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The Impact of Student Leadership Engagement
on Meaning in Life and Work during College

Heather Janel Strine-Patterson

A dissertation submitted to the Graduate Faculty of

JAMES MADISON UNIVERSITY

In

Partial Fulfillment of the Requirements

for the degree of

Doctor of Philosophy

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FACULTY COMMITTEE:

Committee Chair: T. Dary Erwin, Ph.D.

Committee Members/Readers:

Karen Ford, D.S.W.

John Hathcoat, Ph.D.

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Table of Content

| | |
|---|-----|
| Acknowledgements..... | ii |
| Table of Content..... | iv |
| List of Tables..... | v |
| List of Figures..... | vi |
| Abstract..... | vii |
| Introduction..... | 1 |
| The Current Product and Value of Postsecondary Education..... | 1 |
| Expanding the Value of Postsecondary Education..... | 4 |
| Review of Literature..... | 10 |
| Student Leadership Engagement..... | 10 |
| Well-Being..... | 17 |
| Studying College Student Leadership Engagement and Meaning..... | 24 |
| Research Methods..... | 26 |
| Purpose..... | 26 |
| Participants..... | 26 |
| Instruments..... | 27 |
| Research Design..... | 42 |
| Results..... | 46 |
| Measurement Properties of Dependent Variable Subscales..... | 47 |
| First Research Question..... | 50 |
| Second Research Question..... | 52 |
| Third Research Question..... | 60 |
| Discussion..... | 70 |
| Implications..... | 73 |
| Limitations..... | 75 |
| Future Research..... | 77 |
| Conclusion..... | 78 |
| Appendix..... | 79 |
| References..... | 81 |

List of Tables

| | |
|--|----|
| Table 1 <i>Summary of Variables Used in Study</i> | 27 |
| Table 2 <i>Student Leadership Engagement Types (ET) and Example Experiences</i> | 32 |
| Table 3 <i>Leadership Roles (LR), Descriptions, and Weighting</i> | 36 |
| Table 4 <i>Student Leadership Engagement of Earl R. Hensley during 2016-2017</i> | 37 |
| Table 5 <i>Computations of Student Leadership Engagement Measures of Earl R. Hensley during 2016-2017</i> | 38 |
| Table 6 <i>Hypotheses Variables and Statistical Analysis</i> | 43 |
| Table 7 <i>Frequencies of Participants' Engagement Types and Leadership Roles</i> | 47 |
| Table 8 <i>Descriptive Statistics of SLE-TS, ET-C, and the Meaning in Life and Work Scale</i> | 48 |
| Table 9 <i>Pearson's Bivariate Correlation Analysis Summary of SLE-TS with Meaning Measures</i> | 51 |
| Table 10 <i>Pearson's Bivariate Correlation Analysis Summary of the Unique Contribution of ET-C</i> | 52 |
| Table 11 <i>Regression Analysis Summary of SLE-TS, ET-C, and their Interaction on MLQ-PM</i> | 54 |
| Table 12 <i>Regression Analysis Summary of SLE-TS, ET-C, and their Interaction on MLQ-SM</i> | 55 |
| Table 13 <i>Regression Analysis Summary of SLE-TS, ET-C, and their Interaction on SoMe-M</i> | 56 |
| Table 14 <i>Regression Analysis Summary of SLE-TS, ET-C, and their Interaction on WAMI-R-PM</i> | 57 |
| Table 15 <i>Regression Analysis Summary of SLE-TS, ET-C, and their Interaction on WAMI-R-W</i> | 58 |
| Table 16 <i>Regression Analysis Summary of SLE-TS, ET-C, and their Interaction on WAMI-R-GG</i> | 59 |
| Table 17 <i>Multiple Regression Analysis Summary of the Unique Contribution of ET-C</i> | 60 |
| Table 18 <i>Means (Standard Deviations) for each Leadership Role</i> | 61 |
| Table 19 <i>Standardized Canonical Coefficients and Structure Coefficients for Significant Discriminant Functions</i> | 62 |
| Table 20 <i>Mean Differences and Significance Test between Project Coordinator and Other LRs on the First Function</i> | 63 |
| Table 21 <i>Group Centroids for the First and Second Function</i> | 64 |
| Table 22 <i>Means (Standard Deviations) for each ET</i> | 66 |
| Table 23 <i>Standardized Canonical Coefficients and Structure Coefficients for the Significant Function</i> | 67 |
| Table 24 <i>Mean Differences and Significance Tests between Engaged Learning and Other ETs</i> | 68 |

List of Figures

| | |
|--|----|
| <i>Figure 1.</i> Relationship of College Curricular, Cocurricular, and Extracurricular Experiences..... | 7 |
| <i>Figure 2.</i> Graphic Depiction of the Group Centroids for the First and Second Leadership Role (LR) Discriminant Functions. | 64 |
| <i>Figure 3.</i> Graphic Depiction of the Group Centroids for the First Engagement Type (ET) Discriminant Function. | 69 |

Abstract

The rising need, cost, and debt for postsecondary education has increased attention and scrutiny on its value, and colleges and universities must underscore outcomes beyond employment of graduates. Psychological well-being is a promising area to expand the value of postsecondary education. Using correlations, multiple regression, and multivariate analysis of variance (MANOVA), this study seeks to contribute to an emergent body of empirical knowledge about the impact of postsecondary education on students' well-being by specifically examining the relationship between participation in cocurricular and extracurricular experiences and students' well-being defined by their sense of meaning in life and work. To this end, university administrators submitted students' cocurricular and extracurricular experiences for an academic year at one large, four-year, primarily undergraduate and residential institution in the southeast. At the same institution, 1,426 students completed meaning in life and work measures at the end of the academic year – 1,151 had verified student leadership engagement; 275 did not.

Broadly, results did not support the hypothesis that student leadership engagement relates to higher levels of meaning in life and work; though, results showed that the type of leadership role and engagement type had a nominal practical, but statistically significant, effect to differentiate between the average levels of meaning in life and work. Specifically, experiences that were project-based leadership roles or engagement types showed small, positive, statistically significant differences in some of their meaning in life and work outcomes. This result implies that postsecondary education institutions need to find ways to create meaningful project-based experiences for students in order to support the development of meaning in life and work while students are in college. Research must continue to examine how college experiences – curricular, cocurricular, and extracurricular – relate to and influence college success outcomes beyond salaries, debt, and first destinations after graduation (such as meaning in life and work).

Introduction

Young adults are pursuing postsecondary education at an increasing rate. From 2003–2013, undergraduate enrollment in the United States rose 21% (Snyder, de Brey, & Dillow, 2016); and, from 2005–2015, the full time equivalent (FTE) enrollment increased 12.5% (State Higher Education Executive Officers [SHEEO], 2016). Part of this increased enrollment may be in response to the increasing earnings disparity between young adults with and without a Bachelor's degree (Pew Research Center, 2014). While an increasing number of students are attending college, the Gallup organization and the Lumina Foundation (2014) found that 77% of Americans feel that postsecondary education is not affordable, a finding supported by data that shows a significant increase in the cost of a U.S. education. After adjusting for inflation, the cost of undergraduate tuition, fees, and housing rose 34% at public institutions and 25% at private nonprofit institutions between 2003–2004 and 2013–2014 (Snyder et al., 2016). Decreased educational appropriations are compounding the increase of enrollment numbers with the rising cost of college (SHEEO, 2016) as, since 1990, educational appropriations have decreased by 20% per student (SHEEO, 2016). To manage the costs, 84% of FTE undergraduates in 2011–2012 received financial aid through grants, loans, work-study, or multiple types of aid (Snyder et al., 2016). The amount of financial aid students borrow is also increasing. Between 2005–2006 and 2013–2014, the average annual student loan amount rose 23%, after adjusting for inflation (Kena et al., 2016). The rising need, cost, and debt for postsecondary education has increased attention and scrutiny on its value.

The Current Product and Value of Postsecondary Education

Before discussing the current value of a postsecondary education, it is important to understand its common product. In the United States, there are over 4,000 degree-granting institutions of postsecondary education (U.S. Network for Education Information [USNEI],

2008). Of the degree-granting institutions, about 1,600 award associate degrees while roughly 2,400 award bachelor's degrees or higher (USNEI, 2008). These institutions can be public nonprofit, private nonprofit, or private for-profit colleges or universities. The common thread that cuts across these institutions is that they are degree-granting institutions where their primary product is the degree credential, although many institutions offer certificates too.

In the United States, a Bachelor's degree generally requires a minimum of 120 credit hours (including the completion of a general education program) and an academic major that includes a collection of courses focused on one academic discipline or an interdisciplinary collection of courses. Said briefly, the leading product of a postsecondary education, the Bachelor's degree, is the successful completion of a breadth and depth of academic courses. The common metrics used to exemplify the value of earning this credentialing product are annual salary earnings and employment upon graduation. For example, the Pew Research Center (2014) found that college graduates who work full-time between the ages of 25-32 make about \$17,500 more annually than their full-time working peers whose highest educational level is a high school diploma. This same college-educated group is also 7% more likely to have full-time employment and 8.4% less likely to be unemployed.

In response to the product of a postsecondary education being the successful completion of courses, it is no wonder that the conversation around this topic tends to focus on a student's choice of major, as this decision significantly impacts the courses required for credentialing. The conversation moves beyond comparing college graduates to non-graduates and instead compares college graduates of certain majors against those of other majors. For example, reports have specially emphasized the disparities between students majoring in engineering versus students who major in the humanities, social sciences, or liberal arts (Humphreys & Kelly, 2014). This disparity has particularly been publicized in a student's ability to pay off their student loans. In fact, some states make the first-year salaries of recent graduates

available for prospective students and families to compare graduates' earnings based on their major and school (Marklein, 2012). A recent report from the National Association of College and Employers (NACE, 2017) shows that engineering and computer science majors earn more than other graduates, with a starting salary averaging \$66,097 and \$65,540, respectively. Other math and science majors earn an average of \$59,368. Business majors earn \$54,803, on average; social sciences, communications, and humanities majors' averages rank at the bottom with a starting salary averaging \$53,459, \$51,925, and \$48,733, respectively. When examining unemployment rates, research shows that graduates in the arts, humanities, and liberal arts have the highest unemployment of recent graduates, with these rates being 11.1% and 9.4% respectively (Carnevale, Cheah, & Strohl, 2012). However, the Association of American Colleges and Universities (AACU; Humphreys & Kelly, 2014) used data from the U.S. Census Bureau's American Community Survey to examine how graduates of certain majors fare over the course of a career. While the report shows differences in outcomes related to employment, such as a recent graduate's starting salary, it also shows that graduates of liberal arts disciplines will likely do as well as graduates of professional and pre-professional fields (like business) and close the initial earning gap over the long-term.

Using employment potential and annual salary earnings as prominent measures of the value of college may relate to an individual's opinion on the purpose of college. When adults age 18 and older were asked about the main purpose of college, 47% indicated college should teach specific skills and knowledge for the workplace while 39% of adults said college should help an individual grow personally and intellectually (Pew Research Center, 2011). Examining these results in more detail, there is a noticeable gap in opinion based on postsecondary education pursuits: 45% of those who have attended some postsecondary education believe that skill and knowledge acquisition is the main purpose of college, compared to 55% of those who have a high school diploma or less believe the same. Only 31% of those without some level of

postsecondary education say personal and intellectual growth should be the main objective of college. Considering the divisions revealed during the 2016 Presidential election, these results are striking as it emphasizes an increasingly relevant difference of opinion between college educated and non-college educated individuals (e.g. Kurtzleben, 2016; Silver, 2016).

Expanding the Value of Postsecondary Education

Postsecondary education has always focused on a variety of outcomes centered on students' learning and development during college and post-graduation . College and university mission statements regularly include commitments to citizenship, diversity, leadership, student development, service to society, and knowledge acquisition and creation (Astin, 1997; Morphey & Hartley, 2006). It is unclear how these commitments translate as relevant or meaningful outcomes to college or non-college educated communities. Still, recent calls have urged colleges and universities across the country to reclaim and reinvest in their missions (e.g. Astin & Astin, 2000; National Task Force on Civic Learning and Democratic Engagement, 2009). The current challenge for postsecondary education institutions is reinvesting in missions that resonate with multiple audiences and go beyond workforce development and monetary employment outcomes. These mission statements must articulate the college/university's value to it graduates, their families, and society as a whole. In particular, if a goal of a postsecondary education institution is to expand access (e.g. Cunningham, Erisman, & Looney, 2008; State Council of Higher Education for Virginia [SCHEV], 2007, 2016), then it must expand access by enrolling individuals that currently come from non-college-educated families and communities, where the association between college and work is the strongest.

For first-generation college students and their families, attaining a college degree does create an opportunity for upward social mobility and jobs that can pay for an array of goods and services (e.g. homes, schooling, healthcare, vacations), which will presumably enhance their quality of life (QoL). Therefore, prioritizing the value of a college education for employment

outcomes should not be minimized, particularly when new research shows a decreasing number of 30-year-olds earning more than their parents did at the same age, after adjusting for inflation (Chetty, Friedman, Saez, Turner, & Yagan, 2017). QoL is a broad and difficult concept to define succinctly, and the academic literature does not consistently define QoL as any “one unitary or objective entity” (Gasper, 2010, p. 351). Feinstein (1987) describes that the “quality of life often seems to be an umbrella term, covering a variety of concepts, such as functioning, health status, perceptions, life conditions, behavior, happiness, lifestyle, [and] symptoms” (p. 891). Kagawa-Singer, Padilla, and Ashing-Giwa (2010) define QoL as “a subjective, multidimensional experience of well-being that is culturally constructed as individuals seek safety and security, a sense of integrity and meaning in life, and a sense of belonging in one’s social network” (p. 59). While research is needed to better understand a layman’s definition of QoL, the definition by Kagawa-Singer et al. demonstrates the underlying meaning of QoL is related to well-being. In fact, Gasper (2010) acknowledges that the concepts of QoL and well-being “almost completely overlap” (p. 351). The concept of QoL branches from the discipline of sociology, which focuses on communities, while the concept of well-being comes from the discipline of psychology and focuses on the individual. In postsecondary education, focusing on the individual makes the most sense as a theoretical grounding, since institutions are focused primarily on students and graduates. There are two theoretical approaches to well-being in the research literature; the non-academic definition likely integrates both. Subjective well-being, the hedonic approach, defines well-being in terms of pleasure attainment and pain avoidance; and, psychological well-being, the eudaimonia approach, focuses on meaning and self-realization. It is incumbent upon postsecondary education institutions to better understand the motivations of non-college educated persons, families, and communities who wish to pursue education beyond high school so that they may improve their well-being. These motivations need to be utilized to

communicate the value of postsecondary education beyond the current valued outcomes of employment and salaries.

Postsecondary education is a prime environment to facilitate the development of subjective and psychological well-being. In fact, Pascarella and Terenzini (1991, 2005) synthesize that postsecondary education has a positive relationship with subjective well-being on a variety of indices. However, research on postsecondary education and psychological well-being is almost absent from the literature. This may be due to psychological well-being taking longer periods of time to achieve (e.g. Vallacher & Wegner, 1985, 1987), though college student development theories (e.g. Chickering, 1969; Chickering & Reisser, 1993; Kegan, 1994; see Evans, Forney, Guido, Patton, & Renn, 2010 for comprehensive review of theories) conceptually share a “culminating state of self-definition and self-direction” (Pascarella & Terenzini, 2005, p. 48). Activities that attend to psychological well-being “will be those in which an individual experiences self-realization through the fulfillment of personal potentials in the form of the development of one’s skills and talents, the advancement of one’s purpose in living, or both” (Waterman, 1993, p. 679). Research needs to explore the relationship between higher education attainment and the pursuit of a purposeful or meaningful life, and postsecondary education needs to utilize this information to communicate its value.

Recently, collegiate outcomes around psychological well-being is gaining momentum. The Gallup organization and Purdue University collaborated to develop the Gallup-Purdue Index, designed to measure college graduates’ well-being based on a five-factor model of well-being: purpose, social, financial, community, and physical (Gallup-Purdue, 2014). The initial results indicated that colleges influenced graduate’s well-being if they had engaged in one of six characteristics while they were students. Specifically, the odds of being engaged at work and thriving in their well-being doubled if they had a professor who (a) cared about them as a person, (b) made them feel excited about learning, or (c) encouraged them to pursue their

dreams. Graduates' odds of engagement at work also doubled if while they had (d) an internship or job where they could apply their classroom learning, (e) were actively involved in extracurricular activities and organizations, or (f) worked on projects that took a semester or more to complete.

Of the six experiences graduates needed to have in college to improve their well-being, half strongly relate to the curricular components of college and half do not. The first three all require connections with professors, and interaction with professors frequently occurs while students are taking classes, or *curricular* experiences, that are required as part of their curriculum for graduation. The last three elements that improve graduates' well-being often fall into aspects of student *cocurricular* engagement, meaning experiences that clearly complement the academic curriculum and are sometimes awarded credit (e.g. internship, research, service-learning); and, *extracurricular*, meaning experiences that may not appear to directly relate to the academic curriculum (e.g. peer mentors, student organizations; see *Figure 1*). Cocurricular and extracurricular experiences are often not requirements for students to earn the baccalaureate degree credential. Said differently, the product of higher education, the baccalaureate degree, often does not include a requirement that students participate in anything outside of the classroom, such as cocurricular or extracurricular experiences.

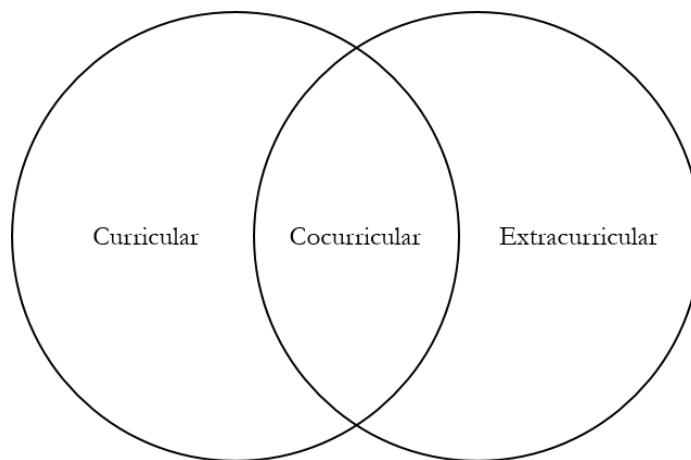


Figure 1. Relationship of College Curricular, Cocurricular, and Extracurricular Experiences.

