different theoretical perspectives: uses and gratifications, the health belief model, and media exposure and appraisal. Uses and gratifications theory suggests that media use is goal-directed; users are aware of their needs and correspondingly select media to fulfill those needs (Rubin, 1986; Tan, 1985). User needs can be categorized as cognitive, affective, personal integrative, social integrative, and escapist (Tan, 1985). Cognitive needs, which relate to information and understanding, and personal integrative needs, which involve improving individual credibility and self-confidence, apply to the career preparation context. The health belief model proposes that individual readiness to take action regarding a health

condition is based on perceptions of the severity of the risks and potential benefits of taking action (Rosenstock, 1974). The media exposure appraisal model (Johnson, 1983) posits that editorial tone, perceived utility, and perceptions of a communication medium affect frequency of use and positive appraisal of that particular medium. Based on the aforementioned perspectives, the CMIS theorizes that four health-related factors (demographics, direct experience, salience, and beliefs) and two information carrier factors (characteristics, utility) combine to influence information seeking. In the context of health information seeking, direct experience refers to an individual personally having the health issue under investigation or knowing someone who does. Salience refers to the perceived threat of the health issue and personal significance of health information, and beliefs are individuals' perceptions that they can do something about the issue. Information carrier characteristics refer to the content and style of the message presented (e.g., quality), while utility refers to the perceived personal usefulness of the message.

Although the CMIS has been applied to organizational contexts with some success (Johnson, 1996; Johnson et al., 1995), research using the CMIS primarily examines health information seeking. Initial tests of the CMIS, focused on cancer information seeking and magazines as the communication channel, provided support for the model overall, but indicated that health-related factors had little effect (Johnson & Meischke, 1993). Some tests have also found direct effects between antecedents and actions, with information carriers not mediating the relationship to the extent originally theorized (Hartoonian, Ormseth, Hanson, Bantum, & Owen, 2014; Johnson et al., 1995). A modified version of the CMIS collapsed the information character characteristics into a single variable, titled perceived source usefulness, when applied to prescription drug information seeking (DeLorme, Huh, & Reid, 2011). Consistent with the original CMIS test, health-related factors were weak predictors, while perceived source

usefulness predicted use of Internet sources for seeking information. However, education, ethnicity, age, and health consciousness all accounted for significant variance in Internet use for seeking cancer prevention information (Ginossar, 2016).

Despite its primary focus in health-related information seeking, the CMIS shows promise as a framework for career information seeking because the two contexts share some similar features; most notably, the potential for high uncertainty and the wide array of information available via technology. As previously noted, health issues can create a great deal of uncertainty for the individuals involved, but they may choose to avoid seeking information as an alternative way of managing that uncertainty (Brashers et al., 2002). Likewise, students may experience a great deal of uncertainty regarding their post-graduate job prospects, but do not necessarily seek information to help them address that uncertainty (Carver, 2010). In both contexts, avoidance of information seeking may occur despite the amount of easily accessible information on the Internet.

Technology-based information seeking in particular has been a common focus of research involving the CMIS of late. Recent work uses the CMIS to examine participation in online cancer support groups (Han, Hou, Kim, & Gustafson, 2014) and use of an interactive cancer communication system in which information seeking resource choices varied based on demographics, disease status, and psychosocial needs. Multiple studies apply the CMIS to Internet use for information seeking (Hartoonian et al., 2014; Oh, 2015; Rains, 2008a, 2008b) as well as less purposive information scanning (Ruppel, 2016). Even CMIS studies not focusing solely on the Internet have found it to be a prevalent health information source for many users (Sweet, Perrier, Podzyhun, & Latimer-Cheung, 2013). The popularity of the Internet for seeking information is not surprising, considering the Internet includes more than 1 billion websites

("Total number of Websites - Internet Live Stats," n.d.), with more than 70,000 containing health information alone at the start of the 21st century (Cline & Haynes, 2001). Despite the proliferation of information available, barriers to information seeking remain. These barriers include individual characteristics, time and cost concerns, and situational and interpersonal issues related to the source (Wilson, 1997). Internet-specific barriers include accessibility of a high-speed connection (Rains, 2008a), information overload, website usability/navigation issues, and concerns about the quality and credibility of information posted online (Cline & Haynes, 2001). Thus, an extension of the CMIS incorporated self-efficacy as a key mediating variable in Internet information seeking (Rains, 2008b). Specifically, Rains found that Internet self-efficacy partially or completely mediated the relationships between health related factors, Internet use, and information seeking processes and outcomes. Essentially, individuals with lower Internet self-efficacy had lower perceptions of the quality of information available, viewed their searches as less successful, and reported lower likelihood of using the Internet to seek health information in the future. Low confidence and self-efficacy can particularly impede career information seeking efforts as well. If students do not feel as though they know what to do regarding career goals, they may not attempt to get their career questions answered (Julien, 1999). Self-efficacy is a key component of the career preparation process, having been associated with positive job search behaviors and employment status (Saks & Ashforth, 1999) and negatively associated with avoidance and career indecision (Betz & Voyten, 1997; Taylor & Betz, 1983). As such, the role of self-efficacy in predicting career information seeking warrants consideration in the proposed study.

Proposed Model and Hypotheses

This study seeks to apply the CMIS and Rain's (2008b) extension incorporating self-efficacy to college students' career information seeking from two sources: the Internet and campus career centers. The CMIS is an appropriate framework for examining career information seeking because it has been applied across health and organizational information seeking contexts, and studying processes across contexts provides opportunities to gain a more developed understanding of information seeking (Johnson, 2003). Additionally, career information seeking parallels health information seeking in multiple ways. Uncertainty is a central component of many people's career experiences (Trevor-Roberts, 2006), and uncertainty commonly occurs regarding health issues as well (see Brashers, 2001, for examples). Health information is available from both face-to-face and mediated information sources (Brashers et al., 2002), as is career information and thus is subject to similar source-related availability and barriers. College students have also identified credibility of the information sources as a key concern (Escoffery et al., 2005). Furthermore, individuals may choose to manage the uncertainty in ways other than seeking information in both health and career preparation contexts (Brashers et al., 2002; Orndorff & Herr, 1996). Self-efficacy, particularly pertinent to this study, has also impacted outcomes for both health-related information seeking (Hong, 2006; Rains, 2008b) and job-related search behavior (Saks & Ashforth, 1999).

The CMIS indicates that demographics, direct experience, salience, and beliefs predict perceptions of the quality and usefulness of an information source, which in turn predict information seeking. The sections below describe the aforementioned variables, as well as source self-efficacy, in the context of the proposed study. Corresponding hypotheses for each

component of the model are also stated. Figure 1 provides a complete depiction of the proposed model.

Antecedents

Demographics. Multiple information seeking scholars argue that context is more powerful in shaping information seeking behavior than common demographic variables such as age, gender and racial/ethnic background (Case & Given, 2016). Health information researchers find that information seeking is greater among females at higher education levels, and negatively associated with age (Ruppel, 2016), but the applicability of these findings to non-health information seeking contexts is unclear. In their test of the CMIS in a technical organization, Johnson et al. (1995) proposed education level as the most important demographic variable in organizations, and their data supported a direct relationship between education and information seeking. Although undergraduate college students all essentially occupy the same formal education level, students undergo many changes while pursuing an undergraduate degree that can be attributed to their college experience, including job-related skills (Astin, 1993). As such, students with fewer semesters remaining until graduation would be expected to view career preparation differently than those earlier in their college careers and thus be more likely to seek career information.

H1: Semesters remaining until graduation negatively predicts likelihood of seeking career information.

Direct Experience. Direct experience has been associated, albeit inconsistently, with perceptions of source utility (Hartoonian et al., 2014; Johnson et al., 1995; Johnson & Meischke, 1993). Health information seeking research operationalizes direct experience as having the health issue under investigation or knowing someone personally who has the health issue. In the

organizational information seeking context, direct experience was operationalized as years working in a position (Johnson et al., 1995), which was a significant positive predictor of utility for formal information sources. Comparably, some students may have already pursued job or internship experiences in their field of interest. In addition, students may have family members or close friends who were recently in college and went through the career exploration and preparation process. Friends and parents both play important roles in anticipatory socialization (Fonner & Roloff, 2008), so students with friends or family members who have recently gone through a post-graduate job search experience career-related information in ways they might not have otherwise.

Although not included in the original CMIS, experience with the information source in question also influences individual perceptions of, and likelihood of using, the source to seek information (Rains, 2008b). Experience with a source helps individuals develop skills with the source, an important consideration because lack of appropriate skills can be a major impediment to information seeking (Johnson, 1996). Further, Internet experience influences perceptions of its credibility as a source (Flanagin & Metzger, 2000) and is a positive predictor of Internet self-efficacy, which in turn influences source perceptions and information seeking actions (Rains, 2008b). As such, source experience is also included in the proposed model.

H2: Direct experience positively predicts perceptions of perceptions of source usefulness.

H3: Experience with the information source positively predicts perceptions of source quality.

H4: Experience with the information source positively predicts perceptions of source usefulness.

H5: Experience with the information source positively predicts source self-efficacy.

Salience. Salience is the perceived applicability of information; namely, whether or not an individual feels it is important to do something in a given situation. In terms of health information, salience can include individuals' perceptions of the threat of a particular illness, and their likelihood of contracting that illness (Johnson & Meischke, 1993). Salience also impacts how important individuals perceive a situation to be. Individuals affected by particular problems perceive those problems to be more important on a societal level (Iyengar & Kinder, 2010). Although salience was originally proposed as an antecedent with information carrier characteristics as mediators, studies involving the CMIS have more commonly found salience-related variables to be direct predictors of information seeking (Hartoonian et al., 2014; Johnson et al., 1995; Rains, 2008b) and information scanning (Ruppel, 2016). In addition, attitude toward a behavior, a component of the Theory of Planned Behavior that is similar to salience, directly predicted adolescent students' intentions to seek career information (Millar & Shevlin, 2003). One exception found desire for informational involvement (considered an aspect of salience) positively predicted source self-efficacy, which in turn positively predicted perceptions of source characteristics and usage intentions (Rains, 2008b). Because self-efficacy was not included as a mediator in other CMIS tests, and self-efficacy, as previously noted, is an important component of career preparation, the proposed model hypothesizes a relationship consistent with Rains's findings.

H6: Perceived salience of career information seeking positively predicts perceptions of information source self-efficacy.

Beliefs. In health information seeking research, beliefs are perceptions that effective detection and/or treatment options exist for a health issue. That is, if individuals seek information about a health issue, they believe solutions can be found. Tests of the CMIS specifically

incorporating health beliefs are contradictory, with some reporting little to no relationship to source perceptions (Johnson & Meischke, 1993) and others identifying significant predictive relationships to source perceptions (Hartoonian et al., 2014). When tested in an organizational context, beliefs were operationalized as perceptions that use of a communication channel was worthwhile and could help an organization. These beliefs positively predicted perceptions of the source as well (Johnson et al., 1995). Beliefs about career information seeking would seem to more closely align with beliefs identified in the organizational test (Johnson et al., 1995): the more students believe that seeking career information makes a difference and can benefit their post-graduate job search, the more positively they will view career information sources.

H7: Beliefs about career information seeking positively predict perceptions of information source quality.

H8: Beliefs about career information seeking positively predict perceptions of information source usefulness.

Source Self-Efficacy

Broadly, self-efficacy is defined as individuals' confidence in their ability to complete a task successfully (Bandura, 1977). The role of self-efficacy in information seeking has been examined most often using the Internet as the information source; namely, examining confidence in one's ability to successfully use the Internet to find information. Self-efficacy judgments affect Internet use (Eastin & LaRose, 2000), and Internet self-efficacy positively predicted perceptions of quality and usefulness of Internet information, which influenced information seeking intentions (Rains, 2008b). Self-efficacy also interacted with task complexity to impact quality of information found. Specifically, individuals high in self-efficacy were able to find more accountable sources of information online than their low self-efficacy counterparts when

given a more challenging information search task (Hong, 2006). Because search parameters are not clearly defined and will vary based on individual career interests, career information seeking could be considered a more challenging information search task as well. Correspondingly, source self-efficacy could be expected to affect perceptions of source quality and information usefulness. Rains (2008b) also found that self-efficacy partially mediated the relationship between Internet experience and information quality, and fully mediated the relationship between Internet experience and information usefulness. Therefore, self-efficacy is expected to mediate the corresponding relationships in the proposed model as well.

H9: Source self-efficacy positively predicts perceptions of information source quality.

H10: Source self-efficacy positively predicts perceptions of information source usefulness.

H11: Source self-efficacy partially mediates the relationship between source experience and perceptions of information source quality.

H12: Source self-efficacy fully mediates the relationship between source experience and perceptions of information source usefulness.

Source Perceptions

Quality. Tests of the CMIS have yielded some mixed results on the role of perceived information source characteristics. An early test of the model involving magazines found perceptions of the quality of information was positively related to information seeking actions (Johnson & Meischke, 1993), but other tests found no significant relationship between the two (Hartoonian et al., 2014; Johnson et al., 1995). However, when self-efficacy was incorporated as a mediating variable in the model, perceptions of source quality were positively related to health information seeking intentions (Rains, 2008b). Because the proposed model incorporates self-

efficacy, which mirrors the model that was also supported by Rains, perceptions of information quality are expected to influence career information seeking.

H13: Perceptions of source information quality positively predict the likelihood of using the source to seek career information.

Usefulness. Tests of the CMIS have been somewhat more consistent in finding positive relationships between perceived usefulness of an information source and information seeking (DeLorme et al., 2011; Johnson et al., 1995; Johnson & Meischke, 1993; Rains, 2008b), with only one study finding no significant path between the two (Hartoonian et al., 2014). Accordingly, perceived source usefulness is expected to relate positively to career information seeking as well.

H14: Perceptions of source usefulness positively predict the likelihood of using the source to seek career information.

The proposed model is tested on two information sources: the Internet and campus career centers. Some differences have emerged in past CMIS studies, based on information source (DeLorme et al., 2011; Johnson et al., 1995; Ruppel, 2016), and in health communication contexts there is evidence that the model works best with authoritative information sources, such as doctors (Johnson, 2003). Testing the model with campus career centers provides the equivalent of an authoritative information source in the career preparation context and enables this assertion to be tested. Furthermore, applying the model to both the Internet and campus career centers offers the potential for greater practical application. For instance, if the hypothesized source experience paths are supported for campus career centers but not for the Internet, career center staff could use the findings to focus on ensuring all students gain experience with the career center itself rather than emphasizing Internet resources.

Method

The following section describes the sample, procedures, measures, and analysis strategy used to test the hypotheses that compose the theoretical model guiding this study. Because in some cases measures needed to be modified from past health communication studies, and in other cases, newly developed measures were needed to test the variables in a career information-seeking context, a pilot study was conducted to assess the reliability of the proposed study items. First, a brief overview of the pilot study participants, procedures, and results is provided. Next, a description of the modifications of the pilot study methods for final data collection is described.

