

**EXAMINING THE EFFECT OF FIRST-GENERATION STATUS ON USE OF
CAREER SERVICES**

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ABSTRACT

Previous studies have found that overall first-generation college students have lower levels of student engagement than non-first-generation college students in higher education (Pascarella, Pierson, Wolniak, & Terenzini, 2004; Pike & Kuh, 2005). However, more recent research has brought into question the extent of these differences in engagement (Dong, 2019). Additionally, while a growing body of literature has focused on the engagement of first-generation college students, fewer studies have addressed this population's participation with support services (Volet & Karabenick, 2006) and career services more specifically (Tate, Caperton, Kaiser, Pruitt, White & Hall, 2015). The purpose of the current study was to examine the effect of first-generation status on students' use of in-person services at a university career center in a large, public research institution. A conceptual framework infusing social capital theory and intersectionality was developed to assess the effect of first-generation status alongside several other at-risk demographic factors. While first-generation status was not found to be a significant factor in students' use of the career center, gender and student work did have an effect. The results of this study have implications for researchers studying the career development experiences of first-generation college students as well as administrators seeking to improve data tracking methods within career services offices.

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CHAPTER 1

INTRODUCTION

Higher education is an essential segment in the broader educational pipeline. A college degree has been linked with greater job earnings and job satisfaction (Jones, 2013). Furthermore, careers requiring postsecondary education have doubled over the last 40 years (Carnevale, Smith, & Strohl, 2010). Additionally, the Bureau of Labor Statistics has projected occupations requiring a postsecondary degree to grow by 14 percent by 2022 (Richards & Terkanian, 2013). With these factors in view, the case can be made that higher education is a strategic pathway to greater social mobility and influence in American society.

Relationships play a significant role in the success that students gain from college. While in school, students are introduced to a network of university faculty, staff, and other students. These relationships can serve as a means of social capital, or successful exchanges with others that provide support or assistance in social situations (Stanton-Salazar, 2011). For example, a professor may share a job opportunity with her class or department. Equally, an academic advisor may introduce a student to his colleague in another industry. These relationships developed in the university setting can be a catalyst for upward social mobility. The vitality of these interactions challenge that the value of college is not simply found in the information that is amassed within the classroom. Rather, higher education is also important because of the connections it facilitates throughout the college experience.

Given the numerous advantages of higher education, it is critical to assess whether all students who participate in college are benefiting equally. American colleges

and universities have seen a steady increase of underrepresented students enrolling over the past 40 years (U.S. Department of Education, National Center for Education Statistics, 2019). First-generation college students are one of those populations who need special attention. According to the Higher Education Research Institute, first-generation college students comprise roughly 20 percent of students going to four-year institutions (Eagan et al., 2017). These students are typically the first individuals in their families to complete a bachelor's degree. First-generation college students are often ethnic minorities and come from low-income backgrounds (Dong, 2019; Engle & Tinto, 2008). For many of these students, completing a college degree is an opportunity to substantially improve their socioeconomic status (Stebbleton, Soria, & Huesman, 2014).

Nevertheless, first-generation college students face a number of challenges in attaining a four-year degree. Research has shown these students have higher rates of attrition than non-first-generation college students (Horn & Nuñez, 2000; Ishitani, 2006; Ting, 2003). Furthermore, first-generation college students are more likely to work and less likely to be involved with extracurricular activities while in school (Pascarella, Pierson, Wolniak, & Terenzini, 2004). They also enter college with relatively less knowledge of the "college-going" process, and worry more about paying for college (Rodriguez, 2003). With these significant challenges, first-generation college students have been considered an at-risk student population for degree completion and a source of many studies in the academic literature.

First-generation college students tend to have less viable support from family in navigating the college and career development process (Tate, Caperton, Kaiser, Pruitt, White, & Hall, 2015). These students are more likely to come from lower status-

occupational homes (Spiegler & Bednarek, 2013). They have parents who have not completed four-year degrees and are generally unfamiliar with college life and expectations (Bui, 2002; Chen & Carroll, 2005). First-generation college students are also overrepresented in business subjects and health sciences (Chen, 2005) because they anticipate these majors to be more employable (Spiegler & Bednarek, 2013). Yet, these students still may not be familiar with the career options for their fields of study (Parks-Yancy, 2012). These factors place first-generation college students in sometimes greater need of guidance and support when it comes to completing college and finding careers that match their chosen majors.

The broader research on first-generation college students supports that these students underutilize their social relationships at the university (Moschetti & Hudley, 2015; Parks-Yancy, 2012; Yee, 2016). For example, Kim and Sax (2009) found that first-generation college students had limited interaction with advisers and faculty and were hesitant to seek help from these institutional agents. Moschetti and Hudley (2015) found that a group of White, working-class, first-generation college students in community college participated in fewer extracurricular activities and maintained lower levels of interactions with peers. Yee (2016) followed the experiences of eight first-generation college students and found that these students were more likely to use independent as opposed to interactive engagement strategies when interacting with the university. The sum of these findings suggests that first-generation college students do not make full use of the social capital resources provided at college.

To further complicate matters, research has also supported that post-college outcomes may differ for first-generation and non-first-generation college students. In a

recent study, Manzoni and Streib (2019) found an 11 percent wage gap for men and a 9 percent wage gap for women favoring graduates of non-first-generation status. These scholars suggest that varied outcomes may be due to decisions made by graduates when selecting certain labor markets, occupations, and geographic regions after college. These results point to a need to further investigate how first-generation college students experience higher education and then transition to the workforce. These factors also beg the question of how first-generation college students are using their social relationships in college to better their career trajectories.

First-Generation College Students at Research Universities

The challenges faced by first-generation college students also vary by institutional type. One type of institution that may be very difficult for first-generation college students to navigate is the large, public research university. In 2013, public research universities enrolled approximately four million students nationwide. The average student to faculty ratio at public research universities is also 18:1 (American Academy of Arts & Sciences, 2015). Beattie and Thiele (2016) found that larger class sizes negatively affected the likelihood that first-generation college students would talk to professors or teaching assistants about the class. These large class sizes force students to be much more intentional about seeking help from faculty, staff, and other students. The sheer size of these institutions can cause first-generation college students, the first representatives from their families to complete college, to have great anxiety about how to be successful.

The Student Experience in the Research University (SERU) survey has been used repeatedly to explore the experience of first-generation college students at large, public

research universities. The SERU is based at the Center for Studies of Higher Education at the University of California-Berkeley and provides a census scan of the undergraduate experience. The core questions of the SERU address four thematic areas: academic engagement, community and civic engagement, global knowledge and skills, and student life and development (Stebbleton, Soria, & Huesman, 2014). From the SERU, several important studies have emerged identifying the challenges of first-generation college students at research institutions.

Soria and Stebleton (2012) used the SERU to compare the academic engagement of first-generation and non-first-generation college students at research institutions. First-generation college students reported lower mean scores of contributing to class discussion, asking insightful questions, bringing up ideas related to previous courses, and interacting with faculty during lecture class sessions. Stebleton and Soria (2013) also used the SERU to analyze first-generation and non-first-generation college students' self-perceived obstacles to academic success. Again, first-generation college students reported more significant challenges as it relates to job responsibilities, family responsibilities, English skills, math skills, study skills, and feeling depressed, stressed, or upset. Lastly, Stebleton, Soria, and Huesman (2014) used the student life and development module of the SERU to evaluate first-generation and non-first-generation college students' sense of belonging, satisfaction, and use of counseling services at large, public research institutions. First-generation college students demonstrated lower levels of sense of belonging, satisfaction, and use of mental health services.

This collection of studies highlights that the challenges of first-generation college students at large, public research institutions do exist. While these studies are based

exclusively on students' self-report, this research still must be considered by administrators at these types of institutions. These studies also point to the need for further research on the experiences of first-generation college students at these specific types of institutions.

First-Generation College Students' Engagement of Career Services

A significant strand of the literature on first-generation college students focuses on their student engagement. Student engagement can be defined as “the quality of effort students themselves devote to educationally purposeful activities” (Astin, 1993; Pascarella & Terenzini, 1991, as cited in Hu & Kuh, 2002, p. 555). Previous research has shown that first-generation college students have lower levels of student engagement than non-first-generation college students (Pascarella et al., 2004; Pike & Kuh, 2005). Yet, while most of this literature supports that first-generation college students lag in engagement, few studies accurately portray how these students interact with support services on campus. For example, major studies from Pascarella and colleagues (2004) as well as Pike and Kuh (2005) make strong claims about the student engagement of first-generation college students using large datasets. However, neither of these prominent studies address how first-generation college students use support services beyond library services. To better understand how first-generation college students make career decisions after college, it is important to study how these students participate with support offices like career services.

Career services centers are an instrumental resource for students to learn information about how to be competitive for the workforce and apply for graduate school. These offices provide career counseling where students can address concerns about

choosing a major, finding career paths, or searching for jobs (Schaub, 2012; Sutton & Gifford, 2011). They also offer job search services such as career fairs where career centers act as liaisons between employers and students for employment (Schaub, 2012; Woodruff, 2013). Through all these activities, career services professionals serve as a salient social capital resource helping to facilitate students' career goals.

The expertise of university career services has become even more critical in the last 10 to 15 years. Unemployment rates for college graduates aged 25 years and older have continued to rise from 2000 (Gallup, 2016). Additionally, the economic recession of 2008 placed significant pressure on American colleges and universities to demonstrate career outcomes to key stakeholders such as students, parents, and government boards (Dey & Cruzvergara, 2014). In response, many administrations have turned to career services centers to address this important issue of helping students and alumni find employment after graduation (Chin, Blackburn Cohen, & Hora, 2018). Furthermore, career services professionals have been enlisted to support faculty and administrators in preparing graduates for a rapidly changing workforce.

Nevertheless, only about half of college graduates nationally report visiting the career center during college (Gallup, 2016). Academic scholars echo that college students underutilize career services (Fouad et al., 2006; Garver, Spralls, & Divine, 2009; Osborn & Lenz, 2017). More alarming, studies exploring the career development experiences of underrepresented groups such as first-generation college students are limited (Tate et al., 2015). The dearth of literature on groups such as first-generation college students is particularly troubling as it is these students who are the most in need of guidance and support in career decision.

From the scholarship that is available, researchers argue that first-generation college students are markedly unclear what employers desire in job applicants and unfamiliar with the ways that career services professionals help facilitate employment preparation (Parks-Yancy & Cooley, 2018). Additionally, a recent study by the National Association of Colleges and Employers showed that first-generation college students were declining full-time job offers at greater rates than their peers and that this occurrence may be due to misinformation about expected salaries (Eismann, 2016). This evidence supports that more research is needed on the ways first-generation college students interact with career services offices and leverage information from these spaces.

Few studies investigating the relationship between first-generation college students and career services have presented how this population uses career services centers in a measurable way. For example, Parks-Yancy (2012) interviewed 58 first-generation college students from a business school on their interactions with their school-specific career services center. Parks-Yancy and Cooley (2018) surveyed 115 first-generation college students on their perceptions of employer hiring methods. Tate and colleagues (2015) asked 15 first-generation college students about external influences on, and internal beliefs about, their career development process. Storlie, Mostade, and Duenyas (2016) conducted a qualitative study with 10 Latinx first-generation college students to explore how their values and life-role salience related to their career development at a primarily White institution. While all these studies provide further insight into the behaviors of first-generation college students with career services, none of them demonstrate a quantitative perspective on students' engagement with these offices. In fact, some studies (Parks-Yancy, 2012; Parks-Yancy & Cooley, 2018),

assume that first-generation college students' have lower levels of engagement without providing firm empirical support. Therefore, further quantitative study measuring first-generation college students' engagement with career services is needed to justify the growing qualitative studies being generated for this area.

Social Capital Theory and First-Generation College Students

Relationships appear to be a central theme in the challenges experienced by first-generation college students at the university. These students tend to lack relational support from friends and family on how to successfully navigate college (Parks-Yancy, 2012; Tate et al., 2015). At the same time, these students also feel personally responsible for overcoming the obstacles of college and often fail to seek out institutional agents (Kim & Sax, 2009; Moschetti & Hudley, 2015; Raque-Bogdan & Lucas, 2016; Yee, 2016). Considering a theoretical framework to help conceptualize these challenges experienced by first-generation college students, social capital theory seems to be an appropriate vehicle.

Social capital theory espouses that "capital" is a form of currency or accumulated labor that can be derived from human relationships. Based on this assumption, social capital is one's investment in social relations with an expected return (Lin, 2001). It has already been established that first-generation college students tend to lack social relationships within the home that facilitate college and career guidance. Research has also supported that these students avoid seeking help from faculty and staff more broadly at the university. Using social capital theory, the current study further examined how first-generation college students invest in social relationships with university career services personnel to facilitate their career development and job success.

It should also be noted that university career centers and career services professionals are social capital resources or agents whereby capital can be derived. Yet, each career office provides a certain number of services and activities from which students can accrue this capital. As such, for the purposes of this study, social capital resources were defined as the services and activities supplied by career centers and professionals that assist students in achieving upward mobility.

Other Demographic Variables Influencing Student Engagement

The challenges of first-generation college students do not exist in a vacuum. Scholars have acknowledged the intersectional nature of first-generation status with other social inequalities (Beattie, 2018; Nguyen & Nguyen, 2018). Intersectionality can be defined as, “the critical insight that race, class, gender, sexuality, ethnicity, nation, ability, and age operate not as unitary, mutually exclusive entities, but as reciprocally constructing phenomena that in turn shape complex social inequalities” (Collins, 2015, p. 2). When looking at the case of first-generation college students, it is apparent that many of these other social inequalities overlap with this student population. First-generation college students are much more likely to come from households with lower levels of family income, to be students of color, non-traditional-aged learners, immigrants, non-native English speakers, and to have a disability (Engle & Tinto, 2008). Since it is possible that any number of these variables can account for challenges faced by first-generation college students, it is important to include these factors in research on the population.

Previous scholars have used enrollment data to identify demographic characteristics and track performance. D’Amico and Dika (2013) evaluated the effect of

variables related to financial, academic, integration, and demographic factors on first-year GPA and second-year retention for first-generation and non-first-generation college students. Dika and D'Amico (2016) also used demographic background variables alongside early institutional experiences to assess the persistence of first-generation college students in STEM and non-STEM majors. These studies reflect an effective approach for measuring the effect of first-generation status alongside other demographic variables.

Taking into consideration the complexity of factors that influence the experience of first-generation college students, intersectionality was also utilized as a theoretical perspective to help conceptualize this study. While intersectionality was first used to demonstrate the experiences of African American women, scholars have since acknowledged the merits of the theory as an analytical strategy in research of other marginalized groups (Collins, 2015; Nguyen & Nguyen, 2018). Therefore, a lens of intersectionality was grafted into the conceptualization and methodology of the current study.

Purpose of the Study

First-generation college students represent an at-risk population to degree completion within higher education. The literature has shown that these students may be less engaged with the university as a whole and feel isolated at large, public research institutions. More research is also needed on how this student group interacts with career services and few studies on this area implement a quantitative research approach. Therefore, the purpose of this study was to evaluate how first-generation status might affect students' use of in-person career services at a large, public research institution.

Research Question

Guided by the purpose statement above, this study explored the following question:

- After controlling for other salient demographic variables, does first-generation status explain the difference in students' use of in-person services at a university career center?