In addition to the initial study of the Gallup-Purdue Index showing that cocurricular and extracurricular experiences have a strong correlation with well-being, a potential new value of postsecondary education, future employers also find these experiences relevant for employment; and employment is the current espoused value of postsecondary education. The NACE (2014) surveyed recruiters of new college graduates on the attributes they seek in applications, and 77.8% responded that they look for both “leadership” and “the ability to work in a team structure.” The survey also found that employers considered students’ leadership positions just as influential as a student’s academic major when making hiring decisions. Research also indicates that students who are engaged in student organizations and activities “have a heightened awareness of the world of work and their personal skills and limitations as workers” (Williams & Winston, 1985, p. 55). In addition to finding cocurricular and extracurricular experiences valuable, business leaders also want employees to have high levels of well-being to increase motivation and productivity in the workplace (e.g. Drucker, 1989; Hackman & Oldham, 1975, 1976, 1980).

Student cocurricular and extracurricular engagements have been recognized as a critical component to undergraduate education for decades (e.g. Schuh & Leverty, 1983, U.S. National Institute of Education, 1984; Tinto, 1993; Pascarella & Terenzini, 2005). Students’ learning and development outcomes are impacted by these out-of-class experiences through “the interactions they have with their peers and faculty members outside the classroom, the variety of people and ideas they encounter, and the extent of their active involvement in the academic and social systems of their institutions” (Pascarella & Terenzini, 2005, p. 642). This research combined with employers prioritizing these types of experiences highlight the importance of students’ cocurricular and extracurricular experiences during college in conjunction with their curricular pursuits and achievements.

In direct competition with these out-of-class experiences is the checklist mentality inherent within credentialing requirements that push students to quickly complete their degree and begin working. This mindset is exemplified by the introduction of three-year bachelor's degree programs (e.g. Epstein, 2010), along with the 97% increase in the number of students taking Advanced Placement exams between 2003 and 2013 (College Board, 2014), and dual enrollment courses being offered at 46% of institutions (Marken, Gray, & Lewis, 2013). Focusing on the current espoused value of higher education and the future potential value of higher education, cocurricular and extracurricular experiences appear to be a cornerstone of postsecondary education. However, these out-of-class experiences are not generally required for the credentialing of a baccalaureate degree, and thus negates the important cocurricular and extracurricular experiences necessary for a comprehensive and holistic education.

Part of the reason that cocurricular and extracurricular experiences are not required for graduation may be because there is no tracking mechanism (like class registrations and major and minor declarations) for those experiences. This study will identify important components for institutions to track at the student level on student participation in cocurricular and extracurricular experiences and the relationship between these experiences and post-graduation outcome of well-being. With student-level data about cocurricular and extracurricular experiences, this study seeks to contribute to an emergent body of empirical knowledge about the impact of postsecondary education on students' well-being by specifically examining the relationship between participation in cocurricular and extracurricular experiences and students' well-being defined by their sense of meaning in life and work.

Review of Literature

Student Leadership Engagement

Theoretical and conceptual framework. The terms cocurricular, extracurricular, involvement, and engagement are often used interchangeably because each requires the students' time and energy outside of class-related activities. In fact, Astin (1984) defined student involvement as "the quantity and quality of the physical and psychological energy that students invest in the college experience" (p. 528), and cocurricular and extracurricular activities are a large part of that experience. Astin (1984, 1985) described that the outcomes derived from student involvement are a product of the quantity and quality of effort expended within that involvement. He further described that there are quantitative aspects of involvement, such as the amount of physical energy a student devotes to an activity (e.g. the number of organizations to which a student belongs, or the number of hours spent on activities), and qualitative aspects of involvement, such as the quality of psychological energy a student devotes to an activity (e.g. the investment required by a formal leader position). Astin's theory of involvement (1984, 1985) has roots in the concepts of *time on task* (Merwin, 1969) and *quality of effort* (Pace, 1980, 1984), and he acknowledges that cocurricular and extracurricular activities are forms of involvement that can facilitate learning and development on college campuses.

Over time, the meaning of student involvement has evolved to one of student engagement, partially in response to calls for institutions to give students more responsibility (e.g. Kuh et al., 1991). Extracurricular experiences have moved beyond the boundaries of student-run organizations and towards structured opportunities across the university, such as orientation leaders, peer mentors, and student honor or judicial councils. These opportunities are examples of how the concept of involvement, as defined by Astin (1984, 1985), has moved into a concept of engagement that highlights the reciprocal responsibility of students and institutions (Kuh, 2001, 2003, 2009). Kuh (2001, 2003, 2009) defines student engagement by the time and

effort students devote to activities inside and outside of the classroom *and* what institutions do to make these experiences available and encourage students to participate. Many authors also describe that engagement is a multidimensional phenomenon, including behavioral, affective, and interpersonal components (Handelsman, Briggs, Sullkvuivuan, & Towler, 2005). Kuh (2009) writes that “today engagement is the term generally used to represent constructs such as quality of effort and involvement in productive learning activities” (p. 6).

Both Astin’s theory of student involvement (1984, 1985) and Kuh’s concept of student engagement (2001, 2003, 2009) recognize the importance of students’ participation in these campus facilitated or supported activities. The importance of these activities is also recognized in K-12 education. For example, Vadenboncoeur (2006) identified formal and informal aspects of student engagement, and defined informal engagement broadly to encompass out-of-class activities that range from after-school programs to learning that occurs in any social setting. In postsecondary education, the importance of these activities is not novel. Both formal instruction and extracurricular engagement have been said to address “cognitive learning, effective development, and practical competence” (Bowen, 1977, p. 27) for decades.

Research supports the importance of involvement and engagement to the collegiate experience by typically finding a positive relationship between involvement and developmental gains (Pascarella & Terenzini, 1991, 2005). Educational organizations also affirm the shared responsibility of faculty and professional staff to encourage student engagement for learning and development. For example, statements issued by national organizations – such as *The Student Learning Imperative: Implications for Student Affairs* (American College Personnel Association [ACPA], 1996) and *Powerful Partnerships: A Shared Responsibility for Learning* (American Association for Higher Education [AAHE], ACPA, & National Association of Student Personnel Administrator [NASPA], 1998) – utilize inspirational motivation (Bass, 1985; Burns, 1978) to recognize and influence academic and non-academic professionals within postsecondary

education and emphasize that student learning and development is a shared responsibility (Bresciani, Zelna, & Anderson, 2004).

Student leadership is a dimension of involvement and engagement that has been of considerable interest in postsecondary education (e.g. Cress, Astin, Zimmerman-Oster, & Burkhardt, 2001; Logue, Hutchens, & Hector, 2005; Rosch, Collier, & Thompson, 2015). However, these studies typically define student leader positions narrowly as a dichotomous variable, which is inconsistent with leadership literature and research outside of higher education (see Day & Antonakis, 2012, for a comprehensive review). In his seminal work on leadership, Burns (1978) began with the premise that leadership is “relational, collective, and purposeful” (p. 18). Many leadership theories, such as relational leadership (e.g. see Uhl-Bien, Maslyn, & Ospina, 2012 for a comprehensive review), shared leadership (e.g. see Wassenaar & Pearce, 2012 for a comprehensive review), and transformational leadership (e.g. Bass, 1985; Burns, 1978) recognize that leaders and followers are active partners in the leadership process towards shared goals. In fact, there has been increasing interest in studying the behavior of followers within the leadership process, because the success of an organization or team relies on the positive qualities of its followers, such as self-management or commitment (Kelley, 1988; see Brown, 2012, for a comprehensive review of followership). Therefore, the current focus of higher education research to study student leader positions as a dichotomous variable is too narrow for the study of student leadership. Furthermore, the use of *leadership* as a term to describe student *leader* positions contributes to the confusion about the uniqueness of these constructs.

Leadership is a dynamic, shared, and relational process in which leaders and followers collectively make progress towards identifying and accomplishing a shared vision and outcomes. In any context, those with leader positions and responsibilities contribute to the process of leadership, and those with follower responsibilities contribute to the process of leadership. In the context of higher education, students that assume leader positions and responsibilities *and* those

that assume follower roles contribute to the process of *student leadership* in curricular, cocurricular, and extracurricular settings. These student leadership opportunities materialize through the reciprocal responsibility of students to engage with opportunities at the institution through meaningful participation and for institutions to engage by creating and supporting opportunities in which students may meaningfully participate. Kuh (2001, 2003, 2009) calls this process *student engagement*, which means that, whether the student is a leader or follower (and the multifaceted nature of these roles), they are participating in curricular, cocurricular and extracurricular settings, and are engaging in the process of student leadership towards shared goals; hence, *student leadership engagement*.

Current research approaches and measurements. Most research on student leadership engagement takes one of three approaches. The first approach researches the relationship or impact of a specific *type* of leadership engagement (e.g. clubs and organizations, Greek organizations, intercollegiate athletics, service involvement) within an identified outcome (e.g. critical thinking, leadership development, psychosocial development; Cooper, Healy, & Simpson, 1994; Foubert & Grainger, 2006; Smith & Chenoweth, 2015). This form of research is limited, because it does not account for students' concurrent leadership engagements, which means results could overestimate the relationship or influence of any one type of engagement. The second research approach conducts meta-analyses in two ways (e.g. Gellin, 2003; Terenzini, Pascarella, & Blimling, 1996; Yorio & Ye, 2012): the first way examines a specific type of student leadership engagement and the variety of outcomes studied about it, and the second way reviews all forms of student leadership engagement that have a measured common outcome. These two meta-analyses methods build off the first approach of research, and, therefore, are subject to the same limitations. The third research approach attempts to capture the breadth of students' leadership engagement by utilizing students' *self-reported* involvement to measure various

outcomes (e.g. Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008; Martin, 2000; Webber, Krylow, & Zhang, 2013).

In fact, much of the research demonstrating the positive effects of college student leadership engagement utilizes students' self-reported surveys (Gonyea, 2005; Porter, 2011). These surveys include the National Survey of Student Engagement (NSSE; Indiana University Center for Postsecondary Research, 2016); College Student Experience Questionnaire (CSEQ; College Student Experiences Questionnaire Assessment Program [CSEQAP], 2007); Community College Survey of Student Engagement (CCSSE; Center for Community College Student Engagement, 2016); College Senior Survey (CSS; Higher Education Research Institute, 2016); and, the Student Engagement Scale (SEC; Gunuc & Kuzu, 2015). Generally, items on college student surveys ask participants for information that is either *factual* (objective items used to collect facts about participant's behaviors, characteristics, or life circumstances) or *attitudinal* (subjective items used to capture participant's opinions and feelings) (Tourangeau, Rips, & Rasinski, 2000). There are three major challenges with relying heavily on college student surveys, and the resulting self-report data, for higher education research on factual data.

The first challenge to drawing inferences about student leadership engagement from self-report data is that it draws factual and attitudinal data from the same data source: the self-report measure. Research inferences about student leadership engagement from college student surveys tend to show relationships between items within the survey. Institutions can verify some of the factual items requested on college student surveys, such as academic plans (e.g. majors, minors, pre-professional programs) and academic standing information (e.g. first-year student, G.P.A.), but the challenge lies with other factual items that do not have corresponding institutional records, such as cocurricular and extracurricular activities (Gonyea, 2005). Researchers from NSSE, the current leading college student survey, acknowledge that institutional policy and practice should utilize multiple data sources and not solely rely on a single source (Gonyea & Miller, 2011). The

same rationale promotes that researchers utilize multiple data sources to examine student leadership engagement.

The second challenge to using college student surveys is that these surveys primarily focus on the curricular settings of student leadership engagement (e.g. the classroom environment, study habits, and faculty and classmate interactions), and only a small fraction of items address cocurricular and extracurricular settings of student leadership engagement (e.g. student organizations, service-learning, intercollegiate or intramural sports, and peer mentors). When college student surveys *do* address student leadership engagement, they tend to minimize the quality of students' engagement by asking three types of questions: the first is a continuous variable about the number of activities in which the student engages (e.g. Foreman & Retallick, 2013; Kilgo, Mollet, & Pascarella, 2016); the second seeks to identify if the student holds a formal leader position, a dichotomous variable (e.g. Dugan, 2006; Rubin, Bommer, & Baldwin, 2002); and, the third measures student leadership engagement by using a dichotomous variable of leader and follower and does not recognize the multifaceted nature of those involved in the leadership process. While most research on student leadership within higher education captures leadership as a dichotomous variable, many of these same researchers have called for future studies to include broader definitions of leadership behaviors that differ from simply occupying structured positions of leadership (e.g. Dugan, 2013; Rosch et al., 2015).

The final type of question commonly used on college student surveys asks students about the number of hours or amount of time they spend on activities (e.g. Kuh & Gonyea, 2005; Zacherman & Foubert, 2014). In fact, these survey items about cocurricular or extracurricular activities mirror initial studies of academic engagement that built upon Tyler's "time on task" concept (Merwin, 1969; e.g. Brophy, 1983; McIntyre, Copenhaver, Byrd, & Norris, 1983) even though it was a questionable method of measuring academic engagement at the time (e.g. Karweit & Slavin, 1980). Tversky and Kahneman (1973) have shown the faultiness with self-reported time

on task information. They first studied and labeled the *availability heuristic* phenomenon, which is when respondents recall an event occurring more frequently when more memories are recalled, regardless of the actual frequency. Even when Pace (1980, 1984) developed the CSEQ to measure “quality of effort”, activities were still being measured by time-on-task. For example, students were asked to rate, “attended a meeting of a campus club, organization, or student government group”, as “very often”, “often”, “occasionally”, or “never” (Pace & Kuh, 1998). This measure does not differentiate the constructs of effort and time, because effort is framed by the frequency in which something is done, which is a version of time. Nearly two-thirds of the original NSSE were drawn or modified from the CSEQ (CSEQAP, 2007), so the current dominant college student survey is consistent with this frame of questioning.

The third and final challenge of using college student surveys regards the validity of these self-report surveys. The validity of a survey that collects factual information about student leadership engagement relies on a four-step process for students to respond accurately: comprehension, retrieval of information, judgment and/or estimation, and answering (Tourangeau et al., 2000). Therefore, students must encode memories about activities, understand the question asked, retrieve these memories accurately, attach dates to the experience (if requested), and match their memories to answer options accurately (Porter, 2011). Research shows that the degree of encoding memories differs for memorable and unmemorable events, but the rate of forgetting either event is the same after only two weeks (Thompson, 1982). Garry, Sharman, Feldman, Marlatt, and Loftus (2002) challenge the definition of what it means for an event to be memorable or distinctive when they studied the accuracy of college students self-reporting on the frequency of their sexual activity. Study participants completed daily diaries of sexual experiences and were interviewed six to twelve months later to report the activities from their diary and to discuss their confidence in the accuracy of those memories. Researchers found that students only reported acts of anal sex accurately for six to twelve month after their sexual activity, and Porter

(2011) argues that it is unlikely students will encode memories about cocurricular and extracurricular activities so distinctly.

Concerning the third step of the process, research shows that participants inaccurately report estimations of involvement (Bradburn, Rips, & Shevell, 1987), including the availability heuristic phenomenon (Tversky & Kahneman, 1973). In the final step of the process, where students must report involvement accurately, students are often susceptible to over reporting involvement because it is a socially desirable behavior (SDB; Bowman & Herzog, 2011; Gonyea, 2005; Porter, 2011). Sharkness and DeAngelo (2011) found that moderate to highly involved students who reported their involvement on the Cooperative Institutional Research Program (CIRP) – Your First College Year (YFCY) survey tended to utilize the highest option for involvement available. This finding supports the impact of the SDB bias when reporting involvement. While Sharkness and DeAngelo (2011) argued that the scale needs to differentiate moderate to high levels of involvement better by including more items, Porter (2011) argued that, regardless of the scale, it is difficult for respondents to “map their responses onto the question’s response scale and do so accurately” (p. 52). With all of these challenges, it is understandable that, at any point during this process, students may inaccurately recall their level of involvement within cocurricular or campus activities, which challenges the validity of the involvement levels collected using self-report measures.

Well-Being

Theoretical and conceptual framework. The discipline of psychology has typically focused on two dimensions of well-being: subjective well-being (SWB), also known as the hedonic approach, and psychological well-being (PWB), which refers to as the eudaimonia approach (e.g. Baumeister, Vohs, Aaker, & Garbinsky, 2013; Fave, Brdar, Freire, Vella-Brodrick, & Wissing, 2011; Keyes, Shmotkin, & Ryff, 2002; Ryan & Deci, 2001; Waterman, 1993). While research has shown that SWB and PWB have some overlap, it is also possible to lead a

meaningful life that is not necessarily a happy one, and vice versa (Baumeister et al., 2013; Linley, Maltby, Wood, Osborne, & Hurling, 2009). Therefore, this section will further explore their differences and relation to the goals of postsecondary education.

There are three components of SWB: presence of a positive mood, absence of an unpleasant mood, and life satisfaction (Diner, Suh, Lucas, & Smith, 1999). The first two relate to the affect, or feelings, about life happiness; the later relates to the cognition, or judgment, about life satisfaction. Lucas, Diner, and Suh (1996) found validity for these three distinct, yet interrelated constructs used to measure SWB. This approach to well-being is more understood and rigorously defined than PWB (Waterman, 2008), in part because it has been more widely studied for a longer period of time (Linley et al., 2009).

Keyes, Shmotkin, and Ryff (2002) defined PWB as “engagement with existential challenges of life” (p. 1007), with the definition’s theoretical roots in existential psychology (Frankl, 1946/2006), developmental psychology (Erikson, 1959; Havighurst, 1953), and motivation theory (Maslow, 1954, 1968; Baumeister, 1991; Sommer & Baumeister, 1998; see Auhagen, 2000; Ryff, 1985, for a full review). In her seminal works, Ryff (1989a, 1989b) sought to identify commonalities among these previous theoretical perspectives. She ultimately integrated their commonalities into one parsimonious, multidimensional model of PWB with six dimensions: (a) self-acceptance, (b) positive relations with others, (c) autonomy, (d) environmental mastery, (e) purpose in life, and (g) personal growth.

Time is an important component for understanding the differences between SWB and PWB. Happiness, as a subjective form of well-being, exists in the present. If happiness is examined as life satisfaction, it “may integrate some degree of the past into the present – but even so, it evaluates the past from the point of view of the present” (Baumeister et al., 2013, p. 2). PWB exists by integrating past, present, and future. For example, Baumeister et al. (2013) describes that purpose, a psychological form of well-being, requires that “present events draw

meaning from future ones” (p. 2). This definition makes it apparent that *meaning* is a central component of purpose, and it warrants a definition for clarity. Meaning is the result of an individual making sense of something (Pratt & Ashforth, 2003). Some authors use *meaningfulness* interchangeably with meaning, and the use of these terms as synonyms contributes to the confusion about the uniqueness of these constructs (Pratt & Ashforth, 2003; Rosso, Dekas, & Wrzesniewski, 2010). Meaningful or meaningfulness refers to the amount of significance something holds for an individual (Pratt & Ashforth, 2003), and implies a high level of significance associated with a positive meaning (Rosso et al., 2010). Research supports that meaning integrates past, present, and future, because meaningfulness relates to longer periods of time (Vallacher & Wegner, 1985, 1987).