Pilot Study Overview

Participants. In order to assess the appropriateness of potential measures for the proposed study, a pilot test survey was distributed to students enrolled in Communication courses at a large public university in the Midwest. A total of 88 students participated in the pilot. The sample was 63% female and 74% White, with an average age of approximately 25 years ($M = 25.21$; $SD = 7.19$). On average, participants had less than three semesters remaining until graduation ($M = 2.69$; $SD = 1.64$). Exactly half the participants (n = 44) identified as Communication majors, with the remainder representing a variety of majors including Psychology, Finance, Accounting, Marketing, Information Science, and Social Work. The majority of participants (78%) were employed at least part-time.

Procedures. Following IRB approval, a recruitment email with a link to an online survey was sent to instructors to share with their students. Participants who accessed the online survey link first viewed an informed consent document, and then clicked through to the survey. The first section of the survey asked participants to respond to each of the proposed measures for the Internet as an information source. Next, an open-ended question asked participants to list specific

sources they have used or would use to find information about a particular career. This question was included in part to determine whether any sources beyond the Internet and campus career centers seemed particularly prevalent, and to break up the sets of test measures. Participants primarily listed different websites, in a few cases including other sources such as professors, advisors, family, and friends. After the open-ended question, participants responded to the same test measures from the beginning of the survey, modified with campus career center listed as the information source, followed by several demographic items. Upon completion of the survey, participants were directed to a separate link to submit their information for course extra credit purposes, if desired.

Instruments. Proximity to graduation was the only demographic item included in the proposed model, and was assessed with a single statement asking participants to indicate how many semesters they had remaining until graduation on a seven-point scale (from 1 = 1 semester to 7 = 7 or more semesters). Most participants (58%) were within two semesters of graduating.

Two aspects of direct experience were assessed: career preparation experience and information source experience. For the first two aspects, participants were asked the extent to which they had experienced each item in the past twelve months on a five-point scale (from 1 = Not at All to 5 = To a Great Extent). Four items assessed respondents' past career preparation experience and experience through their personal networks: "Using the [source] to explore careers in your field of interest"; "Using the [source] to pursue a job or internship in your field of interest"; "Immediate family members who have attended college using the [source] to seek career information"; and "Friends who have attended college using the [source] to seek career information". All four items loaded on a single factor, explaining 61% of the variance for the Internet and 66% of the variance for the career center. Cronbach's alpha for the measure was .76

for the Internet and .83 for the campus career center. Table 1 lists all items for independent and mediating variable measures for the Internet, and Table 2 lists all items for independent and mediating variable measures for the campus career center.

Source experience was measured using five items from Flanagin and Metzger's (2000) measure of Internet use, with the five items modified in the second portion of the survey to reflect the campus career center as the information source. Sample items include "I have a great deal of experience using the [source]" and "It is easy for me to access the [source]." Items were assessed on a five-point scale (from 1 = Strongly Disagree to 5 = Strongly Agree). Cronbach's alpha was .77 for the Internet and .89 for the campus career center.

Measures of salience and beliefs in past CMIS studies were tailored specifically to the health and/or organizational contexts under investigation. Therefore, new items were developed to assess salience and beliefs regarding career information seeking. Participants were asked to indicate their level of agreement with each item on a five-point scale (from 1 = Strongly Disagree to 5 = Strongly Agree). The salience measure included four statements: "The [source] is a valuable tool for helping me find career information"; It is important that I use the [source] to find career information"; "There is a good chance I will need the [source] to find career information in the future"; and "I can find the career information I need without using the [source]" (reverse coded). Principal components analysis with Varimax rotation revealed two-factor solutions for both the Internet items and the campus career center items, with only the reverse-coded item loading onto a separate factor. The scale had low reliability for both the Internet items (Cronbach's $\alpha = .56$) and campus career center items (Cronbach's $\alpha = .64$). However, after removing the reverse-coded item, Cronbach's alpha improved to .86 for the Internet items and .75 for the campus career center items. Individual data points were compared

with the original data export and confirmed that reverse coding had been performed correctly, indicating the fourth item included in the measure required rewording for final data collection.

Beliefs were measured with five items asking for participants' level of agreement that the [source]: is a waste of time (reverse coded), better prepares you for your chosen career, not worth the effort (reverse coded), will benefit you in the future, and will help you in your job search. Factor analysis revealed a single factor for the campus career center, explaining 67% of the variance. The items also had very good reliability (Cronbach's $\alpha = .87$). However, factor analysis revealed a two-factor solution for the Internet items, with the two reverse-coded items loading onto the second factor. Reliabilities for the two reverse-coded items were examined separately and found to be low (Cronbach's $\alpha = .64$), particularly compared to the other three items (Cronbach's $\alpha = .83$). Removing the reverse-coded items from the campus career center beliefs measure did not appear to affect that scale's reliability (Cronbach's $\alpha = .86$), indicating a possibility the reverse-coded items could be removed during final data analysis. Table 3 reports the means, standard deviations, and correlations for all Internet variables, and Table 4 reports the means, standard deviations, and correlations for all campus career center variables, after removal of the problematic salience and beliefs items.

The measure of source self-efficacy included eight items adapted from Rains (2008b) for career information seeking. Participants were asked to indicate how confident they were in their ability to use the [source] for each item on a five-point scale (from 1 = No Confidence to 5 = Total Confidence). The eight items for the Internet as information source read as follows: "Understanding different procedures for accessing career preparation information"; "Using different search engines to gather career preparation information"; "Evaluating the quality of different career preparation websites"; "Locating a variety of perspectives on a career

preparation topic"; "Finding high-quality career preparation information"; "Understanding how search engines work"; "Locating high-quality career preparation websites"; and "Learning how to use the Internet to gather career preparation information." The scale had excellent reliability in the pilot data set (Cronbach's $\alpha = .94$). The eight items for the campus career center as information source read as follows: "Understanding the procedures for accessing the campus career center"; "Using career center resources to gather career preparation information"; "Evaluating the quality of different career center services"; "Identifying a variety of services available from the campus career center"; "Finding high-quality career preparation information"; "Understanding how the campus career center works"; "Locating high-quality career preparation resources"; and "Learning how to use the campus career center to gather career preparation information". Scale reliability for the campus career center items was also excellent (Cronbach's $\alpha = .98$).

Perceptions of source quality were assessed using eight items from Rains (2008b). Participants were asked to indicate their level of agreement that career information from the [source] is: high quality, believable, accurate, informative, correct, untrustworthy, biased, and low quality. The final three items were reverse coded. Items achieved good reliability for both the Internet (Cronbach's $\alpha = .83$) and the campus career center (Cronbach's $\alpha = .92$).

Perceptions of source usefulness were assessed using a single item also adapted from Rains (2008b). Participants were asked to assess the usefulness of their most recent search for career information using the [source] on a five-point scale (from 1 = Extremely Useful to 5 = Not At All Useful). Items were reverse coded during analysis for directional consistency with other measures (i.e., a higher score indicating a more positive assessment of the construct). A "Not

Applicable" option was included for any participants who had not sought career information from the Internet and campus career center, respectively.

Finally, information seeking was with a set of items that asked participants how likely they were to search for career information on the Internet and use the campus career center, respectively, in the next twelve months. Both items were assessed on a seven-point scale (from 1 = Extremely Likely to 7 = Extremely Unlikely). The difference in the number of scale points was solely due to a clerical error when setting up the survey. As with the usefulness measure, the likelihood statements were reverse coded for directional consistency during data analysis.

Modifications for Final Data Collection

Procedure. Data were collected from two different campuses: a large public university and a large private university, both located in the Midwest. Different recruitment methods were used in order to comply with the established policies and norms of each respective institution. Data collection at the public university followed a similar recruitment procedure to the pilot study, making the survey available to students in introductory Communication courses for extra credit. An email distributed to a random sample of 10% of the undergraduate student population was used to recruit participants at the private university. Because extra credit could not easily be offered to the private university participants, they had the option to enter a drawing for a small gift card instead. A total of 767 students at the private university received the recruitment email, and the survey received a 10% response rate (78 completed surveys). All participants, regardless of university, were randomly assigned to respond to the measures for only one information source (either the Internet or the campus career center), in order to ensure the responses about one source did not impact responses about the other source.

Participants. A total of 433 students completed the survey, with 82% (n = 355) coming from the public university and 18% from the private university. There were 229 participants (53%) who filled out the Internet version of the survey, and the remaining 204 (47%) completed the career center version. The sample was 61% female and 73% White, with an average age of 21.33 years (*SD* = 4.33). On average, participants had between 4 and 5 semesters remaining until graduation, and reported pursuing majors in a wide variety of areas, with the most popular majors focused around business (26%), communication (19%), healthcare (11%), and information technology (9%). Remaining majors included human services, education, sciences, arts, and engineering, with 6% pursuing multiple majors and 3% indicating they were undecided. The breakdown of majors is somewhat consistent with the overall college student population, as business and related programs are the most popular majors nationally, though health-related majors are the second most-popular category nationwide (National Center for Education Statistics, 2016). The higher representation of communication majors in the current sample can be attributed to the public university recruitment taking place in communication courses. More than two thirds of participants (69%) were employed at least part-time. Just fewer than 25% (n = 106) had completed at least one internship. Nearly half (47%) had taken a career preparation course, and 40% indicated that they have someone working in their field of interest that they consider a mentor.

Instruments. Final survey items underwent a few minor modifications based on pilot test results and feedback to help refine and improve the measures. The four items of the salience measure were reworded to address the problematic fourth item and ensure the items were assessing perceived salience of career preparation in general, not salience of the individual source. The final items in the measure were: “It is important that I learn about career options

after graduation", "There is a good chance I will need career information in the future," "I worry about pursuing a career after graduation," and "I don't need to do anything to prepare for a career after graduation" (reverse-coded). The beliefs measure was modified in a similar manner to ensure the items asked about career preparation in general, rather than the specific source. The revised measure asked participants the extent of their agreement that career preparation: is not worth the time (reverse-coded), helps you succeed, is not worth the effort (reverse-coded), will benefit you in the future, and makes a difference. Measures for proximity to graduation, career preparation experience, source experience, source self-efficacy, source quality, source usefulness, and information seeking were retained as is from the pilot study. However, likelihood of future information seeking was assessed on a five-point scale instead of a seven-point scale, for consistency. Negative words (e.g., "not") were bolded for all reverse-coded items to help participants notice the change in what they are evaluating. Items measuring endogenous and mediating variables (information seeking likelihood, perceived source quality, perceived source usefulness, and source self-efficacy) were placed at the beginning of the survey to prevent the exogenous variable measures from influencing outcome responses.

Variables for Internet as information source. All individual items measuring the variables of interest were run through principal components analysis with Varimax rotation to examine factor structure and potentially simplify the proposed model. Table 5 contains a list of the original factor loadings and identifies the items retained for final analysis. The Internet condition and career center conditions were run separately, revealing some differences in factor structure. The Internet as source data yielded an eight-factor solution explaining 64% of the variance. In the rotated component matrix, the single-item measures of semesters remaining until graduation, perceived usefulness, and information seeking did not have any higher factor

loadings than .54 and thus will remain analyzed separately as originally intended. For multi-item measures, items with a factor loading of at least .6 and no secondary factor loadings greater than .4 were retained for analysis. One item from source quality ("informative") was removed due to low factor loading, and the three reverse-coded items loaded onto a separate factor and were also dropped after confirming that reverse-coding had occurred correctly. The remaining four items had good reliability (Cronbach's $\alpha = .84$). The first five items of the self-efficacy measure loaded together on a single factor, but the last three items loaded onto a different factor, along with the five source experience items. Past research has identified Internet self-efficacy as a unidimensional construct (Eastin & LaRose, 2000; Hong, 2006; Rains, 2008b), and combining the three self-efficacy items with the source experience items did not make conceptual sense, so the final three self-efficacy items were removed for final analysis. Cronbach's alpha was .89 for the five-item source self-efficacy measure and .87 for the five-item source experience measure. One source experience item loading was just below the cutoff point (.58), but was retained because removing the item did not change scale reliability and the measure has been well established in previous research. The five direct experience items loaded together and were reliable (Cronbach's $\alpha = .75$). The four salience items and five beliefs items loaded onto two factors, but two of the salience items and three beliefs items had no factor loadings greater than .58, and four of those five items cross-loaded. Of the four remaining items, one salience item ("It is important that I learn about career options after graduation") loaded by itself, while the other ("I don't need to do anything to prepare for a career after graduation") loaded together with the remaining two beliefs items ("is not worth the time" and "is not worth the effort"). The latter three items were reverse-coded and were re-checked to ensure reverse coding had been performed correctly. Although potentially concerning as a single-item measure, the individual

salience item was retained for initial model analysis, with the remaining three items that loaded together retained as the beliefs measure (Cronbach's α = .83). It should be noted that the mean scores in both salience and beliefs were near the top of the five-point scale ($M_{salience}$ = 4.57, SD = .61; $M_{beliefs}$ = 4.57, SD = .77), as was information seeking likelihood (M = 4.34, SD = .89), for the current sample.

Variables for career center as information source. The career center data also revealed an eight-factor solution, accounting for 78% of the variance. As in the Internet condition, perceived usefulness and information seeking had no high factor loadings. Semesters remaining until graduation loaded onto its own factor, so the three aforementioned items were analyzed separately as originally intended. All eight source quality items loaded onto the same factor, but four items were dropped because of cross-loading issues, resulting in a four-item measure including one item consistent with the final Internet measure ("believable") and the three reverse-coded items. The four items achieved good reliability (Cronbach's α = .88). All eight source self-efficacy items were retained (Cronbach's α = .96), while only the first three source experience items were retained (Cronbach's α = .94). The direct experience items loaded onto two separate factors, with the first two items significantly correlated (r = .45, p < .01), and the last three items acceptably reliable (Cronbach's α = .81). The two sets of items could conceptually be divided into secondhand experience and firsthand experience, respectively, and were thus added to the model as separate variables for analysis. The reverse-coded salience item loaded onto a factor with the two reverse-coded beliefs items, while the remaining three salience items and three beliefs items loaded together onto a separate factor. The decision was made to drop the reverse-coded items and analyze salience and beliefs as a single variable for the career center data set. The first salience item had a factor loading less than .6 and was thus dropped,

leading to a five-item measure (Cronbach's $\alpha = .85$). Table 6 contains a list of the original factor loadings and identifies the items retained for final analysis.

