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Supervisors Matter for College Students: Relationships between Employment Type and Student Outcomes

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Abstract

Although student persistence is an important metric for higher education administrators and working while attending school is pervasive among those who attend college, the extent to which work supervisors may impact students while attending college through interactions is underexplored. This study examines the relationship between supervisor interactions and student outcomes in relation to type of employment, academic persistence, and competencies. The literature review indicates the relationship between type of employment and academic persistence is important and interactions may provide useful benefits. However, interactions within the type of employment experience is lesser known. The study site for this research is Alpha University (Alpha) (pseudonym). Alpha is a large, public, research university in the western United States. This study draws from a pre-existing dataset that uses two data sources: responses from the 2016 Alpha Student Employment Survey (ASES), and student records. Type of employment data come from the survey, and student records provide demographic and academic persistence data. The sample is limited to degree-seeking, non-online undergraduates enrolled at Alpha in fall 2016 who were employed, whose primary institution affiliation is not employee, are not post-baccalaureate students, and have one job (n=1,434). Data are analyzed using logistic regression with interaction effect for the first research question, dominance analysis for the second research question, and logistic regression for the third research question.

Keywords: Academic Persistence, Student Employment, Supervisor Interactions

Introduction

A recent survey conducted by the National Center for Education Statistics (NCES, 2012) suggested employers are seeking undergraduate talent that values work experience beyond academic achievement, including competencies like leadership, teamwork, communication, problem-solving, and work ethic. Working while attending college is a pervasive part of the undergraduate experience with 43% of full-time students and 78% of part-time students employed in 2015 (NCES, 2017). With academic persistence seen as an early indicator for graduation (Kezar, 2014; Logan, Hughes, & Logan, 2016; Perna, Cooper, & Li, 2006), it is important to examine the relationship between type of employment and academic persistence.

Academic persistence, or the willingness of a student to continue despite challenges and obstacles encountered, is a critical issue concerning graduation rates at universities nationwide (Perna et al., 2006). Yet, college affordability may undermine persistence. According to College

Data (n.d.), the average cost of tuition and fees for the 2017-2018 year is \$9,970 for residents at public colleges, and \$25,620 for out-of-state residents attending public universities, with costs projected to rise each successive year (Lewis, 2008; Logan et al., 2016). Today's students experience higher costs with college attendance (Robb, Moody, & Abdel-Ghany, 2012), they also experience rising student loan debt (Bozick, 2007). One strategy student's use to make college more affordable is to work while in college.

Working may have positive and negative impacts on the undergraduate student experience. Working while attending college has increased over previous decades (Davis, 2012; Logan et al., 2016; Stern & Nakata, 1991), as has working longer hours (Brotton, Goldrick-Rab, & Benson, 2016; Grant, Hawkins, Hawkins, & Smith, 2005), and multiple jobs (Beeson & Wessel, 2002; King & Bannon, 2002). Supervisors can play a vital role in the academic and professional development of students who work (Docherty, Gullan, & Phillips, 2018). Therefore, it is critical to examine the working learner experience.

This study advances knowledge about working while in college, supervisor interactions, and student outcomes (persistence and competencies employers seek from college graduates). On one hand, employment encourages students to develop leadership (Astin, 1993, 1999), civic-mindedness (Barnhardt, Trolan, An, Rossmann, & Morgan, 2019), creativity (Astin, 1993, 1999), self-efficacy (Broadbridge & Swanson, 2005), professional skills (Salisbury, Pascarella, Padgett, & Blach, 2012), and academic growth (Nunez & Sansone, 2016). On the other hand, employment offers supervisors the opportunity to interact with individual students through the multifaceted combination of academics (Perna, 2010) and professional skills (Lewis, 2008).

Studies on the relationship between type of employment and academic persistence were mixed, with working while in college viewed as positive (Beeson & Wessel, 2002; Furr & Elling, 2000; Huie, Winsler, & Kitsantas, 2014) negative (Attewell, Heil, & Reisel, 2011; Bozick, 2007; Di, 1996; Grant et al., 2005; Perna, 2010), neutral (High, 1999; Pascarella & Terenzini, 2005), or as having curvilinear (Perna et al., 2006) impacts related to academic persistence and graduation. Findings indicated that limited employment contributes to student success (Lewis, 2008) and the undergraduate engagement process (Astin, 1993, 1999; Salisbury et al., 2012); however, only a relative handful of studies have examined supervisor interactions (Docherty et al., 2018) and student outcomes (Schreiner et al., 2011). Thus, this study addresses supervisor interactions, academic persistence, and competencies employers seek among students working while in college.