Tagg (2004) highlighted postsecondary educators’ primary goal of increasing PWB when he synthesized literature that explored different types of learning. One type of learning that Tagg described required *surface-level processing*, where students seek to attain a performance goal (e.g. memorization, or completing an assignment or test); the other type of learning required *deep-level processing*, where students seek to attain a learning goal where they make meaning (e.g. participating in community-service learning to learn, reflect, and make personal meaning from the experience). In his article, Tagg (2004) described two students he taught that approached him some time after the class finished. The first was a male that earned an A grade in his class, but expressed relief that he would not have to take the exam again because he would not remember anything. The second was a female that failed his class, but informed the instructor that his course had pushed her towards continuing her personal growth. She stated that she had continued the learning experience after the class concluded and that this process had changed her understanding, decisions, ideas, and behaviors. She ultimately changed her major and stated that, for the first time, she felt a sense of purpose. The first student executed surface-level processing and felt momentary happiness about attaining his performance goal. The second

student performed deep-level processing by integrating past and present learning experiences with the future to create meaning and find purpose. Ultimately, Tagg argued that it is the second student who is the success story of a college educational experience.

Ryff's (1989a, 1989b) PWB dimension of seeking purpose in life is apparent within Tagg's (2004) example of student learning within a postsecondary education context. Ryff defined a purposeful life as one where an individual feels "there is purpose in and meaning to life ... [that] emphasizes a clear comprehension of life's purpose, a sense of directedness, and intentionally" (Ryff, 1989b, p. 1071). Meaning and purpose in life has strong roots in Frankl's (1946/2006) concept of logotherapy, which is the "most well-known and important approach in psychology to meaning in life" (Auhagen, 2000, p. 35). Logotherapy presents a humanistic-existential paradigm that frames a purposeful or meaningful life as one worth living. There are three assumptions to logotherapy: freedom of the will, will to meaning, and meaning in life (Melton & Schulenberg, 2008). The first refers to the human potential to choose a response to external circumstances. Will to meaning references that a fundamental human motivation is to search for meaning and purpose. The last, meaning in life, is that an individual finds and chooses their meaningful purpose to life.

Some recent definitions of a meaningful life also include an additional dimension of service to society or the greater good. For example, part of Reker's (1997) definition includes that an individual has a "greater social consciousness" (p. 710). Seligman (2004) described a meaningful life as "knowing what your highest strengths are, and using them ... in the service of something larger than [yourself]." Damon, Menon, and Bronk (2003) also included this type of dimension in their definition of purpose: "...a stable and generalized intention to accomplish something that is at once meaningful to the self *and* [emphasis added] of consequence to the world beyond the self" (p. 121). This later definition emphasizes that it is not enough to have an introspective perspective that service to society or the greater good is important – one must

actively work towards that goal through some effort. Beyond definitions, there is additional research that supports the inclusion of societal contribution to a meaningful life (e.g. De Schutter & Vandenabelle, 2008).

The focus on others, service to society, or a greater good to enhance meaningfulness has also appeared in the literature of organizational psychology and business. In their seminal work, which proposing the Job Characteristics Theory, Hackman and Oldham (1975, 1976, 1980) described that the degree to which an employee's work affects others internal or external to the organization – delineated into different levels of *task significance* – contributes to meaningful work. Drucker (1989) has also urged business leaders to learn from nonprofits who focus first on their missions, organizational purpose, and contribution to society. He argued this focus helps nonprofits to recruit and retain volunteers, because volunteers find higher levels of positive meaning in their work as there is a clear understanding of their contribution to society. Michaelson (2005) argued that there is a large overlap between work and one's life work (or purpose), "because a life's work is to a significant degree accomplished at work" (p. 12). Furthermore, Steger, Dik, and Duffy (2012) describe that meaningful work is related to the eudaimonic, rather than hedonic, approach to well-being. Research supports the proposition that work is a significant source of meaning in life and PWB (e.g. Arnold, Turner, Barling, Kelloway, & McKee, 2007; Steger & Dik, 2009, 2010), and this finding highlights the importance of a meaningful life *and* meaningful work for higher levels of PWB.

There are implicit and explicit ways that a meaningful life and work are communicated as the primary purpose of postsecondary education. For example, one way that this purpose appears implicitly is through academic advising on college campuses. Academic advisors are guided to utilize career development theories to integrate academic and career planning (e.g. Gore & Metz, 2008; McCalla-Wriggins, 2000), and all major career development theories address meaning and purpose (Chen, 2001; Dik, Duffy, & Eldridge, 2009). When asked about the

purpose of college, faculty and administrators will explicitly address meaningful life and work. For example, Dr. Mark Edmundson (2013), an English professor at The University of Virginia, described, “A real education ... is oriented around ... figuring out who you are and what you really want to do with your life.” Dr. Phyllis M. Wise (2013), the Chancellor of the University of Illinois at Urbana-Champaign and Vice President of the University of Illinois, said, “[College] is when [students] have the freedom to explore paths their lives might take. It is a rare student who comes to us with a clear life map already in hand.” Finally, many institution mission statements will explicitly include meaningfulness (e.g. Central Virginia Community College, 2016, CVCC Mission section; James Madison University, n.d., About section; John Jay College of Criminal Justice, 2017, Mission Statement section). Therefore, a meaning in life and meaningful work are important constructs to study to determine the value of postsecondary education.

Meaning in life measures. Fifty-nine different instruments have been designed to evaluate meaning in life (Brandstätter, Baumann, Borasio, & Fegg, 2012). Two measures frequently used in research are the Purpose in Life Test (PIL; Crumbaugh & Maholick, 1964) and the Life Regard Index (LRI; Battista & Almond, 1973). Researchers have criticized meaning in life measures for three primary reasons (Steger, Frazier, Oishi, & Kaler, 2006). First, items are highly correlated with other constructs, such as SWB constructs of positive and unpleasant moods, and life satisfaction (e.g. Chamberlain & Zika, 1988; Debats, van der Lubbe, & Wezeman, 1993; Zika & Chamberlain, 1987, 1992), and other related constructs (e.g. Dufton & Perlman, 1986). Second, factor analysis studies show the factor structures differ from those theorized and with each other (e.g., Dufton & Perlman, 1986; Chamberlain & Zika, 1988; McGregor & Little, 1998; Schulenberg & Melton, 2010). Finally, meaning in life measures neglect Frankl’s (1946/2006) second assumption of will to meaning (Steger et al., 2006).

The Meaning in Life Questionnaire (MLQ; Steger et al., 2006) was developed in an attempt to overcome these limitations, and there is growing support and usage of the MLQ as an

assessment of meaning in life (e.g. Bailey & Phillips, 2016; Damásio, Hauck-Filho, & Koller, 2016; Zhang et al., 2016). However, the MLQ does not include items that specifically address service to society or the greater good in the newer definitions of a meaningful life. The Source of Meaning and Meaning in Life Questionnaire (SoMe; Schnell, 2009) has a meaningfulness subscale (SoMe-MS) with items that address and include these newer definitions. Furthermore, Damásio et al. (2016) recently found that two items on the SoMe-MS provide further information than the MLQ; specifically, that spirituality and generativity affect sources of meaning. Together these two measures show inherent content validity by covering the breadth of the meaning in life construct; therefore, this study will utilize these two measures to assess students' meaning in life.

Meaningful work measures. Literature supports the notion that work provides a platform for individuals to find meaning in life (e.g. Michaelson, 2005; Steger & Dik, 2009, 2010), and it has the potential to address the concept of service to society in the newer definitions of meaning (e.g. Drucker, 1989; Grant, 2007). The first meaningful work measure was the Job Diagnostic Survey (JDS; Hackman & Oldham, 1975); however, the employee or supervisor could complete the JDS. Definitions of meaning in life and meaningful work identify that the individual determines the extent to which something is meaningful; therefore, self-report measures are important to study these constructs. Other more recent measures of work address related but different constructs. For example, the Workplace Spirituality Scale (WSS; Ashmos & Duchon, 2000) addresses spiritual work drive; and, the Work Orientation Scale (WOS; Wrzesniewski, McCauley, Rozin, & Schwartz, 1997), Vocational Identity Questionnaire (VIQ; Dreher, Holloway, & Schoenfelder, 2007), and Calling and Vocation Questionnaire (CVQ; Dik, Eldridge, Steger, & Duffy, 2012) address vocational calling. Definitions of “calling” address purpose or meaningfulness in work with a religious or spiritual tone. For example, Dik and Duffy (2009) define calling as a “transcendent summons, experienced as originating beyond the

self, to approach a particular life role in a manner oriented toward demonstrating or deriving a sense of purpose or meaningfulness and that holds other-oriented values and goals as primary sources of motivation” (p. 427). Calling is related to Frankl’s (1946/2006) concept of will to meaning, and should be correlated with any meaningful work scale; however, while calling is a component of meaningful work for some, it is not an inclusive or comprehensive measure of the construct.

Currently, the most inclusive and comprehensive measure of meaningful work is the Work and Meaning Inventory (WAMI; Steger et al., 2012). The WAMI is a self-measure, which allows the instrument to capture the subjective nature of meaningfulness, and the measure seeks to measure more than job satisfaction and vocational calling. The WAMI focuses on the meaning made through work, which is consistent with the research on meaning in life to focus on the process of making meaning. Additionally, this measure focuses on motivations to serve society or the greater good, as described in new definitions of a meaningful life. Because of the WAMI’s content validity with the construct of interest, this study will utilize the WAMI to measure students’ meaningful work.

Studying College Student Leadership Engagement and Meaning

In a study about spirituality, 76% of students (in a sample of 112,232 students across 236 institutions) reported that they were searching for meaning or a purpose in life to some or a great extent (Astin et al., 2005). Additionally, Zukin and Szeltner (2012) found that 65% of students felt that contributing to society was very important or essential to their ideal job, which speaks to the importance of meaningful work. Meaning in life, a component of psychological well-being, and meaningful work, a path through which to find meaning, are clearly a relevant outcome for institutions of postsecondary education.

Moran (2001) was the first to call attention to the work of Frankl (1946/2006) on meaning in life related to student leadership engagement through cocurricular and extracurricular

activities, saying, “participation in campus activities ... may actually lead to the identification of a life purpose” (p. 272). In 2006, Molasso answered this call and found preliminary evidence that the type of engagement (e.g. fraternities and sororities, and intramural or club sports) is related to a student’s sense of purpose in life; although, there are threats to the validity of this study because it utilized the PII test and student self-report data. Other than Molasso’s (2006) study after Moran’s (2001) call, there has been a vacuum of published research about the relationship between student leadership engagement and psychological well-being, as defined by meaning in life.

This study begins to address that gap in the literature to study student leadership engagement, through cocurricular and extracurricular activities, and its relation to meaning. Exploring how the breadth and depth of student leadership engagement may relate to meaning could be extremely helpful to practitioners and future researchers. For example, the multilayered roles within followers and leaders provide different depths of leadership engagement for the student. Do different depths of leadership experiences differentially relate to meaning? There is also a wide variety of contexts where student leadership engagement occurs; engaging in more contexts provide students more breadth in their experiences. Does breadth of student leadership engagement relate to meaning differently? This study will begin to answer these questions by exploring how the breadth and depth of student leadership engagement relates to meaning, a component of psychological well-being.

Research Methods

Purpose

The purpose of this study is two-fold. First, the study seeks to propose significant components that institutions may use to track student participation in cocurricular and extracurricular activities or, at the student level, student leadership engagement. Second, this study will examine whether student leadership engagement relates to higher levels of psychological well-being, specifically focused on the dimensions of meaning in life (Frankl, 1946/2006; Ryff, 1989a, 1989b) and meaningful work (Steger & Dik, 2009, 2010).

Participants

This study occurred at a large, four-year, primarily undergraduate and residential institution in the southeast. The initial sample began with students who had verified student leadership engagement experiences on the Student Leadership Engagement Measure (SLEM) during the 2015-2016 or 2016-2017 academic year by an instructional faculty, administrator, or current public roster. In total, 13,633 students comprised the initial sample. The study followed up with these students at the end of the 2016-2017 academic year to administer six meaning in life and work subscales within three instruments: MLQ, SoMe, and WAMI. Participants were solicited from the initial sample through electronic mail messages using standards of internet-based survey research (Crawford, McCabe, & People, 2005), and the rate of return was 8.5% ($n = 1,163$). Participants were removed if they did not have at least one complete dependent variable subscale. Participants were also removed if their average rate to complete items was in the bottom 5% (three seconds or less per item). This average rate served to indicate when a participant had not taken the appropriate time necessary to read and respond to the survey. Finally, participants were removed if there was a pattern detected in their answers (e.g. 1, 2, 3, 4, 5, 1, 2, 3, 4, 5). The final web-based survey sample was 1,005 students. The same six meaning in life and work subscales were also administered during a university administration (UA) two

months prior to the email survey, and those students were added to the sample. The total sample comprised of 1,426 participants.

Instruments

There are two comprehensive instruments used in this study. The independent variable, the Student Leadership Engagement Measure (SLEM), includes 17 variables. The dependent variable, the Meaning in Life and Work Scale (MLWS; see Appendix A for scale), adapts three psychological well-being instruments for use with college students: Meaning in Life Questionnaire (MLQ; Steger et al., 2006), Sources of Meaning and Meaning in Life Questionnaire (SoMe; Schnell, 2009), and the Work and Meaning Inventory (WAMI; Steger et al., 2012) revised for college students (WAMI-R). This section will describe all instruments and variables in detail. Please view Table 1 for an outline of independent and dependent variables.

Table 1

Summary of Variables Used in Study

| Variable | Variable Type (Range) |
|---|-------------------------|
| Independent Variables | |
| Total Score of Student Leadership Engagement (SLE-TS) | Continuous (≥ 1) |
| Engagement Type Variables | |
| Count of Engagement Types (ET-C) | Continuous (1 thru 7) |
| Civic ET (ET-Civic) | Dichotomous |
| Engaged Learning ET (ET-EngLrn) | Dichotomous |
| Fraternities & Sororities ET (ET-FraSor) | Dichotomous |
| Paraprofessional ET (ET-Parapro) | Dichotomous |
| Sports ET (ET-Sports) | Dichotomous |
| Student Employment: Administrative ET (ET-StEA) | Dichotomous |
| Student Organizations ET (ET-StOrg) | Dichotomous |
| Multiple Engagement Types (ET-M) | Dichotomous |

| Variable | Variable Type (Range) |
|--|------------------------|
| Leadership Role Variables | |
| Count of Leadership Roles (LR-C) | Continuous (1 thru 5) |
| Attendee/Participant (LR-1) | Dichotomous |
| General Member (LR-2) | Dichotomous |
| Project Coordinator (LR-3) | Dichotomous |
| Group Organizer (LR-4) | Dichotomous |
| Executive Leader (LR-5) | Dichotomous |
| Multiple Leadership Roles (LR-6) | Dichotomous |
| Highest Leadership Role (LR-H) | Categorical (1 thru 5) |
| Average Leadership Roles (LR-A) | Continuous (1 thru 5) |
| Dependent Variables | |
| MLQ Presence of Meaning Subscale (MLQ-PM) | Continuous (5 thru 35) |
| MLQ Search for Meaning Subscale (MLQ-SM) | Continuous (5 thru 35) |
| SoMe Meaningfulness Subscale (SoMe-M) | Continuous (5 thru 35) |
| WAMI-R Positive Meaning Subscale (WAMI-R-PM) | Continuous (4 thru 28) |
| WAMI-R Meaning-Making through Work Subscale (WAMI-R-W) | Continuous (3 thru 21) |
| WAMI-R Greater Good Motivations Subscale (WAMI-R-GG) | Continuous (3 thru 21) |

Note. MLQ = Meaning in Life Questionnaire; SoMe-M = Sources of Meaning and Meaning in Life Questionnaire; WAMI-R = Work and Meaning Inventory – Revised.

Student Leadership Engagement Measure (SLEM). As described, college student surveys are the primary method of collecting data about cocurricular and extracurricular involvement, and there are validity issues surrounding this data collection method. Additionally, there is an absence of behavioral data regarding some of the more qualitative dimensions involvement (Astin, 1984, 1985), such as differentiating different types of engagement within the leadership process. The SLEM addresses the above validity and quality concerns in two ways. First, faculty or administrators responsible for student leadership engagement will define those experiences based on the dimensions identified for this instrument below: engagement type,

responsibility level, resume components, and additional variables. This measure will improve the quality of *inputs* (Erwin, 1996) or information about the opportunities for student leadership engagement. Second, responsible faculty or administrators will verify individual student engagement during those experiences. These two measures will address concerns of validity over students' self-reported behaviors.

Student leadership engagement unit. The first concern to address is, "What constitutes as student leadership engagement?" Measuring cocurricular and extracurricular experiences by time on task is common, and the validity challenges of measuring time on task through college student surveys was discussed earlier. Most frequently, attempts to measure time on task will result in asking students how many hours they have participated in all cocurricular experiences. A minor improvement to this approach would be for college student surveys to ask students how many hours they have spent participating in each type of cocurricular experience; however, the validity issues around accuracy (Tourangeau et al., 2000) and over reporting due to socially desirable behaviors (SDB; Bowman & Herzog, 2011; Gonyea, 2005; Porter, 2011) would remain.

It is equally unreasonable that faculty and administrators could verify the number of hours that students dedicate to leadership engagement. Even among positions where students receive financial compensation, while hourly student employees could easily report their hours (e.g. a Peer Educator), student employees paid through a stipend would find it challenging to report those hours accurately (e.g. a Resident Assistant). Departments that pay stipends may be able to provide an average number of hours, but that could vary for each student. Using the example of the Resident Assistant, some floors may have more residents with transitional or behavioral challenges and require more work than other floors. Most cocurricular experiences that are unpaid would find it extremely challenging to report even an estimate on the number of hours that students engage. Therefore, measuring time on task by hours is not a strong or practical way to measure

student involvement, no matter whether that time is reported by the student, faculty, or administrator.

An alternative to measuring time on task is to verify the start and end dates of an experience, but the validity of comparing experiences based on start and end dates is questionable. For example, a student that participates in an alternative spring break would be seen as having less experience when compared to others, but the student participating in the alternative spring break has experienced a more time intensive engagement during a shorter time-frame. Another alternative to time on task would be to report cocurricular experiences completed within an academic year; however, this approach also presents some challenges. A number of formal leader positions change on the calendar year rather than the academic year, and some students graduate and matriculate mid-academic year. Each of these examples represent an engagement that would be a portion of the full academic year and not comparable to a full year.