Analysis Overview

The proposed model predicted three variables to directly influence career information seeking likelihood: semesters remaining until graduation (H1, negative relationship), perceived information source quality (H13, positive relationship), and perceived information source usefulness (H14, positive relationship). Three variables are predicted to directly influence perceived information source quality: source experience (H3, positive relationship), beliefs (H7, positive relationship), and source self-efficacy (H9, positive relationship). Four variables are predicted to directly influence perceived information source usefulness: direct experience (H2, positive relationship), source experience (H4, positive relationship), beliefs (H8, positive relationship) and source self-efficacy (H10, positive relationship). Two variables are predicted to directly influence perceptions of source self-efficacy: source experience (H5, positive relationship) and salience (H6, positive relationship). Finally, source self-efficacy is also predicted to partially mediate the relationships between source experience and perceived information source quality (H11) and source experience and perceived information source usefulness (H12).

Because of the large number of related predictions, structural equation modeling (SEM) was used to test the hypotheses. SEM involves the evaluation of relationships between combinations of variables—models—allowing for a higher-level perspective in the analysis and enabling the testing of multiple hypotheses simultaneously (Kline, 2016). Because the proposed model is largely based on the CMIS extension developed by Rains (2008b) and includes single-item measures consistent with that study, an observed variable approach was used, as is

appropriate for models with single-item measures (Stephenson & Holbert, 2003). The lavaan package for R was used to test the model. The model was specified using regression equations for each endogenous (or, in the case of self-efficacy, mediator) variable. The private university samples were relatively small for each group (41 for the Internet as information source and 37 for the career center as information source), so model fit indices were not compared individually by school. Table 7 reports the means, standard deviations, and correlations for all model variables.

The chi-square, Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Square Residual (SRMR) are the global fit indices used to evaluate the model. In SEM, the null hypothesis assumes the model exactly fits the data, so a non-significant chi-square value is preferred. CFI measures "goodness of fit", comparing the specified model's difference from close fit to the null model, which assumes the covariances between endogenous variables to be zero (Kline, 2016). Higher CFI values indicate better model fit. In contrast, RMSEA measures the model's distance from close fit, generally reported with a 90% confidence interval, and SRMR measures the model's "badness of fit", so lower values for RMSEA and SRMR indicate better model fit (Kline, 2016).

Results

Hypothesis testing: Internet as information source

The initial results indicated poor model fit, χ^2 (df = 14) = 40.34, $p < .01$, CFI = .82, RMSEA = .09, 90% CI = .06 - .13, SRMR = .06. Examination of fit indices indicated that adding a path from quality to usefulness would significantly improve model fit. The original CMIS (Johnson & Meischke, 1993) included a direct path from information carrier

characteristics (comparable to quality in Rains's 2008 adaptation) to utility (comparable to usefulness in Rains's 2008 adaptation). The relationship was supported by the original test data and the subsequent organizational test of the model (Johnson et al., 1995), so adding the path was theoretically consistent. The revised model fit the data well, χ^2 (df = 13) = 21.45, p = .06, CFI = .94, RMSEA = .08, 90% CI = .00 - .09, SRMR = .04. Further, all correlation residuals for relationships specified in the model were < .10, indicating good fit at the local level as well as the global level (Goodboy & Kline, 2017; Kline, 2016). Several individual paths in the model were not significant: semesters remaining– information seeking, beliefs – quality, direct experience – usefulness, beliefs – usefulness, and self-efficacy – usefulness. However, these paths were not trimmed from the model because doing so could potentially remove a theoretically meaningful path that could be significant in a replication sample (Goodboy & Kline, 2017). Table 8 reports the parameter estimates for the final model.

In addition, bootstrap mediation tests (Preacher & Hayes, 2008) were used to assess the pattern of relationships proposed in Hypothesis 11. Hypothesis 12 was not tested because, as previously noted, the path between source-self-efficacy and perceived information usefulness was not significant. Bootstrapping is a method of computer-based resampling many times (in this case, 1,000), to generate a sampling distribution and compute an indirect effect. Results also generate a 95% confidence interval for the indirect effect. If the confidence interval does not include zero, one can conclude that the indirect effect is greater than zero, suggesting the occurrence of mediation (Kenny, David A., n.d.). The indirect effect between source experience and perceived information quality was small but significant, b = .07, SE = .03, 95% CI = .02, .13.

Looking solely at the significant paths, the Internet as information source data supports the predicted relationships between source experience and source quality (H3), source experience

and source usefulness (H4), source experience and source self-efficacy (H5), salience and source self-efficacy (H6), source self-efficacy and source quality (H9), source self-efficacy partially mediating the relationship between source experience and quality (H11), and source quality (H13) and source usefulness (H14) as predictors of information seeking likelihood. Six predicted relationships were not supported by the data: semesters remaining until graduation and information seeking (H1), direct experience and source usefulness (H2), beliefs and source quality (H7), beliefs and source usefulness (H8), source self-efficacy and source usefulness (H10), and source self-efficacy as a partial mediator of source usefulness (H12).

Supplemental analysis

Some of the additional demographic and work-related information participants reported in the survey was not hypothesized in the model, but could potentially be of interest with regard to career information seeking. Therefore, correlations between these additional survey items and the endogenous variables in the model were examined as well. Two variables correlated with information seeking likelihood: number of internships completed ($r = .22$, $p < .01$) and having a mentor ($r = .17$, $p < .01$). The latter also significantly correlated with source self-efficacy.

To examine the potential impacts of number of internships and mentorship, the model was re-evaluated to compare model fit for participants who had not completed any internships ($n = 172$) and participants who had completed one or more internships ($n = 57$), participants who reported having a mentor ($n = 95$) and those who did not ($n = 133$), respectively. The model fit the non-intern data, χ^2 (df = 13) = 16.66, $p = .20$, CFI = .97, RMSEA = .04, 90% CI = .00 - .09, SRMR = .05, but not the intern data, χ^2 (df = 13) = 24.82, $p = .02$, CFI = .75, RMSEA = .13, 90% CI = .05 - .21, SRMR = .09. These results suggest that completing internships may be associated with the factors that influence students' use of the Internet for seeking career information, but

without additional information regarding the internships (e.g., timing, length, relation to students' current career paths), further conclusions about this potential relationship cannot be drawn. In contrast, the model fit both the mentor data, χ^2 (df = 13) = 14.76, p = .32, CFI = .98, RMSEA = .04, 90% CI = .00 - .11, SRMR = .05, and the non-mentor data, χ^2 (df = 13) = 14.89, p = .31, CFI = .97, RMSEA = .03, 90% CI = .00 - .10, SRMR = .05. One path (between semesters remaining and information seeking) differed in direction between the two groups, but was not significant for either group.

Career center as information source

Structural equation modeling was also used to analyze the career center data, testing the same fourteen hypotheses outlined previously. However, the career center condition ended up with a much smaller data set on which to test the model. For the perceived usefulness variable, participants had the option to select "NA – I have never used the [source]" when asked to report how useful they would rate their most recent use of the source for information. This option resulted in only two cases being dropped from the Internet condition, but resulted in 130 cases being dropped from the career center condition. An additional two cases had missing items elsewhere, leading lavaan to run the model using only 72 observations, compared to 224 for the final Internet model. While a larger sample size would be preferable, enough cases remain to examine the model. Table 9 reports the means, standard deviations, and correlations for all model variables.

Initial results indicated poor model fit, χ^2 (df = 13) = 26.88, p = .01, CFI = .81, RMSEA = .12, 90% CI = .05 - .19, SRMR = .09. As with the Internet model, modification indices showed that adding quality as a predictor of usefulness would improve model fit. The revised model fit was better and the chi-square just below significance, but other fit measures still did not indicate

a good-fitting model, χ^2 (df = 12) = 21.26, p = .05, CFI = .87, RMSEA = .10, 90% CI = .01 - .17, SRMR = .08. Modification indices did not suggest any additional theoretically reasonable path adjustments, so the model was rejected for the career center data.

Discussion

This study sought to apply the CMIS, with the addition of source self-efficacy, to college students' career information seeking on the Internet and from campus career centers. Data were collected from 433 students from two campuses, with students randomly assigned to respond to survey items about one of the two aforementioned information sources. Analysis via structural equation modeling demonstrated that the hypothesized model fit the data well for participants in the Internet as information source group. However, some individual paths within the final model were not significant predictors. In addition, supplemental analysis revealed the model fit the data, regardless of whether or not students had someone they considered to be a mentor, although the model did not adequately fit the data when applied solely to students who had completed an internship. The size of the career center as information source group decreased when participants who had never used the campus career center (and thus could not assess its usefulness) were removed from analysis. Although the remaining sample was still large enough to test, the model and subsequent theoretically justifiable modification both fit the campus career center data poorly. Thus, the model was accepted for the Internet as information source group, with the data supporting eight of the fourteen hypothesized paths, and the model was rejected for the career center as information source group.

Conclusions

Several key conclusions emerge from the findings of the study described herein. First, the results demonstrate the CMIS to be a viable framework for understanding factors that influence college students to seek career information on the Internet. Research rooted in the CMIS primarily focuses on health information seeking, and in particular use of the Internet to seek health information (DeLorme et al., 2011; Rains, 2007, 2008b; Ruppel, 2016). Data from the current study focused on the Internet as the information source fit the proposed model, demonstrating that the CMIS can help explain the factors that influence Internet information-seeking behaviors in other domains. The core constructs and relationships described in the CMIS can extend beyond health communication and thus could be used to examine Internet information seeking for topics beyond career information as well. For instance, the CMIS might also explain the factors that influence individuals to turn to the Internet to seek information about potential employer organizations, potential organizations they might like to support through donations or volunteering, or organizations providing needed services such as home repairs or financial planning.

Second, the current study reinforces the influence of self-efficacy in the information seeking process. Overall, relationships among model components aligned with the Rains (2008b) model, which specifically emphasized and tested the role of Internet self-efficacy, were largely consistent with his findings. Just as was the case with individuals seeking health information online, college students' confidence in their ability to use the Internet for career information is critical for empowering students to take an active role in career preparation by seeking information online. Conversely, a lack of confidence in students' ability to use the Internet for career information could impede them from seeking information that could help

them succeed post-graduation. Individuals' perceptions of their ability to control events impacts their information seeking (Johnson, 1996), so students low in Internet self-efficacy may not feel as though they can take control of their post-graduate career outcomes and opt not to seek information (Julien, 1999). The latter is a particularly relevant concern for higher education institutions as societal emphasis on students' post-graduate career success continues to grow. Students must be empowered to take an active role in the career exploration and preparation process.

Although findings of the current study were generally consistent with Rains (2008b), two notable differences emerged. Rains found the relationship between Internet experience and perceived information quality to be negative, but the Internet data for this study revealed a positive relationship. Both studies were, however, consistent in finding self-efficacy to have an indirect effect on the relationship, which Rains references as an important point when discussing the unexpected negative relationship. One possible explanation for the difference may be the difference in Internet credibility expectations in the populations sampled for the two studies. Participants in the Rains study were recruited from the general population of individuals who had sought health information on the Internet in the six months prior to the survey. In contrast, the present study sample consisted entirely of current college students. Previous research addressing Internet credibility perceptions has demonstrated that college students rate the credibility of information higher than does the general population (Metzger, Flanagin, & Zwarun, 2003), which could potentially explain the directional difference in the relationship between Internet experience and perceived information quality. Despite this notable difference, however, the end results remained largely consistent: higher perceptions of source quality lead to higher likelihood of using the source to seek information.

Another notable difference in the current study was that source self-efficacy was not related to perceived information usefulness, while Rains (2008b) found that self-efficacy fully mediated the relationship between source experience and usefulness (labeled search success in that particular model). One possible interpretation is that source self-efficacy does not play as much of a role in shaping perceptions of source usefulness as in health information seeking. However, the Rains model had one additional noteworthy difference from the current study, and the original CMIS, that may help explain the discrepancy in results. The final Internet model included a direct path between perceived information quality and perceived information usefulness, in line with the original CMIS. The Rains model had no direct path between these same variables. The difference is somewhat surprising considering that the aforementioned direct path has been one of the strongest paths in the model in multiple tests of the CMIS (Hartoonian et al., 2014; Johnson et al., 1995; Johnson & Meischke, 1993). In the case of the Rains study, however, the path would have added unnecessary complexity to an already good-fitting model, and more parsimonious models are preferable when theoretically reasonable (Kline, 2016). In the current study, source self-efficacy does not have a true indirect effect on perceived source usefulness because the direct relationship is not significant. This difference is consistent with prior research focused on mental health information seeking, in which self-efficacy did not predict use of general Internet information sources (McKinley & Ruppel, 2014). However, source self-efficacy does impact perceptions of source quality, and source quality in turn exerts a strong influence on perceptions of source usefulness, so source self-efficacy still plays an important role in career information seeking. Further, the direct path between perceived quality and perceived usefulness in the current model reinforces the importance of this same path from the original CMIS.

A third conclusion that can be drawn from the current study is that, of the proposed antecedents, Internet experience exerts the strongest influence on college students' Internet self-efficacy and perceptions of career information quality. In general, the model indicates that college students' personal factors, the equivalent of health-related factors in the CMIS, positively predict their perceptions of the quality of career information on the Internet, which in turn positively predicts perceived usefulness of career information on the Internet, and both perceptions ultimately predict likelihood of seeking career information from the Internet in the future. Internet experience was the strongest predictor of perceived source characteristics, consistent with the Rains (2008b) model. This finding demonstrates some consistency with other Internet information seeking research with regard to quality as well, in which more experienced Internet users found online information to be more credible (Flanagin & Metzger, 2000). Results also indicate an indirect effect between source experience and perceived information quality via source self-efficacy and evidence of partial mediation, though recently researchers have cautioned against definitely equating an indirect effect with mediation in non-longitudinal studies (Kline, 2016). Several other individual hypothesized paths involving other antecedents were not significant, as has been the case with other tests of the CMIS. Nonetheless, this finding suggests the importance of students gaining experience using the Internet. Although younger generations are often described as "digital natives" and assumed to be technologically-savvy (Prensky, 2010), their levels of experience cannot be taken for granted. For instance, the average age of the current sample was within the traditional college student age range at just over 21 years, but participants rated their Internet experience ($M = 3.77$, $SD = .71$) lower than all of the other five-point scale variables except direct experience ($M = 3.21$, $SD = .94$).

In the final model, three of the five hypothesized antecedent variables were not significant predictors of endogenous variables: semesters remaining, direct experience, and beliefs regarding career preparation. Particularly surprising, and perhaps concerning, is the lack of significant relationship between semesters remaining and career information seeking. That students with fewer semesters remaining until graduation would be more likely to seek career information seems simply logical, in addition to aligning with the theoretical model. However, the finding suggests that, consistent with Carver's (2010) findings, college students are not necessarily engaging in career information seeking to the extent perhaps expected.