Research Hypothesis

The general consensus in the academic literature is that first-generation college students are less engaged with the college environment than non-first-generation college students (Parks-Yancy, 2012; Pascerella et al., 2004; Pike & Kuh, 2005; Stebleton, Soria, & Huesman, 2014). Following this evidence, this hypothesis was proposed for the current study:

- First-generation status will have a statistically significant effect on students' use of in-person services when compared to other salient demographic variables.

Nature of Study

Given the design of the study, several specific methodological choices were made. The current study employed quantitative research methods. The sample was drawn from a single institution in the mid-Atlantic region. Admissions and career center appointment data were merged and analyzed secondarily to investigate students' engagement with career services. Chi-Square tests, Analysis of Variance (ANOVA), and regression analyses were performed on first-generation status as well as other demographic variables to assess each factor's effect on students' use of appointments. This research approach allowed for a thorough evaluation of the role that first-generation

status played in students' engagement with the career office. This methodological approach also added to the literature on career services engagement and first-generation college students which primarily includes qualitative studies and does not assess for the effect of other demographic factors (Parks-Yancy, 2012; Parks-Yancy & Cooley, 2018; Tate et al., 2015).

Definition of Key Terms

To provide clarity for readers unfamiliar with the terminology used in this study, several key definitions have been added below:

- **Social Capital:** the “investment in social relations with expected returns” (Lin, 2001, p. 30).
- **Intersectionality:** “the critical insight that race, class, gender, sexuality, ethnicity, nation, ability, and age operate not as unitary, mutually exclusive entities, but as reciprocally constructing phenomena that in turn shape complex social inequalities” (Collins, 2015, p. 2).
- **Student Engagement:** “the quality of effort students themselves devote to educationally purposeful activities” (Astin, 1993; Pascarella and Terenzini, 1991, as cited in Hu & Kuh, 2002, p. 555).
- **First-Generation College Students:** all students whose parents had not completed a postsecondary degree (Ward, Siegel, & Davenport, 2012).
- **Career Advising:** a process by which a career advisor “helps student[s] understand how their personal interests, abilities, and values might predict success in the academic and career fields they are considering and how to form their academic and career goals accordingly” (Gordon, 2006, p. 12).
- **Career Centers:** university support offices that include a range of services including career fairs, workshops, internship, co-op, and externship opportunities to career resources and assessment, drop-in career advising, and career counseling by appointment (National Association of Colleges and Employers, 2014).

Significance of the Study

There are several reasons that give rise to a need for this study. First, the academic literature on first-generation college students and their use of career services is sparse (Tate et al., 2015). This lack of literature leaves career services professionals at a disadvantage in understanding and developing effective measures to support the specific needs of this population. The current study adds to the knowledge of what resources first-generation college students use when coming to career services centers. Insight into the services that first-generation college students frequently use will help career services centers to learn if this population is using the resources most likely to advantage them in the job search.

Furthermore, several existing studies on first-generation college students and career services jump immediately to exploring first-generation college students' experiences with these offices qualitatively without justifying the need for such research quantitatively. While there is a general consensus that first-generation college students tend to use support services less than non-first-generation college students (Stebbleton, Soria, & Huesman, 2014), there is not enough empirical support for these claims when studying students' use of career services. More quantitative study of this perspective will help to further substantiate the important work of qualitative researchers in this area. The current study sought to complement the literature on this research area with further quantitative data.

Lastly, this study may be helpful in improving data tracking methods for career services units nationwide. Historically, data collection in university career services has not been comprehensive. Most career centers track attendance by class year and majors

only (Osborn & Lenz, 2017). This surface level analysis is dangerous in that it misses underlying differences that may be present in student engagement.

Previous research has supported that underrepresented minority groups underutilize career services (Carter, Scales, Juby, Collins, & Wan, 2003; Falconer & Hays, 2006). This lack of engagement may well be the case for other underrepresented student groups such as first-generation college students and low-income college students. In recent years, there has been a continued push by practitioners and thought leaders to investigate further differences between students who use career services (Saénz, 2017). This study analyzed student differences in use of career services that may be apparent when data are examined beyond simply class years and majors.

Focused research on how underrepresented student groups like first-generation college students engage with the university is of great importance to American institutions. As the college-going population becomes more diverse, attention to student success is critical. Data have already supported that first-generation college students finish college at lower rates than other students (Choy, 2001; Ishitani, 2006). Given this information, administrations need research-driven strategies to support policies and programming that improve college outcomes for all students. This study contributes to the growing research informing institutional decision-making on the career services initiatives that benefit first-generation college students.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

Before describing the current study, it is helpful to review the literature related to first-generation college students and career services. A review of this literature will take the following form: 1) a definition of first-generation college students, 2) a review of the literature on first-generation college students with student engagement, research universities, support services, and career services respectively, 3) a case for using social capital theory to understand first-generation college students' engagement with career services, 4) a rationale for assessing the effect of first-generation status alongside other salient demographic variables through the lens of intersectionality, and 5) a position for focusing on the experience of first-year college students.

Defining First-Generation College Students

There has been continued debate on a singular definition for first-generation college students. In a review of over 24 articles in top-tier higher education journals from 2005 to 2015, Peralta and Klonowski (2017) found 12 different ways that the concept of first-generation status was defined. From this broad heap of interpretations, two specific definitions tend to emerge (Zuo, Mulfinger, Oswald, & Casillas, 2018). The most generally accepted definition of first-generation student status was coined by the federal TRIO grant programs (Ward, Siegel, & Davenport, 2012). TRIO defined first-generation college students as all students whose parents had not completed a postsecondary degree.

This definition may be considered the broadest interpretation, allowing students whose parents have completed some college to be identified as first-generation college students.

It was later that the First Scholars Program of the Suder Foundation went on to develop a more stringent definition. This group defined first-generation status as students with whom neither parent had completed education beyond a high school diploma. Several scholars have supported this second definition as the most accurate depiction of first-generation status (Choy, 2001; Ishitani, 2006; Ward, Siegel, & Davenport, 2012). The merits of this alternative definition stem from the fact that students in the former definition possess greater sociocultural capital as their parents have some experience with the college environment.

Beyond theoretical assumptions, there are statistical implications for choosing one definition of first-generation status over another. Toutkoushian, Stollberg, and Slaton (2018) explored the impact of eight alternative definitions of first-generation status on taking the SAT or ACT, applying to college, or enrolling in college. For this study, the scholars used four different levels of educational attainment that could be used to define first-generation status. These definitions were: 1) parent(s) have at most a high school degree, 2) parent(s) have at most started (but not completed) an associate's degree, 3) parent(s) have at most completed an associate's degree, and 4) parent(s) have at most completed an associate's degree or started (but not completed) a bachelor's degree. In their results, they found that students with no college-educated parents were 9 percent less likely than students with two college-educated parents to enroll in a four-year institution. Additionally, students with one college-educated parent faced a 5.8 percent deficit in likelihood of enrollment at a four-year institution.

These differences in enrollment based on the definition of first-generation status support the value of assessing multiple levels of status when evaluating this student population. It is possible to find differing results and implications depending on the way first-generation status is defined. However, using multiple definitions of first-generation status allows for a more comprehensive approach to analysis and interpretation. Most importantly, this approach provides a more accurate assessment of where resources and support are most needed.

First-Generation College Students and Student Engagement

Student engagement is a crucial component of college completion. Scholars have demonstrated that student engagement can have a compensatory effect on the grades and persistence of underrepresented student groups (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). Student-peer and student-faculty interaction has been shown to improve learning and academic performance (Astin, 1993; Kuh, Kinzie, Schuh, & Whitt, 2010). Other scholarship has called for administrators and student affairs practitioners to be intentional about acclimating first-generation college students to academic and social networks when they arrive on campus (Padgett, Johnson, & Pascarella, 2012). And yet, the broader literature on student engagement and first-generation college students is underdeveloped with regards to knowledge on how these students use career services.

There are several complementary definitions for student engagement. Kuh and colleagues (2007) defined engagement as “participation in educationally effective practices, both inside and outside the classroom, which leads to a range of measurable outcomes” (p. 44). Krause and Coates (2008) spoke of engagement as “the extent to which students are engaging in activities that higher education research has shown to be

linked with high-quality learning outcomes” (p. 493). And lastly, Hu and Kuh (2002) coined engagement as “the quality of effort students themselves devote to educationally purposeful activities that contribute directly to desired outcomes” (p. 555). While these definitions are somewhat different, they all seem to point to engagement as activities both *in* and *outside* the classroom that promote learning outcomes.

This emphasis on activities both inside and outside the classroom is absent from several large studies examining the student engagement of first-generation college students over the years. While a number of these studies have been influential in the academic discourse about first-generation college students, many of them fail to properly articulate the role of support services in engagement. For example, Pascarella and colleagues (2004) used the National Study of Student Learning (NSSL) to assess differences in engagement between first-generation and non-first-generation college students over three years. Results showed that first-generation college students worked significantly more hours, took fewer courses, had lower levels of extracurricular involvement and peer interaction, and earned lower grades than non-first-generation college students. However, close examination of the NSSL shows that this survey assessed only students’ academic involvement with library services and engagement with extracurricular activities. This survey criteria provides no insight into how first-generation college students participate with support services like the career center.

Pike and Kuh (2005) conducted a large study comparing the engagement and intellectual development of first-generation college students and non-first-generation college students. Using the College Student Experiences Questionnaire (CSEQ), these scholars measured students’ educational aspirations, student residence (on or off

campus), academic engagement, and students' perceptions of academic and social engagement. Results showed that first-generation college students were less engaged and that living off campus and students' educational aspirations were significant factors.

Although Pike and Kuh provided further insight into the challenges of first-generation college students, this study did not clearly address students' engagement with student support services. Use of library resources was included in this study's measure of academic engagement. The measure for students' perceptions of campus environment also asked about students' interactions with administrative personnel and offices. However, there was no other evaluation of how these students used support services. This gap in Pike and Kuh's study continues to show the limits of previous research to accurately address the ways first-generation college students use support services like career services.

Soria and Stebleton (2012) conducted another major study on first-generation students' academic engagement within the first year of college. These scholars evaluated the responses of 1,864 students on the Student Experience in the Research University (SERU) survey. Results showed significant differences between first-generation and non-first-generation college students in terms of academic engagement. First-generation college students were found to contribute less to class discussion, ask less insightful questions in class, bring up less ideas or concepts from different courses during class discussions, and interact less with faculty during lecture class sessions.

While these results are helpful to show differences in how first-generation college students engage with college academically, this study provides no information on students' use of support services or how this involvement may influence students'

academic engagement. Soria and Stebleton even recommend that academic advisors and student support staff encourage first-generation college students to use faculty hours (p. 682), but this suggestion rests on the assumption that students are regularly interacting with these offices in the first place. This study is another example of how the prevailing literature on first-generation college students has covered only a certain segment of students' engagement.

Dong (2019) represents several important changes in the broader literature on first-generation college students and student engagement. This study evaluated the student engagement and outcomes of first-generation and non-first-generation college students at private liberal arts colleges. Here, the Higher Education Data Sharing Consortium (HEDS) Senior Survey was used to assess 7,611 students' level of engagement in high-impact practices, satisfaction with support services, and self-reported gains as a result of their undergraduate education. Results showed limited differences between first-generation college students and non-first-generation college students. First-generation college students also reported greater satisfaction with career services.

The outcomes of this study posit some noteworthy shifts in the literature on the student engagement of first-generation college students. First, no differences were found in the student engagement of first-generation and non-first-generation college students. In fact, first-generation college students had higher scores on satisfaction with career services. These findings present the possibility that engagement for first-generation college students may be changing or even influenced by institutional type.

Second, Dong's study included a survey that clearly assessed how students interacted with support resources. As demonstrated above, several of the major studies

on first-generation college students have highlighted only library services to define engagement with institutional resources (Pascarella et al. 2004; Pike & Kuh, 2005). The survey choice of this study allowed for a more comprehensive evaluation of students' overall engagement.

First-Generation College Students and Research Universities

Student engagement can be greatly influenced by institutional type. Public research universities are known for having large enrollments and classroom sizes. There is substantial literature to support that these environments hinder the overall engagement and success of first-generation college students. These studies tend to fall into the categories of student-faculty interactions and students' perceptions of the college experience.

Student and Faculty Interactions

Kim and Sax (2009) evaluated the impact of research-related and course-related student-faculty interactions using the University of California Undergraduate Experience Survey (UCUES). Their study included data from 11,928 students attending programs in the University of California system. Results showed that non-first-generation college students were more likely than first-generation college students to have assisted faculty with research for course credit, communicated with faculty by email or in person, and interacted with faculty during lecture class sessions.

Collier and Morgan (2008) conducted focus groups on faculty members' expectations and students' understanding of those expectations at an urban public university. These scholars interviewed 15 faculty members and 63 students. The student sample included six groups of first-generation college students and two groups of

students with more traditional backgrounds. Results showed that first-generation college students struggled more with navigating how to meet professor expectations than other students.

Beattie and Thiele (2016) examined the influence of class size on student interactions with professors and peers at one public research university. Using the Social Interactions and Academic Opportunities (SIAO) Survey, the scholars asked students about their interactions with course material and assignments, ideas from class or readings outside of class, and future career plans. These researchers found that increased class sizes had a significant negative association with students talking about course material and assignments with professors, regardless of race or first-generation status. Additionally, for discussing ideas from class with professors or TAs, larger class sizes specifically had a negative effect for first-generation college students.

All three of these studies took place at large public institutions and focused on academic student engagement. The first-generation college students in each study seemed to have trouble engaging with faculty. These outcomes portray a consistent narrative of first-generation college students' interactions in the classroom.

Student Perceptions of the College Experience

Regarding first-generation college students' perceptions of large, public research universities, several challenges emerge that make the landscape appear difficult to navigate. For example, Stebleton and Soria (2013) used the SERU survey to analyze first-generation and non-first-generation college students' self-perceived obstacles to academic success. This study involved the self-reported responses of approximately 58,000 students from six research universities. First-generation college students reported

more significant challenges as it related to competing job responsibilities, competing family responsibilities, English skills, math skills, study skills, and feeling depressed, stressed, or upset.

Pratt, Harwood, Cavazos, and Ditzfeld (2019) surveyed 3,118 first-time, full-time college students at a large, midwestern state university. This study also revealed several strong links between student perceptions and freshmen-to-sophomore retention. These scholars found that first-year retention was negatively related to students' financial concerns, perceived academic competence, and sense of belonging. First-generation college students also voiced more concerns about money, reported greater doubt in their abilities to succeed, and expressed greater difficulty fitting in on campus and making new friends.

These studies give context to the struggles of first-generation college students on large university campuses. From the research, students seem to face challenges engaging faculty and wrestling with several self-perceived obstacles to success. These issues appear intensified by the climate and culture of big campuses.

First-Generation College Students and Support Services

Examining the literature on first-generation college students and support services gives an even clearer view on the challenges of this population to engage at the university. While the literature exploring first-generation college students' use of support services is limited (Volet & Karabenick, 2006), there are a handful of studies that give evidence of the need for more research in this area.