Global Learner Framework

The realities for today's undergraduate students, who are being challenged to prepare for the demands of the global workforce academically and professionally, shape their experiences and outcomes. Validation (Rendón, 1994) and change agency (Kezar, 2014) theory are synthesized into a framework for understanding the relationship between type of employment, supervisor mentoring, and student outcomes.

Global higher education market. While many postsecondary institutions have consistently articulated democratic and civil goals, less attention has been given to preparing leaders for the global economy (Manathunga, 2007). With increased globalization and marketization, universities and colleges have responded by focusing on global learning and the influence of neoliberalism (Cole, 2017). Whereas global learning is concerned with the intersectionality between people and places throughout the world (Standish, 2012), neoliberalism is a governmental agenda dictated by self-discipline, competition, and individualism which operates under the false appearance of autonomy, when it actually serves the global market

(Manathunga, 2007). As the relationship between academia and the marketplace has become increasingly connected through globalization, a new context has been framed regarding the importance of educating globally and culturally competent students for future workforce preparation (Manathunga, 2007). With rising tuition, declining state support, and an increase in for-profit and online markets, higher education has adopted corporate strategies to maintain survival in a competitive economic environment (Kezar, 2014; Manathunga, 2007).

Literature Review

This study included a comprehensive literature review on the relationship between undergraduate type of employment, academic persistence, and supervisor interaction practices. The literature review was grounded in validation theory (Rendón, 1994), and change agency theory, (Kezar, 2014) which together provide a model for higher education to help prepare students for 21st century employment. The literature review concludes by identifying the gap on the relationship between supervisor interactions and outcomes.

Problem

Working while attending college may be related to leaving without a degree (Attewell et al., 2011; Bozick, 2007), it may also provide many potential benefits, including the development of leadership skills (Astin, 1993, 1999), civic-mindedness (Barnhardt et al., 2019), creativity (Astin, 1993, 1999), self-efficacy (Broadbridge & Swanson, 2005) professional skills (Salisbury et al., 2012) and academic growth (Nunez & Sansone, 2016). Still, it may also have a detrimental impact on academic persistence (Astin, 1993, 1999) and academic performance (Di, 1996; Logan et al., 2016), reduced involvement in campus events (Callender, 2008), isolation from peers (Warren, 2002), and weakened faculty/student relationships (Astin, 1993, 1999). Academic performance in this study is used to evaluate the academic progress of students—GPA (Astin, 1993, 1999). In any case, the relationship between working while in college and academic persistence deserves further attention. In particular, the relationship amongst type of employment, supervisor interactions, and student outcomes is underexplored and unsettled.

Theory

Astin (1993, 1999) found that working a limited number of hours on-campus improved the college experience for undergraduates and contributed positively to academic persistence, confidence, awareness of campus resources, and student life. The opposite is also true of students who work too many hours while attending school, decreasing academic persistence, reducing campus involvement with peers, and diminishing faculty relationships (Furr & Elling, 2000). Recent literature has suggested that student employment has a curvilinear effect (Perna et al., 2006), positing that as one variable increases, another decreases, making this complex relationship difficult to identify. Therefore, it is important to address not only academic persistence research, but also the indirect relationship to competencies employers seek because skills learned on the job are potentially transferable to future employment after graduation.

Type of employment and competencies are related to professional outcomes for higher education institutions (Kezar, 2014) and business (Troschitz, 2017). As the relationship between academia and the marketplace has become increasingly connected through globalization, a new context has been framed regarding the importance of educating globally and culturally competent students for future workforce preparation (Manathunga, 2007). Therefore, examining the relationship between working students and supervisors is very timely and important to this continuum, especially in terms of validating academic and job-related student success.

Validation theory holds that students who find it difficult to get involved in college or had been previously invalidated by those at their higher education institution, struggle to succeed (Rendón, 1994). Validation refers to intentional, proactive, affirmation of students by in-and out-of-class agents (faculty, student, academic affairs staff, family members, peers, etc.). By supervisors mobilizing their experience and campus resources, they can help inspire academic persistence and increase competencies that benefit the university and future employment in tandem.