Direct experience might not have been a significant predictor in the model because students with past career exploration and preparation experience may not necessarily perceive the Internet to provide any information more valuable than what they have already experienced. Information seeking research in most contexts indicates that people prefer information coming directly from other people (Case & Given, 2016), and face-to-face communication has been shown to be a more important predictor of effective assimilation than mediated communication in organizational contexts (Waldeck, Seibold, & Flanagin, 2004). Likewise, students who have direct experience, either through their own career preparation efforts or observing family or friends, may feel their in-person information resources are preferable to Internet career information. Correspondingly, these students may not feel that seeking career information from the Internet provides them additional benefits beyond the information their own experiences have provided. Direct experience and beliefs about career preparation were also significantly negatively correlated in the current data set ($r = -.14$, $p < .05$), so this explanation could account for beliefs not being a significant predictor in the final model as well.

Finally, the present study makes clear that the model cannot necessarily be applied equally to different types of information sources. In contrast to the Internet group, the career center data did not support the proposed model, even after the addition of a theoretically reasonable modification. The difference is particularly surprising here, because Johnson (2009) has noted that the CMIS appears to work best with authoritative channels, such as doctors in health communication, and for rational, programmed tasks in organizational settings. One might reasonably conclude that campus career centers are the equivalent of an authoritative channel for career information seeking and that seeking career information is a rational task aligned with students' goals of attending college in order to obtain better jobs (Eagan, et al., 2016). However, the studies on which Johnson's observations were based were also conducted well before the proliferation of the Internet as the information source we know today, and more recent support for the CMIS stems from studies of Internet information seeking as previously mentioned. Further, the CMIS is primarily rooted in theories related to mass media usage, as opposed to interpersonal interactions. Perhaps students associate campus career center information seeking more closely with the latter than the former. In any case, participants in the current study were significantly less likely to seek information from the campus career center ($M = 2.67$, $SD = 1.23$) than from the Internet ($M = 4.34$, $SD = .89$) in the next six months, so clearly differences exist that need to be explored further to explain the results discrepancy.

In addition, model testing only utilized 35% of the total career center sample, because 65% of participants had never used the campus career center and thus selected "not applicable" for the perceived usefulness measure. This information in and of itself is certainly noteworthy and perhaps suggests an additional reason the model did not fit the career center data. Seeking information from the campus career center may require more effort than a basic Internet search.

For instance, students may need to physically visit the center, send an email to set up an appointment, or fill out an information form. Often, people choose to seek the information they believe to be most accessible, and it takes very little for someone to decide a source is not easily accessible (Johnson, 1996). Information seeking research in organizations has also found perceived accessibility of a source to play a role in individuals' decisions to seek information (Major & Kozlowski, 1997; Morrison & Vancouver, 2000). Source accessibility is not directly considered in the CMIS, and perhaps plays a larger role for an information source like a campus career center than it might for the Internet, which can be accessed quickly and from virtually anywhere if a student has a laptop, tablet, or smartphone. Other CMIS research has also shown the Internet to play a more prominent role that traditional information sources, and that influencing factors may vary based on the type of source examined (DeLorme et al., 2011). Students may perceive campus career centers as a traditional information source and thus perceive their roles in career information seeking efforts differently. In any case, the lack of model support from the campus career center data suggests the need for additional research to examine other factors that influence college students to seek career information from their campus career centers.

Theoretical Implications

Findings from the study contribute support to some components of the CMIS, as well as the Rains (2008) modification incorporating source self-efficacy, for Internet information seeking. In particular, the Internet data supports the model's general premise that antecedent factors influence perceptions of the information source, which in turn influence information seeking intentions. The results suggest that Internet self-efficacy predicts perceptions of information source quality and partially mediates the relationship between Internet experience

and quality, and thus warrants continued inclusion in tests of the CMIS. In addition, the findings demonstrate that the CMIS can be a viable theoretical framework for examining information seeking outside of the health domain. Although some differences from the original CMIS emerged in the current study, Johnson himself (2003) notes that context can differentiate results using the same theoretical model. Thus, differences are not unexpected and have emerged in other tests of the model as well (Hartoonian et al., 2014; Johnson et al., 1995). These observations could also help account for the lack of model fit for the subsample of students who had completed at least one internship. Perhaps the experience of completing an internship creates a different context for students' overall educational experience and thus shapes their perspectives on career information seeking differently. However, because the analysis was only supplemental and not a primary focus of the study, the current data set lacks enough information to draw any clear conclusions from the discrepancy between the two subgroups.

The final Internet model also strengthens support for the importance of information carrier factors. When the CMIS was tested in an organizational setting, the final model identified many direct paths to information seeking and suggested that the information carrier characteristics and utility did not play as important a role in information seeking as previously thought. However, the present study demonstrated strong relationships among perceptions of source quality, utility, and information seeking likelihood, suggesting that these factors do play an important role in the decision to seek career information from a particular source and should continue to be incorporated in future research utilizing the CMIS.

As noted, the final model included several paths that were not significant; however, even these non-significant paths can provide some support for previous CMIS findings. Past tests of the CMIS have found the antecedents to be weak predictors (DeLorme et al., 2011; Hartoonian et

al., 2014; Johnson et al., 1995; Johnson & Meischke, 1993). The same held true for the antecedents examined here. Findings could suggest measurement issues are at work, but nonetheless reinforce the limited role of antecedents in predicting information carrier characteristics, a concern which may warrant exploration in further CMIS research.

However, the career center data not fitting the proposed model suggests the CMIS may not account for factors relevant to information seeking from interpersonal sources. As previously noted, source accessibility perceptions are not considered in the CMIS, but have been found to impact information seeking in organizational contexts (Major & Kozlowski, 1997; Morrison & Vancouver, 2000). In addition, perceived social costs can affect information seeking choices (Fonner & Timmerman, 2009; Miller, 1996; Miller & Jablin, 1991; Teboul, 1995; Tidwell & Sias, 2005), and perceived risk of excessive psychological costs of information seeking is an affective barrier that can lead to avoid seeking information from people (Savolainen, 2016). The CMIS has proven useful when applied to doctors in the past, but perhaps subsequent research is demonstrating this to be the exception rather than the rule. Social considerations and affective barriers play an important role in information seeking from human sources and may need to be accounted for more clearly when examining information seeking from campus career centers if interpersonal interactions are assumed to be involved.

Finally, this study contributes to both information-seeking and VAS research by adding receiver-focused knowledge to the body of information seeking literature, which has traditionally been dominated by an information source perspective (Johnson, 1996). VAS research has also primarily focused on the sources of socialization messages, despite individuals playing an active role in the socialization process (Jablin, 2001). These findings demonstrate value in continuing to explore the receiver-focused perspective with regard to VAS, particularly given the ability of

the Internet to fall into multiple categories of VAS messages sources, thanks in part to the availability of social channels such as LinkedIn. This study demonstrates that students do play an active role in VAS, as evidenced by, at the very least, the high likelihood of seeking career information from the Internet they reported, and their perspectives will add value to future research.

Practical Implications

The Internet findings provide valuable practical application for faculty and staff working with college students. The model indicates that experience using the Internet, and perceived salience regarding career preparation, predict students' self-efficacy regarding using the Internet for career information. Faculty and staff can apply these findings by communicating with their students about the impact of taking an active role in career preparation, as well as working with students to gain experience using the Internet as a career preparation tool. For instance, instructors might incorporate a career preparation activity related to their course topic into their lesson plans, and staff members who work with students in a non-instructional capacity, such as academic advisors or coaches, might introduce students to online resources based on their career interests and emphasize why these resources are important for helping students succeed after graduation. Both of the aforementioned scenarios create opportunities to build students' career-related Internet experience and self-efficacy regarding using the Internet for career information, which in turn will positively increase students' perceptions of the quality and usefulness of the information and likelihood of seeking career information on the Internet in the future.

Although the proposed model as a whole did not fit the career center data, career center staff can still benefit from some of the findings as well. Likelihood of seeking information from the campus career center still strongly and significantly correlated with students' perceptions of

the source quality and usefulness, as well as students' self-efficacy regarding their use of the career center. Career center staff could use this information to tailor their outreach programs and messaging toward these perceptions. For instance, career center staff might work with faculty to bring smaller seminar classes into the center to explore the available resources. Alternatively, staff could engage the class in a hands-on activity to introduce students to the center and help build students' confidence in their ability to use the career center successfully. Further, messages promoting career center programs and resources might highlight the experience and credibility of staff, or reputability of other on-site resources, to emphasize information quality. Other campaigns could feature testimonials from students explaining how they were able to use the career center information successfully in order to promote perceptions of source usefulness.

For students, the clear implication is that Internet experience builds self-efficacy and promotes positive career information seeking experiences and greater future information seeking likelihood. Although they are often assumed to be Internet experts already, students always have more to learn and can benefit from spending time focusing on using the Internet successfully for career exploration and preparation. Students can benefit from taking an active role in the anticipatory socialization process, and gaining purposeful experience using the Internet can help empower them to do so.

Limitations

Although the study described herein has produced valuable findings, some limitations must be noted. The model examined students' likelihood of seeking information in the future, not actual information seeking behavior. Although this is a necessary adaptation that fits the nature of students who will eventually be pursuing employment, the purpose of the model was ultimately to identify factors that predict students to information seeking, so assessing past

behavior might have been somewhat counterintuitive. However, tracking actual subsequent information seeking would have strengthened the predictive value of the model.

Related, conclusions are somewhat limited by the study's cross-sectional design, particularly with regard to definitively identifying source self-efficacy as a mediating variable. Longitudinal data would help strengthen the study's conclusions with regard to mediation, and indicate the extent to which antecedents and information carriers influence actual information seeking behavior over time. The drawback, of course, is that longitudinal data presents more challenges to collect, such as dropout rates affecting the sample size. In addition, accurately tracking actual Internet information seeking in particular presents logistical challenges because students could use multiple personal devices, as well as general campus-owned computers, to seek career information. Thus, even a longitudinal study would likely be subject to the limitations of self-report data.

Another limitation of the current study is the fact that, although the model identified here represents a good fit to the data, other models could be identified that may fit the data equally well (Kline, 2016). However, the final model is clearly and appropriately situated in existing theory, a critical condition for what Kline refers to as "The ultimate goal of SEM…statistical beauty" (p. 22). Future replication of the model using independent samples could further minimize this potential limitation.

In addition, the single-item measures used in model testing, particularly for salience, may raise validity concerns for some researchers. However, two of the single-item measures used (perceived source usefulness and information seeking likelihood) were consistent with the study on which this project is largely based (Rains, 2008b), and a third (semesters remaining) is essentially a straightforward demographic question. Although some participants may be

uncertain whether or not they have four or five semesters left, for example, depending upon choices they may make, a multi-item measure would not necessarily be able to provide additional clarity for that type of issue. Ultimately, single-item measures can be effective and may also help allay concerns related to common method variance (Fisher, Matthews, & Gibbons, 2016).

A final limitation is a potential methodological issue for the career center data. The setup of the present study kept the Internet and career center survey items as parallel as possible to make the conditions more easily comparable, but the existing measures used for the study were originally designed to assess Internet experience and perceptions. Although wordings were modified as appropriate to reflect the campus career center as the information source, perhaps the measures needed further customization to allow participants to comparably assess their perceptions, as the differences in factor loadings from the Internet data might suggest. Despite these limitations, however, the study expands our understanding of the factors that influence college students' career information seeking and provides helpful starting points for future research.

Future Directions

In addition to efforts to remedy the limitations, the results of this study present a number of promising avenues for future research. In particular, the role of salience and beliefs in career information seeking could be explored further and measures for the former two items further tested and refined. The fact that items from the salience and beliefs measures exhibited multiple instances of cross-loading together suggests students may interpret the two constructs in similar ways. The CMIS does not examine the factors that influence individuals' salience and beliefs related to a topic, so exploring the influences on those two antecedents could prove particularly

useful with regard to career exploration. For instance, future research might focus on how the five VAS message sources (friends, family, part-time jobs, school, mass media) relate to students' perceptions of the importance and effectiveness of career preparation efforts. Exploring these constructs might also prove useful for modifying the measures and model for campus career center information seeking. As employers continue to call for students to leave college better prepared for the workforce, career centers can and should play an important role in the college experience. However, at present, career center usage is voluntary and optional, and as evidenced by the current data set, many students are not taking advantage of the resources available to them through campus career centers. The reasons for this lack of usage certainly warrant further exploration in order to help higher education leaders gain a better understanding of how they might modify programming and messaging to increase students' likelihood of seeking information from their career centers.

Another potential area for future research is to specifically explore the role of internships in impacting career information seeking. The Internet model did not fit the data adequately for the subsample of participants who had completed at least one internship. The model mismatch is based on a relatively small sample size (roughly one-fourth of the full Internet sample), but nonetheless suggests that collecting additional data regarding students' internships, such as type, length, relationships developed, and skills taught, could provide additional insight on the impact of internships. For instance, students may rely more heavily on sources of information other than the Internet for future career preparation, based on their internship experiences. Conversely, internship experiences might influence students' perceptions of the quality or usefulness of Internet career information and in turn affect their information seeking intentions.

The goal of this particular study was to explore factors that influence students to seek career information, but understanding why they do not may be just as important. The information seeking and uncertainty management literature provide many potential avenues to explore regarding barriers to information seeking and information seeking avoidance. Examining the role that barriers and other uncertainty management concerns play in the factors outlined in this study could also prove useful in identifying ways to help students take a more active role in successful career preparation during college.

One of the most valuable future research directions, however, would be retesting the model to assess its validity across samples. Replication is rare in published SEM research, but vital to building confidence in models' applicability beyond a single study (Goodboy & Kline, 2017). The non-significant, but theoretically meaningful, paths identified in the final Internet model, in particular, would benefit from re-testing with independent samples to determine whether the paths should be retained or the model simplified. Additionally, the model could be re-tested with longitudinal data to determine which components of the model exert the greatest impact on actual career information seeking over time. The aforementioned validation efforts would help make the model a useful tool for college faculty and staff interested in encouraging students to take an active role in the career preparation process and thus wanting to facilitate students' information seeking efforts.

Conclusion

As college students graduate and move into the professional workforce, employers express concerns regarding their level of career preparedness. However, these concerns are primarily directed at what higher education institutions are doing to prepare students for careers, and existing vocational anticipatory socialization research primarily positions students as the

passive recipients of messages, rather than active participants in the socialization process. The previously described study represents an attempt to bridge this gap in the literature by examining factors that might influence students to seek career information from one of two sources: the Internet or campus career centers. Use of the CMIS, which is, to date, a framework primarily used to study health information seeking, seemed an appropriate framework because health and career information seeking share similarities related to uncertainty and prolific availability of information sources.

The proposed model demonstrates that the CMIS is a viable framework through which to understand college students' career information seeking on the Internet. Individual characteristics, perceptions, and source experience influence students' Internet self-efficacy, which in turn predicts their perceptions of the information quality on the Internet. Quality perceptions influence students' perceptions of the usefulness of career information on the Internet, and these two information carrier characteristics in turn predict students' likelihood of using the Internet to seek career information. However, the proposed model did not adequately fit the data for information seeking from the campus career center, suggesting alternative frameworks or factors not examined in this particular model may play a stronger role in that particular information source. Nonetheless, findings from both sets of data suggest valuable theoretical and practical applications for college and university faculty and staff wishing to engage their students in more career preparation. The study also addresses a call for more receiver focus in information-seeking research overall, and within vocational anticipatory socialization in particular. While the findings provide a solid starting point for this line of research, there is clearly much more to be explored and plenty of opportunities for scholars to

expand knowledge in this area, while also helping their students succeed in their post-graduate careers in the process.