Torres, Reiser, LePeau, Davis, and Ruder (2006) explored the experiences of 24 first-generation Latinx college students at four urban, commuter institutions over four

years. These scholars investigated how these students sought out academic information typically covered in academic advising. Results showed that students would initially seek out academic information from peers or pamphlets before seeking out advisors. Additionally, students seemed to avoid advising because they 1) were waiting to be told information by an advisor, 2) viewed seeking out an authority figure as a risk, 3) did not want to appear foolish, or 4) did not recognize advisors as expert authorities. Such findings support that first-generation college students face several barriers to using support services.

Stebbleton, Soria, and Huesman (2014) assessed differences in sense of belonging and satisfaction, mental-wellbeing, and use campus mental health services between first-generation and non-first-generation college students. These scholars examined responses on the SERU survey from 145,150 students across six large, public research institutions. Results showed that first-generation college students needed but did not use counseling services at a higher rate than non-first-generation college students. First-generation college students reported barriers to accessing services such as the inconvenience of the location, lack of communication of services, inconvenience of hours, and lack of enough time.

Stebbleton, Soria, and Huesman's study demonstrates direct evidence of how first-generation college students may underutilize campus services at large, public research institutions. Students' reasons for not using services were also in line with previous studies that showed first-generation college students have limited engagement with university campuses (Pascarella et al., 2004; Pike & Kuh, 2005). These findings bolster

the need to further assess how first-generation college students engage with other specific resources on campus.

Moschetti and Hudley (2015) explored the social capital among 20 White, working-class, first-generation community college students. These scholars investigated students' perceptions of faculty, staff, and fellow students. Results from interviews showed that most students perceived roadblocks to support at the community college and believed that only their personal effort would help them achieve their long-term goals. These findings support other studies that portray first-generation college students as generally taking a more individualistic and independent approach to navigating college life (Rague-Bogdan & Lucas, 2016; Yee, 2016). This approach, although it appears mature, can have drawbacks as first-generation college students often fail to make connections or receive information that can help them excel in both college and career.

These selected studies point to several important themes about how first-generation college students interact with support services. One, first-generation college students face several barriers to accessing support services (Torres et al., 2006). Two, first-generation college students have been found to underutilize specific support services dedicated to mental health such as counseling centers (Stebbleton, Soria, & Huesman, 2014). And three, first-generation colleges students have been found to employ independent interaction practices at the university that can lead to further isolation and low engagement with institutional agents (Moschetti & Hudley, 2015). These challenges provide a helpful and broader framework in addressing first-generation college students' engagement with support services at colleges and universities.

First-Generation College Students and Career Services

Studies involving first generation college students and career services have also been under-researched. A number of these studies have been qualitative in nature, attempting to explore how first-generation college students relate to career development. For example, Parks-Yancy (2012) interviewed 58 African American undergraduate business students about their interactions with their school-specific career services. Most of these students, 83 percent of whom were first-generation college students, were unaware of career services, failed to use strategic networking in their job searches, and received unhelpful advice from parents and family members about future careers. Tate and colleagues (2015) explored the career development experiences of 15 first-generation college students. They found that these students' parents were supportive but lacked knowledge on how to navigate the college and career development process. Students in this study also voiced having less career professional networking resources than non-first-generation college students.

While few quantitative studies can be found on first-generation college students and career services, the National Association of Colleges and Employers has published several annual reports demonstrating the career attitudes, behaviors, and outcomes of graduating college seniors. The National Association of Colleges and Employers' 2019 Student Survey Report included responses from 3,952 seniors on their post-graduation plans, use of career services, participation in internships, and job search strategies. With regard to participation in internships, this report showed that "paid interns during college were more likely to be men with at least one parent with a bachelor's degree, who were not first-generation students (p. 29)." Conversely, women were more likely to have been

unpaid interns, and first-generation college students were most likely to have never had an internship during college.

The National Association of Colleges and Employers' 2016 Student Survey also disclosed some vital information about job searching and interviewing behavior (Eismann, 2016). This national survey included responses from 5,013 graduating seniors who self-identified as either first-generation (1,925) or non-first-generation (3,088). Results from the report showed that non-first-generation college students were more likely to use networking with friends and family in the job search than first-generation college students. First-generation college students were also more likely to use virtual career fairs, articles in newspapers/magazines, and advertisements in publications/magazines than non-first-generation college students as job search resources. Such findings continue to support that first-generation college students use a more independent approach to engaging with college and career (Moschetti & Hudley, 2015; Yee, 2016).

These independent engagement strategies used by first-generation college students can have a profound effect on their career outcomes. Parks-Yancy and Cooley (2018) surveyed a group of 115 first-generation college students on their perceptions of employer screening methods. Results showed that first-generation college students underestimated the value of having university contacts refer them to career opportunities. Parks-Yancy and Cooley argue that these students' lack of awareness of the benefits associated with receiving this "insider information" from institutional agents ultimately keeps them from achieving their desired post-college career goals.

However, the academic literature does support that there is a positive effect when institutions make intentional efforts to guide first-generation college students and other underrepresented student groups toward to career-related activities. Kezar, Hypolite, and Kitchen (2020) performed a mixed-methods study on a group of low-income, first-generation, and underrepresented minority students participating in a comprehensive college transition program during their first year of college. The scholars evaluated whether involvement in the program improved students' career self-efficacy in comparison to a group of students who did not receive the career intervention. Quantitative results of the study showed that involvement in the program did promote career self-efficacy, and student interviews supported that relationship with the program staff advisors helped students make sense of their majors and career-related experiences (Kezar, Hypolite, & Kitchen, 2020). Such findings support that career interventions can help first-generation college students feel more confident about the career applications of their degrees when these programs are intentional and focused. This study also supports the implementation of career interventions early in students' academic careers.

The need for further research on first-generation college students and career services is evident from the review of the literature. Previous studies have shown that first-generation college students underutilize career services (Hughes, Gibbons, & Mynatt, 2013; Parks-Yancy, 2012; Parks-Yancy & Cooley, 2018). Other studies have demonstrated that first-generation college students are more likely than non-first-generation college students to engage with online resources (Eismann, 2016) and to receive minimal career guidance from parents (Tate et al., 2015). Yet, several of these studies in academic journals have used relatively small sample sizes (Parks-Yancy,

2012). Going forward, the use of larger sample sizes will significantly enhance the evidence to support claims on the differences in engagement between first-generation and non-first-generation college students.

Social Capital Theory and First-Generation College Students

Social capital theory is a helpful framework that can clarify the ways in which first-generation college students interact with the university. The central idea of social capital theory is that social networks have value (Putman, 2000). From this understanding, higher education acts as a social network whereby capital can be drawn similar to that of the professional's workplace or the parishioner's religious community.

Several key theorists have commented on the nature of social capital. Coleman (1988) articulated that social networks function under norms of reciprocity and trustworthiness. According to Coleman, social networks were closed, allowing only certain members to achieve the benefits of the group. Coleman also saw social networks as information channels where privileged knowledge could be shared between members for personal benefit.

Lin (2001) defined social capital as investment in social relations with an expected return. From this perspective, individuals engage in interactions to produce a variety of favorable outcomes such as information, influence, social credentials, and reinforcement. However, critical to Lin's theorizing is the assumption that actors must have access to and interact with others to gain such favorable outcomes.

Stanton-Salazar (2011) further applied the understanding of social capital to the educational landscape. Influenced by Pierre Bourdieu (1986), he sees social capital as contributing to social reproduction of class inequality. Stanton-Salazar (2011) defined

social capital as “resources and key forms of social support embedded in one’s network or associations, and accessible through direct or indirect ties with institutional agents (p. 1067).” Institutional agents here are meant to be individuals who occupy positions of high-status and authority. Stemming from this understanding, social capital is the outcome of successful communications and exchanges between students and institutional agents (Stanton-Salazar, 2011). However, the success of these exchanges is influenced by the student’s amount of cultural capital, leading some students to acquire more rewards than others.

The insights of Coleman, Lin, and Stanton-Salazar can work together to conceptualize how first-generation college students use career services. Coleman’s concept of trustworthiness can be used to understand first-generation college students’ challenges in navigating the higher education landscape. Scholars have shown that first-generation college students use independent engagement strategies at college, often avoiding valuable interactions with faculty and staff (Kim & Sax, 2009; Moschetti & Hudley, 2015; Yee, 2016). This style of engagement could be due to students’ distrust of institutional agents or ambivalence with this form of support. If first-generation college students, members of the social network of higher education, do not trust the other members, then they cannot experience the personal benefits of the social network.

Additionally, as Coleman articulates, “information can be acquired through social relations (1988, p. 104).” Applying this idea to higher education, in-person services through support offices such as the career center can be wielded to transmit important information about the job world to students. As a result, when first-generation college

students do not participate in these exchanges with career services professionals, they are choosing to miss out on a key form of social capital.

Lin's contribution that actors must "invest" in social relations is also critical to the conversation surrounding first-generation college students. Some scholars have shown that first-generation college students do not always understand the importance of seeking out career services (Hughes, Gibbons, & Mynatt, 2013; Parks-Yancy & Cooley, 2018). If these students do not realize the benefit of engaging with career services professionals, it would follow that they would be less likely to use these services and gain the available social capital. Therefore, Lin highlights that students must themselves engage with institutional agents to receive help.

Stanton-Salazar does well to situate social capital within the context of education. He highlights that social capital is exchanged between a student and an institutional agent, or a person with greater cultural power. He also illuminates that social capital happens through successful dialogue between two parties. Again, it has been communicated by several scholars in the literature that first-generation college students tend to navigate college more independently than interactively. This lack of exchange with key institutional agents could impact the level of knowledge and capital they receive about careers.

As evidenced from the scholars reviewed here, social capital is about networks, information sharing, trust, investment, and communication. All these concepts apply to the context of first-generation college students and how they interact with the university on a broader scale. These qualities make social capital an appropriate lens from which to assess the student engagement of first-generation college students with career services.

Other Demographic Variables Influencing Student Engagement

When conducting research on first-generation college students, it is important to account for other demographic variables that may influence students' performance. Scholars are increasingly recognizing the intersectional nature of social inequalities and their effect on students (Beattie, 2018; Nguyen & Nguyen, 2018). The literature supports that first-generation students are much more likely to come from households with lower levels of family income, to be students of color, non-traditional-aged learners, immigrants, non-native English speakers, and to have a disability (Engle & Tinto, 2008). This range of other demographic variables can blur one's understanding of what factors truly affect the experience of first-generation college students. These related factors must be identified and integrated into the research of this population.

Intersectionality is a theoretical paradigm that aligns well with the study of first-generation college students. Originally used to demonstrate the experiences of African American women, intersectionality has increasingly been repurposed as an analytical strategy to explore the social realities of other marginalized groups (Collins, 2015; Nguyen & Nguyen, 2018). Intersectionality also emphasizes the "complexities not only of individual identities but also group identity, recognizing that variations within groups are often ignored and essentialized" (Dill & Zambrana, 2009, p.5). Acknowledging these intricacies within marginalized groups, intersectionality can be wielded to provide a more critical view of social inequalities in society.

McCall (2005) presented three methodological approaches to how intersectionality deals with the complexity of identity: anticategorical complexity, intercategorical complexity, and intracategorical complexity. Each of these approaches

has a different response to the typical way identity is categorized in society.

Intercategorical complexity seeks to use “existing analytical categories to document relationships of inequality among social groups and changing configurations of inequality along multiple and conflicting dimensions” (p. 1773). In short, this method takes previously accepted categories of identity and analyzes them collectively to find a more comprehensive meaning. This analytical strategy seems necessary to employ with first-generation college students who have been affirmed by scholars to hold membership with several other marginalized groups. Therefore, intersectionality was used as a theoretical perspective to inform the complex way first-generation status operates with other at-risk factors to affect students’ engagement with career services.

Family Income

First-generation college students are more likely to come from households with lower levels of family income (Engle & Tinto, 2008; Spiegler & Bednarek, 2013). This overlapping factor is so pronounced that many scholars focus their research entirely on low-income, first-generation college students (Garriott, 2020; Kezar, Hypolite, & Kitchen, 2020; Moschetti & Hudley, 2015). When combined, first-generation status and social class often influence educational outcomes more than race and gender (Moschetti & Hudley, 2015). For example, in 2013, individuals from the highest-income families were eight times more likely to complete a bachelor’s degree by age 24 than individuals from low-income families (Cahalan & Perna, 2015). The compound significance of low-income status with first-generation status makes it important to account for this variable when analyzing this population.

Gender

The academic literature has also shown that gender may be a supporting factor in the career engagement of first-generation college students (Nguyen & Nguyen, 2018). Scholars have consistently reported that first-generation college students tend to be female (Engle & Tinto, 2008; Spiegler & Bednarek, 2013). Yet, researchers have also acknowledged the need to specifically support first-generation, African American male collegians with ongoing career development (Owens, Lacey, Rawls, & Holbert-Quince, 2010). These findings are important as gender is known to influence help-seeking behavior in career counseling. Several studies have shown men to have a greater stigma toward using career services (Di Fabio & Bernaud, 2008; Ludwikowski, Vogel, & Armstrong, 2009; Rochlen, Mohr, & Hargrove, 1999). Given these factors surrounding gender and help-seeking, it makes sense to evaluate this interaction as it relates to use of university career services.

English as a Second Language

First-generation college students are also more likely to be non-native English speakers. Kanno and Cromley (2013) found students who identified as English language learners have significantly lower levels of postsecondary access and attainment than other students. Other scholarship has supported that English language learners can feel marginalized at four-year institutions, especially when they are funneled into developmental education courses (Núñez, Rios-Aguilar, Kanno, & Flores, 2016). This feeling of marginalization could also influence students' overall engagement with their college campuses. As a result, it may be helpful to assess the effect of English as a second language on student engagement alongside first-generation status.

Student Living

A student's residence can also affect his or her engagement with the university. Wilbur and Roscigno (2016) conducted a study on the college enrollment and completion of first-generation college students and found that these students were more likely to live at home while attending a four-year institution than their peers. Wilbur and Roscigno noted that living at home had a negative effect on these students' college completion. Garza and Fullerton (2018) also found that first-generation college students living farther away from home were more likely to persist through college. These scholars also suggested that living off-campus with proximity to friends and family could negatively impact persistence for first-generation college students. Furthermore, in a study of retention, D'Amico and Dika (2013) found out-of-state status as a positive predictor of first-year GPA for both first-generation and non-first-generation college students. This collection of studies evidences that where a student lives can affect his or her college experience. Thus, evaluating the influence of student residence should also be considered when researching the experience of first-generation college students.

Student Work

There has been debate around the impact of student employment on student success (Martinez, Bilges, Shabazz, Miller, & Morote, 2012). However, research has shown that as the number of hours worked increases for students that the level of campus engagement decreases (Lang, 2012). Additionally, Pike, Kuh, and Massa-McKinley (2008) found a negative relationship with students working more than 20 hours a week while enrolled in college. The literature supports that first-generation college students are more likely to work than non-first-generation college students (Pascellera et al.,

2004). Prior research has also supported that first-generation college students have lower levels of campus involvement, peer interaction, and investment in learning due to heavy student employment workloads (Lundberg et al., 2011). Therefore, it may be valuable to evaluate the effect of student work on the engagement of first-generation college students.