The SLEM counts a student's leadership engagement as one that occurs within an academic term (i.e. quarter or semester), similar to an academic course. Each faculty or administrator can identify meaningful campus engagement experiences that their department facilitates, supports, or sponsors, and can submit verifiable student-level data about participation in any given academic term. There are strong arguments against the time-based, credit hour measure for academic courses (e.g. Laitinen, 2012; Selingo, 2012). These arguments hold true for measuring cocurricular and extracurricular student leadership engagement, but an interpretable unit is needed. The acknowledgement of cocurricular experiences meaningful contribution to students' learning and development is still emerging, and that emergence may reflect the academic coursework path that still predominantly uses credit hours within an academic term. While advocating that these experiences contribute to a student's learning and development during college, advocates may benefit by adapting to an instrument (such as this one) that is aligned with the current measure of the academic curriculum.

Engagement type (ET). Not all educational opportunities produce the same outcomes (Pace, 1984), and the type of engagement is an important aspect to differentiate cocurricular and extracurricular experiences. Researchers of involvement often address the type of engagement by conducting focused research on a specific type (e.g. Greek affiliation, student government). Taxonomies of different types of student experiences are almost absent from the literature. Some researchers have developed student typologies that categorize students based on their personal attributes and self-reported behaviors (e.g. Astin, 1993; Clark & Trow, 1966; Katchadourian & Boli, 1985; Kuh, Hu, & Vesper, 2000; Taber & Hackman, 1976). If these typologies include cocurricular or extracurricular engagement as a dimension to build the typology, they “often lack specificity with regard to involvement” (Dugan, 2013, p. 229). For example, Kuh et al. (2000) utilized the CSEQ (CSEQAP, 2007) which asks students broad questions about cocurricular and extracurricular activities, such as how often has the student “attended a meeting of a campus club, organization, or student government group” (Content section, College Activities section, Clubs and Organizations section). Recently, Dugan (2013) developed a typology based on the Multi-Institutional Study of Leadership (MSL). The MSL has items focused on specific types of activities, such as “Have you been involved in the following kinds of student groups during college? Academic/Departmental/Professional (ex. Engineering Club); Service (ex. Circle K, Habitat for Humanity); Campus-Wide Programming (ex. multicultural programming committee); Student Governance (ex. Student Government Association)” (Center for the Study of Student Life & Student Leadership Development, 2012). Dugan developed his taxonomy solely focused on these specific activities and not on personal attributes as previous typologies had done. This instrument will utilize the strength of Dugan’s (2013) approach to focus on specific types of cocurricular and extracurricular activities. The SLEM will build off the 21 dichotomous variables Dugan (2013) identified by adding four new specific activities and clustering these 25 specific activities into seven ETs (see Table 2). To

capture an aspect of the breadth of student leadership engagement, each student will have a count of engagement types (ET-C) ranging from one to seven, and this count will sum the number of engagement types in which the student has an associated engagement.

Table 2

Student Leadership Engagement Types (ET) and Example Experiences

| Engagement Type (ET) | Cocurricular and Extracurricular Experiences and Examples |
|---------------------------|--|
| Civic | <p><i>Media</i> (e.g. campus radio, student newspaper)</p> <p><i>Military</i> (e.g. ROTC, Cadet Corps)</p> <p><i>Political/ Advocacy</i> (e.g. College Democrats; Students Against Sweatshops)</p> <p><i>Student Governance and Advocacy Group</i> (e.g. Student Government Association; Residence Hall Association; Interfraternity Council)</p> |
| Engaged Learning | <p><i>Living-Learning Programs</i> (e.g. language house, leadership floors, ecology halls)</p> <p><i>Service-Learning*</i> (e.g. alternative spring break; federal work study in the community)</p> <p><i>Study Abroad*</i> (e.g. short-term, semester, or exchange program)</p> <p><i>Scholar*</i> (e.g. undergraduate research, publications, and conference presentations)</p> |
| Fraternities & Sororities | <p><i>Culturally Based Fraternities and Sororities</i> (e.g. National Pan-Hellenic Council groups such as Alpha Phi Alpha Fraternity, Inc., and Latino Greek Council groups such as Lambda Theta Alpha Latin Sorority, Inc.);</p> <p><i>Social Fraternities or Sororities</i> (e.g. Pan-Hellenic or Interfraternity Council groups such as Sigma Phi Epsilon or Kappa Kappa Gamma)</p> |
| Paraprofessional | <p><i>Campus-Wide Programming Groups</i> (e.g. program board; film series board, multicultural programming committee)</p> <p><i>New Student Transitions</i> (e.g. admissions ambassador, orientation advisor)</p> <p><i>Paraprofessional Group</i> (e.g. resident assistants, peer health educators)</p> |
| Sports | <p><i>Sports: Intercollegiate or Varsity</i> (e.g. NCAA hockey, varsity soccer)</p> <p><i>Sports: Club</i> (e.g. club volleyball)</p> <p><i>Sports: Leisure or Intramural</i> (e.g. intramural flag football; rock climbing club)</p> |

| Engagement Type (ET) | Cocurricular and Extracurricular Experiences and Examples |
|-------------------------------------|--|
| Student Employment: Administrative* | e.g. Fiscal Assistant; Office Student Assistant; Recreation Assistant; Social Media Assistant <i>Academic/ Departmental/ Professional</i> (e.g. Prelaw Society, academic fraternity, Engineering Club) <i>Arts/ Theater/ Music</i> (e.g. theater group, marching band) <i>Cultural/ International</i> (e.g. Black Student Union; German Club) |
| Student Organizations | <i>Honor Society</i> (e.g. Omicron Delta Kappa, Mortar Board, Phi Beta Kappa); <i>Religious</i> (e.g. Campus Crusades for Christ; Hillel) <i>Service</i> (e.g. Circle K, Alpha Phi Omega) <i>Special Interest</i> (e.g. comedy group) |

Note. Adapted from “Patterns in Group Involvement Experiences During College: Identifying a Taxonomy,” by J. P. Dugan, 2013, *Journal of College Student Development*, 54(3), p. 234. Copyright 2013 by the American College Personnel Association. The * denotes cocurricular group experience variables not included in Dugan (2013).

Culturally-based experience. In the original 21 dichotomous variables that Dugan (2013) identified for cocurricular group experiences, two variables recognized group experience with a racial or ethnic perspective: cultural/international, and culturally based fraternities and sororities. Research has shown that this dimension in student opportunities influence engagement (e.g. Griffin & McIntosh, 2015) and learning and development outcomes (e.g. Guiffrida, 2003; Harper & Quayle, 2007; Museus, 2008). The challenge with disassociating this dimension within cocurricular group experiences is that it does not comprehensively address culturally-based experiences. For example, the Inter-Cultural Greek Council would be defined as a student governance group and a cultural/international experience, while the National Society of Black Engineers would be defined as an academic/departmental/professional group and a cultural/international experience. To recognize the unique nature of all culturally-based experiences, a dichotomous variable is included in the SLEM to indicate if the student leadership engagement has a cultural perspective and focus.

Leadership role (LR). As discussed, most research on student leadership within higher education captures leadership as a dichotomous variable that represents whether a student has held a structured leadership position or not. Much of this same research calls for future studies to include broader definitions of leadership behaviors than occupying structured positions of leadership (e.g. Dugan, 2013; Rosch et al., 2015). The call for broader definitions of leadership behaviors aligns with leadership literature and research outside of higher education, both of which frequently emphasize that leadership is a process, not a position, and that both leaders and followers engage in the process of leadership towards shared goals (e.g. Bass, 1985; Burns, 1978; Uhl-Bien et al., 2012; Wassenaar & Pearce, 2012). Coupled with the call for students to take an increasing responsibility for their education (e.g. Kuh et al., 1991), this measure captures student leadership engagement by identifying different LRs that students assume in the leadership process.

When examining the literature in meaningful work, and in organizational and personnel psychology, Hackman and Oldham's (1975, 1976, 1980) Job Characteristics Theory (JCT) represented different levels of effort or job complexity by differentiating types of responsibility. In the JCT, job complexity refers to the level of stimulating and challenging demands associated with a particular position, and higher levels of job complexity are associated with greater challenges and effort required to complete a task (e.g. Fried, Melamed, & Ben-Davis, 2002). The LRs for this instrument (see Table 3) were developed with inspiration from two dimensions described in the JCM: *task identity* and *task significance*. Hackman and Oldham (1975) defined task identity as "the degree to which the job requires completion of a 'whole' and identifiable piece of work" (p. 161), and task significance as "the degree to which the job has a substantial impact on the lives or work of other people – whether in the immediate organization or in the external environment" (p. 161). When students are entrusted with responsibilities, expected to complete tasks on a regular basis, or provided with long-term projects, they are operating within positions

of significant task identity. When students are entrusted with responsibilities that heavily impact others, they are intuitively entrusted with more responsibility and higher levels of task significance. Therefore, positions that primarily focus on task *significance* are assigned higher scores than positions focused primarily on task *identity*.

In the proposed LRs, project coordinators are students who have higher degrees of task identity, while group leaders and executive leaders are students who have higher degrees of task significance. The LRs of group organizer and executive leader are differentiated based on their degree of task significance, with executive leaders having higher levels of task significance because of the role's broader impact on the lives of others. For each student, his or her highest leadership role (LR-H) and average leadership role (LR-A) will be identified as an independent variable. Historically, when leadership has been captured as a dichotomous variable representing whether the student has held a structured leadership position or not, the executive leader, group organizer, and project coordinator would have been identified as a leader.

These six levels of responsibility provide an intuitive way to operationalize broader definitions of student leadership behaviors based on responsibilities within the leadership process of student engagement. In addition to operationalizing a broader construct of student leadership, this study also provides an approach to operationalize student effort, a central component of Pace's (1980, 1984) concept of quality of effort, Astin's (1984, 1985) definition of involvement, and Kuh's (2001, 2003, 2009) definition of engagement.

The resume components. When writing a resume, two components are consistently included within the details of any experience: the position and the organization in which the experience occurs. These two qualitative variables should be included in any cocurricular and extracurricular engagement measure for deeper analysis, such as the analysis of outliers. These data points are also helpful when studying individual specific student experiences, such as Resident Assistants, rather than examining clusters of experiences, such as the paraprofessional

ET where Peer Educators would be included with Resident Assistants. The components of position and organization are also extremely helpful when institutions use this data for cocurricular transcripts or comprehensive student records.

Table 3

Leadership Roles (LR), Descriptions, and Weighting

| LR | Description of LR | Weighting |
|---------------------|---|-----------|
| Executive Leader | Responsible for the oversight of group organizers and/or project coordinators; facilitates the movement towards accomplishing shared vision and outcomes (e.g. Organization President, Undergraduate Hall Director, Undergraduate Student Employee Manager) | 5 |
| Group Organizer | Consistently responsible for groups of people, money, or highly confidential information (e.g. Adventure Trip Leader, Peer Educator, Treasurer) | 4 |
| Project Coordinator | Primarily responsible for routine completion of project, task, or other responsibility (e.g. Office Student Assistant, Secretary, Webmaster) | 3 |
| General Member | Primarily responsible for regular participation and requirements of general membership (e.g. Organization Member) | 2 |
| Attendee | Not responsible for anything other than attending and participating in an event or short series of events (e.g. Conference Attendee, Intramural Sport Participant, Presidential Leadership Summit) | 1 |
| None | Not involved in the experience | 0 |

Additional variables. There are two dichotomous variables also collected about each experience: academic credit and compensation. Some cocurricular experiences require training in order for students to perform in the position successfully, such as a Resident Assistant. The training of these students can occur during in-service training sessions, retreats, and academic courses (Ender, 1983; Upcraft, 1982). Increasingly, some cocurricular experiences have an academic course that is required prior to, or when completing, the cocurricular experience (Bowman & Bowman, 1995). The academic credit variable will allow analysis of the potential

different involvement patterns, or differential impacts, when training is conducted through academic courses. Similarly, some cocurricular experiences compensate students monetarily for involvement, such as orientation leaders (Education Advisory Board, 2015). The dichotomous financial compensation variable will allow analysis of the potential different involvement patterns, or differential impacts, when financial compensation is given for involvement.

Calculated engagement measures. Three variables are operationalized to capture different measures of student leadership engagement: the total score of student leadership engagements (SLE-TS), the count of student leadership engagements (SLE-C), and the average leadership role (LR-A). The SLE-TS is the sum of all LR weights, the SLE-C is the sum of each leadership experience, and the LR-A is the SLE-TS divided by the SLE-C (see Table 3). Please view Table 4 and Table 5 to see an example of how these measures are calculated; calculations in the example are for a student named Earl R. Hensley.

Table 4

Student Leadership Engagement of Earl R. Hensley during 2016-2017

| | Organization | Position | ET | LR | LR Weight | Term |
|----|----------------------------|--------------------------------------|------------------|------------------|-----------|--------|
| 1. | Office of Residence Life | Resident Assistant | Paraprofessional | Group Organizer | 4 | fall |
| 2. | Office of Residence Life | Undergraduate Hall Director | Paraprofessional | Executive Leader | 5 | spring |
| 3. | Community Service-Learning | Alternative Spring Break Participant | Engaged Learning | General Member | 2 | spring |

Note. ET = Engagement Type; LR = Leadership Role.

Table 5

Computations of Student Leadership Engagement Measures of Earl R. Hensley during 2016-2017

| Measure | Computation | Score |
|--|-------------|-------|
| Total Score of Student Leadership Engagements (SLE-TS) | $4 + 5 + 2$ | 11 |
| Count of Student Leadership Engagements (SLE-C) | $1 + 1 + 1$ | 3 |
| Average Leadership Role (LR-A) | $11 \div 3$ | 3.67 |

Demographic characteristics. While not specifically about the cocurricular involvement experience, it is important to collect the demographic characteristics of those students that participate in cocurricular experiences, preferably by matching a unique student identifier against student-level leadership engagement data and institutional data. Examples of demographic data to collect include academic level (e.g. first-year, senior), admit type (e.g. first-year, transfer), gender (e.g. female, male), and race and ethnicity (e.g. Caucasian, Hispanic). Matching engagement data with demographic characteristics of students enables both the research and institutional analysis to understand how subgroups may engage in leadership opportunities and roles differently.

Meaning in Life and Work Scale (MLWS). The MLWS is a comprehensive scale used to measure psychological well-being (PWB), as defined by meaning in life and meaningful work. It is a 25-item measure that includes three scales: Meaning in Life Questionnaire (MLQ; Steger et al., 2006), Sources of Meaning and Meaning in Life Questionnaire meaningfulness subscale (SoMe-MS; Schnell, 2009), and the Work and Meaning Inventory revised for college students (WAMI-R; Steger et al., 2012). For ease of completion by participants, one scale has been developed for answering all items. The scale ranges from 1 (absolutely untrue) to 6 (absolutely true), with 7 providing an unsure option. Original scales for each instrument will be provided in the descriptions below. The 7-point scale was chosen because some researchers have recently argued that more points on a Likert scale increase the reliability and validity of the scale,

generally because it decreases usage of extreme responses (e.g. Lozano, Garcia-Gueto, & Muniz, 2008; Weijters, Cobooter, & Schillewaert, 2010).

Meaning in Life Questionnaire (MLQ). The MLQ (Steger et al., 2006) is a 10-item measure that includes two subscales to assess PWB, defined by meaning in life: (a) Presence of Meaning (items 1, 4, 5, 6, 9) and (b) Search for Meaning (items 2, 3, 7, 8, 10; see Appendix A for items). Presence of Meaning measures whether people perceive meaning in their lives; Search for Meaning measures whether people actively seek to find meaning in life. On the MLWS, items 1 through 10 represent the MLQ (see Appendix A). The original scale to answer the MLQ ranged from 1 (absolutely untrue) to 7 (absolutely true), with 4 providing a neutral or unsure option. The original scale aligns closely with the modified scale of the MLWS. On both, there are 7 points on the scale using the same untrue and true statements. The only difference is that the neutral option is listed at the end of the scale on the MLWS rather than the middle of the scale, as it is on the MLQ.

The MLQ has demonstrated strong validity and reliability. First, the MLQ shows strong evidence of construct validity, “the degree to which a test measures what it claims, or purports to be measuring” (Brown, 1996, p. 231). Seger et al. (2006) conducted factor analysis, which revealed that presence and search for meaning were two related but distinct constructs. Schulenberg, Strack, and Buchanan (2011) documented six administrations of the MLQ, after its original publication in 2006, that had alpha coefficients for the Presence of Meaning subscale ranging from .81 to .93 and the Search for Meaning subscale ranging from .88 to .93 (Duffy & Raque-Bogdan, 2010; Kashdan & Breen, 2007; Park, Park, & Peterson, 2010; Schulenberg, Schnetzer, & Buchanan, 2011; Whittington & Scher, 2010). After this publication, Steger et al. (2012) again found high alpha coefficients for the presence ($\alpha = .87$) and search ($\alpha = .87$) for meaning. Seger et al. (2006) also revealed a pattern of correlations with which the MLQ theoretically should correlate, including a number of well-being, personality, and religiosity

variables. Additionally, because they attempt to measure the same construct, the MLQ Presence of Meaning subscale should and was found to correlate with the Life Regard Index (LRI; Battista & Almond, 1973) and the Purpose in Life Test (PIL; Crumbaugh & Maholic, 1964), with eight correlations ranging from .58 to .74 (Seger et. al., 2006). Finally, in their aggregate sample, Steger et al. (2006) found the Presence of Meaning subscale ($\alpha = .82$) and Search for Meaning ($\alpha = .87$) displayed good reliability. Subsequent studies have demonstrated sufficient test-retest reliability (Dik, Sargent, & Steger, 2008; Steger & Kashdan, 2007). Because, in part, of its strong validity and reliability, the MLQ has been translated into more than 27 languages (Damásio et al., 2016).

Sources of Meaning and Meaning in Life Questionnaire meaningfulness subscale (SoMe-MS). The Sources of Meaning and Meaning in Life Questionnaire (SoMe; Schnell, 2009) is a 151-item measure that measures 26 sources of meaning, meaningfulness, and crisis of meaning. For this study, the 5-item meaningfulness subscale was used to further assess PWB, defined by meaning in life. Schnell (2009) defined meaningfulness as “a fundamental sense of meaning and belonging” (p. 483), and writes that the meaningfulness subscale measures “the degree of subjectively experienced meaningfulness” (p. 488). On the MLWS, items 11 through 15 represent the SoMe-MS (see Appendix A). The original scale to answer the SoMe-MS ranged from 0 (strongly disagree) to 5 (strongly agree), with no option for neutral or unsure. Increasing the original 5-point scale to a 7-point scale will likely increase the reliability and validity of the scale because it will decrease the usage of extreme responses (e.g. Lozano et al., 2008; Weijters et al., 2010).

The SoMe-MS demonstrates good validity and reliability to measure meaning in life. Schnell (2009) found the meaningfulness scale significantly predicted positive well-being ($r = .26$) and did not predict negative well-being ($r = -.01$). Further, the meaningfulness and crisis of meaning scales were negatively correlated ($r = -.35$). Schnell (2009) also found the SoMe displayed good reliability after 2 months for the scales ($\alpha = .81$) and positive and negative

dimensions of meaning in life ($\alpha = .90$), and after 6 months for the scales ($\alpha = .72$) and dimensions ($\alpha = .78$). Damásio et al. (2016) report that the SoMe has been translated into at least eight languages, which demonstrates the rising interest and support to use this instrument to measure meaningful work.