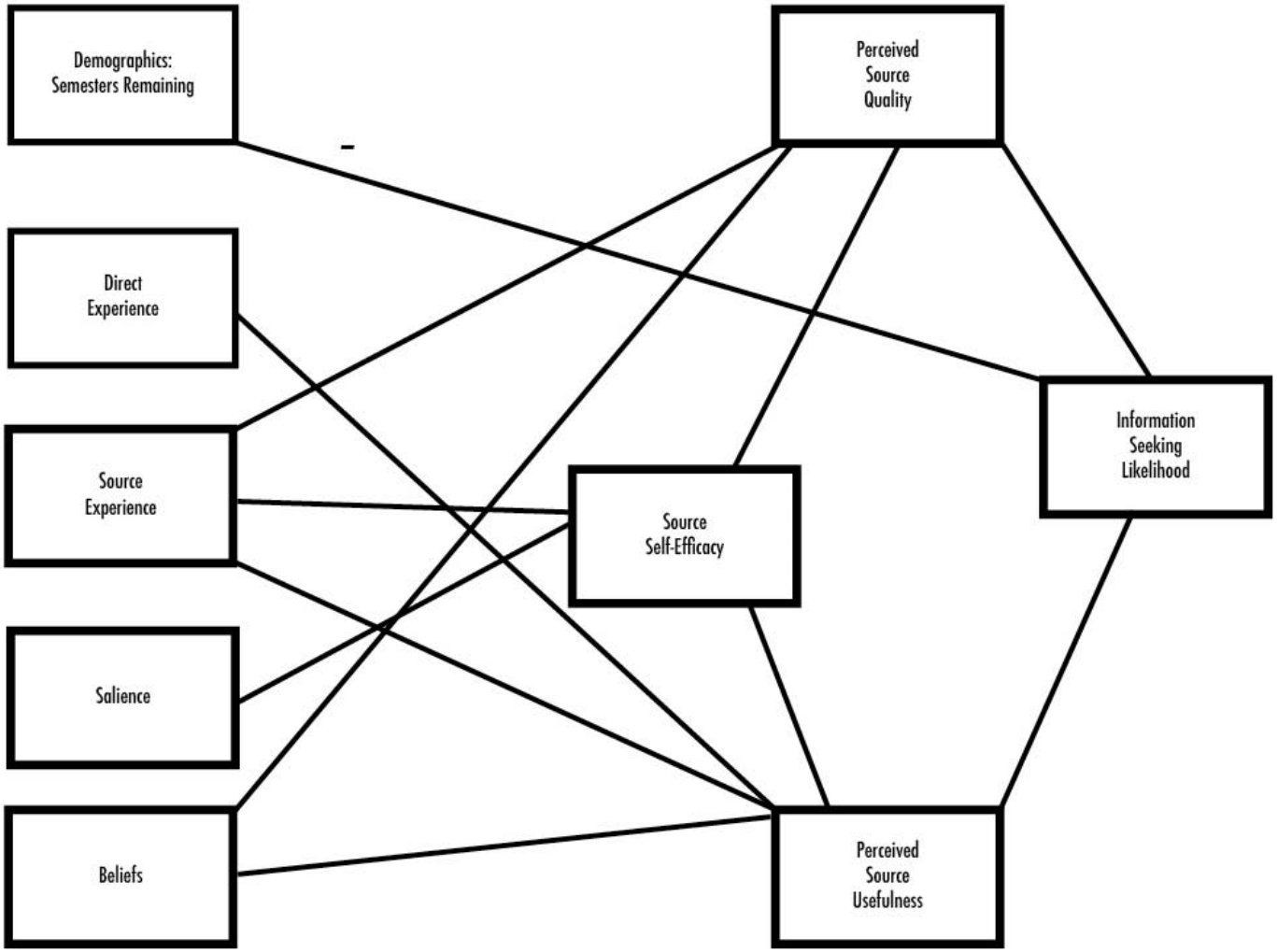

Figure 1. Proposed model.
Note: All hypothesized relationships are positive unless otherwise indicated.

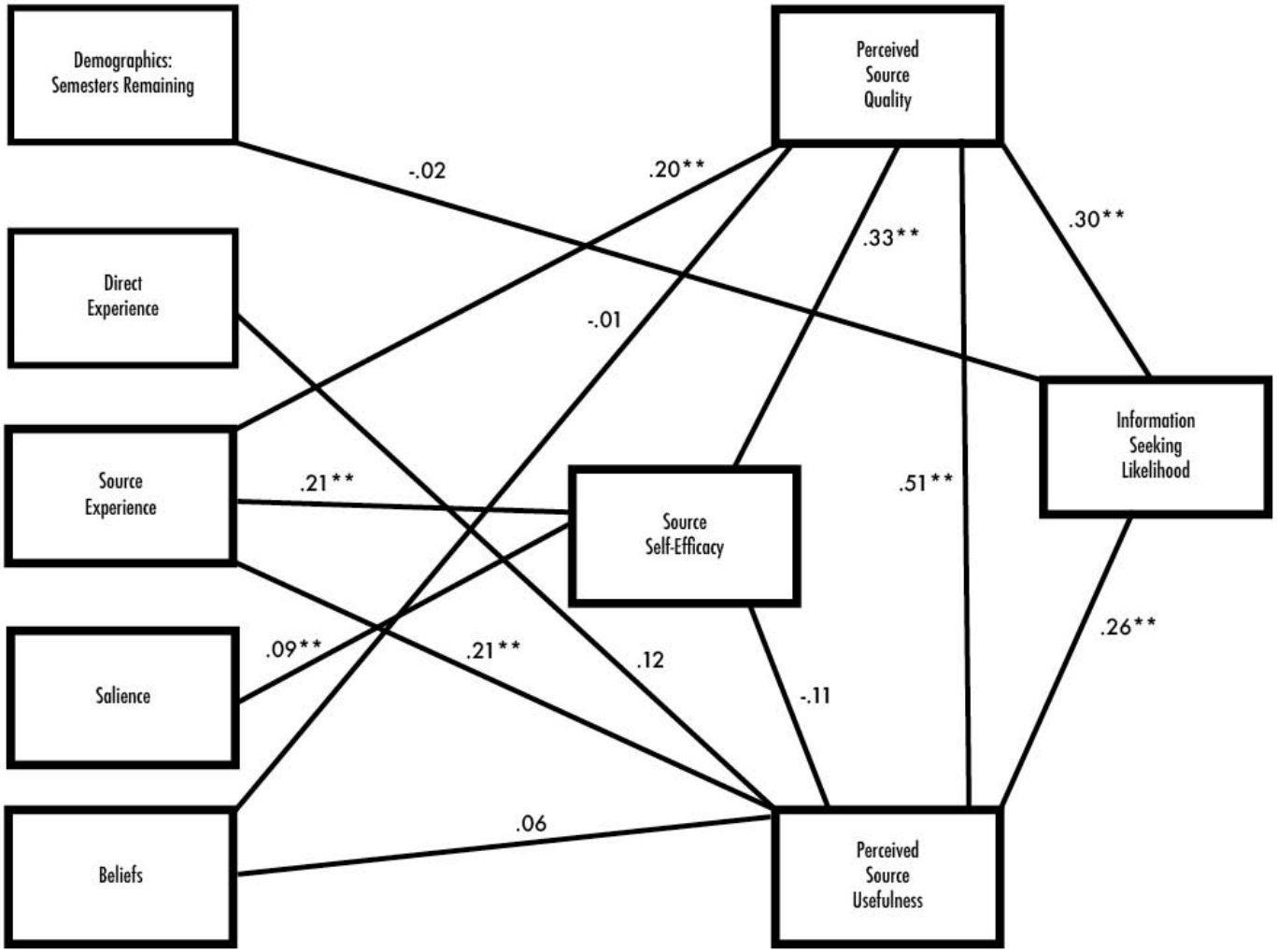

Figure 2. Final model – Internet data.
**$p < .01$

Table 1

Items from Pilot Test Measures for Predictor and Moderator Variables - Internet

Item	*M**	*SD*	α
Demographics			
Semesters remaining until graduation (including current semester)	2.69	1.64	
Direct Experience	3.86	.92	.76
Immediate family members who have attended college using the Internet to seek career information			
Friends who have attended college using the Internet to seek career information			
Using the Internet to explore careers in your field of interest			
Using the Internet to pursue a job or internship in your field of interest			
Source Experience	3.56	.43	.92
I use the Internet often			
I have a great deal of experience using the Internet			
I am an expert at using the Internet			
I am familiar with the variety and amount of information available on the Internet			
It is easy for me to access the Internet			
Salience:	4.50	.57	.86
The Internet is a valuable tool for helping me find career information			
It is important that I use the Internet to find career information			
There is a good chance I will need the Internet to find career information in the future			
I can find the career information I need without using the Internet**			
Beliefs: The Internet is:	4.52	.65	.83
A waste of time			
Better prepares you for your chosen career			
Not worth the effort			
Will benefit you in the future			
Will help you in your job search			
Source Quality: Career information on the Internet is:	4.27	.68	.74
High quality			
Believable			
Accurate			
Informative			
Correct			
Untrustworthy			
Biased			
Low quality			
Self-efficacy: Confidence in ability to use the Internet for:	3.87	.76	.94
Understanding different procedures for accessing career preparation information			
Using different search engines to gather career preparation information			
Evaluating the quality of different career preparation websites			

	Locating a variety of perspectives on a career preparation topic
	Finding high-quality career preparation information
	Understanding how search engines work
	Locating high-quality career preparation websites
	Learning how to use the Internet to gather career preparation information

*5-point scale

Reworded to "I **don't need the campus career center to find the career information I need" for final data collection

Table 2

Items from Pilot Test Measures for Predictor and Moderator Variables – Campus Career Center

Item	*M**	*SD*	α
Demographics			
Semesters remaining until graduation (including current semester)	2.69	1.64	
Direct Experience	1.61	.82	.83
Immediate family members who have attended college using the campus career center to seek career information			
Friends who have attended college using the campus career center to seek career information			
Using the campus career center to explore careers in your field of interest			
Using the campus career center to pursue a job or internship in your field of interest			
Source Experience	2.05	.96	.89
I use the campus career center often			
I have a great deal of experience using the campus career center			
I am an expert at using the campus career center			
I am familiar with the variety and amount of information available at the campus career center			
It is easy for me to access the campus career center			
Salience:	3.42	.69	.75
The campus career center is a valuable tool for helping me find career information			
It is important that I use the campus career center to find career information			
There is a good chance I will need the campus career center to find career information in the future			
I can find the career information I need without using the campus career center**			
Beliefs: The campus career center is:	3.60	.77	.86
A waste of time			
Better prepares you for your chosen career			
Not worth the effort			
Will benefit you in the future			
Will help you in your job search			
Source Quality: The campus career center is:	3.66	.70	.92
High quality			
Believable			
Accurate			
Informative			
Correct			
Untrustworthy			
Biased			
Low quality			

Item	*M*	*SD*	α
Self-efficacy: Confidence in ability to use the campus career center for:	2.99	.95	.98
Understanding the procedures for accessing the campus career center			
Using career center resources to gather career preparation information			
Evaluating the quality of different career center services			
Identifying a variety of services available from the campus career center			
Finding high-quality career preparation information			
Understanding how the campus career center works			
Locating high-quality career preparation websites			
Learning how to use the campus career center to gather career preparation information			

*5-point scale

Reworded to "I **don't need the campus career center to find the career information I need" for final data collection

Table 3
Correlations for Pilot Study Variables – Internet

Measure	*M* (*SD*)	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Semesters Remaining	2.69 (1.64)									
2. Direct Experience	3.86 (.92)	-.14								
3. Source Experience	4.50 (.57)	.01	.23*							
4. Salience	4.52 (.65)	.05	.25*	.50**						
5. Beliefs	4.27 (.68)	-.02	.34*	.23*	.32**					
6. Source Self-efficacy	3.87 (.76)	-.09	.17	.35*	.07	.46**				
7. Source Quality	3.56 (.54)	.10	.14	.23*	.38**	.33**	.24*			
8. Source Usefulness	3.60 (.85)	-.08	.17	.11	.19	.39**	.47**	.44**		
9. Past Information Seeking	3.99 (1.10)	-.28**	.35**	.24*	.21	.25*	.32**	.19	.26*	
10. Information Seeking Likelihood+	6.26 (1.20)	-.08	.15	.00	.08	.25*	.11	.18	.36**	.32**

* $p < .05$
** $p < .01$
+ Measured on a seven-point scale

Table 4

Correlations for Pilot Study Variables – Campus Career Center

Measure	*M* (*SD*)	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Semesters Remaining	2.69 (1.64)									
2. Direct Experience	1.61 (.82)	-.20								
3. Source Experience	2.05 (.96)	-.10	.67**							
4. Salience	3.42 (.69)	.11	.34**	.26*						
5. Beliefs	3.60 (.77)	.05	.07	.10	.57**					
6. Source Self-efficacy	2.95 (.99)	-.23*	.36**	.45**	.27*	.21				
7. Source Quality	3.66 (.70)	-.08	.19	.15	.44**	.42**	.23*			
8. Source Usefulness	3.09 (.91)	.08	.20	.33	.52**	.34	.34	.43*		
9. Past Information Seeking	1.54 (.91)	-.28**	.52**	.62**	.27*	.19	.37**	.20	.12	
10. Information Seeking Likelihood+	4.05 (2.00)	.09	.28**	.27*	.53**	.43**	.20	.18	.55**	.24*

* $p < .05$

** $p < .01$

+ Based on $n = 33$; remaining respondents selected "N/A" for this item

++ Measured on a seven-point scale

Table 5

Variable Factor Loadings for Multi-Item Measures – Internet

Scale Item	Factor Loading
Direct Experience	
Immediate family members who have attended college pursuing a post-graduate career	.62
Friends who have attended college pursuing a post-graduate career	.70
Exploring careers in your field of interest	.64
Pursuing a job or internship in your field of interest	.71
Making contact with professionals in your field of interest (networking)	.69
Eigen Value	2.21
% of Variance	5.82
Source Experience	
I use the Internet often	.66
I have a great deal of experience using the Internet	.67
I am an expert at using the Internet	.58
I am familiar with the variety and amount of information available on the Internet	.61
It is easy for me to access the Internet	.64
Eigen Value	7.76
% of Variance	40.41
Salience	
It is important that I learn about career options after graduation	.75
There is a good chance I will need career information in the future	.39
I worry about pursuing a career after graduation	.42
I don't need to do anything to prepare for a career after graduation *(reverse-coded)*	.74*
Eigen Value	1.62
% of Variance	2.46
Beliefs *(Exploring and preparing for a career after graduation is…)*	
Is not worth the time *(reverse-coded)*	.84
Helps you succeed	.56
Is not worth the effort *(reverse-coded)*	.87
Will benefit you in the future	.53
Makes a difference	.34
Eigen Value	4.92
% of Variance	12.93
Source Self-Efficacy	
Understanding different procedures for accessing career preparation information	.85
Using different search engines to gather career preparation information	.87
Evaluating the quality of different career preparation websites	.66