Race and Ethnicity

First-generation college students are more likely to be persons of color. The literature presents differing views on how minorities use career services. Earlier studies seem to show that minorities underutilize career services (Carter et al., 2003; Falconer & Hays, 2006). However, more recent reports show that minority students are even more likely to use career services than non-minority students (Gallup, 2016). It would also be worthwhile exploring the effect of minority status in how first-generation college students engage with support resources.

Decided Major Status

Clarity of student major is also a relevant factor. Chen (2005) found that students who had not declared a major were less likely to earn a degree. The literature supports that low-income and first-generation students are concerned about their degrees leading to future employment and the relevance of their college education (Kezar, 2010). Scholarship also suggests that students are more likely to persist if they have a sense of what they will study and the careers that can be obtained with certain majors (Kezar, Hypolite, & Kitchen, 2020). Given these factors, it may also be valuable to evaluate the effect of decided major status on the student engagement of first-generation college students.

Previous research has sought to understand the relationship of student success with a range of variables like the ones presented above. D'Amico and Dika (2013) evaluated the effect of variables related to financial, academic, integration, and demographic factors on first-year GPA and second-year retention for first-generation and non-first-generation students. Dika and D'Amico (2015) also used demographic background variables alongside early institutional experiences to assess the persistence of first-generation college students in STEM and non-STEM majors. Both studies utilized enrollment data to identify demographic variables. Such studies demonstrate a comprehensive approach for assessing the effect of first-generation status at the university. This technique also serves as an effective strategy from which to design future quantitative research on this population.

Focus on First-Year Students

The first year of college is often challenging for all students (Yan & Sendall, 2016). Institutions have faced significant pressure from governments over the years to demonstrate how they are improving retention across class years (Zepke & Leach, 2010). As a result, colleges and universities are regularly strategizing how to enhance students' first year experiences through efforts such as orientations and first-year experience courses.

First-generation college students need careful attention in the first year of college. These students are nearly twice as likely to leave four-year institutions before the second year in comparison to non-first-generation college students (Choy, 2001; Ishitani, 2006). Bui (2002) conducted a study on a group of incoming first-year students and found that first-generation college students felt less prepared for college, worried more about

financial concerns, and knew less about the social environment of the university in comparison to other students. Other scholars have supported that these students have trouble locating assistance once they arrive on campus (Moschetti & Hudley, 2015; Padgett, Johnson, & Pascarella, 2012).

The literature points to the need for institutions to play a critical role in integrating students into educationally purposeful activities and helping them develop social capital. Maack (2002) conducted a study on the retention and graduation behavior of over 2,000 students at a single institution. Results showed that students who received appropriate assessment as they entered college, sought and received counseling (both academic as well as personal), and attended an official orientation session provided by the institution, were more likely to persist into the second and third years. Swecker, Fifolt, and Searby (2013) performed a quantitative study on the retention of 363 first-generation college students in their first year. Results showed a strong relationship between retention and the number of meetings with an academic advisor. Means and Pyne (2017) followed the first-year experiences of 10 first-generation college students in a comprehensive college access program. Their analysis revealed that institutional support structures like the tutoring center and writing center played an important role in the academic integration and sense of belonging for the students. Furthermore, Zepke and Leach (2010) conducted a meta-analysis of 93 research studies on student engagement. From this analysis, they generated ten proposals to action. Two of these proposals for action were “invest in a variety of support services” and “enable students to develop social and cultural capital” (p. 172-73).

There is also data that support the value of engagement with the career center in the first year of college. A report from the National Association of Colleges and Employers (2019) tracked the career experiences of graduating seniors. Data showed that students who ended up with paid internships were far more likely to have used the career center in their first year of college than those who were unpaid interns or never interns. While the survey was clear that the association was not predictive, early engagement with the career center appears to be descriptive of successful college graduates.

The sum of these studies shows that it is important for institutions to be involved in the student engagement of first-year students. This evidence also supports that first-year students should be connecting to support services such as the career center to foster retention, persistence, and career success.

Summary

The review of the literature clearly articulates the need for the current study. Results from several large studies on the engagement of first-generation college students show that findings have been somewhat variable over time (Dong, 2019). A number of these studies also fail to assess first-generation college students' use of other support services beyond library services. Other studies specifically addressing first-generation college students' use of support services demonstrate that these students face unique barriers to accessing resources on campus, tend to underuse services, and employ independent engagement strategies that often isolate them from institutional support (Moschetti & Hudley, 2015; Stebleton, Soria, & Huesman, 2014; Torres et al., 2006). Studies with first-generation college students and career services mirror these results (Eismann, 2016; Parks-Yancy, 2012). Given this multitude of evidence, further

research is warranted in understanding the specific ways first-generation college students engage with career services. To provide greater clarity on this area, this study assessed the effect of first-generation status on students' use of in-person services at a university career center in a large, public research institution. This effect of first-generation status was assessed in comparison to a range of other at-risk demographic factors proven to have influenced college success and completion.

CHAPTER 3

METHODOLOGY

Introduction

This study investigated the role of first-generation status as an effect in the use of career services at a postsecondary institution. A secondary analysis of students' engagement with in-person appointment services at a university-wide career center was performed over the course of one academic year. Data were then analyzed using a series of bivariate and multivariate analyses.

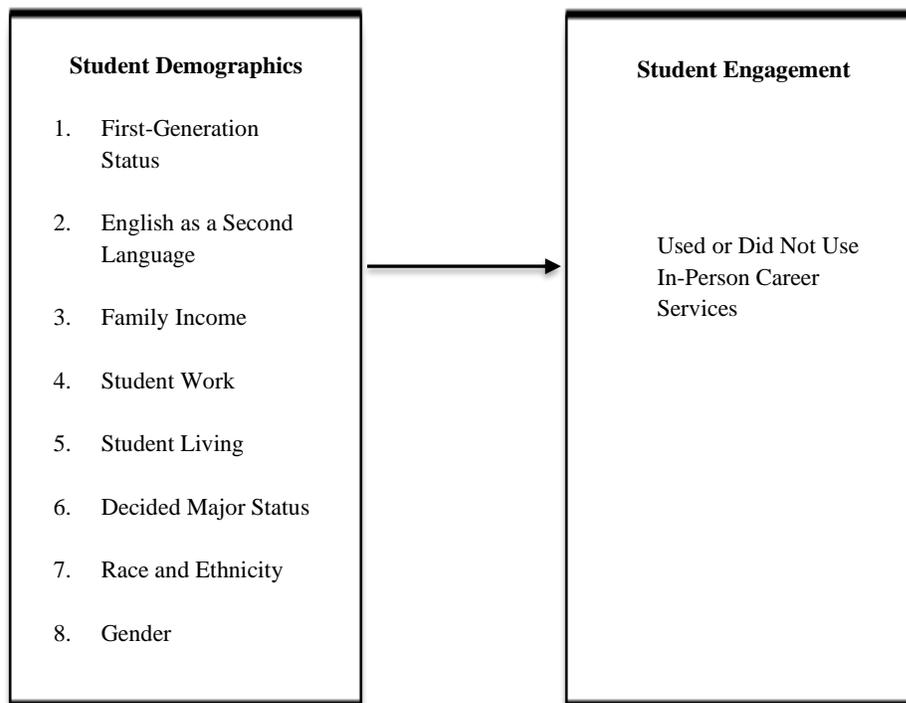
The following chapter provides a detailed description of the methods and strategies taken to perform the study. The chapter begins with a review of the conceptual model, research question, and research hypothesis which drove the direction of the study. Then, it shifts to an explanation of the sample and setting, instrumentation, and key variables that were chosen to represent the study. The chapter concludes with an account of the data collection, data analysis, and research considerations made to ensure the integrity of the study.

Conceptual Model

The theoretical concepts of social capital and intersectionality reviewed in Chapter 2 are critical to understanding the complex nature of students' engagement with career services. Social capital is the outcome of successful exchanges between students and institutional agents (Stanton-Salazar, 2011). It involves investment, on the part of the student, in social relations with an expected return (Lin, 2001). The academic literature has repeatedly shown that first-generation college students have trouble engaging with

institutional agents and resources to extract social capital (Moschetti & Hudley, 2015; Parks-Yancy, 2012; Pascerella et al., 2004; Yee, 2016). Recent scholarship has also acknowledged that the effect of first-generation status on student success does not operate independently (Beattie, 2018; Nguyen & Nguyen, 2018). Several other demographic factors are often present in the disparate educational outcomes between first-generation and non-first-generation college students. Recognizing these realities, a conceptual model was developed for this study to illustrate how social capital theory and intersectionality converge to explain students' engagement with career services. This model can be viewed in Figure 3.1.

Figure 3.1: Interaction of Student Demographics and Student Engagement



This model shows how the intersectional nature of students' demographic factors influence their ability to access social capital resources from career services. In this

study, the effect of first-generation status on students' use of career center appointments was analyzed alongside other at-risk demographic factors known to influence student engagement. These risk factors, which were described in Chapter 2, will be further explained and operationalized. As it is proposed through this conceptual model, students' use of career services is directly impacted by the complex array of factors that make up their individual identities. This framework is important to grasp when thinking how students engage with career services and what motivates these interactions.

Research Question

Stemming from this conceptual model, the following research question was established to guide the study:

- After controlling for other salient demographic variables, does first-generation status explain the difference in students' use of in-person services at a university career center?

Research Hypothesis

The general consensus in the academic literature is that first-generation college students have lower levels of student engagement than non-first-generation college students (Kim & Sax, 2009; Moschetti & Hudley, 2015; Parks-Yancy, 2012; Pascarella et al., 2004; Stebleton, Soria, & Huesman, 2014; Yee, 2016). Considering this empirical support, the following hypothesis was made:

- First-generation status will have a statistically significant effect on students' use of in-person services when compared to other salient demographic variables.

Sample and Setting

This study took place at a large, public research university in the mid-Atlantic region. The estimated student population for this university was approximately 29,732 undergraduate students and 10,508 graduate students. The number of females at the institution was estimated at 20,511 matriculated students in comparison to 18,246 male matriculated students. The total enrollment was roughly 53.8 percent White, 11.7 percent African American, 6.3 percent Hispanic, 11.3 percent Asian, 0.1 percent American Indian/Alaska Native, 0.1 percent Pacific Islander, 8.5 percent International, and 8.2 percent Other/Two or More Races (University Fact Book, 2017).

This research study focused exclusively on students completing their first year of college. The number of first-year students at this institution during the study was approximately 5,030 students. There were several reasons this specific student population was chosen. Experiences in the first year of college set the tone for the totality of students' college experience (Nora, Barlow, & Crisp, 2005). First-generation college students are significantly more likely to leave college before their second year than their peers (Choy, 2001; Ishitani, 2006). Nevertheless, previous scholarship has found a positive relationship between student engagement and persistence into the second year of college (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008).

Additionally, research has shown that career self-efficacy enhanced by involvement in career-related activities can increase student persistence (Kezar, Hypolite, & Kitchen, 2020). Assessing first-generation college students in their first year may provide additional insight into how persistence is aided by involvement in career services. Furthermore, engagement with first- and second-year students remains a

priority of many career centers. In a study by the National Association of Colleges and Employers (2019), graduating seniors who had paid internships were more likely to have used career center services as first-year students. Thus, evaluating first-year students' use of career services may help to determine how this engagement influences post-college career outcomes.

The scope of this study assessed how students engaged with the university-wide career services center at the selected institution. The university career center reports to the office of undergraduate studies, a division within the provost's portfolio that works to support the overall student academic experience. This centralized office is responsible for providing career services to the entire university community. The unit has approximately 17 staff with specific teams to handle employer relations and student professional development in the university's schools and colleges. Students and alumni can utilize a full range of services at this career center including resume/cover letter writing, career exploration, job and internship strategies, and graduate school preparation.

The selected institution has 12 schools and colleges in which undergraduate students can be enrolled. Specifically, seven of those 12 schools and colleges offer some level of additional career support services to undergraduate students. While these auxiliary supports should be noted, the operations of these offices were not included in the study. The university career center plays a central role in the orientation of new students at the university as well as in assisting the college-specific career offices with programming. Additionally, the level of support across the college-specific offices is varied and would be difficult to measure consistently in one single study. Given the

prominence of the university career center's operations, it was deemed best to focus exclusively on its service delivery.

Instrumentation

The central aim of this study was to evaluate the effects of demographic variables on students' use of career services appointments. Two specific instruments were employed for this analysis.

New Student Questionnaire

The New Student Questionnaire (NSQ) is an 83-item online survey administered to all matriculated undergraduate freshmen and transfer students as part of the new student orientation process (see Appendix A). It is a part of the university's risk model used to determine what students are at risk for retention. It is also used to monitor trends in student characteristics, attitudes, self-confidence, motivations, and aspirations as students start at the university.

There are multiple sections in the NSQ survey. The type of questions also ranges from Yes/No responses to a Likert scale, where respondents can rank their level of agreement with certain statements using 1 – 4 or 1 – 5. However, questions 1-21 were of particular interest to the current study. These questions provide key demographic information such as students' family income, language ability, residence, and level of parental education.

Handshake Platform

Student use of the university career services center was measured using Handshake, an online job and internship platform used by the center. Handshake is an early career community which connects students to over 500,000 employers and 100

percent of Fortune 500 companies (Students). Over 1,000 colleges and universities use this career management tool as a central resource to help their students find employment (Career Centers). Handshake prioritizes accessibility for students providing mobile capabilities that allow users to navigate the platform by phone or computer.

At the selected institution, Handshake records all pertinent student ID information and is used to track student attendance of appointments and events associated with the university career services center. For the purposes of this study, only students' use of appointments was tracked. A description of students' engagement with in-person services according to appointment type is shown in Chapter 4.

Key Variables

Independent Variables

This study sought to evaluate the effect of several demographic factors as predictor variables of students' engagement with the career center. The selection of these variables was influenced by the questions presented in the NSQ as well as the review of the literature recorded in Chapter 2. The variables used are described below. Table 3.1, displayed at the end of this section, shows all the independent variables and their effect on the dependent variable.

First-Generation Status

First-generation status was determined as students with whom neither parent had completed a four-year college degree (Stebbleton, Soria, & Huesman, 2014). This definition of first-generation status is consistent with the federal definition cited by TRIO programs (Ward, Siegel, & Davenport, 2012). Non-first-generation status was determined as students with whom at least one parent had completed a four-year college

degree. Questions 12 and 13 of the NSQ were combined to develop a measure for first-generation status. The response items in questions 12 and 13 were as follows: a) Did not graduate from high school, b) Graduated from high school, c) Some college education, d) Graduated from college (a bachelor's degree), and e) Postgraduate or professional degree.

Much debate has hovered around the appropriate definition of first-generation status (Stebbleton, Soria, & Huesman, 2014; Tate et al., 2015; Ward, Siegel, & Davenport, 2012). As a result, an alternative definition and variable for first-generation status were created for this study. This variable defined as parental education, evaluated the difference among the sample for students with whom neither parent, one parent, nor both parents had some college experience.

Seven other demographic variables were developed from questions in the NSQ survey and the selected institution's admissions data.

English as a Second Language

Question 1 in the survey asks students if English is their native language. Response options for this question are either “yes” or “no.” This question was recoded to assess the effect of English as a second language on student engagement. English as a second language was included in the analysis because of the specific barrier it places on some students when entering the university setting (Núñez, Rios-Aguilar, Kanno, & Flores, 2016).