Work and Meaning Inventory revised for college students (WAMI-R). The Work and Meaning Inventory (WAMI; Steger et al., 2012) is a 10-item measure that includes three subscales to assess the construct of meaningful work: (a) Positive Meaning (items 1, 4, 5, and 8); (b) Meaning-Making through Work (items 2, 7, and 9); and, (c) Greater Good Motivations (items 3, 6, and 10; see Appendix A items 16 – 25). Positive Meaning measures whether an individual perceives that the work they are doing has personal significance or if people “judge their work to matter and be meaningful” (Steger et al., 2012, p. 324). Meaning-Making through Work assesses the degree to which work contributes to meaning in life; Greater Good Motivations measures whether an individual’s work contributes to the greater good or to society at large.

The WAMI has demonstrated acceptable validity to measure meaningful work. Steger et al. (2012) reported that the WAMI correlated in predictable ways with the constructs of calling and work orientations. Specifically, correlations were examined with the Brief Calling Scale (BCS; Dik et al., 2012), and the job, career, and calling orientation scores by Wrzesniewski et al. (1997). BCS correlations ranged from .42 to .54 on the calling subscale and .00 to -.30 on the calling-seeking subscale (Steger et al., 2006). Correlations ranged from -.51 to -.60 for on-the-job orientation, -.07 to -.23 for career orientation, and .49 to .61 for calling orientation. Additionally, Steger et al. (2012) reported that the WAMI subscale and total scores correlated positively with desirable work variables (organizational citizenship behaviors, career commitment, organizational commitment, job satisfaction, and intrinsic work motivations), ranging from .16 to .70. However, scores correlated negatively with undesirable work variables (days reported absent, withdrawal intentions, and extrinsic work motivations), ranging from -.05 to -.48. Additionally, researchers

conducted hierarchical linear modeling to examine the ability of the WAMI to uniquely explain the three work orientations above and beyond other predictors. They found that the WAMI “added a small, but significant, portion of variance” (Steger et al., 2006, p. 331) explaining 5% more variance of job satisfaction ($R^2\Delta = .05, p < .01$), 3% more variance in days of reported absence ($R^2\Delta = .03, p < .01$), and 2% more variance of life satisfaction ($R^2\Delta = .02, p < .01$).

The WAMI was modified for the current study in two ways. First, the Likert scale was expanded to a 7-point scale, changing from the original scale where the WAMI ranged from 1 (absolutely untrue) to 5 (absolutely true) with 3 providing a neutral or unsure option. Second, the items were modified for a traditional-age college student population that is not yet full-time in the workforce. Therefore, the scale is the WAMI revised (WAMI-R). On the MLWS, items 16 through 25 represent the WAMI-R (see Appendix A).

Research Design

Bivariate correlation, multiple regression, and multivariate analysis of variance (MANOVA) were employed to study the following hypotheses. Independent variables for all hypotheses vary based on the research question, but will comprise of the total score of student leadership engagements (SLE-TS), engagement type variables, and leadership role variables (see Table 1). Dependent variables include three measures of psychological well-being, with a focus on meaning in life and work. Two of these measures will assess meaning in life: Meaning in Life Questionnaire (MLQ) and Sources of Meaning and Meaning in Life Questionnaire Meaningfulness Subscale (SoMe-MS). The MLQ will be analyzed using its two subscales: Presence of Meaning (MLQ-PM) and Search for Meaning (MLQ-SM). The last measure will assess meaningful work using the Work and Meaning Inventory – Revised (WAMI-R). The WAMI-R will be analyzed using its three subscales: Positive Meaning (WAMI-R-PM), Meaning-Making through Work (WAMI-R-W), and Greater Good Motivations (WAMI-R-GG). Results were calculated using SPSS statistical analysis software. All hypothesis will use the six subscales

for dependent variables (MLQ-PM, MLQ-SM, SoMe-M, WAMI-R-PM, WAMI-R-W, and WAMI-R-GG); see Table 6 for a summary of the independent variables and statistical analyses employed.

Table 6

Hypotheses Variables and Statistical Analysis

| Hypothesis | Independent Variables | Statistical Analysis |
|------------|---|-------------------------------------|
| 1 | (1) Total Score of Student Leadership Engagement (SLE-TS) | Pearson's Correlations with each DV |
| 2 | (1) Count of Engagement Types (ET-C) | Pearson's Correlations with each DV |
| 3 | (1) Total Score of Student Leadership Engagement (SLE-TS) (2) Count of Engagement Types (ET-C) | Multiple Regression with each DV |
| 4 | (1) Engagement Type (ET) | MANOVA with follow-up DA |
| 5 | (1) Leadership Role (LR) | MANOVA with follow-up DA |

Note. DA = Discriminant Analysis; DV = dependent variable; MANOVA = multivariate analysis of variance.

First research question. The following hypotheses are guided by the research question, “Does student leadership engagement relate to psychological well-being, as measured by meaning in life and work?”

Hypothesis one. It is hypothesized that individuals with a higher SLE-TS will report significantly higher average levels of meaning in life, as scored by the MLQ and SoMe-MS, and meaningful work, as scored by the WAMI-R. This hypothesis will be analyzed conducting bivariate correlations with each of the six subscales.

Hypothesis two. It is hypothesized that individuals with a higher ET-C will report significantly higher average levels of meaning in life, as scored by the MLQ and SoMe-MS, and

meaningful work, as scored by the WAMI-R. This hypothesis will be analyzed conducting bivariate correlations with each of the six subscales.

Second research question. The following hypothesis is guided by the research question, “Does the depth and breadth of student leadership engagement predict psychological well-being, as measured by meaning in life and work?” Students’ SLE-TS will operationalize depth and ET-C will operationalize breadth.

Hypothesis three. It is hypothesized that individuals with a higher SLE-TS will report higher average levels of meaning in life, as scored by the MLQ and SoMe-MS, and meaningful work, as scored by the WAMI-R; this relationship will be different based on students’ ET-C. Said differently, SLE-TS and ET-C will jointly contribute to meaning measures. This hypothesis will be analyzed by conducting multiple regressions with each of the six subscales.

Third research question. The last hypotheses are guided by the research question, “Does the content of the student leadership engagement differentiate psychological well-being, as measured by meaning in life and work?” The content of student leadership engagement is operationalized by leadership roles (LR) and engagement types (ET).

Hypothesis four. It is hypothesized that LR will differentiate average levels of meaning in life, as scored by the MLQ and SoMe-MS, and meaningful work, as scored by the WAMI-R. This hypothesis will be analyzed by conducting a multivariate analysis of variance (MANOVA). Discriminant analysis (DA) will be used as a follow-up to determine (a) the number of different combinations, or composites, of meaning measures (i.e. MLQ, SoMe-MS, WAMI-R) that differentiate LR significantly; (b) the LRs that are differentiated by each composite; and, (c) which of the subscales contribute to significantly differentiating the groups.

Hypothesis five. It is hypothesized that ET will differentiate average levels of meaning in life, as scored by the MLQ and SoMe-MS, and meaningful work, as scored by the WAMI-R. This hypothesis will be analyzed by conducting a MANOVA. DA will be used as a follow-up to

determine (a) the number of different combinations, or composites, of meaning measures (i.e. MLQ, SoMe-MS, WAMI-R) that differentiate ET significantly; (b) the ETs that are differentiated by each composite; and, (c) which of the subscales contribute to significantly differentiating the groups.

Results

This chapter presents the results of this research study to examine the relationship between well-being, as defined by meaning in life and work, and student leadership engagement. Since the subscales were modified, classic test theory was used to determine if any modifications were needed on the meaning in life and work subscales in order to improve the study's reliability. Pearson's correlation coefficients were computed to examine the relationship between student leadership engagement and the students' meaning in life and work. Multiple regression was conducted to examine if the depth and breadth of student leadership engagement could jointly predict students' meaning in life and work. Finally, Multivariate Analysis of Variance (MANOVA) analyses were conducted to examine if the content of the student leadership engagement differentiates students' meaning in life and work.

The final sample comprised of 1426 participants, of which 1151 had verified student leadership engagement during the 2016 – 2017 academic year. The 275 students that did not have verified student leadership engagement were students that completed the measures during the university administration (UA), and students that had verified engagement in 2015 – 2016 but not 2016 – 2017. Because this study was more comprehensive in its collection, the study specifically focused on student leadership engagement in the 2016 – 2017 academic year rather than including the 2015 – 2016 academic year, which served as a pilot year for data collection. In 2016 – 2017, there were 33,011 student leadership engagement experiences documented. Table 7 provides the frequencies of the participant's ETs and LRs.

Table 7

Frequencies of Participants' Engagement Types and Leadership Roles

| Variables | Number of SLEM Activities | | | | | | | Total |
|----------------------------|---------------------------|-----|----|----|----|----|-----|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 | ≥ 7 | |
| Engagement Type Variables | | | | | | | | |
| Civic | 11 | 46 | 2 | 4 | 0 | 0 | 0 | 63 |
| Engaged Learning | 183 | 56 | 6 | 0 | 1 | 0 | 0 | 246 |
| Fraternities & Sororities | 19 | 307 | 0 | 0 | 0 | 0 | 0 | 326 |
| Paraprofessional | 129 | 105 | 27 | 13 | 4 | 5 | 1 | 284 |
| Sports | 177 | 207 | 77 | 41 | 20 | 19 | 41 | 564 |
| Student Employment: Admin. | 11 | 24 | 0 | 0 | 0 | 0 | 0 | 35 |
| Student Organizations | 115 | 117 | 17 | 12 | 1 | 2 | 1 | 63 |
| Leadership Role Variables | | | | | | | | |
| Attendee/Participant | 251 | 139 | 54 | 39 | 16 | 13 | 9 | 521 |
| General Member | 179 | 397 | 70 | 49 | 11 | 1 | 6 | 713 |
| Project Coordinator | 208 | 80 | 6 | 9 | 0 | 0 | 0 | 303 |
| Group Organizer | 115 | 97 | 14 | 10 | 2 | 2 | 0 | 240 |
| Executive Leader | 62 | 28 | 2 | 2 | 0 | 0 | 0 | 94 |

Note. $N = 1426$. SLEM = Student Leadership Engagement Measure.

Measurement Properties of Dependent Variable Subscales

Assumption of Normality. Descriptive statistics were computed for SLE-TS, ET-C and each subscale: MLQ-PM, MLQ-SM, SoMe-M, WAMI-R-PM, WAMI-R-W, WAMI-R-GG (see Table 8). When examining skewness and kurtosis measures, Field (2009) recommends that, with very large sample size (over 200), criterion should not be applied for significance, because significant values arise from small deviations from normality within large samples (Field, 2009). Therefore, the shape of the distribution was examined visually with the skewness and kurtosis measures. When visually examining the histogram of SLE-TS and ET-C, both appeared

positively skewed. SLE-TS had a wide range of scores and therefore had a heavy tail of distribution towards the higher end of the scale; ET-C had a smaller range, so its tail towards higher scores was not as large. Specifically, there appears to be a range-of-instrument constraint, which may be a result of the survey being primarily distributed to students engaged in campus activities.

Table 8

Descriptive Statistics of SLE-TS, ET-C, and the Meaning in Life and Work Scale

| Measure | <i>N</i> | <i>M</i> | <i>SD</i> | Min | Max | Skewness (<i>SE</i>) | Kurtosis (<i>SE</i>) |
|-----------|----------|----------|-----------|-----|-----|------------------------|------------------------|
| SLE-TS | 1426 | 5.36 | 5.27 | 0 | 36 | 1.79 (.07) | 4.80 (.13) |
| ET-C | 1426 | 1.25 | 0.91 | 0 | 6 | 0.70 (.07) | 0.79 (.13) |
| MLQ-PM | 1423 | 26.53 | 6.25 | 5 | 35 | -0.86 (.07) | 0.42 (.13) |
| MLQ-SM | 1423 | 26.44 | 6.77 | 5 | 35 | -1.08 (.07) | 0.85 (.13) |
| SoMe-M | 1408 | 28.38 | 5.49 | 5 | 35 | -1.13 (.07) | 1.38 (.13) |
| WAMI-R-PM | 1388 | 24.42 | 3.76 | 4 | 28 | -1.78 (.07) | 4.82 (.13) |
| WAMI-R-W | 1389 | 18.12 | 2.84 | 3 | 21 | -1.51 (.07) | 3.59 (.13) |
| WAMI-R-GG | 1388 | 17.81 | 3.26 | 3 | 21 | -1.18 (.07) | 1.40 (.13) |

Note. *N* = 1426. SLE-TS = Total Score of Student Leadership Engagement; ET-C = Count of Engagement Types; MLQ-PM = Meaning in Life Questionnaire (MLQ) Presence of Meaning Subscale; MLQ-SM = MLQ Search for Meaning Subscale; SoMe-M = Sources of Meaning and Meaning in Life Questionnaire (SoMe) Meaningfulness Subscale; WAMI-R-PM = Work and Meaning Inventory – Revised (WAMI-R) Positive Meaning Subscale; WAMI-R-W = WAMI-R Meaning-Making through Work Subscale; WAMI-R-GG = WAMI-R Greater Good Motivations Subscale.

On the meaning of life and work subscales, the response scale ranges from 1 (absolutely untrue) to 6 (absolutely true), with 7 providing an unsure option. When scoring, an unsure answer was scored in the middle of the scale as a four (i.e. 1 = 1, 2 = 2, 3 = 3, 4 = 5, 5 = 6, 6 = 7, and 7 = 4). Although the response scale was a 7-point scale, the standard deviation was .96 to 1.75 for any item, averaging 1.44; therefore, the scale did not appear to differentiate respondents. Visually examining each subscales' histogram, responses on all scales were concentrated in the

positive end of the scale with a heavy tail of distribution towards the lower end of the scale. The sample appeared to have higher levels of meaning in life and work. Therefore, some statistically significant results in this research study may be questioned and interpreted cautiously as they are prone to an inflated Type I error rate. All statistically significant tests will utilize effect sizes to determine the potential importance of findings.

Scale Modifications. For ease of completion by participants, the researcher developed one response scale for answering all items. The scale ranges from 1 (absolutely untrue) to 6 (absolutely true), with 7 providing an unsure option. In addition to the response scale modification across all subscales, the verbiage of items on the Work and Meaning Inventory (WAMI) was modified for college students (WAMI-R). To view the response scale and item questions, see Appendix A. Because of these modifications, classical test theory was utilized to determine if any modifications were needed on these subscales to improve the reliability of this study.

Internal consistency reliability. Internal consistency reliability was examined to assess the consistency of results across items within a subscale. The Meaning in Life Questionnaire (MLQ) included of the Presence of Meaning and Search for Meaning subscales. The Presence of Meaning subscale consisted of five items ($\alpha = .88$), and the Search for Meaning subscale consisted of five items ($\alpha = .89$). The SoMe Meaningfulness subscale, which also consisted of five items, showed a similar level of internal consistency ($\alpha = .87$). Therefore, the MLQ and SoMe subscales had a strong level of internal consistency. The WAMI-R consisted of the Positive Meaning subscale with four items ($\alpha = .85$), the Meaning-Making through Work subscale with three items ($\alpha = .79$), and the Greater Good Motivations subscale with three items ($\alpha = .75$). The Positive Meaning subscale attained a good level for internal consistency ($\alpha > .80$) and did not meaningfully improve with item removal. The Meaning-Making through Work

subscale met an acceptable level for internal consistency ($\alpha > .70$) and did not improve with item removal. The Great Good Motivations subscale did meet an acceptable level for internal consistency, but improved to a good level if item 18 was deleted, the reverse-scored item; the corrected item-total correlation for item 18 was .46. Therefore, the Greater Good Motivations subscale was reduced to two items ($\alpha = .82$), and the descriptive statistics for the subscale changed, $M = 11.92$, $SD = 2.29$, minimum = 2, maximum = 14, skewness (SE) = -1.33 (0.07), and kurtosis (SE) = 1.80 (0.13).

Test-retest reliability. There was a small sample of students ($n = 21$) that completed the measurements during the UA and retook them two months later through the emailed survey. This small sample provided an opportunity to examine the degree to which test results are consistent over time. The subscale test-retest reliabilities were nearly as high as the internal consistency reliability estimates: MLQ Presence of Meaning ($r = .85$), MLQ Search for Meaning ($r = .82$), SoMe Meaningfulness ($r = .78$), WAMI-R Positive Meaning ($r = .91$), WAMI-R Meaning-Making through Work ($r = .76$), and the two-item WAMI-R Greater Good Motivations ($r = .78$).

Summary. When examining the internal consistency reliabilities, Cronbach's alphas provided a range from .75 to .89, so items within each subscale are moderately related to measuring the same construct. Examining test-retest reliabilities, Cronbach's alphas ranged from .76 to .91, demonstrating that responses are moderately consistent from one time to another. Therefore, all measures of reliability were well above an acceptable level ($\alpha > .70$) and demonstrated a moderate level of reliability.

First Research Question

There are two hypotheses guided by the research question, "Does student leadership engagement relate to psychological well-being, as measured by meaning in life and work?" These hypotheses were examined by computing Pearson's correlation coefficients.

Examining hypothesis one. Pearson’s bivariate correlations were conducted between SLE-TS and each subscale to examine the research hypothesis that individuals with higher SLE-TS will report higher average levels of meaning in life and work (see Table 9). Results showed only one significant correlation between SLE-TS and SoMe-M ($r = .06, p = .02$). While the correlation is statistically significant, it is not practically significant as the SLE-TS only explains 0.36% of SoMe-M.

With concerns about the normal distribution of meaning in life and work measures, effect size is important when determining whether to reject the null hypothesis or fail to reject the null hypothesis. Because most correlations have $r < .05$ and an extremely small practical significance, the researcher’s hypothesis that students with higher SLE-TS will report higher average levels of meaning in life and work was not supported.

Table 9

Pearson’s Bivariate Correlation Analysis Summary of SLE-TS with Meaning Measures

| Measure | N | r | P | 95% CI of r |
|-----------|------|-----|------|---------------|
| MLQ-PM | 1423 | .01 | .769 | [-0.04, 0.06] |
| MLQ-SM | 1423 | .04 | .110 | [-0.01, 0.09] |
| SoMe-M | 1408 | .06 | .018 | [0.01, 0.11] |
| WAMI-R-PM | 1388 | .05 | .068 | [0.00, 0.10] |
| WAMI-R-W | 1389 | .04 | .150 | [-0.01, 0.09] |
| WAMI-R-GG | 1388 | .04 | .124 | [-0.01, 0.09] |

Note. SLE-TS = Total Score of Student Leadership Engagement; CI = confidence interval; MLQ-PM = Meaning in Life Questionnaire (MLQ) Presence of Meaning Subscale; MLQ-SM = Search for Meaning Subscale; SoMe-M = Sources of Meaning and Meaning in Life Questionnaire (SoMe) Meaningfulness Subscale; WAMI-R-PM = Work and Meaning Inventory – Revised (WAMI-R) Positive Meaning Subscale; WAMI-R-W = Meaning-Making through Work Subscale; WAMI-R-GG = Greater Good Motivations Subscale.