The need for students to work while pursuing their undergraduate degree is a pressing issue in higher education. Working is pervasive among undergraduates in the United States (US), primarily in response to the issue of college affordability (Davis, 2012). In view of the increase of attending college and student loan debt, working during college is becoming less of a choice for undergraduates (Perna et al., 2006). One way to address this issue is by increasing the quality of the employment experience for students who work. Working while attending college is regarded as the new norm for college students (Sallie Mae, 2017). As of 2015, about 14 million college students worked while attending college, and for the past twenty-five years above 70% of undergraduate students enrolled in U.S. postsecondary institutions were employed (Carnevale, Smith, Melton, & Price, 2015). These trends exist regardless of other student characteristics, such as family income, financial dependency, enrollment status, type of institution, age, race, and marital status (Carnevale et al, 2015). Data extending from the 1990s to present suggests that students work an average of 30 hours per week. About 40% of them are undergraduate and 76% graduate students (Carnevale et al., 2015).

Table 1
National Undergraduate Working Average

Year	Share Working %	Average Hours Worked
1989-1990	77	30
1992-1993	72	31
1995-1996	79	30
2003-2004	74	29
2007-2008	75	29
2011-2012	62	29
2013-2015	78	30

Note. (Carnevale et al., 2015; NCES, 2017).

National statistics suggest over 7-in-10 students work while in college, and many are employed over 20 hours per week (Davis, 2012). This applies to Alpha University, as about 7-in-10 students work while attending the institution (Sesate, 2018). Many work to help with college affordability (Logan et al, 2016) and rising student loan debt (Bozick, 2007). Some students work at the university (Furr & Elling, 2000), others work outside the university (Astin, 1993, 1999; Di, 1996; Logan et al., 2016), while still others work multiple jobs (Beeson & Wessel, 2002; King & Bannon, 2002). For this reason, working and learning applies to most college students who attend postsecondary institutions.

Type of employment and academic persistence. Type of employment has an indirect relationship to academic persistence because the positive and negative aspects of working while attending college have the ability to influence the outcomes of working learners. Attaining a

bachelor's degree, higher self-reported cognition, and higher effective growth have been found to be more likely for students who worked at their higher education institution (Astin, 1993). These students had a greater chance of seeking out leadership opportunities from the college and were more likely to be engaged with the college experience, including participation in student government (Astin 1993, 1999), tutoring other students (Pascarella & Terenzini, 1991, 2005), and attending campus-based activities (Astin 1993, 1999). Students who work for their college were thought to have higher rates of persistence because of more time spent studying, participating in active and collaborative learning experiences, student interactions with faculty members (Kuh, Kinzie, Cruce, Shoup, & Gonyea, 2007), the development of civic mindedness (Barnhardt et al., 2019), and increased academic performance (Huie et al., 2014). It has been hypothesized that the more time students spend on campus, the more they gain awareness aware of campus-based resources related to persistence (Kuh et al., 2007).

The relationship between employment outside of one's college and academic persistence is complex. Working has been found to be of little influence on GPA or persistence (Harding & Harmon, 1999). Other findings have suggested students above the age of 25, who worked full-time, received mostly A and B grades (Rowan-Kenyon, Swan, Deutsch, & Gansneder, 2010). Therefore, for adult students, working is positively associated with grades and persistence. In contrast, adult students who were not employed at all reported lower grades than the full-time students who worked (Rowan-Kenyon et al., 2010).

A considerably larger group of studies have found type of employment and academic persistence research to be mixed. The scholarship is varied and complex, indicating that the problem within the literature has not been solved. These findings include positive (Beeson & Wessel; Huie et al., 2014; Pascarella & Terenzini, 1991, 2005; Salisbury et al., 2012), negative (Astin, 1993,1999; Attewell et al., 2011; Bozick, 2007; Di, 1996; Furr & Elling, 2000; Grant et al., 2005; King & Bannon, 2002; Perna, 2010), neutral (High, 1999; Pascarella & Terenzini, 2005), and curvilinear (Perna et al., 2006) impacts related to academic persistence and graduation. The range of studies on student employment and academic persistence are contradictory and deserve to be unpacked further.

Methodology

This chapter describes and details the methodology planned for this quantitative study. The problem, research questions and hypotheses are restated. The research design and study site are identified. The sample of students who participated in the research under IRB is discussed. Data sources used in this research are explained. Variables selected for this study sought to reduce omitted variable bias. Estimation and data analysis for the three research questions are identified.