Scale Item	Factor Loading
Locating a variety of perspectives on a career preparation topic	.76
Finding high-quality career preparation information	.80
Understanding how search engines work	.13
Locating high-quality career preparation websites	.06
Learning how to use the Internet to gather career preparation information	.11
Eigen Value	2.67
% of Variance	7.02
Perceived Source Quality *(Career information from the Internet is…)*	
High quality	.73
Believable	.73
Accurate	.72
Informative	.54
Correct	.73
Untrustworthy	.17
Biased	.07
Low quality	.23
Eigen Value	2.45
% of Variance	6.44

Items in bold were retained for model analysis
*Loaded with beliefs items

Table 6

Variable Factor Loadings for Multi-Item Measures – Campus Career Center

Scale Item	Factor Loading
Secondhand Experience	
Immediate family members who have attended college pursuing a post-graduate career	.80
Friends who have attended college pursuing a post-graduate career	.70
Eigen Value	1.52
% of Variance	3.99
Firsthand Experience	
Exploring careers in your field of interest	.81
Pursuing a job or internship in your field of interest	.88
Making contact with professionals in your field of interest (networking)	.80
Eigen Value	1.79
% of Variance	4.71
Source Experience	
I use the campus career center often	.79
I have a great deal of experience using the campus career center	.78
I am an expert at using the campus career center	.70
I am familiar with the variety and amount of information available on the campus career center	.28
It is easy for me to access the campus career center	.22
Eigen Value	1.52
% of Variance	3.99
Salience/Beliefs*	
It is important that I learn about career options after graduation	.57
There is a good chance I will need career information in the future	.72
I worry about pursuing a career after graduation	.78
I don't need to do anything to prepare for a career after graduation *(reverse-coded)*	.19
Exploring and preparing for a career after graduation is…	
Is not worth the time *(reverse-coded)*	.21
Helps you succeed	.83
Is not worth the effort *(reverse-coded)*	.23
Will benefit you in the future	.86
Makes a difference	.84
Eigen Value	3.89
% of Variance	10.24
Source Self-Efficacy	
Understanding the procedures for accessing the campus career center	.87
Using career center resources to gather career preparation information	.82
Evaluating the quality of different career center services	.78

Scale Item	Factor Loading
Identifying a variety of services available from the campus career center	.84
Finding high-quality career preparation information	.70
Understanding how the campus career center works	.81
Locating high-quality career preparation resources	.84
Learning how to use the campus career center to gather career preparation information	.90
Eigen Value	10.88
% of Variance	28.62
Perceived Source Quality *(Career information from the campus career center is…)*	
High quality**	.64
Believable	.75
Accurate**	.78
Informative**	.62
Correct**	.78
Untrustworthy	**.85**
Biased	**.79**
Low quality	**.83**
Eigen Value	5.63
% of Variance	14.83

Items in bold were retained for model analysis
*Combined into a single measure
**Dropped because of cross-loading issues

Table 7

Means, Standard Deviations, and Correlations for Model Variables - Internet

Measure	*M* (*SD*)	1.	2.	3.	4.	5.	6.	7.	8.
1. Semesters Remaining	4.59 (1.7)								
2. Direct Experience	3.21 (.96)	-.24**							
3. Source Experience	3.77 (.71)	-.08	.28**						
4. Salience	3.89 (1.06)	.04	-.10	-.14*					
5. Beliefs	4.57 (.77)	.08	-.14*	-.01	.14*				
6. Source Self-efficacy	4.57 (.61)	-.05	-.03	.23**	.12	.22**			
7. Source Quality	3.87 (.58)	-.02	.09	.03	.06	.31**	.38**		
8. Source Usefulness	4.04 (.94)	-.18**	.19**	.27**	-.04	.04	.10	.35**	
9. Information Seeking Likelihood	4.34 (.89)	-.08	.15**	.18**	.02	.00	.08	.28**	.34**

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

Table 8

Parameter Estimates for Model Parameters - Internet

Parameter	Estimate	Standard Error
Information Seeking ~ Semesters Left	-.02	.03
Information Seeking ~ Source Quality	.30**	.11
Information Seeking ~ Source Usefulness	.26**	.07
Source Quality ~ Source Experience	.20**	.06
Source Quality ~ Source Self-Efficacy	.33**	.10
Source Quality ~ Beliefs	-.01	.05
Source Usefulness ~ Direct Experience	.12	.07
Source Usefulness ~ Source Experience	.21*	.09
Source Usefulness ~ Beliefs	.06	.08
Source Usefulness ~ Source Self-Efficacy	-.11	.12
Source Usefulness ~ Source Quality	.51**	.13
Source Self-Efficacy ~ Source Experience	.21**	.05
Source Self-Efficacy ~ Salience	.09**	.03

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

Table 9

Means, Standard Deviations, and Correlations for Model Variables – Campus Career Center

Measure	*M* (*SD*)	1.	2.	3.	4.	5.	6.	7.	8.
1. Semesters Remaining	4.51 (1.78)								
2. Firsthand Experience	3.24 (1.13)	-.29**							
3. Secondhand Experience	2.74 (1.30)	-.06	.37**						
4. Source Experience	1.69 (.96)	-.22**	.19**	.23**					
5. Salience/Beliefs	4.49 (.66)	.05	.24**	.02	-.23**				
6. Source Self-efficacy	3.30 (.88)	-.10	.20**	.08	.23**	.21**			
7. Source Quality	3.65 (.83)	-.01	.15*	-.10	.01	.15*	.33**		
8. Source Usefulness	3.22 (1.15)	-.21	.30**	-.12	.24*	.45**	.43**	.44**	
9. Information Seeking Likelihood	2.67 (1.23)	-.03	.07	-.15*	.04	.14*	.23**	.37**	.42**

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

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Appendix A: Pilot Study Recruitment Materials and Survey Instrument

Hello students,

I am conducting a study about student career information seeking. I am looking for college students who are at least 18 years old and would be willing to help with the project by participating in a brief online survey.

If you do not wish to participate, you have the option of completing an alternative assignment in which you will write a 1-2 page summary of a chapter of your choosing from your Communication textbook, and email it to fethers4@uwm.edu. This extra credit opportunity (whether you complete the survey or complete the alternative assignment) is worth 1 unit of extra credit. According to the Communication Department's policy on extra credit, instructors will be informed that students have completed one unit of research participation, and the instructor will translate points accordingly. Note that students have many opportunities to earn extra credit; this is only one of them and you are under no obligation to participate.

The survey will take about 15 minutes to complete. At the end of the survey, the participant will see a link to a separate form to enter the your name and course number (e.g., Communication 105) so that you may receive extra credit.

Please feel free to contact me (fethers4@uwm.edu) if you have any questions about the survey.

Access the survey here: https://milwaukee.qualtrics.com/SE/?SID=SV_6gLKlV6BmiLvXAp

Thank you for your time.
Michelle Fetherston
Communication PhD Student
UW-Milwaukee

University of Wisconsin – Milwaukee
Consent to Participate in Online Survey Research

Study Title: Factors Influencing Student Career Information Seeking (IRB #: 17.009)
Person Responsible for Research: Michelle Fetherston, Dr. Erik Timmerman

Study Description: The purpose of this research study is to learn about student career information seeking. Approximately 200 subjects will participate in this study. If you agree to participate, you will be asked to complete an online survey that will take approximately 15 minutes to complete. The questions will ask you to evaluate several statements regarding career exploration experiences and resources, as well as some basic demographic information.

Risks / Benefits: Risks to participants are considered minimal. Collection of data and survey responses using the internet involves the same risks that a person would encounter in everyday use of the internet, such as breach of confidentiality. While the researchers have taken every reasonable step to protect your confidentiality, there is always the possibility of interception or hacking of the data by third parties that is not under the control of the research team. There will be no costs for participating. Benefits of participating include the opportunity to further research on career information seeking. In addition, if you are participating in this study to earn extra credit in a course, (point total determined by your instructor) your responses will not be shared with your instructor. Instead, you will click a separate, confidential survey link, which will not be associated with your responses to the original survey. In the separate survey, you will specify your name, your instructor's name, and the course in which you are planning to earn extra credit. Your instructor will be unable to identify your individual survey responses.

Limits to Confidentiality: Identifying information such as your name, instructor and course number for the Communication course in which you wish to receive extra credit will be collected on a separate form you will receive upon completion of the survey. None of this identifying information will be collected in the survey itself; but there is always a small chance the surveys could be linked using time/date stamps. Data will be retained on the Qualtrics website server for 1 year and will be deleted after this time. However, data may exist on backups or server logs beyond the timeframe of this research project. Data transferred from the survey site will be saved in an encrypted format. Only Ms. Fetherston will have access to the data collected by this study. However, the Institutional Review Board at UW-Milwaukee or appropriate federal agencies like the Office for Human Research Protections may review this study's records. The research team will remove potentially identifying time stamps from the extra credit participant list after downloading the data, and all study results will be reported without identifying information so that no one viewing the results will ever be able to match you with your responses.

Voluntary Participation: Your participation in this study is voluntary. You may choose to not answer any of the questions or withdraw from this study at any time without penalty. Your decision will not change any present or future relationship with the University of Wisconsin Milwaukee. If you do not wish to participate in this study, you may complete an alternative, equivalent extra credit assignment by writing a 1-2 page summary of a chapter of your choosing from your Communication textbook. Who do I contact for questions about the study: For more

information about the study or study procedures, contact Michelle Fetherston at fethers4@uwm.edu. Who do I contact for questions about my rights or complaints towards my treatment as a research subject? Contact the UWM IRB at 414-229-3173 or irbinfo@uwm.edu.

Research Subject's Consent to Participate in Research: By entering this survey, you are indicating that you have read the consent form, you are age 18 or older and that you voluntarily agree to participate in this research study. Thank you!

Please indicate your level of agreement with each of the following statements regarding the Internet.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I use the Internet often	❍	❍	❍	❍	❍
I have a great deal of experience using the Internet	❍	❍	❍	❍	❍
I am an expert at using the Internet	❍	❍	❍	❍	❍
I am familiar with the variety and amount of information available on the Internet	❍	❍	❍	❍	❍
It is easy for me to access the Internet	❍	❍	❍	❍	❍

To what extent have you experienced each of the following in the past 12 months?

	Not at all	Very little	To some extent	To a moderate extent	To a great extent
Immediate family members who have attended college using the Internet to seek career information	❍	❍	❍	❍	❍
Friends who have attended college using the Internet to seek career information	❍	❍	❍	❍	❍

	Not at all	Very little	To some extent	To a moderate extent	To a great extent
Using the Internet to explore careers in your field of interest	❍	❍	❍	❍	❍
Using the Internet to pursue a job or internship in your field of interest	❍	❍	❍	❍	❍

Please indicate your level of agreement with each of the following statements regarding the Internet.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
The Internet is a valuable tool for helping me find career information	❍	❍	❍	❍	❍
It is important that I use the Internet to find career information	❍	❍	❍	❍	❍
There is a good chance I will need the Internet to find career information in the future	❍	❍	❍	❍	❍
I can find the career information I need without using the Internet	❍	❍	❍	❍	❍

To what extent would you agree that seeking career information from the Internet is:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
A waste of time	❍	❍	❍	❍	❍
Better prepares you for your chosen career	❍	❍	❍	❍	❍
Not worth the effort	❍	❍	❍	❍	❍
Will benefit you in the future	❍	❍	❍	❍	❍
Will help you in your job search	❍	❍	❍	❍	❍

To what extent would you agree that career information from the Internet is:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
High quality	❍	❍	❍	❍	❍
Believeable	❍	❍	❍	❍	❍
Accurate	❍	❍	❍	❍	❍
Informative	❍	❍	❍	❍	❍
Correct	❍	❍	❍	❍	❍
Untrustworthy	❍	❍	❍	❍	❍
Biased	❍	❍	❍	❍	❍
Low quality	❍	❍	❍	❍	❍

How confident are you in your ability to use the Internet for each of the following?

	No confidence	Low confidence	Average confidence	High confidence	Total confidence
Understanding different procedures for accessing career preparation information	❍	❍	❍	❍	❍

	No confidence	Low confidence	Average confidence	High confidence	Total confidence
Using different search engines to gather career preparation information	❍	❍	❍	❍	❍
Evaluating the quality of different career preparation websites	❍	❍	❍	❍	❍
Locating a variety of perspectives on a career preparation topic	❍	❍	❍	❍	❍
Finding high-quality career preparation information	❍	❍	❍	❍	❍
Understanding how search engines work	❍	❍	❍	❍	❍
Locating high-quality career preparation websites	❍	❍	❍	❍	❍
Learning how to use the Internet to gather career preparation information	❍	❍	❍	❍	❍

What specific sources have you used (or would you use) if you needed to find information about pursuing a particular career? List all that come to mind.

Please indicate your level of agreement with each of the following statements regarding the campus career center.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I use the campus career center often	❍	❍	❍	❍	❍
I have a great deal of experience using the campus career center	❍	❍	❍	❍	❍
I am an expert at using the campus career center	❍	❍	❍	❍	❍
I am familiar with the variety and amount of information available at the campus career center	❍	❍	❍	❍	❍
It is easy for me to access the campus career center	❍	❍	❍	❍	❍

To what extent have you experienced each of the following in the past 12 months?

	Not at all	Very little	To some extent	To a moderate extent	To a great extent
Immediate family members who have attended college using the campus career center to seek career information	❍	❍	❍	❍	❍

	Not at all	Very little	To some extent	To a moderate extent	To a great extent
Friends who have attended college using the campus career center to seek career information	❍	❍	❍	❍	❍
Using the campus career center to explore careers in my field of interest	❍	❍	❍	❍	❍
Using the campus career center to pursue a job or internship in my field of interest	❍	❍	❍	❍	❍

Please indicate your level of agreement with each of the following statements regarding the campus career center.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
The campus career center is a valuable tool for helping me find career information	❍	❍	❍	❍	❍
It is important that I use the campus career center to find career information	❍	❍	❍	❍	❍

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
There is a good chance I will need the campus career center to find career information in the future	❍	❍	❍	❍	❍
I can find the career information I need without using the campus career center	❍	❍	❍	❍	❍

To what extent would you agree that seeking career information from the campus career center is:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
A waste of time	❍	❍	❍	❍	❍
Better prepares you for your chosen career	❍	❍	❍	❍	❍
Not worth the effort	❍	❍	❍	❍	❍
Will benefit you in the future	❍	❍	❍	❍	❍
Will help you in your job search	❍	❍	❍	❍	❍

To what extent would you agree that career information from the campus career center is:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
High quality	❍	❍	❍	❍	❍
Believable	❍	❍	❍	❍	❍
Accurate	❍	❍	❍	❍	❍
Informative	❍	❍	❍	❍	❍

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Correct	❍	❍	❍	❍	❍
Untrustworthy	❍	❍	❍	❍	❍
Biased	❍	❍	❍	❍	❍
Low quality	❍	❍	❍	❍	❍

How confident are you in your ability to use the campus career center for each of the following?