Family Income

Question 6 in the survey asks students to identify their best estimate of their family income. Response options for this question were as follows: a) Less than \$20,000, b) \$20,000 to \$39,999, c) \$40,000 to \$59,999, d) \$60,000 to \$79,999, e) \$80,000 to

\$99,999, f) \$100,000 to \$124,999, g) \$125,000 to \$149,999, and h) \$150,000+. This question was recoded to assess the effect of family income on student engagement. For regression analyses, options a and b were combined to qualify as a measure of low-income status. Previous scholarship has identified low-income status as family income below \$39,000 (Moschetti & Hudley, 2015).

Student Work

Question 2 in the survey asks students how many hours they plan to work per week while in school. Response options for this question were as follows: a) none, b) 1 to 15 hours, c) 16 to 20 hours, d) 21 to 25 hours, and e) more than 25 hours per week. This question was recoded to assess the effect of students' level of work on student engagement. For regression analyses, option e (more than 25 hours a week) was used to demonstrate excessive workload. This measure was chosen based on findings in the academic literature (Lang, 2012; Pike, Kuh, & Massa-McKinley, 2008).

Student Living

Question 3 in the survey asks students where they plan to live during the first semester at the institution. Response options for this question were as follows: a) University-owned housing (including residence halls), b) Home of parents/relatives, c) Your own home or apartment, d) With other family members, and e) Other. This question was recoded to assess the effect of student living on student engagement. For regression analyses, options b, c, d, and e were combined to serve as student living off campus. Option a was used to demonstrate student living on campus. The effect of student living was valuable to include as several studies have shown living on campus

and away from family to have a positive influence on retention and persistence (D'Amico & Dika, 2013; Garza & Fullerton, 2018).

Decided Major Status

Question 19 in the survey asks students if they have decided on an academic major. Response options were either “yes” or “no” for decided major. This question was recoded to assess the effect of major status on student engagement. This variable was also included in previous research on retention into the second year of college (D'Amico & Dika, 2013).

Race and Ethnicity

Students' self-report of their racial and ethnic background was included in the dataset. Race and ethnicity are known to have an effect on issues of college success (D'Amico & Dika, 2013). While information about race and ethnicity are not included in the NSQ survey, student responses to this variable were included in the dataset received from the institutional research office upon the lead researcher's request.

Response options for race and ethnicity were as follows: African American, American Indian/Alaska Native, Asian, Hispanic/Latino, International, Two or more races, Pacific Islander, Unknown, and White, non-Hispanic. These responses were recoded to assess the effect of race and ethnicity on student engagement. For all analyses, Pacific Islander was combined with Asian. For regression analyses, African American, Asian, and Latino American were combined to demonstrate minority status.

Gender

Students' self-report of gender was also included in the dataset. Scholarship has continued to acknowledge that first-generation college students tend to be female (Engle

& Tinto, 2008; Spiegler & Bednarek, 2013). Additionally, researchers have advocated for greater attention to the career development experiences of first-generation, African American collegians (Owens, Lacey, Rawls, & Holbert-Quince, 2010). Previous research on the first-year experiences of first-generation college students have also included gender (D'Amico & Dika, 2013). Such factors made it important to include this variable in the dataset.

Like the information for race and ethnicity, students' gender was not included in the NSQ survey data. Nevertheless, institutional research was able to provide this information to be merged with the final data. Students' responses to gender were either "female" or "male." The final dataset included all student responses for the 2018-2019 cohort. For regression analyses, the variable was recoded as "female" to understand the effect of gender on use of career services.

Dependent Variable

Student engagement can be defined as "the quality of effort students themselves devote to educationally purposeful activities" (Astin, 1993; Pascarella & Terenzini, 1991, as cited in Hu & Kuh, 2002, p. 555). For this study, student engagement related to career services was identified as participation in in-person counseling services at the university career center.

Student Appointment Status

The outcome variable for this study was students' appointment status. Students were evaluated on whether they completed, no showed, or cancelled appointments with career services professionals in the Handshake system. It should be stated that the operationalization of the dependent variable was modified based on the statistical tests.

For the Chi-Square tests and ANOVA, the dependent variable was comprised of three parts: “Completed,” “No Show,” or “Cancelled” appointments. For the logistic regression, the dependent variable was comprised of two parts: “Completed Appointment” or “No Show/Cancelled Appointment.”

To provide further clarity, a table was developed to display the independent variables within the study and their effect on the dependent variable. To view the full range of variables used in the study, see Table 3.1.

Data Collection

Student appointment data in Handshake were collected for the 2018-2019 academic year. Data were given to institutional research at the selected institution to be merged with students’ responses to the NSQ for the fall 2018 cohort. These data were merged by student ID information and then de-identified. The merged dataset was imported into Statistical Package for the Social Sciences (SPSS) PC-Windows version 26.0. Key demographic variables were then recoded in SPSS.

Data Analysis

This study used various statistical techniques to address the research question. These analyses were Chi-Square, ANOVA, and Regression. SPSS was used to conduct the analyses. A series of Chi-Square tests were used to conduct an analysis of student appointment status with all the key demographic variables. A two-way ANOVA was used to perform an in-depth analysis of the effect of first-generation status and student appointment status with any significant demographic variables. Lastly, a logistic regression was used to assess the effect of all demographic variables on completed student appointments.

Table 3.1			
<i>Independent Variables and Significance with Dependent Variable</i>			
Independent Variable	Definition with Chi-Square and ANOVA	Definition with Logistic Regression	Significance with Dependent Variable
Student Work	1 = None 2 = 1 to 15 hours 3 = 16 to 20 hours 4 = 21 to 25 hours 5 = More than 25 hours	1.00 = More than 25 hours .00 = 0 to 25 hours	Significant with Chi-Square
Race and Ethnicity	1 = African American 2 = Asian 3 = Hispanic/Latino 4 = International 5 = Two or more races 6 = Pacific Islander 7 = Unknown 8 = White, non-Hispanic	1.00 = Minority Status .00 = Non-Minority Status	No Significance
Student Living	1 = University-owned housing 2 = Home of parents/relatives 3 = Your own home or apartment 4 = With other family members 5 = Other	1.00 = Student Living Off Campus .00 = Student Living On Campus	No Significance
Family Income	1 = Less than \$20,000 2 = \$20,000 to \$39,999 3 = \$40,000 to \$59,999 4 = \$60,000 to \$79,999 5 = \$80,000 to \$99,999 6 = \$100,000 to \$124,999 7 = \$125,000 to \$149,999 8 = \$150,000	1.00 = 39,000 or less .00 = 40,000 or more	No Significance
First Generation	1 = First Generation 2 = Continuing Generation	1.00 = First Generation .00 = Continuing Generation	No Significance
Parental Education	1 = Neither Parent with Some College 2 = One Parent with Some College 3 = Both Parents with Some College	N/A	No Significance
Decided Major Status	1 = Decided Major 2 = Undecided Major	1.00 = Undecided Major Status .00 = Decided Major Status	No Significance
English as a Second Language	1 = Native English Speaker 2 = Non-Native English Speaker	1.00 = Non-Native English Speaker .00 = Native English Speaker	No Significance

Table 3.1			
<i>(continued)</i>			
Independent Variable	Definition with Chi-Square and ANOVA	Definition with Logistic Regression	Significance with Dependent Variable
Gender	1 = Female 2 = Male	1.00 = Female .00 = Male	Significance with Chi-Square and Logistic Regression
Dependent Variable	Definition with Chi-Square and ANOVA	Definition with Logistic Regression	N/A
Appointment Status	1 = Cancelled 2 = Completed 3 = No Show	1.00 = Completed Appointment .00 = No Show/Cancelled Appointment	N/A

Key Ethical and Research Considerations

Several actions were taken to maintain the ethical integrity of this study. Before beginning data collection, the institutional review board at the selected institution was contacted about the nature of the study. A formal letter was also submitted from university leadership within the provost's office at the institution acknowledging that the results of the research study would benefit the unique interests of the institution. It was then determined by the institutional review board that the study did not meet the federal regulatory definition for human subjects' research and was therefore exempt from needing additional review and approval. A copy of the approval email from the institutional review board can be seen in Appendix B.

The lead researcher collaborated with institutional research at the university to ensure that all student information was de-identified. Student usage of the career center was collected secondarily, also preventing the need for consent from human subjects. The lead researcher's dual role as an employee within the university career center gave him direct access to the student activity records. The lead researcher's role also provided additional knowledge of the student population's matriculation process and the center's

specific operations at the university. It should also be noted that the lead researcher does not identify as having been a first-generation college student.

To provide a level of clarity to the data, all duplicate student cases were removed from the final dataset. Therefore, the data in the study reflects the unique number of student appointments. Additionally, frequency distributions were run on all variables to detect any missing data. Several variables including family income, student living, decided major status, parental education, and student work had missing data. However, upon further review, it was determined that the number of missing entries for these variables was not a detriment to the study. A table of the frequency distributions and missing data for all variables can be seen in Appendix C.

The study employed an intersectional analytical approach to ensure external validity. Previous research has shown that many times first-generation status overlaps with other marginalized identities and at-risk factors (Engle & Tinto, 2008; Nguyen & Nguyen, 2018). McCall (2005) has suggested intercategorical complexity as an investigative approach that allows the researcher to explore the collective impact of several demographic categories on an individual or group. This analytical strategy was used to further the study at hand.

Finally, several statistical procedures were chosen to maintain the integrity of the study. Chi-Square analysis is an effective statistical procedure when dealing with nominal data (Mertens, 2015; Urdan, 2016). A majority of the variables in the study were categorical in nature and would be best evaluated using nonparametric statistics. Therefore, a series of initial Chi-Square tests were performed on all demographic variables with student appointment usage. Multiple regression is a useful statistical test

when evaluating the relationship between several independent variables on an outcome variable (Creswell & Creswell, 2017). Given the capabilities of this type of test, a logistic regression was used to assess the relationship of first-generation status and the other selected variables on students' use of in-person career services. This type of assessment matched the research question which sought to answer how much first-generation status affected student appointment usage in relation to other key variables.

Summary

Several of the methodological choices for this study are distinctive and contribute to the academic literature. Few studies on first-generation college students and career services assess this population from a quantitative lens (Parks-Yancy, 2012; Tate et al., 2015). Furthermore, there are also limited studies that acknowledge intersectionality within the first-generation student population and evaluate first-generation status alongside other at-risk variables. Utilizing the NSQ survey and regression analyses to address the engagement of first-generation college students in career services represents a thorough research approach. Results of this methodology for this specific study are discussed in the next chapter.

CHAPTER 4

RESULTS

Introduction

This study was designed to answer the following research question: *After controlling for other salient demographic variables, does first-generation status explain the difference in students' use of in-person services at a university career center?* This research question was analyzed in three distinct parts. First, Chi-Square tests were used to evaluate the association of each demographic variable with use of appointments. Next, ANOVA tests were then used to assess the interaction of first-generation status and appointment use with any of the other significant demographic variables. Lastly, logistic regression was used to evaluate which demographic variable had the greatest effect on use of in-person career services. Additional analyses were also conducted using an alternative definition of first-generation status to assess potential differences in operationalization. This chapter will review the execution of all analyses performed beginning first with a description of the sample.

Sample Demographics

There were 411 first-year students who scheduled individual career appointments at the university career center from 2018 to 2019. This sample emerged from a population of approximately 5,030 first-year students at the institution. These students requested a total of 601 appointments with several students scheduling multiple sessions.

Slightly more men (n=217) than women (n=194) scheduled appointments with career services. This result was somewhat unusual given that the data revealed that more

women than men attended the selected institution for that year. However, as it will be shown in the Chi-Square tests, a higher percentage of women completed appointments in comparison to men. These results echo previous studies which show that women have more favorable perceptions toward career counseling (Di Fabio & Bernaud, 2008; Rochlen, Mohr, & Hargrove, 1999). Table 4.1 shows the frequency of scheduled appointments according to gender.

Table 4.1		
<i>Sample Frequency Distribution of Gender</i>		
Gender	Frequency	Percent
Female	194	47.2
Male	217	52.8
Total	411	100.0

As to be expected, more non-first-generation college students (n=313) than first-generation college students (n=98) scheduled appointments. This distribution was understandable as the share of non-first-generation students attending college is considerably larger than first-generation students (Eagan et al., 2017). Additionally, records from the selected institution showed that the first-year cohort had approximately 3,539 non-first-generation college students and 1,491 first-generation college students. Table 4.2 displays the frequency of scheduled appointments according to generational status.

Table 4.2		
<i>Sample Frequency Distribution of Generational Status</i>		
Generational Status	Frequency	Percent
First-Generation	98	23.8
Continuing Generation	313	76.2
Total	411	100.0

In terms of race and ethnicity, White students (n=216) were the most likely to schedule appointments followed by Asian students (n=71) and then other minority groups. These demographics also reflect previous research which showed that Asian students used career services more frequently than other minority groups (Carter et al., 2003). Table 4.3 displays the frequency of scheduled appointments according to race and ethnicity.

Table 4.3		
<i>Sample Frequency Distribution of Race and Ethnicity</i>		
Race and Ethnicity	Frequency	Percent
African American	55	13.4
Asian	71	17.3
Hispanic	34	8.3
International	15	3.6
Two or More Races	14	3.4
Pacific Islander	1	0.2
Unknown	5	1.2
White, non-Hispanic	216	52.6
Total	411	100.0

Students from the school of science and technology (n=85) closely followed by the liberal arts college (n=84) were most likely to schedule appointments. These results also make sense given that majors in the humanities and social sciences do not have clear pathways to careers and students often seek additional guidance in determining their vocational goals. Somewhat conversely, in the science and technology school, programs like computer science have direct career paths and require internships to be competitive for employment. The high demand and competitiveness of this industry may have caused an increase in this school's use of career services. Table 4.4 provides the frequency of appointments scheduled according to school or college.

Table 4.4		
<i>Unique Appointments by School/College</i>		
School/College	Frequency	Percent
Music School	9	2.2
Education School	6	1.5
Engineering School	26	6.3
Liberal Arts School	84	20.4
Public Health School	35	8.5
Science and Technology School	85	20.7
Business School	49	11.9
Communication School	31	7.5
Social Work School	1	0.2
Tourism School	10	2.4
Theater and Film School	20	4.9
Art School	14	3.4
University College	39	9.5
Blank	2	0.5
Total	411	100.0

Looking at the requested appointment types, most students sought out the career center for resume and cover letter support. Overall, students were also interested in exploring careers and learning about applying to jobs and internships. Few students requested support with graduate school as this population was just beginning their academic programs. Table 4.5 shows students' appointment usage according to appointment type.

Chi-Square Tests

To answer the research question, a series of Chi-Square tests were performed to assess the statistical independence between student appointment status (defined as Completed, Cancelled, and No Show) and the selected demographic variables. Several of the demographic variables contained nominal-level data and Chi-Square was determined as the most appropriate test to undertake this analysis (Mertens, 2015). Statistical

significance was set at the 0.05 level. Effect size was set according to standards for Cramer's V (Liebetrau, 1983).