Examining hypothesis two. Pearson’s bivariate correlations were conducted between ET-C and each subscale to examine the research hypothesis that individuals with higher ET-C will report higher average levels of meaning in life and work (see Table 9). Results showed

statistically significant correlations within five of the six subscales, with r 's ranging from .06 – .08. Therefore, while the correlations are statistically significant, they are not practically significant. ET-C only explains 0.36 – 0.64% of any meaning measure.

With concerns about the normal distribution of meaning in life and work measures, effect size is important when determining whether to reject the null hypothesis or fail to reject the null hypothesis. Because most correlations have $r < .05$ and an extremely small practical significance, the researcher's hypothesis is not supported that students with higher ET-C will report higher average levels of meaning in life and work.

Table 10

Pearson's Bivariate Correlation Analysis Summary of the Unique Contribution of ET-C

| Measure | N | r | p | 95% CI of r |
|-----------|------|-----|------|---------------|
| MLQ-PM | 1423 | .02 | .405 | [-0.03, 0.07] |
| MLQ-SM | 1423 | .06 | .033 | [0.00, 0.11] |
| SoMe-M | 1408 | .07 | .010 | [0.02, 0.12] |
| WAMI-R-PM | 1388 | .08 | .003 | [0.03, 0.13] |
| WAMI-R-W | 1389 | .07 | .006 | [0.02, 0.13] |
| WAMI-R-GG | 1388 | .07 | .011 | [0.02, 0.12] |

Note. ET-C = Count of Engagement Types; CI = confidence interval; MLQ-PM = Meaning in Life Questionnaire (MLQ) Presence of Meaning Subscale; MLQ-SM = Search for Meaning Subscale; SoMe-M = Sources of Meaning and Meaning in Life Questionnaire (SoMe) Meaningfulness Subscale; WAMI-R-PM = Work and Meaning Inventory – Revised (WAMI-R) Positive Meaning Subscale; WAMI-R-W = Meaning-Making through Work Subscale; WAMI-R-GG = Greater Good Motivations Subscale.

Second Research Question

The third hypothesis is guided by the research question, “Does the depth and breadth of student leadership engagement predict psychological well-being, as measured by meaning in life and work?” Students’ SLE-TS will operationalize depth and ET-C will operationalize breadth.

Examining hypothesis three. Multiple regression analyses were conducted to examine the third research hypothesis that individuals with a higher SLE-TS will report higher average

levels of meaning in life and work, and this relationship will be different based on students' ET-C. A multiple regression analysis will be conducted with SLE-TS, ET-C, and each of the six meaning in life and work subscales used in this study. Before conducting multiple regression analyses to test the interaction between the SLE-TS and ET-C, both variables were centered. Centering was conducted to reduce the multicollinearity between the predictors and the interaction term (Aiken & West, 1991). Since ET-C was significantly correlated with more subscales than SLE-TS when examining the first two hypotheses, ET-C was the first predictor in the model for all multiple regression analyses. Using the R2 program (Steiger & Fouladi, 1992), exact confidence intervals were found and reported for all the squared multiple correlation coefficients.

While conducting these analyses, the researcher also examined the assumptions of multiple regression analysis. The assumption of non-zero variance was examined; SLE-TS had a computed variance of 28.89 within a range of 36, and ET-C had a computed variance of 0.88 within a range of 6. VIF and tolerance values were computed to examine the assumption of no perfect multicollinearity. Across all multiple regression analyses, VIF values ranged between 1.00 to 2.80, which were all well below values of 10 (a value that would be cause for concern). Tolerance values ranged from 0.36 to 1.00, all above the 0.2 range that would indicate potential problems. Therefore, multicollinearity was not found to be problematic. Predicted scores (\hat{y}) and the residuals ($y - \hat{y}$) were plotted to assess linearity and homoscedasticity. On each graph, the loess line looked like a rough estimate of the regression line, supporting that there was a linear relationship. The variance of residuals also appeared to be constant, supporting the assumption of homoscedasticity. Finally, normality of residuals were examined by graphing histograms of the unstandardized residuals. These graphs showed a similar pattern to prior histograms of scores – positively skewed with heavy tails of distribution towards the left. Since regression is fairly robust to violations of normality, this potential violation is not a concern.

MLQ-PM. Multiple regression analyses were conducted to examine the research hypothesis that SLE-TS and ET-C would jointly predict MLQ-PM (see Table 11). The multiple regression analyses showed that there were no statistically significant interactions between SLE-TS and ET-C to predict MLQ-PM ($b = .053, p = .062, sr^2 = .003$). Therefore, the regression slope of the students' ET-C to predict MLQ-PM scores did not differ based on the students' SLE-TS. SLE-TS and ET-C did not significantly predict MLQ-PM, either. The first model only utilized ET-C as a predictor of MLQ-PM and was also not significant, $R^2 = .000, F(1, 1421) = .693, p = .405$. The second model that added SLE-TS as a predictor did not add predictive capabilities, $R^2_{\text{change}} = .000, F_{\text{change}}(1, 1420) = .262, p = .609$. Therefore, SLE-TS and ET-C did not individually or jointly predict MLQ-PM.

Table 11

Regression Analysis Summary of SLE-TS, ET-C, and their Interaction on MLQ-PM

| Predictors | R ² | 95% CI of R ² | ΔR ² | b | p | 95% CI of b |
|-------------|----------------|--------------------------|-----------------|-------|-----|---------------|
| Step 1 | .000 | <i>Could not compute</i> | .000 | | | |
| ET-C | | | | .152 | .41 | [-0.21, 0.51] |
| Step 2 | .001 | [0.00, 0.01] | .000 | | | |
| ET-C | | | | .260 | .35 | [-0.29, 0.81] |
| SLE-TS | | | | -.025 | .61 | [-0.12, 0.07] |
| Step 3 | .003 | [0.00, 0.01] | .002 | | | |
| ET-C | | | | .280 | .32 | [-0.27, 0.83] |
| SLE-TS | | | | -.062 | .23 | [-0.17, 0.04] |
| Interaction | | | | .053 | .06 | [0.00, 0.11] |

Note. $n = 1423$; SLE-TS = Total Score of Student Leadership Engagement; ET-C = Count of Engagement Types; MLQ-PM = Meaning in Life Questionnaire Presence of Meaning Subscale; CI = confidence interval.

MLQ-SM. Multiple regression analyses were conducted to examine the research hypothesis that SLE-TS and ET-C would jointly predict MLQ-SM (see Table 12). The multiple

regression analyses showed that there were no statistically significant interactions between SLE-TS and ET-C to predict MLQ-SM ($b = .007, p = .828, sr^2 = .000$). Therefore, the regression slope of the students' SLE-TS to predict MLQ-SM scores did not differ based on the number of engagement types in which a student participated. The first model only utilized ET-C as a predictor of MLQ-SM and was statistically significant but not practically significant, $R^2 = .003, F(1, 1421) = 4.563, p = .033$. ET-C only explained 0.3% of the variance for MLQ-SM. The second model that added SLE-TS as a predictor did not significantly predict MLQ-SM above and beyond ET-C, $R^2_{\text{change}} = .000, F_{\text{change}}(1, 1420) = .001, p = .982$.

Table 12

Regression Analysis Summary of SLE-TS, ET-C, and their Interaction on MLQ-SM

| Predictors | R ² | 95% CI of R ² | ΔR ² | <i>b</i> | <i>p</i> | 95% CI of <i>b</i> |
|-------------|----------------|--------------------------|-----------------|----------|----------|--------------------|
| Step 1 | .003 | [0.00, 0.01] | .003* | | | |
| ET-C | | | | .422* | .03 | [0.03, 0.81] |
| Step 2 | .003 | [0.00, 0.01] | .000 | | | |
| ET-C | | | | .427 | .16 | [-0.17, 1.02] |
| SLE-TS | | | | -.001 | .98 | [-0.10, 0.10] |
| Step 3 | .003 | [0.00, 0.01] | .000 | | | |
| ET-C | | | | .429 | .16 | [-0.16, 1.02] |
| SLE-TS | | | | -.006 | .92 | [-0.12, 0.11] |
| Interaction | | | | .007 | .83 | [-0.05, 0.07] |

Note. $n = 1423$; SLE-TS = Total Score of Student Leadership Engagement; ET-C = Count of Engagement Types; MLQ-SM = Meaning in Life Questionnaire Search for Meaning Subscale; CI = confidence interval.

* $p < .05$

SoMe-M. Multiple regression analyses were conducted to examine the research hypothesis that SLE-TS and ET-C would jointly predict SoMe-M (see Table 13). The multiple regression analyses showed that there was not a statistically significant interaction between SLE-TS and ET-C to predict SoMe-M ($b = .025, p = .316, sr^2 = .001$). Therefore, the regression slope

of students' SLE-TS to predict SoMe-M scores did not differ based on the number of engagement types in which a student participated. The first model only utilizing ET-C as a predictor of SoMe-M was statistically significant but not practically significant, $R^2 = .005$, $F(1, 1406) = 6.714$, $p = .01$. ET-C only explained 0.5% of the variance for SoMe-M. The second model adding SLE-TS as a predictor did not significantly predict SoMe-M above and beyond ET-C, $R^2_{\text{change}} = .000$, $F_{\text{change}}(1, 1405) = .359$, $p = .549$.

Table 13

Regression Analysis Summary of SLE-TS, ET-C, and their Interaction on SoMe-M

| Predictors | R ² | 95% CI of R ² | ΔR ² | b | p | 95% CI of b |
|-------------|----------------|--------------------------|-----------------|-------|-----|---------------|
| Step 1 | .005 | [0.00, 0.02] | .005* | | | |
| ET-C | | | | .417* | .01 | [0.10, 0.73] |
| Step 2 | .005 | [0.00, 0.01] | .000 | | | |
| ET-C | | | | .304 | .22 | [-0.18, 0.79] |
| SLE-TS | | | | .026 | .55 | [-0.06, 0.11] |
| Step 3 | .006 | [0.00, 0.02] | .001 | | | |
| ET-C | | | | .314 | .21 | [-0.17, 0.80] |
| SLE-TS | | | | .008 | .87 | [-0.08, 0.10] |
| Interaction | | | | .025 | .32 | [-0.02, 0.07] |

Note. $n = 1408$; SLE-TS = Total Score of Student Leadership Engagement; ET-C = Count of Engagement Types; SoMe-M = Sources of Meaning and Meaning in Life Questionnaire Meaningfulness Subscale; CI = confidence interval.

* $p < .01$

WAMI-R-PM. Multiple regression analyses were conducted to examine the research hypothesis that SLE-TS and ET-C would jointly predict WAMI-R-PM (see Table 14). The multiple regression analyses showed that there were no a statistically significant interactions between SLE-TS and ET-C to predict WAMI-R-PM ($b = .015$, $p = .390$, $s^2 = .001$). Therefore, the regression slope of the students' SLE-TS to predict WAMI-R-PM scores did not differ based on the number of engagement types in which a student participated. The first model only

utilized ET-C as a predictor of WAMI-R-PM and was statistically significant but not practically significant, $R^2 = .006$, $F(1, 1386) = 8.685$, $p = .003$. ET-C only explained 0.6% of the variance for WAMI-R-PM. The second model that added SLE-TS as a predictor did not significantly predict WAMI-R-PM above and beyond ET-C, $R^2_{\text{change}} = .000$, $F_{\text{change}}(1, 1385) = .371$, $p = .542$.

Table 14

Regression Analysis Summary of SLE-TS, ET-C, and their Interaction on WAMI-R-PM

| Predictors | R ² | 95% CI of R ² | ΔR ² | <i>b</i> | <i>p</i> | 95% CI of <i>b</i> |
|-------------|----------------|--------------------------|-----------------|----------|----------|--------------------|
| Step 1 | .006 | [0.00, 0.02] | .006** | | | |
| ET-C | | | | .326** | .00 | [0.11, 0.54] |
| Step 2 | .006 | [0.00, 0.02] | .000 | | | |
| ET-C | | | | .404* | .02 | [0.07, 0.74] |
| SLE-TS | | | | -.018 | .54 | [-0.08, 0.04] |
| Step 3 | .007 | [0.00, 0.02] | .001 | | | |
| ET-C | | | | .410* | .02 | [0.08, 0.74] |
| SLE-TS | | | | -.028 | .37 | [-0.09, 0.03] |
| Interaction | | | | .015 | .39 | [-0.02, 0.05] |

Note. $n = 1388$; SLE-TS = Total Score of Student Leadership Engagement; ET-C = Count of Engagement Types; WAMI-R-PM = Work and Meaning Inventory – Revised Positive Meaning Subscale; CI = confidence interval.

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

WAMI-R-W. Multiple regression analyses were conducted to examine the research hypothesis that SLE-TS and ET-C would jointly predict WAMI-R-W (see Table 15). The multiple regression analyses showed that there were no statistically significant interactions between SLE-TS and ET-C to predict WAMI-R-W ($b = -.009$, $p = .475$, $s^2 = .000$). Therefore, the regression slope of the students’ SLE-TS to predict WAMI-R-W scores did not differ based on the number of engagement types in which a student participated. The first model only utilized ET-C as a predictor of WAMI-R-W and was statistically significant but not practically significant, $R^2 = .005$, $F(1, 1387) = 7.455$, $p = .006$. ET-C only explained 0.5% of the variance

for WAMI-R-W. The second model that added SLE-TS as a predictor did not significantly predict WAMI-R-W above and beyond ET-C, $R^2_{\text{change}} = .001$, $F_{\text{change}}(1, 1386) = .907$, $p = .341$.

Table 15

Regression Analysis Summary of SLE-TS, ET-C, and their Interaction on WAMI-R-W

| Predictors | R ² | 95% CI of R ² | ΔR ² | b | p | 95% CI of b |
|-------------|----------------|--------------------------|-----------------|--------|-----|---------------|
| Step 1 | .005 | [0.00, 0.02] | .005** | | | |
| ET-C | | | | .228** | .01 | [0.06, 0.39] |
| Step 2 | .005 | [0.00, 0.01] | .001 | | | |
| ET-C | | | | .319* | .01 | [0.07, 0.57] |
| SLE-TS | | | | -.021 | .34 | [-0.06, 0.02] |
| Step 3 | .004 | [0.00, 0.01] | .000 | | | |
| ET-C | | | | .316* | .01 | [0.07, 0.57] |
| SLE-TS | | | | -.014 | .55 | [-0.06, 0.03] |
| Interaction | | | | -.009 | .48 | [-0.03, 0.02] |

Note. $n = 1389$; SLE-TS = Total Score of Student Leadership Engagement; ET-C = Count of Engagement Types; WAMI-R-W = Work and Meaning Inventory – Revised Meaning-Making through Work Subscale; CI = confidence interval.

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

WAMI-R-GG. Multiple regression analyses were conducted to examine the research hypothesis that SLE-TS and ET-C would jointly predict WAMI-R-GG (see Table 16). The multiple regression analyses showed that there were no statistically significant interactions between SLE-TS and ET-C to predict WAMI-R-GG ($b = -.014$, $p = .660$, $s^2 = .000$). Therefore, the regression slope of the students’ SLE-TS to predict WAMI-R-GG scores did not differ based on the number of engagement types in which a student participated. The first model only utilized ET-C as a predictor of WAMI-R-GG and was statistically significant but not practically significant, $R^2 = .005$, $F(1, 1386) = 6.524$, $p = .011$. ET-C only explained 0.5% of the variance for WAMI-R- GG. The second model that added SLE-TS as a predictor did not significantly predict WAMI-R- GG above and beyond ET-C, $R^2_{\text{change}} = .000$, $F_{\text{change}}(1, 1385) = .355$, $p = .551$.

Table 16

Regression Analysis Summary of SLE-TS, ET-C, and their Interaction on WAMI-R-GG

| Predictors | R ² | 95% CI of R ² | ΔR ² | <i>b</i> | <i>p</i> | 95% CI of <i>b</i> |
|-------------|----------------|--------------------------|-----------------|----------|----------|--------------------|
| Step 1 | .005 | [0.00, 0.02] | .005* | | | |
| ET-C | | | | .172* | .01 | [0.04, 0.30] |
| Step 2 | .005 | [0.00, 0.01] | .000 | | | |
| ET-C | | | | .218* | .03 | [0.02, 0.42] |
| SLE-TS | | | | -.011 | .55 | [-0.05, 0.02] |
| Step 3 | .005 | [0.00, 0.01] | .000 | | | |
| ET-C | | | | .216* | .04 | [0.01, 0.42] |
| SLE-TS | | | | -.007 | .71 | [-0.05, 0.03] |
| Interaction | | | | -.005 | .66 | [-0.03, 0.02] |

Note. *n* = 1388; SLE-TS = Total Score of Student Leadership Engagement; ET-C = Count of Engagement Types; WAMI-R-GG = Work and Meaning Inventory – Revised Greater Good Motivations Subscale; CI = confidence interval.

* *p* < .05

Summary. Results show that SLE-TS and ET-C did not jointly contribute to meaning in life and work measures. There was no interaction; therefore, the researcher failed to reject the null hypothesis. The researcher did find that ET-C was statistically significant to predicting most meaning in life and work measures; however, the effect sizes were extremely small (see Table 17). With concerns about the normal distribution of meaning in life and work measures, effect size is important to determine whether statistically significant results are meaningful. With these effect sizes, the results did not support that ET-C meaningfully predicts meaning in life and work measures.

Table 17

Multiple Regression Analysis Summary of the Unique Contribution of ET-C

| Measure | N | R ² | 95% CI of R ² | b | 95% CI of b |
|-----------|------|----------------|--------------------------|--------|---------------|
| MLQ-PM | 1423 | .000 | <i>Could not compute</i> | .152 | [-0.21, 0.51] |
| MLQ-SM | 1423 | .003* | [0.00, 0.01] | .422* | [0.03, 0.81] |
| SoME-M | 1408 | .005** | [0.00, 0.02] | .417** | [0.10, 0.73] |
| WAMI-R-PM | 1388 | .006** | [0.00, 0.02] | .326** | [0.11, 0.54] |
| WAMI-R-W | 1389 | .005** | [0.00, 0.02] | .228** | [0.06, 0.39] |
| WAMI-R-GG | 1388 | .005* | [0.00, 0.02] | .172* | [0.04, 0.30] |

Note. ET-C = Count of Engagement Types; CI = confidence interval

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

Third Research Question

The final research hypotheses were guided by the research question, “Does the content of the student leadership engagement differentiate psychological well-being, as measured by meaning in life and work?” The content of student leadership engagement was operationalized by leadership roles (LR) in the fourth hypothesis and engagement types (ET) in the fifth hypothesis. Students who did not complete all six meaning in life and work subscales were removed from these analysis, leaving $n = 1377$.