	No confidence	Low confidence	Average confidence	High confidence	Total confidence
Understanding the procedures for accessing the campus career center	❍	❍	❍	❍	❍
Using career center resources to gather career preparation information	❍	❍	❍	❍	❍
Evaluating the quality of different career center services	❍	❍	❍	❍	❍
Identifying a variety of services available from the campus career center	❍	❍	❍	❍	❍
Finding high-quality career preparation information	❍	❍	❍	❍	❍
Understanding how the campus career center works	❍	❍	❍	❍	❍
Locating high-quality career preparation resources	❍	❍	❍	❍	❍

	No confidence	Low confidence	Average confidence	High confidence	Total confidence
Learning how to use the campus career center to gather career preparation information	❍	❍	❍	❍	❍

How often have you done the following?

	Never	Once a year or less	Once a semester	Once a month	More than once a month
Searched for career information on the internet	❍	❍	❍	❍	❍
Used the campus career center	❍	❍	❍	❍	❍

How likely are you to do each of the following in the next 12 months?

	Extremely likely	Moderately likely	Slightly likely	Neither likely nor unlikely	Slightly unlikely	Moderately unlikely	Extremely unlikely
Use the campus career center	❍	❍	❍	❍	❍	❍	❍
Search for career information on the Internet	❍	❍	❍	❍	❍	❍	❍

How useful would you rate each of the following?

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful	Not applicable
Your most recent search of the Internet for career information	❍	❍	❍	❍	❍	❍
Your most recent use of the campus career center for career information	❍	❍	❍	❍	❍	❍

The following questions ask for some basic demographic information. This is the last page of the survey.

Please type your age (e.g., if you are 19 years old, type the number 19).

What is your gender?
❍ Male
❍ Female
❍ Prefer not to disclose

What ethnicity do you most identify with?
❍ White
❍ Hispanic or Latino
❍ Black or African American
❍ Native American or American Indian
❍ Asian or Pacific Islander
❍ Combination/Unsure

Including the current semester, how many semesters do you have left until graduation?
❍ 1
❍ 2
❍ 3
❍ 4
❍ 5
❍ 6
❍ 7 or more

What is your major?

- ❍ Communication
- ❍ Undecided
- ❍ Other _____

How many people in your immediate family (parents and siblings) have attended college?

- ❍ 0
- ❍ 1
- ❍ 2
- ❍ 3 or more

What is your employment status?

- ❍ Unemployed
- ❍ Internship
- ❍ Part-time
- ❍ Full-time
- ❍ Internship and employed at least part-time

Appendix B: Final Recruitment Materials and Survey Instrument

Public University Recruitment Email

Hello students,

I am conducting a study about student career information seeking. I am looking for college students who are at least 18 years old and would be willing to help with the project by participating in a brief online survey.

If you do not wish to participate, you have the option of completing an alternative assignment in which you will write a 1-2 page summary of a chapter of your choosing from your Communication textbook, and email it to fethers4@uwm.edu. This extra credit opportunity (whether you complete the survey or complete the alternative assignment) is worth 1 unit of extra credit. According to the Communication Department's policy on extra credit, instructors will be informed that students have completed one unit of research participation, and the instructor will translate points accordingly. Note that students have many opportunities to earn extra credit; this is only one of them and you are under no obligation to participate.

The survey will take about 15 minutes to complete. At the end of the survey, the participant will see a link to a separate form to enter the your name and course number (e.g., Communication 105) so that you may receive extra credit.

Please feel free to contact me (fethers4@uwm.edu) if you have any questions about the survey.

Access the survey here (deadline is Friday, December 9):
https://milwaukee.qualtrics.com/SE/?SID=SV_3a7fIfz55lQuQKx

Thank you for your time.

Michelle Fetherston
Communication PhD Student
UW-Milwaukee

Private University Recruitment Email

Subject: Career Information Seeking Survey

Hello students,

I am conducting a study for my dissertation about student career information seeking. I am looking for college students who are at least 18 years old and would be willing to help with the project by participating in a brief online survey by January 31, 2017.

After data collection ends on January 31, there will be a drawing for a $25 Amazon gift card. Participation in the study is not necessary in order to be eligible to enter the drawing. Instead,

eligible individuals may enter the drawing via email by the survey deadline. Of those entered, two (2) participants will be chosen at random to receive a gift card.

The survey will take about 15 minutes to complete. At the end of the survey, participants will receive a link to a form to submit a name and email address if they wish to enter the gift card drawing.

Please feel free to contact me (fethers4@uwm.edu) if you have any questions about the survey.

Access the survey here: https://milwaukee.qualtrics.com/jfe/form/SV_0SuQIPTGFZ0KbxH

Thank you for your time.
Michelle Fetherston
Marquette University Adjunct Instructor, Communication Studies
University of Wisconsin – Milwaukee Communication PhD Student

Private University Reminder Email
Subject: Career Information Seeking Survey

Hello students,

Just a reminder that you still have until January 31 to complete the career information seeking survey and enter for a chance to win one of two $25 Amazon gift cards.

The survey will take about 15 minutes to complete. At the end of the survey, participants will receive a link to a form to submit a name and email address if they wish to enter the gift card drawing. Eligible individuals may also enter the drawing via email by the survey deadline without completing the survey.

Please feel free to contact me (fethers4@uwm.edu) if you have any questions about the survey.

Access the survey here: https://milwaukee.qualtrics.com/jfe/form/SV_0SuQIPTGFZ0KbxH

Thank you for your time.
Michelle Fetherston
Marquette University Adjunct Instructor, Communication Studies
University of Wisconsin – Milwaukee Communication PhD Student

University of Wisconsin – Milwaukee
Consent to Participate in Online Survey Research

Study Title: Factors Influencing Student Career Information Seeking (IRB #: 17.009)
Person Responsible for Research: Michelle Fetherston, Dr. Erik Timmerman

Study Description: The purpose of this research study is to learn about student career information seeking. Approximately 200 subjects will participate in this study. If you agree to participate, you will be asked to complete an online survey that will take approximately 15 minutes to complete. The questions will ask you to evaluate several statements regarding career exploration experiences and resources, as well as some basic demographic information.

Risks / Benefits: Risks to participants are considered minimal. Collection of data and survey responses using the internet involves the same risks that a person would encounter in everyday use of the internet, such as breach of confidentiality. While the researchers have taken every reasonable step to protect your confidentiality, there is always the possibility of interception or hacking of the data by third parties that is not under the control of the research team. There will be no costs for participating. Benefits of participating include the opportunity to further research on career information seeking. In addition, if you are participating in this study to earn extra credit in a course, (point total determined by your instructor) your responses will not be shared with your instructor. Instead, you will click a separate, confidential survey link, which will not be associated with your responses to the original survey. In the separate survey, you will specify your name, your instructor's name, and the course in which you are planning to earn extra credit. Your instructor will be unable to identify your individual survey responses.

Limits to Confidentiality: Identifying information such as your name, instructor and course number for the Communication course in which you wish to receive extra credit will be collected on a separate form you will receive upon completion of the survey. None of this identifying information will be collected in the survey itself; but there is always a small chance the surveys could be linked using time/date stamps. Data will be retained on the Qualtrics website server for 1 year and will be deleted after this time. However, data may exist on backups or server logs beyond the timeframe of this research project. Data transferred from the survey site will be saved in an encrypted format. Only Ms. Fetherston will have access to the data collected by this study. However, the Institutional Review Board at UW-Milwaukee or appropriate federal agencies like the Office for Human Research Protections may review this study's records. The research team will remove potentially identifying time stamps from the extra credit participant list after downloading the data, and all study results will be reported without identifying information so that no one viewing the results will ever be able to match you with your responses.

Voluntary Participation: Your participation in this study is voluntary. You may choose to not answer any of the questions or withdraw from this study at any time without penalty. Your decision will not change any present or future relationship with the University of Wisconsin Milwaukee. If you do not wish to participate in this study, you may complete an alternative, equivalent extra credit assignment by writing a 1-2 page summary of a chapter of your choosing from your Communication textbook. Who do I contact for questions about the study: For more

information about the study or study procedures, contact Michelle Fetherston at fethers4@uwm.edu. Who do I contact for questions about my rights or complaints towards my treatment as a research subject? Contact the UWM IRB at 414-229-3173 or irbinfo@uwm.edu.

Research Subject's Consent to Participate in Research: By entering this survey, you are indicating that you have read the consent form, you are age 18 or older and that you voluntarily agree to participate in this research study. Thank you!

The following questions only appeared for participants randomly assigned to the campus career center condition.

How often have you used the campus career center to seek information?

- ❍ Never
- ❍ Less than once a year
- ❍ Once a semester
- ❍ Once a month
- ❍ More than once a month

How likely are you to seek career information from the campus career center in the next 6 months?

- ❍ Very unlikely
- ❍ Unlikely
- ❍ Neither likely nor unlikely
- ❍ Likely
- ❍ Very likely

How useful would you rate your most recent use of the campus career center for career information?

- ❍ Not at all useful
- ❍ Somewhat useful
- ❍ Slightly useful
- ❍ Moderately useful
- ❍ Extremely useful
- ❍ N/A - I have never used the campus career center

What types of career information have you looked for in the past 12 months? Please be as specific as possible.

To what extent would you agree that career information from the campus career center is:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
High quality	❍	❍	❍	❍	❍
Believable	❍	❍	❍	❍	❍
Accurate	❍	❍	❍	❍	❍
Informative	❍	❍	❍	❍	❍
Correct	❍	❍	❍	❍	❍
Untrustworthy	❍	❍	❍	❍	❍
Biased	❍	❍	❍	❍	❍
Low quality	❍	❍	❍	❍	❍

How confident are you in your ability to use the campus career center for each of the following?

	No confidence	Low confidence	Average confidence	High confidence	Total confidence
Understanding the procedures for accessing the campus career center	❍	❍	❍	❍	❍
Using career center resources to gather career preparation information	❍	❍	❍	❍	❍
Evaluating the quality of different career center services	❍	❍	❍	❍	❍
Identifying a variety of services available from the campus career center	❍	❍	❍	❍	❍
Finding high-quality career preparation information	❍	❍	❍	❍	❍
Understanding how the campus career center works	❍	❍	❍	❍	❍
Locating high-quality career preparation resources	❍	❍	❍	❍	❍
Learning how to use the campus career center to gather career preparation information	❍	❍	❍	❍	❍

Please indicate your level of agreement with each of the following statements regarding the campus career center.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I use the campus career center often	❍	❍	❍	❍	❍
I have a great deal of experience using the campus career center	❍	❍	❍	❍	❍
I am an expert at using the campus career center	❍	❍	❍	❍	❍
I am familiar with the variety and amount of information available at the campus career center	❍	❍	❍	❍	❍
It is easy for me to access the campus career center	❍	❍	❍	❍	❍

To what extent have you experienced each of the following in the past 12 months?

	Not at all	Very little	To some extent	To a moderate extent	To a great extent
Immediate family members who have attended college pursuing a post-graduate career	❍	❍	❍	❍	❍

	Not at all	Very little	To some extent	To a moderate extent	To a great extent
Friends who have attended college pursuing a post-graduate career	❍	❍	❍	❍	❍
Exploring careers in your field of interest	❍	❍	❍	❍	❍
Pursuing a job or internship in your field of interest	❍	❍	❍	❍	❍
Making contact with professionals in your field of interest (networking)	❍	❍	❍	❍	❍

Please indicate your level of agreement with each of the following statements.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
It is important that I learn about career options after graduation	❍	❍	❍	❍	❍
There is a good chance I will need career information in the future	❍	❍	❍	❍	❍
I worry about pursuing a career after graduation	❍	❍	❍	❍	❍

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I **don't** need to do anything to prepare for a career after graduation	❍	❍	❍	❍	❍

To what extent would you agree that exploring and preparing for a career after graduation:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Is **not** worth the time	❍	❍	❍	❍	❍
Helps you succeed	❍	❍	❍	❍	❍
Is **not** worth the effort	❍	❍	❍	❍	❍
Will benefit you in the future	❍	❍	❍	❍	❍
Makes a difference	❍	❍	❍	❍	❍

The following questions only appeared for participants randomly assigned to the Internet condition.

How often have you used the Internet to seek information?

❍ Never
❍ Less than once a year
❍ Once a semester
❍ Once a month
❍ More than once a month

How likely are you to seek career information from the Internet in the next 6 months?

❍ Very unlikely
❍ Unlikely
❍ Neither likely nor unlikely
❍ Likely
❍ Very likely

How useful would you rate your most recent use of the Internet for career information?

- ❍ Not at all useful
- ❍ Somewhat useful
- ❍ Slightly useful
- ❍ Moderately useful
- ❍ Extremely useful
- ❍ N/A - I have never used the Internet for career information

What types of career information have you looked for in the past 12 months? Please be as specific as possible.

To what extent would you agree that career information from the Internet is:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
High quality	❍	❍	❍	❍	❍
Believable	❍	❍	❍	❍	❍
Accurate	❍	❍	❍	❍	❍
Informative	❍	❍	❍	❍	❍
Correct	❍	❍	❍	❍	❍
Untrustworthy	❍	❍	❍	❍	❍
Biased	❍	❍	❍	❍	❍
Low quality	❍	❍	❍	❍	❍

Please indicate your level of agreement with each of the following statements regarding the Internet.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I use the Internet often	❍	❍	❍	❍	❍
I have a great deal of experience using the Internet	❍	❍	❍	❍	❍
I am an expert at using the Internet	❍	❍	❍	❍	❍
I am familiar with the variety and amount of information available on the Internet	❍	❍	❍	❍	❍

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
It is easy for me to access the Internet	❍	❍	❍	❍	❍

How confident are you in your ability to use the Internet for each of the following?