Appointment Type	Unique Appointments	Percent
Career Assessment Introduction	43	10.5
Exploring Career Paths	48	11.7
Focus-2 Review	11	2.7
Graduate School Exploration	4	1.0
Handshake Guidance	1	0.2
Interview Preparation	2	0.5
Job/Internship Search	45	10.9
LinkedIn Review	4	1.0
Mock Interview	11	2.7
Networking Skills/Strategy	2	0.5
Personal Statement/Graduate School Application Review	1	0.2
Resume/CV/Cover Letter Review	133	32.4
Express Appointments – Exploring Career Paths	36	8.8
Express Appointments – Handshake Guidance	3	0.7
Express Appointments – Resume and Cover Letter Review	66	16.1
Strong Interest Assessment	1	0.2
Total	411	100.0

The demographic variables included were first-generation status, gender, English as a second language, number of student work hours, race and ethnicity, student living, family income, and decided major status. From the demographic variables selected, only student work and gender were found to have a statistically significant association with appointment use. It should be noted that this difference was found only when evaluating the unique number of student appointments. Statistical significance was not found for first-generation status. Tables 4.6 and 4.7 show the significant findings for student work

and gender. Chi-Square tests for all other demographic factors that did not have significance can be found in Appendix D.

Table 4.6						
<i>Frequency of Appointment Status and Student Work</i>						
Appointment Status	None	1 to 15 hours	16 to 20 hours	21 to 25 hours	More than 25 hours	Total
Cancelled	12 (25.5%)	22 (46.8%)	11 (23.4%)	1 (2.1%)	1 (2.1%)	47
Completed	66 (20.1%)	172 (52.3%)	68 (20.1%)	17 (5.2%)	6 (1.8%)	329
No Show	2 (7.2%)	11 (42.3%)	9 (34.6%)	1 (3.8%)	3 (11.5%)	26
Total	80	205	88	19	10	402

Chi Square = 15.569, p = .049, Cramer's V = .016

Table 4.7			
<i>Frequency of Appointment Status and Gender</i>			
Appointment Status	Female	Male	Total
Cancelled	10 (5.2%)	38 (17.5%)	48
Completed	168 (86.6%)	167 (77.0%)	335
No Show	16 (8.2%)	12 (5.5%)	28
Total	194	217	411

Chi Square = 15.76, p = .000, Cramer's V = .195

The results of the Chi-Square tests for student work and gender reveal some insightful points about the sample. As evidenced by Table 4.6, a statistical difference was found across the number of students who completed appointments based on student work. Looking at the completed appointments in Table 4.6, 92.5 percent of the completed appointments were by students who worked 20 hours or less. This difference in engagement by student work is consistent with the academic literature which states

students who work more than 20 hours are less engaged with the university (Pike, Kuh, & Massa-McKinley, 2008).

There was also a considerable difference in appointment usage among females and males. Table 4.7 shows that males were more likely to cancel or no show for appointments than females. Additionally, females completed a higher percentage of appointments than males. These findings support previous literature on the differences in perceptions of career counseling according to gender where females appear more favorable to help-seeking than males (Di Fabio & Bernaud, 2008; Rochlen, Mohr, & Hargrove, 1999).

Analysis of Variance

Findings from the initial Chi-Square tests showed that there was a statistically significant difference in the number of students who used services and worked less than 20 hours. The tests also revealed several differences in students' engagement according to gender. Males cancelled and no showed for more appointments than females. Females also completed a higher percentage of appointments than males. Given that considerable work demands and being female have both been associated with first-generation status (Engle & Tinto, 2008; Pascarella et al., 2004), the two variables were combined in a two-way ANOVA. The interaction between hours worked and gender was not significant. As an attempt to further explore the data, hours worked was used as the dependent variable with first-generation and appointment status as the independent variable. These results are presented in Table 4.8 with a graph of the data presented in Figure 4.1.

As shown in Figure 4.1, first-generation college students worked more hours per week and students who missed appointments worked more hours per week. This finding

supports previous research marking the effects of student work on student engagement (Pascarella et al., 2004; Pike, Kuh, & Massa-McKinley, 2008). First-generation college students have also been found to work considerably more hours while completing school than non-first-generation college students (Pascarella et al., 2004). The results of these analyses suggest that the effect of working could have a greater influence on first-generation college students' use of in-person services.

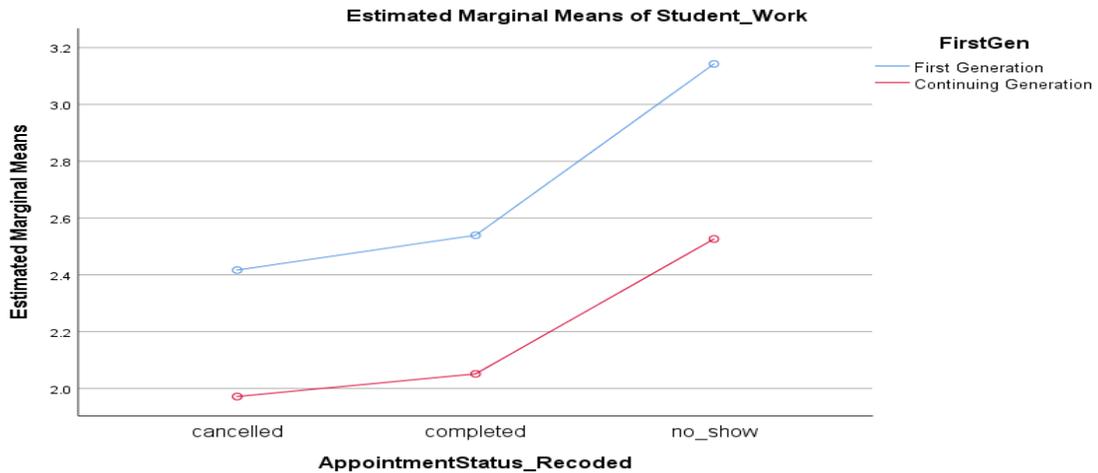
Table 4.8

First-Generation Status and Appointment Status on Student Work

Variables	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Appointment Status	6.126	2	3.063	4.116	.017	.020
First Generation	7.402	1	7.402	9.947	.002	.025
First Generation * Appointment Status	.100	2	.050	.067	.935	.000

R Squared = 0.78 (Adjusted R Squared = .066)

Figure 4.1: First-Generation Status and Appointment Status on Student Work



The ANOVA tests performed in the study were completed to provide a more nuanced understanding of how the significant predictor variables interacted with first-generation status. To conduct these tests accurately, student work had to be used as the dependent variable. While this method worked to achieve a more thorough analysis of the data, the ANOVA tests should be viewed with caution. These tests were performed as a supplemental form of analysis, and the results of the Chi-Square tests and logistic regression hold greater weight in the validity of the findings.

Logistic Regression

The intention of the original research question was to find out the level to which first-generation status affected students' use of appointment services in comparison to other salient demographic factors. Multiple regression is a useful statistical procedure when evaluating the relationship between several independent variables on an outcome variable (Creswell & Creswell, 2017). Therefore, a binary logistic regression was conducted with completed career coaching appointments as the outcome variable. Specifically, "No Show" and "Cancelled" were combined into one group since both reflect a lower level of commitment. The predictor variables were first-generation status, being female, English as a second language, student working more than 25 hours a week, minority student status, off-campus living, low family income, and undecided student major status. Results showed that being female was the most significant factor in completing an appointment with a statistical significance of 0.01. Working more than 25 hours a week had some significance, but this value was found only at the 0.1 level. Being a first-generation college student was not significant. Results of the logistic regression can be seen in Table 4.9.

The findings of the logistic regression disprove the research hypothesis that first-generation status would be the most significant demographic factor influencing students' engagement of career services. Rather, the results point to other factors related to first-generation status having the greatest effect in engagement. This evidence supports the value of an intersectional approach which assesses the complexities and interrelationships of a student population (Nguyen & Nguyen, 2018). Without this sophisticated level of analysis, the key predicting factors of engagement would not be distinguishable.

Predictor Variables	B	S.E.	Wald	df	Sig.	Exp(B)
First-Generation Status (Parents with some college or less)	.109	.331	.109	1	.742	1.115
Excessive Student Work (More than 25 hours)	-1.172	.695	2.842	1	.092	.310
English as a Second Language	-.525	.532	.974	1	.324	1.690
Low Income Status (\$40,000)	-.338	.363	.869	1	.351	.713
Minority Student Status	-.178	.279	.405	1	.524	.837
Undecided Student Major	-.044	.331	.017	1	.895	.957
Student Living Off Campus	-.263	.372	.499	1	.480	.769
Female	.653	.271	5.801	1	.016	1.921
Constant	1.364	.222	37.677	1	.000	3.910

Alternative Definitions of First-Generation Status

An additional consideration from this study was to investigate the potential difference in results based on the definition used for first-generation status. Previous research has shown that results can differ based on the definition that is used for first-generation status (Toutkoushian, Stollberg, & Slaton, 2018). Therefore, an alternative definition of first-generation status was created for the study. This variable included

three levels: 1) both parents with some college, 2) one parent with some college, and 3) neither parent with some college education. All of the analyses presented above were conducted again using this alternative definition of first-generation status. All of these analyses were identical to the original analyses. As such, for this sample, both definitions produced the same set of results. These findings indicate that being a first-generation college student did not affect the use of the career center with this sample. The frequency distribution and Chi-Square test results for parental education and appointment status can be found in Appendix B with the other demographic factors that did not show significance.

Summary

The results of this study present an intriguing narrative about the nature of first-generation status. The series of Chi-Square tests revealed that first-generation status along with several other at-risk demographic variables supported in the literature did not have a significant effect on students' use of in-person career services. Only the number of hours worked and gender significantly influenced the use of services. The two-way ANOVA test supported that first-generation college students who worked showed up for less appointments than non-first-generation college students. The logistic regression confirmed the Chi-Square tests that gender and more specifically being female had the greatest effect on whether students completed appointments. And finally, the additional analyses performed on the alternative definition of first-generation status displayed that neither the broad traditional definition nor the more stringent alternative definition had a significant effect on students' use of services.

The use of multiple statistical procedures strengthened the findings of this study. It should be noted that the Chi-Square tests and logistic regression revealed almost identical results. The Chi-square tests showed that gender and student work had a significant relationship with appointment status. The logistic regression supported being female as the greatest predicting factor of using services. This similarity in findings across statistical procedures enhances the accuracy of the study's results.

These findings have several implications for the literature on first-generation college students. First, these results support the value of using an intersectionality perspective when researching first-generation college students (Beattie, 2018; Nguyen & Nguyen, 2018). There are often other at-risk variables that can mediate or moderate the effect of first-generation status in research studies. Previous research on first-generation college students have sometimes conflated first-generation status with other aspects of identity resulting in broad interpretations of student experiences that are more nuanced (Nguyen & Nguyen, 2018). Second, these data bring into question the historical trend in the academic literature that presents first-generation college students as less engaged with their institutions. As more recent studies on the engagement of first-generation college students have shown (Dong, 2019), the level of engagement from these students may be changing. These implications and others will be further explored in Chapter 5.

CHAPTER 5

DISCUSSION, IMPLICATIONS, AND CONCLUSION

Introduction

Over the last few decades, first-generation college students have garnered much attention in the higher education literature and for obvious reasons. These students constitute one-third of students attending college (Cataldi, Bennett, & Chen, 2018; Skomsvold, 2015), but are more likely to leave college without a degree than students whose parents have completed a bachelor's degree (Choy, 2001). Studies on first-generation college students have covered a variety of outcomes including college choice decisions and aspirations, academic achievement, and persistence and retention (Padgett, Johnson, & Pascarella, 2012). However, in the realm of student engagement, limited research has focused on the career development experiences of first-generation college students (Tate et al., 2015). Research on this aspect of students' engagement is critical as career services personnel play a primary role in educating and connecting students to employment after college.

Even within the literature on career services and first-generation college students, there are significant gaps in the effectiveness of the research. Most studies are qualitative in nature and use small sample sizes (Parks-Yancy, 2012; Tate et al., 2015). Some of these studies also conflate first-generation status with other marginalized identities such as minority status (Parks-Yancy, 2012). These issues within the career development literature promote the need for research that utilizes alternative methodological strategies.

This study addressed several of the gaps that persist in the academic literature on first-generation college students and career services engagement. The following discusses the key findings, implications for research and practice, and limitations of the study.

Discussion of Findings

This study sought to explore the effect of first-generation status on engagement with in-person career center appointment services. It was proposed that first-generation status would have a significant effect on students' use of services, even after controlling for other at-risk demographic variables. This hypothesis was built on the previous academic literature regarding first-generation college students and student engagement (Parks-Yancy, 2012; Pascerella et al., 2004; Pike & Kuh, 2005; Stebleton, Soria, & Huesman, 2014). Nevertheless, first-generation status was not found to have a statistically significant effect on students' use of services. However, other key variables were found to influence students' engagement. These findings have implications worth discussing.

The Effect of Student Work and Gender on Student Engagement

The results from the Chi-Square tests showed that both student work and gender had a significant effect on use of appointment services. While on the surface these variables may seem unrelated to the topic at hand, both factors have been associated with first-generation status in the academic literature. First-generation college students have been found to work significantly more than non-first-generation college students (Pascerella et al., 2004). First-generation college students also have been identified as more likely to be female (Engle & Tinto, 2008). These previous studies demonstrate an

interesting connection between the current findings and the target population. However, these findings also reveal that sometimes the distinguishing variable in engagement is a related factor and not first-generation status itself.

Scholars in advocacy of an intersectional approach to researching first-generation college students have warned about the dangers of conflating first-generation status with other closely related variables (Nguyen & Nguyen, 2018). Failing to account for the overlap of demographic factors can lead to invalid conclusions. This study showed that gender and work demands, two factors often related to social inequity, were more likely to influence student engagement with the career center. These results support using intersectionality as an analytical strategy when researching first-generation college students.

First-Generation Status, Student Work, and Appointment Usage

After noticing the relationship between student work, gender, and first-generation status in the literature, ANOVA tests were conducted to investigate interactions in the data. While no interactions were found when researching gender, the data revealed that first-generation college students who worked more were also more likely to no-show for appointments. This finding points to the possibility that being a first-generation college student and working a number of hours could influence students to participate less in career services. Such a result is consistent with previous research identifying first-generation status and student work as detractors from engagement with college (Pascarella et al., 2004; Pike, Kuh, & Massa-McKinley, 2008). This finding also validates the need for alternative strategies and programming to assist students who cannot visit university career offices because of work demands.

The Significance of Gender and Male Student Engagement

The logistic regression showed that being female was the most significant predictor of use of in-person career services. This finding refuted the research hypothesis that first-generation status would have the greatest effect among demographic factors. However, this result supports a conclusion that has been acknowledged for years by psychologists looking at help-seeking behavior: women have more favorable perceptions of career counseling than men (Di Fabio & Bernaud, 2008; Rochlen, Mohr, & Hargrove, 1999). Findings from the study showed that women completed a higher percentage of appointments and that males were more likely to cancel or no show for coaching sessions. These results spark questions about males' engagement with career services in the first year of college. Other scholars have also advocated for more attention to African American, male first-generation college students in career counseling (Owens, Lacey, Rawls, Holbert-Quince, 2010). The differences in male and female engagement found in this study might suggest further investigation of male student engagement with career services.