Examining hypothesis four. Multivariate analysis of variance (MANOVA) was conducted to examine the fourth research hypothesis that LR would differentiate average levels of meaning in life and work. While conducting the analysis, the researcher examined the additional assumption of MANOVA that was not reviewed earlier – homogeneity of covariance matrices. To examine this assumption, Box’s M was calculated. Box’s $M = 353.83$, $F(126, 20,353.76) = 2.47$, $p = .000$, indicating the assumption of homogeneity had been violated. Box’s M test is sensitive to non-normal distributions, so significant results may occur simply due to the shape of the variables; however, the effects of violating this assumption are unclear (Field, 2009).

All significance test statistics produced (Pillai, Wilk’s Λ , Lawley-Hotelling, and Roy’s) indicate that LR significantly differentiates average levels of meaning in life and work ($\alpha < .05$). Since Box’s M was shown to be significant, the Pillai’s trace criterion statistical test was used to report significance, $V^{(S)} = .055$, $F(36, 8,220) = 2.13$, $p = .000$. The effect size shows a small practical significance ($\eta^2 = .05$); approximately 5% of the variability in the composite of meaning in life and work measures can be attributed to differences among leadership roles.

To determine which LRs differed on sets of meaning in life and work measures, discriminant analysis (DA) was used to follow-up the significant MANOVA. Table 18 presents a summary of means and standard deviations for each meaning in life and work subscale by LRs.

Table 18

Means (Standard Deviations) for each Leadership Role

| LR | <i>n</i> | MLQ-PM | MLQ-SM | SoMe-M | WAMI-R-PM | WAMI-R-W | WAMI-R-GG |
|----------------------|----------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| No LR | 270 | 26.97 (6.19) | 25.87 (6.77) | 28.14 (5.43) | 24.13 (3.86) | 17.76 (3.15) | 11.68 (2.54) |
| Attendee/Participant | 163 | 25.75 (6.47) | 26.18 (7.04) | 27.91 (5.73) | 23.79 (4.12) | 17.87 (2.84) | 11.61 (2.28) |
| General Member | 288 | 25.75 (6.82) | 26.66 (6.55) | 27.65 (6.41) | 24.30 (3.91) | 18.15 (2.87) | 11.83 (2.44) |
| Project Coordinator | 84 | 27.88 (5.66) | 26.19 (7.17) | 29.61 (4.02) | 26.01 (2.44) | 18.86 (2.20) | 13.04 (1.27) |
| Group Organizer | 51 | 26.12 (5.45) | 26.08 (6.96) | 27.12 (6.08) | 23.43 (4.25) | 17.45 (3.38) | 11.59 (2.51) |
| Executive Leader | 13 | 26.15 (8.40) | 28.00 (7.29) | 29.23 (8.05) | 23.85 (6.76) | 18.38 (4.19) | 12.23 (3.11) |
| Multiple LRs | 508 | 26.92 (5.88) | 26.78 (6.60) | 29.07 (4.79) | 24.74 (3.38) | 18.34 (2.57) | 12.07 (2.04) |

Note. LR = Leadership Role; MLQ-PM = Meaning in Life Questionnaire (MLQ) Presence of Meaning Subscale; MLQ-SM = MLQ Search for Meaning Subscale; SoMe-M = Sources of Meaning and Meaning in Life Questionnaire (SoMe) Meaningfulness Subscale; WAMI-R-PM = Work and Meaning Inventory – Revised (WAMI-R) Positive Meaning Subscale; WAMI-R-W = Meaning-Making through Work Subscale; WAMI-R-GG = Greater Good Motivations Subscale.

Multivariate analyses revealed that the first discriminant function reliably differentiated among the LRs ($\Lambda = .946$, $\chi^2(36) = 76.51$, $p = .000$, $R^2_C = .03$), as did the second function ($\Lambda = .971$, $\chi^2(25) = 39.84$, $p = .030$, $R^2_C = .01$). These two functions accounted for 48.1% and 24.9%, respectively, of the between-group variability. Table 19 presents the standardized coefficients and the structure coefficients, revealing that all of the measures, except the MLQ-SM, contribute to the discrimination among leadership roles on both functions. Specifically, on the first function, the WAMI-R-PM and WARI-R-GG make the largest unique contributions; MLQ-PM and WAMI-R-W make the next largest contributions; and, both of these measures negatively relate to the composite variable. On the second function, the SoMe-M and MLQ-PM make the largest unique contributions, and the MLQ-PM negatively relates to the composite variable.

Table 19

Standardized Canonical Coefficients and Structure Coefficients for Significant Discriminant Functions

| Measure | Function | | | |
|-----------|---------------------------|------------------------|---------------------------|------------------------|
| | 1 | | 2 | |
| | Standardized Coefficients | Structure Coefficients | Standardized Coefficients | Structure Coefficients |
| MLQ-PM | -.38 | .43 | -1.07 | -.35 |
| MLQ-SM | -.05 | .11 | .17 | .41 |
| SoMe-M | .32 | .63 | 1.10 | .21 |
| WAMI-R-PM | .73 | .88 | -.59 | -.03 |
| WAMI-R-W | -.43 | .64 | .87 | .35 |
| WAMI-R-GG | .67 | .90 | -.31 | -.02 |

Note. LR = MLQ-PM = Meaning in Life Questionnaire (MLQ) Presence of Meaning Subscale; MLQ-SM = MLQ Search for Meaning Subscale; SoMe-M = Sources of Meaning and Meaning in Life Questionnaire (SoMe) Meaningfulness Subscale; WAMI-R-PM = Work and Meaning Inventory – Revised (WAMI-R) Positive Meaning Subscale; WAMI-R-W = Meaning-Making through Work Subscale; WAMI-R-GG = Greater Good Motivations Subscale.

When conducting post-hocs with Scheffe on the first function, significant mean differences were found between the project coordinator leadership role and all other leadership roles – with the exception of the executive leader role (see Table 20). On the second function, a significant mean difference was found between students with no documented student leadership engagement and students who had multiple documented leadership roles. Differences were only found to be significant when utilizing the Tukey HSD (mean difference = $-.25$, $SE = .08$, $p = .02$, 95% CI = $[-0.47, -0.02]$); the Scheffe test did not find this same significance ($p = .101$, 95% CI = $[-0.51, 0.02]$).

Table 20

Mean Differences and Significance Test between Project Coordinator and Other LRs on the First Function

| LR | Mean Difference (<i>SE</i>) | <i>p</i> | 95% CI of Mean Difference |
|----------------------|-------------------------------|----------|---------------------------|
| No LR | 0.63 (.13) | .00 | [0.19, 1.07] |
| Attendee/Participant | 0.68 (.13) | .00 | [0.20, 1.15] |
| General Member | 0.57 (.12) | .00 | [0.13, 1.01] |
| Group Organizer | 0.76 (.18) | .01 | [0.13, 1.39] |
| Executive Leader | 0.52 (.30) | .80 | [-0.54, 1.58] |
| Multiple LRs | 0.44 (.12) | .03 | [0.02, 0.85] |

Note. LR = Leadership Role; SE = standard error; CI = confidence interval.

Table 21 displays group centroids for each LR on the first and second function, and *Figure 2* presents a graphical depiction of the multivariate results. Specifically, the group centroids are plotted on the first and second function to enable interpretation. While the graph is helpful for interpretation, significance cannot be assumed based on apparent graphical differences. For example, the role of ‘executive leader’ looks like it is significantly different than other leadership roles, but there were no significant differences found in post-hocs using the Scheffe or Tukey HSD tests. This finding is likely due to the small sample size of students who only held verified executive leader leadership roles ($n = 13$).

Table 21

Group Centroids for the First and Second Function

| LR | Function 1 | Function 2 |
|----------------------|------------|------------|
| No LR | -.11 | -.17 |
| Attendee/Participant | -.16 | .10 |
| General Member | -.06 | .03 |
| Project Coordinator | .52 | -.17 |
| Group Organizer | -.24 | -.19 |
| Executive Leader | -.01 | .40 |
| Multiple LRs | .08 | .08 |

Note. LR = Leadership Role.

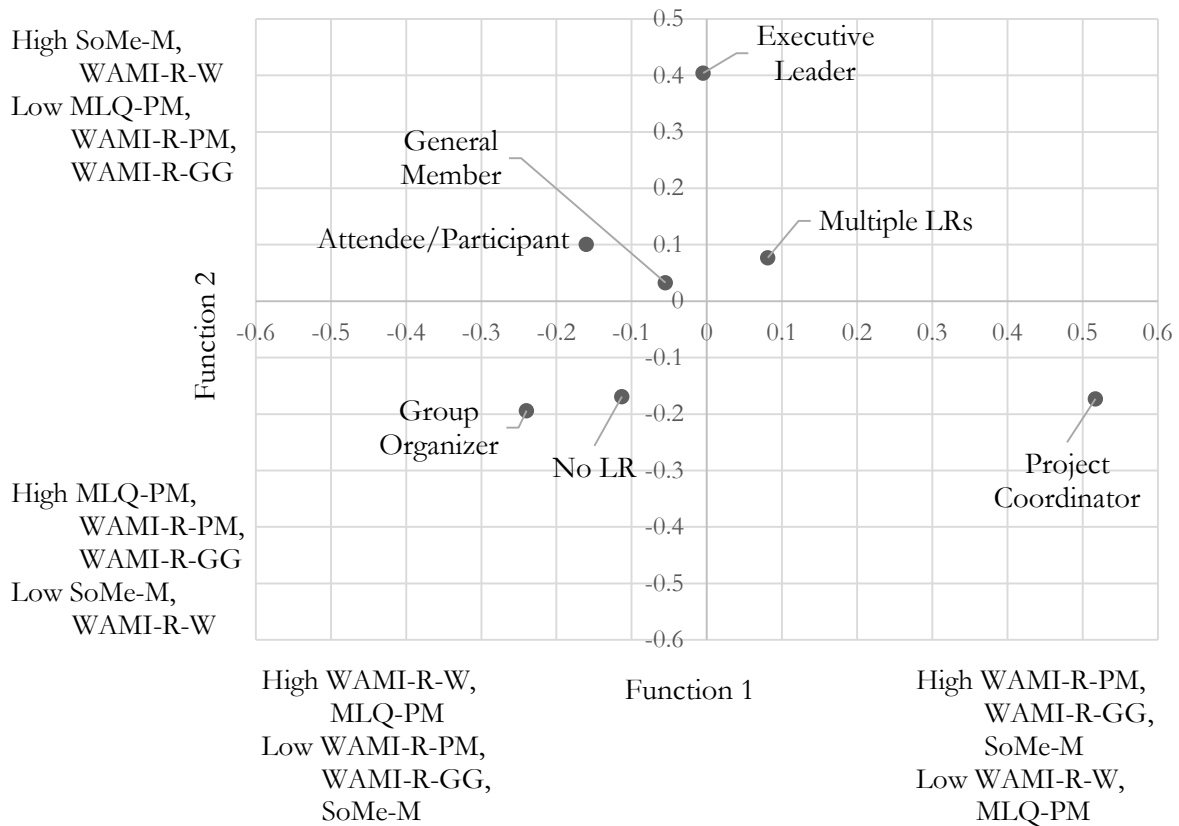


Figure 2. Graphic Depiction of the Group Centroids for the First and Second Leadership Role (LR) Discriminant Functions.

Summary. MANOVA and DA follow-up analysis showed that LR had a small effect when differentiating between the average levels of meaning in life and work, a result that supported the researcher's hypothesis and provided some evidence to reject the null. More specifically, significant mean differences were found between the project coordinator leadership role and all other leadership roles – with the exception of the executive leader role.

Examining hypothesis five. MANOVA was conducted to examine the fifth research hypothesis – that engagement type (ET) will differentiate average levels of meaning in life and work. While conducting the analysis, the researcher examined the additional assumption of MANOVA that was not reviewed earlier – homogeneity of covariance matrices. To examine this assumption, Box's M was calculated. Box's $M = 378.05$, $F(147, 43,572) = 2.47$, $p = .000$, which indicated that the assumption of homogeneity had been violated. Box's M test is sensitive to non-normal distributions, so significant results may occur simply due to the shape of the variables; however, the effects of violating this assumption are unclear (Field, 2009). All significance test statistics produced (Pillai, Wilk's Λ , Lawley-Hotelling, and Roy's) indicate that ET significantly differentiates average levels of meaning in life and work ($\alpha < .05$). Since Box's M was shown to be significant, the Pillai's trace criterion statistical test is used for reporting significance, $V^{(S)} = .074$, $F(48, 8,208) = 2.12$, $p = .000$. The effect size shows small practical significance ($\eta^2 = .07$); approximately 7% of the variability in the composite of meaning in life and work measures can be attributed to differences among engagement types.

To determine which ETs differ, and on a set of meaning in life and work measures, DA was used to follow-up the significant MANOVA. Table 22 presents a summary of means and standard deviations for each meaning in life and work subscales by engagement types. Multivariate analyses revealed that the first discriminant function reliably differentiated among the LRs ($\Lambda = .928$, $\chi^2(48) = 101.88$, $p = .000$, $R^2_C = .04$). This function accounted for 52.7% of the between-group variability. Table 23 presents the standardized coefficients and the structure

coefficients, revealing that WAMI-R-PM, WAMI-R-W, and WARI-R-GG make the largest unique contributions. Specifically, the WAMI-R-PM and WAMI-R-GG load positively onto this function, and the WAMI-R-W loads negatively onto this function. Therefore, students' perception of how their work will contribute to meaning in their own lives and to society is negatively related to the composite variable.

Table 22

Means (Standard Deviations) for each ET

| ET | <i>n</i> | MLQ-PM | MLQ-SM | SoMe-M | WAMI-R-PM | WAMI-R-W | WAMI-R-GG |
|----------------------------|----------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| No ET | 270 | 26.97 (6.19) | 25.87 (6.77) | 28.14 (5.43) | 24.13 (3.86) | 17.76 (3.14) | 11.68 (2.54) |
| Civic | 16 | 23.38 (6.67) | 26.88 (7.05) | 24.50 (7.78) | 23.31 (5.91) | 17.69 (4.00) | 11.13 (2.87) |
| Engaged Learning | 93 | 27.66 (5.59) | 26.77 (6.90) | 29.77 (4.23) | 25.99 (2.31) | 18.94 (2.27) | 12.85 (1.78) |
| Fraternities & Sororities | 118 | 26.15 (5.68) | 26.13 (6.28) | 28.07 (5.78) | 24.46 (4.01) | 18.08 (3.01) | 11.75 (2.25) |
| Paraprofessional | 77 | 26.82 (5.48) | 27.52 (7.26) | 28.42 (5.19) | 24.23 (3.74) | 17.84 (3.00) | 11.99 (2.31) |
| Sports | 243 | 25.05 (7.08) | 25.72 (7.26) | 27.35 (6.15) | 23.40 (4.35) | 17.70 (2.87) | 11.44 (2.46) |
| Student Employment: Admin. | 4 | 24.75 (7.50) | 28.00 (5.48) | 27.75 (7.63) | 23.00 (3.83) | 16.25 (1.89) | 11.00 (1.41) |
| Student Organizations | 86 | 27.17 (6.15) | 27.33 (5.88) | 28.76 (5.62) | 24.78 (2.92) | 18.81 (1.84) | 12.26 (2.01) |
| Multiple ETs | 470 | 26.99 (6.03) | 26.82 (6.71) | 29.02 (5.04) | 24.86 (3.37) | 18.37 (2.67) | 12.16 (2.04) |

Note. ET = Engagement Type; MLQ-PM = Meaning in Life Questionnaire (MLQ) Presence of Meaning Subscale; MLQ-SM = Search for Meaning Subscale; SoMe-M = Sources of Meaning and Meaning in Life Questionnaire (SoMe) Meaningfulness Subscale; WAMI-R-PM = Work and Meaning Inventory – Revised (WAMI-R) Positive Meaning Subscale; WAMI-R-W = Meaning-Making through Work Subscale; WAMI-R-GG = Greater Good Motivations Subscale.

Table 23

Standardized Canonical Coefficients and Structure Coefficients for the Significant Function

| Measure | Standardized Coefficients | Structure Coefficients |
|-----------|---------------------------|------------------------|
| MLQ-PM | .06 | .62 |
| MLQ-SM | .23 | .30 |
| SoMe-M | .18 | .71 |
| WAMI-R-PM | .77 | .90 |
| WAMI-R-W | -.52 | .61 |
| WAMI-R-GG | .46 | .84 |

Note. MLQ-PM = Meaning in Life Questionnaire (MLQ) Presence of Meaning Subscale; MLQ-SM = Search for Meaning Subscale; SoMe-M = Sources of Meaning and Meaning in Life Questionnaire (SoMe) Meaningfulness Subscale; WAMI-R-PM = Work and Meaning Inventory – Revised (WAMI-R) Positive Meaning Subscale; WAMI-R-W = Meaning-Making through Work Subscale; WAMI-R-GG = Greater Good Motivations Subscale.

Conducting post-hocs on the first function, significant mean difference were found between students involved with engaged learning activities (see Table 24). Both the Tukey HSD and Scheffe significance tests found significant mean differences between engaged learning and no ET, and engaged learning and sports. The Tukey HSD also found significant mean differences between engaged learning and civic engagement, and engaged learning compared to fraternities and sororities to be significant; Scheffe’s significance test did not find these differences to be significant. While the difference between those students who were only involved in engaged learning and civic engagement was the largest, the non-significant result found through Scheffe’s is more likely as this test is the most conservative and the sample size for civic engagement was small ($n = 16$). The Tukey HSD post hocs also found a significant mean difference between students only involved in sports and those with involvement in multiple engagement types, mean difference = .54, $SE = .10$, $p = .000$, 95% CI = [0.24, 0.83].