	No confidence	Low confidence	Average confidence	High confidence	Total confidence
Understanding different procedures for accessing career preparation information	❍	❍	❍	❍	❍
Using different search engines to gather career preparation information	❍	❍	❍	❍	❍
Evaluating the quality of different career preparation websites	❍	❍	❍	❍	❍
Locating a variety of perspectives on a career preparation topic	❍	❍	❍	❍	❍
Finding high-quality career preparation information	❍	❍	❍	❍	❍
Understanding how search engines work	❍	❍	❍	❍	❍

	No confidence	Low confidence	Average confidence	High confidence	Total confidence
Locating high-quality career preparation websites	❍	❍	❍	❍	❍
Learning how to use the Internet to gather career preparation information	❍	❍	❍	❍	❍

To what extent have you experienced each of the following in the past 12 months?

	Not at all	Very little	To some extent	To a moderate extent	To a great extent
Immediate family members who have attended college pursuing a post-graduate career	❍	❍	❍	❍	❍
Friends who have attended college pursuing a post-graduate career	❍	❍	❍	❍	❍
Exploring careers in your field of interest	❍	❍	❍	❍	❍
Pursuing a job or internship in your field of interest	❍	❍	❍	❍	❍

	Not at all	Very little	To some extent	To a moderate extent	To a great extent
Making contact with professionals in your field of interest (networking)	❍	❍	❍	❍	❍

Please indicate your level of agreement with each of the following statements.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
It is important that I learn about career options after graduation	❍	❍	❍	❍	❍
There is a good chance I will need career information in the future	❍	❍	❍	❍	❍
I worry about pursuing a career after graduation	❍	❍	❍	❍	❍
I **don't** need to do anything to prepare for a career after graduation	❍	❍	❍	❍	❍

To what extent would you agree that exploring and preparing for a career after graduation:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Is **not** worth the time	❍	❍	❍	❍	❍
Helps you succeed	❍	❍	❍	❍	❍
Is **not** worth the effort	❍	❍	❍	❍	❍

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Will benefit you in the future	❍	❍	❍	❍	❍
Makes a difference	❍	❍	❍	❍	❍

The following questions appeared for all participants.

This is the last page of the survey.

Including the current semester, how many semesters do you have left until graduation?
❍ 1
❍ 2
❍ 3
❍ 4
❍ 5
❍ 6
❍ 7 or more

What is your major?

How many people in your immediate family (parents and siblings) have attended college?
❍ 0
❍ 1
❍ 2
❍ 3 or more

What is your employment status?
❍ Unemployed
❍ Internship
❍ Part-time
❍ Full-time
❍ Internship and employed at least part-time

Answer If What is your employment status? Internship Is Selected Or What is your employment status? Internship and employed at least part-time Is Selected
Does your internship include the possibility of full-time employment with the same organization after you graduate?
❍ Yes
❍ No
❍ Not sure

How many internships have you completed during your college career (including any current internships)?
- ❍ 0
- ❍ 1
- ❍ 2
- ❍ 3
- ❍ 4
- ❍ 5 or more

Have you taken any courses specifically focused on career exploration and/or preparation?
- ❍ Yes
- ❍ No

Do you have a mentor who works in your field of interest? (This person could be formally assigned to you through a program, or someone you informally consider a mentor.)
- ❍ Yes
- ❍ No

In the past 12 months, have you attended any meetings or events for student organizations or local professional organizations related to your field of interest?
- ❍ Student organizations only
- ❍ Local professional organizations only
- ❍ Both student organizations and local professional organizations

Please type your age (e.g., if you are 19 years old, type the number 19).

What is your gender?
- ❍ Male
- ❍ Female
- ❍ Prefer not to disclose

What ethnicity do you most identify with?
- ❍ White
- ❍ Hispanic or Latino
- ❍ Black or African American
- ❍ Native American or American Indian
- ❍ Asian or Pacific Islander
- ❍ Combination/Unsure

Curriculum Vitae

MICHELLE FETHERSTON

EDUCATION

Ph.D., University of Wisconsin – Milwaukee, May 2017
- Communication; organizational communication and technology emphases
- 4.0 GPA
- Dissertation: College students and career information seeking: Applying the Comprehensive Model of Information Seeking to career preparation

M.S., University of Wisconsin – Milwaukee, May 2012
- Administrative Leadership, Higher Education Administration Emphasis
- 3.9 GPA

B.A., University of Wisconsin – Green Bay, May 2004 (Magna Cum Laude)
- Communication Major; Spanish Minor
- University Leadership Award Recipient, 2002 and 2003
- Chancellor's Leadership Medallion Award, 2004

PUBLICATIONS

Cole, A. W., Anderson, C., Bunton, T. E., Cherney, M. R., Cronin Fisher, V., Draeger Jr., R., Fetherston, M., Motel, L., Nicolini, K. M., Peck, B., & Allen, M. (In press). Student predisposition to instructor feedback and perceptions of teaching presence predict motivation toward online courses. *Online Learning.*

Cherney, M., Fetherston, M., & Johnsen, L. (Proposal accepted). Online course group literature: A review and critique. *Small Group Research.*

Fetherston, M. Cherney, M. R., & Bunton, T. E. (2017). Uncertainty, technology use, and career preparation self-efficacy. *Western Journal of Communication.* Advance online publication. http://dx.doi.org/10.1080/10570314.2017.1294704

Fonner, K. L., & Fetherston, M. (2017). Stress. In Scott, C. R. (Ed.), *International Encyclopedia of Organizational Communication*. Wiley.

Fetherston, M. (2016). Teaching diversity in organizations: Stereotyping the stock photo. *Communication Teacher*, *30*, 131-135. http://dx.doi.org/10.1080/17404622.2016.1192662

Fetherston, M. (Revise and resubmit). Information seeking in organizations: Current knowledge and future opportunities. *Annals of the International Communication Association.*

RESEARCH IN PROGRESS

Fetherston, M. Ignoring the bad apples: The impact of managerial failure to address employee deviance. To be submitted to *Management Communication Quarterly.*

Fetherston, M., Fonner, K. L., Blight, M., and Lambertz-Berndt, M. It's like you need a family to have a reason to leave on time": Family status and the perceived inclusiveness of work-life practices. Manuscript in preparation.

CONFERENCE PRESENTATIONS

Fetherston, M. (2017). *Applying the Comprehensive Model of Information Seeking to college student career information seeking on the Internet*. Paper submitted to the National Communication Association conference, Dallas.

Fetherston, M. (2017). *Student information seeking: Strategies, sources and channel choices*. Paper submitted to the National Communication Association conference, Dallas.

Fetherston, M. (2016). *Ignoring the bad apples: The impact of managerial failure to address employee deviance.* Paper accepted to the International Communication Association Conference, San Diego.

Cherney, M., Fetherston, M., & Johnsen, L. (2016, November). *Online course group literature: A review and critique*. Paper presented at the National Communication Association conference, Philadelphia.

Fetherston, M. (2016). College students and career information seeking: Applying the Comprehensive Model of Information Seeking to career preparation. Poster presented at the Organizational Communication Mini Conference, Evanston.

Fetherston, M., Cherney, M., & Bunton, T. (2016, April.) *Experience with technology for career exploration.* Paper presented at the Central States Communication Association conference, Grand Rapids.

Fetherston, M. (2016, February). *Ignoring the bad apples: The impact of managerial failure to address employee deviance.* Graduate student research project in-progress presented at the Western States Communication Association conference, San Diego.

Fetherston, M. (2015, November). *Disconnected employees, missed opportunities: Technology use, apprehension, and organizational communication satisfaction.* Paper presented at the National Communication Association conference, Las Vegas.

Fetherston, M. (2015, November). *Teaching diversity in organizations: Stereotyping the stock photo.* Great Idea for Teaching Students (GIFTS) presented at the National Communication Association conference, Las Vegas. *(Received Top GIFTS designation)*

CONFERENCE PRESENTATIONS (continued)

Fonner, K. L., Blight, M., Fetherston, M., and Lambertz-Berndt, M. (2015, May.) *Evaluating the inclusiveness of work-life practices from the perspective of single/childless employees.* Paper presented at the European Association of Work and Organizational Psychology conference, Olso, Norway.

Fonner, K. L., Blight, M., Fetherston, M., and Lambertz-Berndt, M. (2015, May.) *Supervisory, coworker, and job design support for work-life balance: Evaluating the impact on employees' organizational identification and turnover intentions*. Poster presented at the European Association of Work and Organizational Psychology conference, Olso, Norway.

Fetherston, M., & Johnson II, R. L. (2015, April). *My work away from home: Coworking spaces and career identity.* Panel paper presented at the Central States Communication Association conference, Madison, WI.

Fonner, K. L., Blight, M., Fetherston, M., and Lambertz-Berndt, M. (2015, April.) "*It's like you need a family to have a reason to leave on time": Family status and the perceived inclusiveness of work-life practices.* Panel paper presented at the Central States Communication Association conference, Madison, WI.

Helens-Hart, R. (chair), Riforgiate, S., Meyer, K., Lietzenmayer, A. M., Eddington, S. M., Fetherston, M., & Haugen, J. (2015, April). *Converging on career: Career development activities and strategies for the communication classroom*. Discussion panel presented at the Central States Communication Association conference, Madison, WI.

Zalinger, J.M. (chair), Rennels, T., Gudelunas, D., Fay, M. J., Mobley, J. S., Weidhaas, A., Kindred, J. W., & Fetherston, M. (2014, November.) "*What's my next move?" Using passion-driven pedagogy to build a meaningful life beyond graduation.* Discussion panel presented at the National Communication Association Annual Conference, Chicago.

Allen, M., Bouhris, J., Burrell, N., Adams, Q., Anderson, C., Blight, M., Dahmer, A., Fetherston, M., Gross, C., Mukarram, A., Lambertz, M., Zhao, T. (2014, November.) *Examining 100 communication programs: Mission statements, assessment plans, and assessment evaluations*. Poster presented at the National Communication Association Annual Conference, Chicago.

Fetherston, M**.** (2014, September.) *From outsiders to unknowns: The socialization of temporary employees*. Poster presented at the Organizational Communication Mini Conference, West Lafayette, IN.

OTHER PRESENTATIONS

Fetherston, M. (2013, March). *Meeting students where they are*. Graduate Teaching Assistant workshop at University of Wisconsin-Milwaukee Center for Instructional and Professional Development, Milwaukee, Wisconsin.

OTHER PRESENTATIONS (continued)

Schroeder, C., & Fetherston, M. (2012, August.) *Planning your course one session at a time.* Presentation at UWM Graduate Teaching Assistant Orientation, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin.

TEACHING EXPERIENCE

Teaching Assistant, University of Wisconsin – Milwaukee Department of Communication, August 2013 – present
Courses taught:

- Communication 410 Organizational Communication Technology (online)
  - Instructor of record, Fall 2016 – Spring 2017
  - Developed syllabus, assignments, grading criteria and online activities
  - Video Chat assignment selected for Center for Excellence in Teaching and Learning Office 365 for teaching and learning pilot program
- Communication 310 Communication in Organizations
  - Instructor of record, Fall 2014 – Spring 2017
  - Developed syllabus, assignments, grading criteria and in-class activities
- Communication 105 Business and Professional Communication
  - Discussion sections for large lecture: Fall 2013, Spring 2014
  - Instructor of record, standalone hybrid section: Winterim 2015
  - Instructor of record, standalone section: Fall 2015, Spring 2016
  - Planned in-class activities, communicated with students and graded presentations and other assignments

Adjunct Instructor, Marquette University Department of Communication Studies, August 2014 – present

- Designed and teach CMST3200: Organizational Communication course

Adjunct Instructor, Marian University, Summer 2015

- Taught COM302 Intercultural Communication course for students in the Holy Redeemer Church "Trained Pulpit – Trained Pew" program partnership

Associate Lecturer, University of Wisconsin – Milwaukee Department of Journalism, Advertising, and Media Studies, August 2012 – May 2013

- Designed and taught Media Career Exploration and Preparation course
- Coordinated multiple guest speakers and informational interview contacts for students

PROFESSIONAL EXPERIENCE

Communications Intern, Milwaukee County Human Resources Department, May 2014 – August 2014

- Provided internal and external employee communication recommendations through employee research and technology tool audits
- Conducted small-scale website test to identify usability issues with existing website navigation
- Developed and coordinated distribution of communication survey to more than 4,000 county employees

Academic Resources Supervisor, Carroll University, September 2013 – present

- Supervise student workers at the library's Learning Commons equipment checkout desk on weekends
- Assist Career Services staff with resume, cover letter, and mock interview feedback

Academic Department Associate, University of Wisconsin – Milwaukee, June 2011 – August 2013

- Advised students on major, minor and internship program requirements for the Department of Journalism, Advertising, and Media Studies
- Advised new students in the Digital Arts & Culture certificate program
- Communicated with department majors and minors via e-mail and social media
- Collaborated with faculty, staff and alumni to develop career exploration, speed interviewing and internship fair events for students in the department
- Used Peoplesoft software to review student academic records and maintain course schedules
- Hired, trained and supervised student office assistant
- Coordinated purchasing, travel reimbursement and other administrative functions for the department

Account Coordinator, Scott Advertising, October 2005 – June 2011

- Established and maintained productive working relationships with multiple business-to-business clients at Sara Lee Foodservice and McCain Foods through regular phone, e-mail and face-to-face contact
- Coordinated and managed details of marketing projects including website content, e-mail blasts, sales collateral and print and electronic ads
- Increased efficiency and accuracy of semi-annual sales mailings

Public Relations Coordinator, Stephan & Brady, October 2004 – September 2005

- Worked with local media and vendors to organize grand opening media appearances and activities for The Young Gourmet Culinary Studios
- Wrote press releases and articles for newsletters and client publications
- Provided proofreading and project support to other public relations team members

SERVICE AND MEMBERSHIPS

- International Communication Association (ICA) Organizational Communication Division Website and Social Media Manager, February 2015 - present
- Communication Graduate Student Council (CGSC) Undergraduate Committee Representative, 2015-16
- Central States Communication Association (CSCA) Graduate Student Caucus Convention Paper Reviewer, 2015
- Textbook reviewer, *Organizational communication: A lifespan approach* (Kramer & Bisel, 2016)
- CGSC Social Media Coordinator, Fall 2014
- Communication Department Facebook committee member, Spring 2014
- CGSC Undergraduate Committee Representative, Fall 2013
- UW System @UW Powers Me guest tweeter, October 7-13, 2013
- ICA Member
- National Communication Association (NCA) Member
- CSCA Member
- European Association of Work and Organizational Psychology (EAWOP) Member

LEADERSHIP AND COMMUNITY INVOLVEMENT

Gigi's Playhouse Down's Syndrome Achievement Centers Literacy Program Tutor, June 2015 – April 2016

- Conduct basic reading skills readiness tutoring sessions for a 5-year-old child with Down's Syndrome

Volunteer Tutor, Milwaukee Achiever Literacy Services, March 2012 – August 2013

- Teach reading, writing, speaking and grammar to an English Language Learner (ELL)

Volunteer and Fundraising Committee Member, Midwest Beagle Rescue Education & Welfare (BREW), March 2012 – July 2015

Board Director, Milwaukee Animal Rescue Center, August 2010 – July 2012