No Difference Across Definitions of First-Generation Status

Furthermore, an additional variable for first-generation status was constructed for the study. This variable was meant to measure the effect of being a college student with 1) two parents with some college, 2) one parent with some college, or 3) neither parent with some college. This variable was constructed to provide a more nuanced understanding of the influence of parental education (Ward, Siegel, & Davenport, 2012). However, even with this more stringent operationalization, no statistical differences were found among students for first-generation status. These results make a strong case that

first-generation status was not a determining factor in the career services engagement of these first-year students. These data also run contrary to previous research which suggests that first-generation status is a significant factor affecting student engagement (Pascarella et al., 2004; Pike & Kuh, 2005; Stebleton, Soria, & Huesman, 2014).

The Nature of First-Year Students' Engagement with Career Services

The results of this study also provided some insight into the overall engagement of first-year students with career services. According to the National Association of Colleges and Employers, the engagement of first-year students with career services is relatively similar to that of seniors (2018). Students in this study mainly sought out the career center for resume and cover letter support, career exploration, and job and internship search. These appointment types appear consistent with the developmental needs of this student population. First-year students are likely trying to clarify their fields of study and apply for part-time work and summer internships. The ability of career centers to offer these specific services helps students early in their academic careers to gain self-awareness as emerging professionals and discern their career goals.

It was also observed that students in the liberal arts and life sciences were the most frequent users of the career center. It is understandable that liberal arts students might have greater need for career services as most of their majors do not have clearly defined career paths. Both the demand and competitive nature of internships within computer science and technology may have also influenced the frequent usage from students in the science and technology school.

While the appointment usage of these students may be influenced by the specific institution, thought leaders in higher education have also acknowledged the need to

prepare these student groups for the job market. In a recent report from the Chronicle of Higher Education, it was shown that liberal arts students who added technical skills to their academic coursework were more successful in the job market (Carlson, 2017). Additionally, the source reinforced the need for students with STEM backgrounds to gain complementary soft skills (Carlson, 2017). This field-specific advice is the kind of guidance that should be provided by career professionals at the university. Through interactions with career staff in the first year, students in these fields can be directed to make academic decisions that result in career success.

The focus on first-year students in this study might also encourage career researchers and administrators to continue evaluating the experiences of this population with career services. While the scope of this study catered more toward student demographics, further research could be conducted on the specific career needs of first-year students. The differences in engagement by students' school or college could also lead to research on how students' career needs differ by major in the first year.

Connecting the Meaning of Findings to Social Capital Theory

The findings showed no difference between the engagement of first-generation and non-first-generation college students. These data support that the first-year students used the services somewhat equally with proportion to their sample sizes. Social capital theory would suggest that students invest in the social interactions of career counseling to achieve favorable outcomes like information and reinforcement (Lin, 2001). Previous scholars have also acknowledged that first-generation college students' lack of social capital upon entering the university might lead them to engage more with institutional resources (Pascarella et al., 2004). Looking at the results of this study, it appears that

first-generation college students made good use of their social capital resources in the first year of college.

The engagement of first-generation college students with the university career center may have also been influenced by factors specific to the institution. Handshake, the career management platform used by the university, has mobile capabilities allowing easy access to jobs, career events, and appointment scheduling through phone or computer. It is possible that the accessibility of this platform helped to facilitate connection to the career center for students. Additionally, the university career center staff are an integral part of the new student orientations at the institution. The presence of the staff at the students' orientations might have helped to facilitate long-term engagement as well.

The comparable levels of engagement among students also brings up a potential issue with the definition of first-generation status itself. The definition assumes that the exchange of social capital is dependent upon the relationship between the student and his or her parents. However, students can acquire information on navigating college and career from a variety of sources including friends, extended family, teachers, and even media (Chin, Blackburn Cohen, & Hora, 2018). The construction of the current definition of first-generation status does not make exception for all these alternative ways of accessing social capital. Scholars should be intentional about assessing for these multiple channels from which students can acquire information about being successful in college. It is possible that other influences in these students' lives played a role in the comparable engagement observed by students in this study.

The results of this study and the obvious challenges with the definition of first-generation status leave room to caution this construct's use in the higher education literature. This study showed that it was possible for first-generation status to be insignificant while other related variables more accurately explained differences in students' use of career services. While scholars and administrators have garnered much interest in serving the needs of first-generation college students, it could be that the perceived challenges of this population reflect broader class-based issues among the college-going population. It is recommended that researchers and administrators assess the broader class issues surrounding first-generation status when conducting research or implementing programs. More research addressing the alternative ways first-generation college students attain capital may also shed light on students' engagement.

In sum, the findings of the study did not support the research hypothesis. Nevertheless, the data yielded several valuable insights as it relates to first-generation college students and the field of career services. These results also point to several implications for research and practice.

Implications for Research and Practice

Changes in the Engagement of First-Generation College Students

The findings of this study challenge the trend in the literature supporting that first-generation college students lag in student engagement (Pascarella et al., 2004; Pike & Kuh, 2005). While this evidence may appear like a new discovery, several scholars have pointed to this shift in engagement (Dong, 2019; Franke, Ruiz, Sharkness, DeAngelo, & Pryor, 2010). These results which deviate from the general consensus that first-generation college students are in a perpetual state of peril must be taken into

consideration. Even in qualitative studies on the career development experiences of first-generation college students, students have voiced a sense of resilience and drive to produce favorable outcomes for themselves and their families (Tate et al., 2015).

These examples which suggest a balancing out in the student engagement of first-generation and non-first-generation college students could indicate a need to adjust strategies in researching and serving this underrepresented population. Some scholars have recommended using a cultural wealth framework which allows first-generation college students to view their experiences through a lens of strengths and assets (Garriott, 2020). These theoretical frameworks may become increasingly more appropriate as perceived differences in engagement appear to be closing. As these gaps in engagement potentially grow smaller, research and programming will need to focus more on ways to empower underrepresented students to use the assets they have both in the classroom and the workforce.

Yosso's concept of community cultural wealth was developed as a critique of Bourdieu's idea of cultural capital for failing to recognize other "specific forms of knowledge, skills, and abilities" (2005, p. 76). Yosso's framework presents six additional forms of capital that diverse students might possess as assets to navigate the college landscape (2005). These forms of capital are aspirational capital, familial capital, navigational capital, resistant capital, linguistic capital, and social capital. Future researchers could conduct interviews or surveys assessing for students' use of these forms of capital in the career development process. Approaching research from an inclusive, asset-based framework might lead to different outcomes or insights about the career experiences of first-generation college students.

The Need for More Quantitative Research in Career Development

The results of the current study also call into question the overrepresentation of purely qualitative research on first-generation college students and career services. A number of these studies deal with small sample sizes and make broad generalizations about the experiences of first-generation college students (Parks-Yancy, 2012; Parks-Yancy & Cooley, 2018). The current study showed that when assessing a larger group of first-generation college students in relation to other peers, these students' engagement was not that different. Coupling quantitative research with the qualitative interviews being completed may help to bring more validity to the academic work being performed in career development. The individual stories of students' experiences need to be communicated to the higher education community, but these narratives must also be tempered with a broader perspective of students' overall engagement.

Using an Intersectional Approach in the Evaluation of Career Services

Research and evaluation of university career services have been far from comprehensive. Most career centers track attendance only by class year and majors (Osborn & Lenz, 2017). This surface level evaluation allows career centers and university administrators to miss key data points on how students are interacting with services. The current study adopted a methodological approach of intersectionality in assessing students' engagement with career services. The strategy was executed by close communication with institutional research at the university to ascertain and merge demographic information from admissions data with career services engagement data. This process allowed for a comprehensive assessment of at-risk variables influencing students' engagement with the career center. Results indicated that more women used

career services and that students who worked more used less services. This type of information would not be revealed if only class years and majors were considered.

University career centers should use an intersectional analytical approach when developing annual reports. Such analysis will enable career centers and universities to be more comprehensive in their assessment of who is using services. As a result, data-driven decisions can be made for programming to serve specific populations who may be disengaged. To be more effective in serving all students, career services offices must expand their research and evaluation capabilities. More in-depth tracking of student demographics as it relates to career services engagement will help to accomplish this end.

Adapting Career Services to Students with Work Demands

One significant finding from the study was that first-year students who worked more than 20 hours were less likely to use individual career services. Thought leaders in career services have started to acknowledge that trying to force students into career centers may be an antiquated approach and ineffective for students with considerable family and financial demands (Dey & Cruzvergara, 2019). The results of this study echo that students who have work demands may be less available for services. However, most students do attend classes. Further collaboration between faculty and career centers could allow important career education to take place in the classroom. This approach will ensure students with significant work demands are not missing this type of career preparation.

Scholarship within higher education has also encouraged adapting programming to accommodate the personal lives and work schedules of nontraditional students (Bragg, 2013). Career services offices can apply this knowledge by offering additional hours of

availability on evenings and weekends for students who work. Offering a broader range of appointment times might also increase engagement of students with significant work demands.

Career services professionals should also consider using online technology to assist students with work demands. Technologies such as online modules and career webinars present innovative strategies for career services centers to scale their content to students who would not normally enter their offices (Vaidian, 2019; Venable, 2010). Career centers' websites can be used to provide short videos and other self-service web content to allow students to engage according to their own schedules (National Association of Colleges and Employers, 2016). Research supports that first-generation college students, who typically work considerable hours, often lean toward using online resources over in-person services (Eismann, 2016). Providing an array of online content will help career centers to engage more students.

Adapting the service delivery of career offices is also the appropriate response to the ever-changing landscape of higher education. As it was mentioned at the beginning of this study, American colleges and universities have seen a steady increase of underrepresented students enrolling over the past 40 years (U.S. Department of Education, National Center for Education Statistics, 2019). As enrollment numbers continue to climb, career centers will have to consider more ways of scaling their services to meet the demands of students. It is simply not possible for career professionals to adequately address the career needs of students through individual appointments. Adapting services through programming with faculty and online content are ways to make career services education more accessible for all students.

Best Practices in Operationalizing First-Generation Status

There has been much debate over a singular definition of first-generation status. This study attempted to bridge the gap by assessing students according to two different definitions of first-generation status. While neither of these operationalizations yielded significant results with the sample, this approach is recommended for future studies. As Toutkoushian, Stollberg, and Slaton (2018) demonstrated in their study, a variety of outcomes can emerge depending on the definition of first-generation status being used. Scholars should assess multiple definitions within their analyses and then determine which operationalization would be most appropriate for the direction of the study.

This study also developed a variable which assessed the differential effect of having two parents, one parent, or neither parent attending some college. This distinction between the levels of parental education has not been consistently addressed in the research of this population (Stebbleton, Soria, & Huesman, 2014). However, it is possible for differences to emerge depending on the level of education of the parents (Toutkoushain, Stollberg, & Slaton, 2018). Therefore, future research should consider addressing these potentials with more comprehensive operationalizations of first-generation status.

Specific Programming for First-Generation College Students

While first-generation status was not found to have a significant effect on career center attendance, it is still recommended that specific services be put in place to support these students' career needs. Scholars have acknowledged that having a clearly identified staff member and resources for specific student populations can send a reassuring message to students that the career center is sensitive to their unique needs (Osborn &

Lenz, 2017). Career offices can host networking events that connect first-generation college students with employers and alumni. Offering intentional programming with professionals who may even have had a similar background can help to educate students about the job search while also fostering a sense of belonging.

Several scholars have highlighted the value of mentorship for underrepresented students while in college (Owens, Lacey, Rawls, & Holbert-Quince, 2010; Zalaquett & Baez, 2012). Mentorship has been found to help students progress through and complete college (Gloria, Kurpius, Hamilton, & Willson, 1999). Career services professionals can consider developing mentorship programs with university staff and alumni who identify as first-generation college students. Compassionate guidance from older individuals who have had similar experiences may be useful to students.

The literature also emphasizes the importance of creating interventions that help first-generation college students to feel accepted and understood by campus staff (Gibbons & Woodside, 2014). Career counselors can develop electronic newsletters specific to first-generation college students. These email messages might feature success stories from alumni as well as events and resources pertinent to the population. Counselors should also consider partnering with relevant student organizations on programming (Owens, Lacey, Rawls, & Holbert-Quince, 2010). Students tend to respond favorably to events where they can engage and learn from peers.

Lastly, career centers can partner with admissions and orientation offices to facilitate early engagement of first-generation college students (Maietta, 2016). Career professionals can provide workshops during orientation communicating the long-term value of visiting the career center. Additional sessions can also be held with parents and

families to share the job search process for students during college (Maietta, 2016). These targeted interventions can provide first-generation college students and their families with needed social capital from the outset of the college experience.

Limitations of the Study

Student Sample

There were several limitations to this study. The greatest of these challenges was the student sample. Due to continual changes in the institution's new student questionnaire over the years, it was only possible to access data for students entering their first year at the selected institution. While first-year students were an important group to assess, it may have been helpful to assess students' engagement across class years as in similar studies (Carter et al., 2003; Fouad et al., 2006). Evaluating students' engagement across class years might help to reveal any changes in help-seeking behavior or career needs throughout the college experience.

Length of Time

A somewhat related issue was the length of time for the study. Students' use of career services was evaluated for one academic year. However, there may be additional value in assessing students' activity over several years. A longitudinal study may have made it possible to see changes in students' engagement later in college. A future study may also benefit from using a longitudinal research design.

Inferences in Data

Admissions data were used to generate demographic information for this study. These data included questions such as, "how many hours do you plan to work per week?" or "in what kind of residence will you be living during your first semester?". These

questions are asked before a student begins school, and factors can easily change in the first semester or second semester. Therefore, it must be acknowledged that the demographic variables used such as student work or student living were inferential and based on the assumption that students' reported answers would remain constant throughout the year. In a future study, it may be valuable to formulate a way to verify students' responses to the questionnaire and their behavior patterns throughout the academic year.

Site and Institution

Generalizations from this study must also be tempered in light of the selected site and institution. Data for this study were collected from one large, public research institution in the mid-Atlantic region. The organizational leadership and student interactions are unique to this institution and may have influenced the results. For example, the university career center at this institution participates in new student orientation for all students, allowing the office to gain more visibility with incoming students. This exposure could encourage students to feel more comfortable interacting with career services throughout the year. Other university career centers may have a different relationship with their orientation offices and organizational leadership. For these reasons and undoubtedly others, it would be important to replicate this study with other comparable institutions to gain more generalizability in the findings.

Additionally, data were pulled only from the university career center. As was mentioned in Chapter 3, data from the auxiliary career offices were excluded for methodological reasons. Students at college receive career advice from a variety of sources including advisors, faculty, friends, and family (Chin, Blackburn Cohen, & Hora,

2018). It is quite difficult to account for the variety of ways that students might receive career support, especially in a study using secondary analysis. Therefore, the findings of this study must be held with a degree of caution as students who did not participate in career services could have potentially received support from other sources.

Opportunities for Future Research

The results of this study present several new pathways for research. The current study focused on students at one large, public research institution. While there was sufficient evidence to support the challenges faced by first-generation college students in this environment (Beattie & Thiele, 2016), it would be valuable to assess these students' experiences at other institutional types such as liberal arts colleges and highly-selective universities. Such studies may reveal that first-generation college students have different experiences accessing career services at these institutional types.

As it was mentioned in the limitations section, it may also be valuable to perform a longitudinal study following a cohort of college students from first year to senior year. Monitoring a group of students' engagement over a longer period may also highlight some differences in student appointment usage and outcomes.