Table 24

Mean Differences and Significance Tests between Engaged Learning and Other ETs

| ET | Mean Difference (<i>SE</i>) | Tukey HSD | Tukey HSD 95% CI | Scheffe Test | Scheffe Test 95% CI |
|----------------------------|-------------------------------|-----------|------------------|--------------|---------------------|
| No ET | 0.61 (0.15) | .001 | [0.16, 1.06] | .027 | [0.03, 1.19] |
| Civic | 1.09 (0.33) | .026 | [0.07, 2.12] | .204 | [-0.21, 2.37] |
| Fraternities & Sororities | 0.58 (0.17) | .017 | [0.06, 1.11] | .155 | [-0.08, 1.25] |
| Paraprofessional | 0.45 (0.19) | .300 | [-0.14, 1.03] | .688 | [-0.29, 1.18] |
| Sports | 0.90 (0.15) | .000 | [0.44, 1.37] | .000 | [-0.32, 1.49] |
| Student Employment: Admin. | 0.68 (0.62) | .976 | [-1.26, 2.61] | .997 | [-1.78, 3.13] |
| Student Organizations | 0.45 (0.18) | .248 | [-0.12, 1.02] | .637 | [-0.27, 1.17] |
| Multiple ETs | 0.37 (0.14) | .161 | [-0.06, 0.80] | .525 | [-0.18, 0.91] |

Note. ET = Engagement Type; SE = standard error; CI = confidence interval.

Figure 3 presents a graphical depiction of the multivariate results by plotting ETs group centroids (No ET = -.07, Civic = -.47, Engaged Learning = .43, Fraternities & Sororities = .05, Paraprofessional = .06, Sports = -.31, Student Employment: Admin = -.13, Student Organizations = .06, Multiple ETs = .13) to enable interpretation. While the graph is helpful for interpretation, significance cannot be assumed based on apparent graphical differences. For example, students with multiple ETs appear to be significantly different from those students only involved in civic engagement, particularly since significant differences were found with the Tukey HSD between multiple ETs and the sport ET; however, no significant differences were found between students involved with multiple ETs and those only involved with the civic ET. This result is likely due to the small sample size of students with only a verified civic ET ($n = 16$).

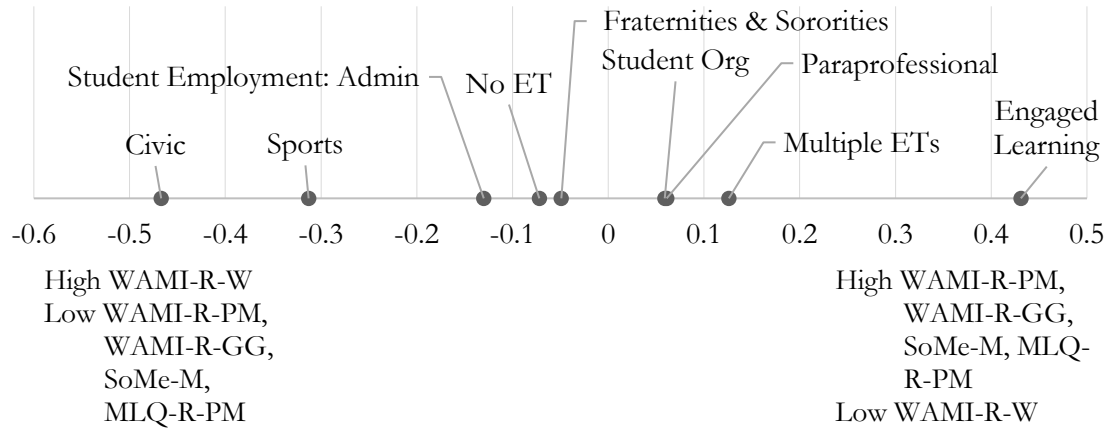


Figure 3. Graphic Depiction of the Group Centroids for the First Engagement Type (ET) Discriminant Function.

Summary. The MANOVA and DA follow-up analysis showed that ET had a small effect to differentiate between the average levels of meaning in life and work, a result that supported the researcher’s hypothesis and provided evidence to reject the null. Specifically, significant mean differences were found between (a) engaged learning and no ET, sports, civic, and fraternities and sororities; and, (b) students only involved in sports and those who were involved in multiple engagement types.

Discussion

The purpose of this study was to examine the relationship of participation in cocurricular and extracurricular experiences with students' psychological well-being, as defined by meaning in life and work. An extensive documentation and verification process of cocurricular and extracurricular experiences was conducted during the 2016 – 2017 academic year to collect a behavioral measure of student leadership engagement. Students were surveyed at the end of the 2016 – 2017 academic year to measure their meaning in life and work. It was hypothesized that students with more student leadership engagement, in both responsibilities and types, would relate to higher levels of meaning in life and work. This section will discuss the results of this study and their implications, along with presenting the limitations and opportunities for future research.

Broadly, results did not support that student leadership engagement relates to higher levels of meaning in life and work. The first two hypotheses were guided by the research question, "Does student leadership engagement related to psychological well-being, as measured by meaning in life and work?" Neither the student's total score of student leadership engagement (SLE-TS) nor the count of engagement types (ET-C) in which they were engaged was related to their meaning in life and work. The third hypothesis was guided by the research question, "Does the depth and breadth of student leadership engagement predict psychological well-being, as measured by meaning in life and work?" Results showed that the Total Score of Student Leadership Engagement (SLE-TS) and Count of Engagement Types (ET-C) do not jointly contribute to meaning in life and work either.

The final two hypotheses were guided by the final research question, "Does the content of student leadership engagement differentiate psychological well-being, as measured by meaning in life and work?" The first of these hypotheses examined content of the engagement based on the type of leadership roles in which a student was involved. Students that only engaged in a

single type of leadership role were compared to students that were engaged in multiple leadership roles, students with no verified student leadership engagement experiences, and to other students who only engaged in a single type of leadership role. Results showed that the type of leadership role had a nominal effect to differentiate between the average levels of meaning in life and work, which provided some support to the hypothesis that the content of a student leadership role differentiates psychological well-being.

Specifically, statistically significant mean differences were found between the project coordinator leadership role and all other leadership roles, with the exception of the executive leader role. Compared with other leadership roles, project coordinators showed higher levels of feeling that people judge their work to be meaningful and a contribution to the greater good. However, project coordinators scored lower than other leadership roles in their current meaning in life and perception that their future work will contribute to their meaning in life. Additionally, compared with students that did not have verified student leadership engagement, results showed that students who participated in multiple leadership roles had significantly higher levels of meaning and belonging and perceived that their future work would have personal significance.

The final hypothesis, guided by the last research question, examined content of the engagement based on the engagement type in which a student was involved. Students that only engaged in a single type of engagement were compared to students that participated in multiple types of engagements, students with no verified student leadership engagement experience, and to other students who only engaged in a single engagement type. Results showed that the engagement type had a nominal effect to differentiate between the average levels of meaning in life and work, which provided some support to the hypothesis that the content of engagement type differentiates psychological well-being.

Specifically, statistically significant mean differences were found between students who were only involved with engaged learning and students who were only involved with sports,

civics, or fraternities and sororities, and students with no student leadership engagement. Compared with these engagement types, students involved with engaged learning showed higher levels of their perceived presence of meaning in their lives and felt that their work contributed to the greater good; however, students involved with engaged learning showed lower levels of confidence that their future work would contribute to their meaning in life. Mean differences were also found between students only involved in sports and those with involvement in multiple engagement types. Compared to students only involved with sports, students involved with multiple engagement types showed higher levels of perceived presence of meaning in their lives and felt that their work contributed to the greater good; however, students involved with multiple engagement types showed lower levels of confidence that their future work would contribute to their meaning in life.

These results partially complement the results of the Gallup-Purdue Index, which studied college graduates' well-being (Gallup-Purdue, 2014). The Gallup-Purdue Index study found that the odds of engagement at work and thriving in well-being doubled if the college graduate was actively involved in extracurricular activities and organizations as a student. This study did not find that current students with higher levels of involvement in extracurricular activities and organizations, as measured by SLE-TS or ET-C, have higher levels of well-being. This discrepancy could signal that large, practical increases in meaning in life and work increase after students have graduated and have the opportunity to reflect on their collegiate experiences. This research further supports that meaning making integrates the past, present and future, relating to longer periods of time (Baumeister et al., 2013; Vallacher & Wegner, 1985, 1987).

The Gallup-Purdue Index study also found that the odds of being engaged at work and thriving in well-being doubled if the college graduate worked on a project that required at least a semester to complete. The results of the current study modestly supported that the process of meaning making may begin while students are in college by participating in project-based

experiences – as these experiences often showed practically small, but statistically significant, differences. For example, students involved with engaged learning showed higher levels of perceived presence of meaning in their lives and felt that their work contributed to the greater good. Engaged learning includes living-learning programs, service-learning, study abroad, and scholarly experiences, such as undergraduate research. These experiences are often project-based experiences that last a semester or more. Additionally, the project coordinator leadership role was found to have higher levels of feeling that people judged their work to be meaningful and that it contributed to the greater good. The project coordinator leadership engagements are also project-based experiences that last at least one semester. It is important to note that students involved in engaged learning experiences were generally not classified as a project coordinator; therefore, the results from the engagement type and leadership role are unique. These results may demonstrate that current students who participate in project-based experiences may have small, immediate increases in their meaning in life and work in college, an appreciation that will continue to increase once graduates have had time to reflect on their collegiate experience.

Implications

These findings are interesting and important for postsecondary education, and there are three major implications to highlight. First, there are the broad implications that students' cocurricular and extracurricular experiences, as defined by the institution, have little to no immediate, differential impact on the amount of meaning students find in their life and work. Yet, meaning in life and work is an important outcome of postsecondary education, and studies show that that college graduates engaged in cocurricular and extracurricular experiences during college have higher levels of meaning in life and work after college (Gallup-Purdue, 2014). While these results supports that longer periods of time are needed for individuals to create meaning, reflection on meaning in life and meaning in work may unintentionally be prompted by annual rituals, such as birthdays, anniversaries, and the New Year. When college professionals have

students with whom they have intentional interactions, these professionals have an opportunity to support students in increasing their meaning in life and purpose before leaving college. Often, student affairs professionals utilize student development theories to facilitate student growth during these intentional interactions; yet, meaning in life and work is not emphasized in student development theories. Professionals can utilize these same kinds of learning opportunities to help students integrate their past, present, and future experiences to begin increasing their meaning in life and work before graduation.

The second major implication relates to the relationship found between project-based experiences and meaning in life and work. As discussed earlier, this study showed that project-based experiences, whether done through an engaged learning experience type or in a project coordinator leadership role, were shown to have small, positive, statistically significant differences in their meaning in life and work outcomes. This result implies that postsecondary education institutions need to find ways to create meaningful project-based experiences for students in order to support the development of meaning in life and work while students are in college. The reason project-based experiences may support further development in this area may be due to the sense of purpose and tangible outcome that prompt reflection and integration of the past, present, and future. There may also be potential for paraprofessional experience types, such as Resident Advisors, Orientation Leaders, and Peer Educators, to create a project-based mentality by creating more time to reflect upon purpose and outcome rather than expecting students to perform as leaders and assuming that reflection is happening without facilitation.

The final major implication that stemmed from this study required further investigation of the significant mean differences found between students who were only involved in sports and those with involvement in multiple engagement types. Further examination of the 243 students classified as only having sport experiences showed that only nine students were varsity student athletes; the remaining 234 students only had documented experiences in intramural

sports or club sports. Of the students with multiple engagement types ($n = 634$), 408 students (64.4% of the sample) had completed a sport experience. Therefore, this difference heavily compared students that were only involved with intramural or club sports and those students who were also involved in other cocurricular and extracurricular experiences at the university.

This further investigation brings us to the final implication: that these results hold importance for recreational sports professionals. University recreation professionals have a large student audience that are not involved in other experiences, and should those students become involved in other experiences, their meaning in life and work would begin to increase while in college. Therefore, some ways that recreation professionals could help to change the behavior of those students who are only involved in sports would be to encourage them to become involved in additional experiences outside of sports. This additional involvement would have the potential to increase the students' meaning in life and work during college. For example, on the application for "Sport Club of the Year," a section could require teams to list ways that members are engaged in experiences outside of the club as part of the evaluation process. University recreation professionals can also be intentional about publicizing other opportunities for outside involvement through public postings in recreation facilities, such as Alternative Spring Breaks or Orientation Leader applications. When students change their behavior and become involved in outside experiences (in addition to sports), this study demonstrates that students can increase their meaning in life and work while they are still attending college.

Limitations

While important, this study should be considered in light of its limitations. First, all participants in this study attended the same institution, which limits the generalizability of these findings. Institutional factors could explain these results. For example, it could be unique that students at this institution had higher levels of meaning in life and work. Students from a variety of institutions may differentiate more on the scales utilized in this study and model a normal

distribution. For this reason, it is important that researchers conduct similar studies in a variety of settings before applying results too broadly. Furthermore, the behaviors and activities reported in this study are behavior indicators from the institution's perspective. It is possible that engagement defined in other ways may be related to well-being. Engagement from a student's perspective should be studied in the future.

The Student Leadership Engagement Measure (SLEM) is another limitation of the study. The SLEM utilized and weighted leadership roles in order to create comprehensive scores for this study (e.g. Executive Leader = 5, Group Organizer = 4, Project Coordinator = 3). Differences between leadership responsibilities may not be equal, as the scale currently weights. For example, the difference between a member and a project coordinator may be larger than the difference between a group organizer and an executive leader. If the differences are unequal, then the scores created based on these weights are questionable, which is a limitation of the study.

The final limitation to highlight is based on the collection of verified student leadership engagement. While the collection covered a large number of offices and experiences at the institution, all university experiences were not collected due to time and access constraints. For example, the study did not collect all student research experiences, organization rosters, or internships. Additionally, students are involved in local, regional, and national communities that are not coordinated by someone at the university, such as volunteering or shadowing at local organizations. While this study included a group of students that did not participate in any of the verified student leadership engagement experiences on-campus, this study is limited to generalize students with low or no verified student leadership engagement as uninvolved. Students who were uninvolved not involved in any of the verified student leadership engagements collected in this study may be involved in experiences not collected in this study. The absence of *all* behavioral data limits the SLEM and the scores it creates based on the verified engagement data.

Future Research

Studying the psychological well-being of college students and graduates, particularly their meaning in life and work, is increasingly of interest and importance. This study contributes to empirical evidence in this area and provides future ideas for continued research. For example, the Gallup-Purdue Index shows that college graduates who engaged in cocurricular and extracurricular experiences during college have higher levels of well-being. However, this study shows little to no difference in the well-being of students while they are engaged in these activities in college. Further research can examine what occurs during an engaged learning experience that sets off an increase of a student's meaning in life and work while they are in college. These strategies can be strengthened and employed in other types of experiences so that students begin to have a better sense of their purpose in life and prospective field of work before walking across the graduation stage.

Future research can also develop and explore meaning in life and work measures that differentiate college students better than the measures in this study. While addressed in the limitation of this study, responses with other samples may show to replicate a concentration of positive responses with heavy tails of distribution towards the lower end of the scale. If meaning in life and work continues to be of interest to practitioners and researchers as a collegiate outcome, then scales that better differentiate current college students need to be developed.

Finally, considering the future study of student leadership, this study provides some evidence for an expanded operationalization of student leadership roles. Since the role of project coordinator was found to have significantly different outcomes than other leadership roles, this study provides some evidence to support the leadership role structure that was utilized in this study and based on Hackman and Oldham's (1975, 1976, 1980) Job Characteristics Theory task identity and task significance dimensions. Further research should examine this student

leadership structure as a way to define student leadership beyond a dichotomous variable of occupying a structured leadership position.

Conclusion

Similar studies to this one are important for the future of postsecondary education. Educational experiences occurring outside of the classroom need to be studied behaviorally and be comparable to those studies that occur based on the curricular classroom approach to education. Additionally, researchers must continue to examine how college experiences – curricular, cocurricular, and extracurricular – relate to and influence college success outcomes beyond salaries, debt, and first destinations after graduation (such as meaning in life and work). Meaning in life and work are particularly important for a postsecondary education that requires continued practitioner and researcher deliberation as a collegiate outcome. The outcome of a college education needs to be more than attaining employment and a high-salary to pay off college debt. The outcome of a college education needs to be that college graduates find more purpose and meaning in their life and understand how their work contributes to society and the greater good.

Appendix

Meaning in Life and Work Scale

Please take a moment to think about what makes your life feel important to you. Please respond to the following statements as truthfully as you can. These statements are very subjective; there are no right or wrong answers. Answer all items using the scale provided.

| Absolutely Untrue | Mostly Untrue | Somewhat Untrue | Somewhat True | Mostly True | Absolutely True | Unsure |
|----------------------|------------------|--------------------|------------------|----------------|--------------------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

1. I understand my life's meaning.
2. I am looking for something that makes my life feel meaningful.
3. I am always looking to find my life's purpose.
4. My life has a clear sense of purpose.
5. I have a good sense of what makes my life meaningful.
6. I have discovered a satisfying life purpose.
7. I am always searching for something that makes my life feel significant.
8. I am seeking a purpose or mission for my life.
9. My life has no clear purpose.
10. I am searching for meaning in my life.
11. I lead a fulfilled life.
12. I think that there is meaning in what I do.
13. I have a task in life.
14. I feel part of a bigger whole.
15. I think my life has a deeper meaning.
16. I expect to find a meaningful career.
17. I view my future work as contributing to my personal growth.
18. My future work will make no difference in the world.
19. I expect that my future work will contribute to my life's meaning.
20. I have a good sense of what will make my future job meaningful.
21. I know my future work will make a positive difference in the world.
22. My future work will help me better understand myself.
23. I expect that my work in the future will have a satisfying purpose.
24. My future work helps me make sense of the world around me.
25. The future work I will do serves a greater purpose.

Scoring

The first step to scoring this instrument is to score the neutral answer (7) in the middle of the mathematical scale (i.e. 4). Utilize the following table to score all answers:

| Score | Absolutely Untrue | Mostly Untrue | Somewhat Untrue | Somewhat True | Mostly True | Absolutely True | Unsure |
|--------------------|-------------------|---------------|-----------------|---------------|-------------|-----------------|--------|
| Participant Answer | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Scored Answer | 1 | 2 | 3 | 5 | 6 | 7 | 4 |

After scoring the neutral answer in the middle of the mathematical scale, create subscale scores by summing the scores for the items as indicated below:

Items 1 – 10 are from the Meaning in Life Questionnaire (MLQ; Steger, Frazier, Oishi, & Kaler, 2006). Scoring for the MLQ is as follows.

Presence of Meaning Subscale = 1, 4, 5, 6, and 9; item 9 is reverse-coded

Search for Meaning Subscale = 2, 3, 7, 8, and 10; no items are reverse-coded

Items 11 – 15 are from the Sources of Meaning and Meaning in Life Questionnaire meaningfulness subscale (SoMe-MS; Schnell, 2009).

Presence of Meaning Subscale = 1, 2, 3, 4, 5; no items are reverse-coded

Items 16 – 25 are from the Work and Meaning Inventory Revised (WAMI-R). The original WAMI was developed by Steger, Dik, and Duffy (2012).

Positive Meaning Subscale = 1, 4, 5, and 8; no items are reverse-coded

Meaning-Making through Work Subscale = 2, 7, and 9; no items are reverse-coded

Greater Good Motivations Subscale = 3, 6, and 10; item 3 is reverse-coded

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