Lastly, further research could benefit from a mixed-methods approach. While the current study was effective in capturing students' engagement on a more quantitative level, it offers little insight into why students who worked more hours did not show for appointments or what motivated more females to use career services. In the future, pairing this quantitative work with qualitative interviews could yield a more comprehensive picture of students' overall engagement.

Conclusion

American colleges and universities have made tremendous strides in diversifying the overall student population attending their institutions. The continual work of higher education researchers and administrators has significantly improved the knowledge of what is needed to support underrepresented students to persist through college and obtain competitive employment. Yet, in career development, there is still a need for robust, analytical procedures to assess these impressive changes being made. The current study has offered several ways to strengthen the analysis and effectiveness of university career centers' research and evaluation of underrepresented groups like first-generation college students. It is hoped that this research will add to the knowledge of administrators and career professionals seeking to provide equitable career education for all students.

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APPENDIX A
NEW STUDENT QUESTIONNAIRE

1. Is English your native language?
 - a. Yes
 - b. No

2. During the school year how many hours do you plan to work (for money) per week?
 - a. None
 - b. 1 to 15 hours
 - c. 16 to 20 hours
 - d. 21 to 25 hours
 - e. More than 25 hours

3. In what kind of residence will you be living during your first semester at City University?
 - a. University-owned housing (including residence halls)
 - b. Home of parents/relatives
 - c. Your own home or apartment
 - d. With other family members
 - e. Other

4. Are you a person who would identify as someone who was or currently is in the care of a public child welfare agency (e.g., foster care, kinship care, dependent or ward of the court, emancipated minor, unaccompanied youth, etc.) and/or someone who was or currently is homeless and/or transient (e.g., moving from one temporary housing arrangement provided by friends, family, or strangers to another, couch surfing, etc.)? [Please note that answer choices A and C apply even if you are no longer eligible for, or opted out of special services]

- a. Yes, I identify as someone who was or currently is in the care of a public welfare agency
 - b. Yes, I identify as someone who was or currently is homeless and/or transient
 - c. Yes, I identify as someone who was or currently is in the care of a public welfare agency AND as someone who was or currently is homeless and/or transient
 - d. No, I do not identify as someone who was or currently is either in the care of a public welfare agency, or homeless and/or transient
 - e. Yes, I identify as someone who is at risk for becoming homeless and/or transient
 - f. Don't Know
 - g. Prefer not to answer
 - h. Other
5. What is your U.S. Military status?
- a. No military service
 - b. Active military service
 - c. Veteran
 - d. Reserves or ROTC
 - e. Other
6. What is your best estimate of the total income of your PARENTAL FAMILY during the past year?
- a. Less than \$20,000
 - b. \$20,000 to \$39,999
 - c. \$40,000 to \$59,000
 - d. \$60,000 to \$79,000
 - e. \$80,000 to \$99,000

- f. \$100,000 to \$124,000
 - g. \$125,000 to \$149,000
 - h. \$150,000+
7. What is your best estimate of YOUR OWN total income during the past year?
- a. Less than \$2,000
 - b. \$2,000 to \$3,999
 - c. \$4,000 to \$5,999
 - d. \$6,000 to \$7,999
 - e. \$8,000 or more
8. Did you apply for financial aid from City University for this year?
- a. Yes, and I received an aid package
 - b. Yes, but I did not receive aid
 - c. Yes, but I have yet to hear about an aid package
 - d. No, but I intend to apply
 - e. No, I will not need financial aid to attend City University
9. How did the amount of financial aid you received from City University compare to other schools to which you were admitted?
- a. Higher than most
 - b. About the same
 - c. Lower than most
 - d. Applied for aid only at the institution
 - e. Did not apply for financial aid
10. Do you have any concern about your ability to finance your college education?

- a. None (I am confident that I will have sufficient funds)
 - b. Some concern (but I will probably have enough funds)
 - c. Major concern (not sure I will have enough funds to complete college)
11. What was your rating of City University at the time you applied for admission?
- a. The institution was my first choice
 - b. The institution was my second choice
 - c. The institution was my third or lower choice
12. What is the highest level of formal education completed by your father or guardian 1?
- a. Did not graduate high school
 - b. Graduated from high school
 - c. Some college education
 - d. Graduated from college (a bachelor's degree)
 - e. Postgraduate or professional degree
13. What is the highest level of formal education completed by your mother or guardian 2?
- a. Did not graduate high school
 - b. Graduated from high school
 - c. Some college education
 - d. Graduated from college (a bachelor's degree)
 - e. Postgraduate or professional degree
14. What is the highest level of formal education completed by any of your college age (18 years of age or older) siblings?

- a. Did not graduate from high school
- b. Graduated from high school
- c. Some college education, but did not graduate
- d. Currently enrolled in college
- e. Graduated from college (a bachelor's degree or higher)
- f. I do not have any college age siblings

15. What was your approximate high school average?

- a. A
- b. B+
- c. B
- d. B-
- e. C+ or lower

16. What scholastic average do you expect to obtain in college?

- a. A
- b. B+
- c. B
- d. B-
- e. C+ or lower

17. Scholastically, where did you rank in your high school graduating class?

- a. Top 10%
- b. Top 20%
- c. Top 30%
- d. Top 50%

e. Not among top 50%

18. In general, how well do you feel that your high school prepared you to do college work?

a. Very well

b. Fairly well

c. Uncertain

d. Poorly

e. Very poorly

19. Have you decided on an academic major?

a. Yes

b. No

20. Do you consider yourself a person who has a disability?

a. Yes

b. No

c. Uncertain

21. During the school year, on the average, how many hours do you plan to study per week?

a. None

b. 1 to 15 hours

c. 16 to 20 hours

d. 21 to 25 hours

e. More than 25 hours

Questions 22-25: During high school (grades 9-12), how many years did you study each of the following subjects?

For questions 22 through 25, use the following responses:

- a. None
- b. One
- c. Two
- d. Three
- e. Four

22. English

23. Mathematics

24. Foreign Language

25. Natural Sciences

Questions 26-29: During high school (grades 9-12), on average, what was your grade in the following subjects?

For questions 26 through 29, use the following responses:

- a. A
- b. B+
- c. B
- d. B-
- e. C+ or lower

26. English

27. Mathematics

28. Foreign Languages

29. Natural Sciences

Questions 30-36: How important were the following in your decision to go to college?

For questions 30 through 36, use the following responses:

- a. Very important
- b. Somewhat important
- c. Not important

30. I wanted to get a general education.

31. My family wanted me to go.

32. I wanted to get away from home.

33. I wanted to be able to get a better job.

34. I wanted to learn more about things that interest me.

35. I wanted to prepare myself for graduate or professional school.

36. It seemed like a good thing to do as a transition to work.

Questions 37-44: How important were the following in your finding out about or selecting City University?

For questions 37 through 44, use the following responses:

- a. Very important
- b. Somewhat important
- c. Not important
- d. Does not apply/did not attend

37. Personal call from City University student

38. City University social media channels (Facebook, Twitter, Instagram, etc.)

39. City University brochure or mailings

40. E-mail communication from City University

41. City University's website
42. City University open house or reception
43. Regular campus visit
44. High school visit by City University representative or college fair

Questions 45-59: Below are some reasons that might have influenced your decision to attend City University. How important was each reason in your decision to come here?

For questions 45 through 59, use the following responses:

- a. Very important positive factor
- b. Somewhat important positive factor
- c. Not a positive factor

45. Affordable tuition
46. City University's student body size
47. Social atmosphere
48. Closeness to home
49. Urban location
50. Variety of academic programs available
51. Variety of co-curricular programs available
52. Reputation of City University
53. Reputation of your specific major at City University
54. Advice and experience of family
55. Advice and experience of friends
56. Meeting students with backgrounds and interests similar to yours
57. Meeting students with backgrounds and interests different from yours

58. Availability of financial aid

59. City University's commitment to environmental sustainability

Questions 60-74: What is the chance that you will do the following while you are at City University?

For questions 60 through 74, use the following responses:

a. Very good chance

b. Some chance

c. Very little chance

d. No chance

60. Change your major field of study

61. Be a student leader

62. Work full time while attending college

63. Join a social organization or club

64. Play varsity / intercollegiate athletics

65. Need more than 4 years to complete degree requirements

66. Make close friends

67. Work with a professor on a research project

68. Receive encouragement from family while you're in college

69. Get tutoring help in specific courses

70. Transfer to another college before graduating

71. Take an on-line course

72. Find a job after college in your chosen field of study

73. Participate in volunteer or community service work

74. Study abroad/away

Questions 75-83: Please indicate your level of agreement with each of the following statements:

For questions 75 through 83, use the following responses:

- a. Definitely agree
- b. Somewhat agree
- c. Neither agree nor disagree
- d. Somewhat disagree
- e. Definitely disagree

75. I want to live and work in Philadelphia after graduation.

76. Most of my teachers considered me one of the harder workers in their class.

77. I find it difficult to keep a plan of action in my school work.

78. I enjoy studying and reading about things on which I am working.

79. I know how to manage my time well.

80. I am self-confident.

81. My plans have frequently seemed so full of difficulties that I have had to give them up.

82. I am organized and have good study habits.

83. I prefer to be independent of others in deciding what I want to do.

APPENDIX B

INSTITUTIONAL REVIEW BOARD APPROVAL FOR PROJECT

From: David M Comalli <david.comalli@temple.edu>
Sent: Wednesday, January 29, 2020 8:15 AM
To: Mark Philip Kaloko <mark.kaloko@temple.edu>
Subject: Re: Research Approval Request - Mark P. Kaloko

Hi Mark,

Thank you for the email. As described, this project would not meet the federal regulatory definition of human subjects research. This is an activity that is part of your purview as a university employee. Additionally, the project as described would not meet the Temple IRB's interpretation of designed to be generalizable as it is using a ██████-specific survey and examining ██████ (unique) student body. This does in no way mean to reflect the validity or importance of the project; it solely means that IRB review and approval are not required. If the design should change, this determination may change as well.

Thanks and have a great rest of the day!
-David

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David Comalli
IRB Program Coordinator

Direct [215-797-7792](tel:215-797-7792)
Email davidcomalli@temple.edu

Office of the Vice President for Research
Institutional Review Board | Research Compliance
Student Faculty Conference Center
3340 North Broad Street
Philadelphia, PA 19140

Main [215-797-3390](tel:215-797-3390) / Fax [215-797-9100](tel:215-797-9100)
Website research.temple.edu

*Please note that some language in this approval message has been censored to protect the selected institution and sample.

APPENDIX C

FREQUENCY DISTRIBUTIONS AND MISSING FILES FOR VARIABLES

Table C1		
<i>Frequency Distributions and Missing Files for Variables</i>		
Variables	Number of Unique Cases	Number of Missing Files
First-Generation Status	411	0
English Speaker	411	0
Family Income	392	19
Student Living	405	6
Decided Major Status	402	9
Parental Education	400	11
Race and Ethnicity	411	0
Student Work	402	9
Appointment Status	411	0
Gender	411	0

APPENDIX D

CHI-SQUARE TESTS FOR OTHER DEMOGRAPHIC VARIABLES

Table D1				
<i>Frequency Distribution of First-Generation Status and Appointment Status</i>				
Generational Status	Cancelled	Completed	No Show	Total
First Generation	13 (13.3%)	78 (79.6%)	7 (7.1%)	98
Non-First Generation	35 (11.2%)	257 (82.1%)	21 (6.7%)	313
Total	48	335	28	411

Chi Square = .356, p = .837, Cramer's V = .029

Table D2				
<i>Frequency Distribution of Decided Major Status and Appointment Status</i>				
Decided Major Status	Cancelled	Completed	No Show	Total
Decided Major	37 (11.3%)	269 (82.0%)	22 (6.7%)	328
Undecided Major	9 (12.2%)	59 (79.7%)	6 (8.1%)	74
Total	46	328	28	402

Chi Square = .250, p = .883, Cramer's V = .025

Table D3				
<i>Frequency Distribution of Student Living and Appointment Status</i>				
Student Living	Cancelled	Completed	No Show	Total
University housing	40 (11.7%)	281 (82.2%)	21 (6.1%)	342
Home of parents/relatives	4 (13.3%)	24 (80.0%)	2 (6.7%)	30
Personal home/apartment	2 (10.5%)	12 (63.2%)	5 (26.3%)	19
With other family members	1 (14.3%)	6 (85.7%)	0 (0.0%)	7
Other	0 (0.0%)	7 (100.0%)	0 (0.0%)	7
Total	47	330	28	405

Chi Square = 13.687, p = .090, Cramer's V = .130

Table D4				
<i>Frequency Distribution of English Speaker and Appointment Status</i>				
English Speaker	Cancelled	Completed	No Show	Total
Native English Speaker	44 (11.7%)	305 (81.3%)	26 (6.9%)	375
Non-Native English Speaker	4 (11.1%)	30 (83.3%)	2 (5.6%)	36
Total	48	335	28	411

Chi Square = .119, p = .942, Cramer's V = .017

Table D5				
<i>Frequency Distribution of Parental Education and Appointment Status</i>				
Parental Education	Cancelled	Completed	No Show	Total
Neither Parent with Some College	8 (17.8%)	32 (71.1%)	5 (11.1%)	45
One Parent with Some College	6 (13.3%)	69 (80.0%)	3 (6.7%)	78
Both Parents with Some College	32 (11.6%)	255 (81.2%)	20 (7.2%)	277
Total	46	326	28	400

Chi Square = 5.803, p = .214, Cramer's V = .085

Table D6				
<i>Frequency Distribution of Race and Ethnicity and Appointment Status</i>				
Race and Ethnicity	Cancelled	Completed	No Show	Total
African American	5 (9.1%)	42 (76.4%)	8 (14.5%)	55
Asian	10 (14.1%)	60 (84.5%)	1 (1.4%)	71
Hispanic/Latino	6 (17.6%)	25 (73.5%)	3 (8.8%)	34
International	1 (6.7%)	13 (86.7%)	1 (6.7%)	15
Two or more races	0 (0.0%)	12 (85.7%)	2 (14.3%)	14
Pacific Islander	0 (0.0%)	1 (100.0%)	0 (0.0%)	1
Unknown	0 (0.0%)	5 (100.0%)	0 (0.0%)	5
White, Non-Hispanic	26 (12.0%)	177 (81.9%)	13 (6.0%)	216
Total	48	335	28	411

Chi Square = 15.075, p = .373, Cramer's V = .135

Table D7				
<i>Frequency Distribution of Family Income and Appointment Status</i>				
Family Income	Cancelled	Completed	No Show	Total
>20,000	6 (22.2%)	17 (63.0%)	4 (14.8%)	27
20,000 – 39,999	4 (9.5%)	35 (83.3%)	3 (7.1%)	42
40,000 – 59,999	3 (7.1%)	38 (90.5%)	1 (2.4%)	42
60,000 – 79,999	6 (14.6%)	32 (78.0%)	3 (7.3%)	41
80,000 – 99,999	1 (2.6%)	35 (89.7%)	3 (7.7%)	39
100,000 – 124,999	11 (13.8%)	64 (80.0%)	5 (6.3%)	80
125,000 – 149,999	4 (13.8%)	24 (82.8%)	1 (3.4%)	29
150,000+	12 (13.0%)	72 (78.3%)	8 (8.7%)	92
Total	47	317	28	392

Chi Square = 13.523, p = .486, Cramer's V = .131