Research Questions and Hypotheses

The research questions developed for this study included:

1. How does the relationship between type of employment and academic persistence vary by supervisor interactions?
2. What is the relative importance of supervisor interactions on academic persistence?
3. What is the relationship between supervisor interactions and competencies employers seek?

Design

Since this quantitative cross-sectional case study research is interested in the relationship among employment, student-supervisor interactions, and outcomes (academic persistence, competencies employers seek), it uses a quantitative approach (Creswell, 2013). A case study using quantitative analysis contains elements from an empirical-analytical scientific approach. A quantitative analysis in case studies depends on the phenomena under study, the research questions formulated, the type of case study, and sources of evidence used (Mills, Durepos, & Wiebe, 2010). In quantitative analysis, the goal is to strive for samples that are statistically generalizable to or of the population (Mills et al., 2010). This case study approach is cross-sectional and focuses on a snapshot in time of working learners at Alpha University (n=1434) examining persistence and competencies. This study is carved out of a larger, ongoing, mixed-methods study on type of employment and student outcomes, and uses a case study approach.

The larger mixed-methods study began in 2015, with research ongoing, at Alpha University. Alpha is focused on inclusivity and delivers education through multiple campus locations. 83% of students are undergraduates. In fall 2018, first-time freshman exceeded 11,000. Females were nearly 48% and males 52% of undergraduates. Nearly 64% were state residents. Non-racial/ethnic minorities comprised nearly 62% of undergraduates. Alpha was selected as a case study because it is similar to the national landscape regarding type of employment (NACE, 2017). For example, the ongoing study has found the vast majority (over 70%) of its working learners work one job (Sesate, 2018). Similarly, many of these students worked extensively (20 or more hours per week), especially those not employed solely or at all by Alpha (Sesate, 2018). This is comparable to national statistics which find over seven in 10 students work while in college, many working over 20 hours per week (Davis, 2012). Given all this, Alpha is an appropriate site for a case study on student employment.

Sample

The sample for this study was drawn from degree-seeking, non-online undergraduates at Alpha University whose primary institution affiliation is not employee and are not post-baccalaureate students (n=1,434). The sample sought to represent the critical mass of the undergraduate student body at Alpha University. Post-baccalaureate students were excluded because even if this population did not persist, they would still have a bachelor's degree to compete with in the labor market. International students were excluded from this survey because persistence is strong with this population (Mamiseishvili, 2012). Compared to U.S. students, international students typically display stronger college GPA's, degree plans, and academic integration positively related to persistence (Mamiseishvili, 2012). International students are also required to document the possession of adequate financial resources during the admissions process (Hill, Burch-Ragan, & Yates, 2001). Athletes were also excluded from this survey. One of the main reasons intercollegiate athletic programs are successful is due to the combined efforts made by the entire institution to ensure persistence occurs (Hill, Burch-Ragan, & Yates, 2001).

Moreover, the reason some athletes leave an institution may not have anything to do with working or academics generally (e.g., accepting a professional contract) (Beamon & Bell, 2002). Athletes also benefit from resources largely unavailable to non-athletes (e.g., extra tutoring and support resources) (Benford, 2007). Therefore, persistence includes other factors for international students and athletes. The sample was further limited to students who indicated they were currently employed on the survey (employed by Alpha/non-Alpha), allowing the focus to be on type of employment. By examining the experiences of working learners, this study may add to the literature on academic persistence and competencies employers.

Data Sources

Data come from a pre-existing dataset comprised of two sources: (1) responses from the 2016 Alpha Student Employment Survey (ASES) and (2) student records. The 2016 ASES is a cross-sectional survey that utilized predominantly close-ended questions, thereby providing a snapshot in time of relationships between type of employment and student outcomes. It was administered in fall 2016 by Alpha University (n=1434). A strength of the ASES is that it is not limited to Alpha University student employees. Instead, it also includes students who work outside of Alpha. This is an important distinction as much of the existing literature focuses on employment inside of one's college (Astin 1993, 1999; Furr & Elling, 2000). Further, despite working being pervasive, most students do not work solely for their institution (Logan et al., 2016). Thus, the dataset is comprised of students who are the majority of working learners. Survey data were merged with student data from administrative records. Survey data provide employment data, including type of employer (Alpha/non-Alpha), supervisor interactions, and competencies. Student records ascertained and provided by Alpha University included persistence data, along with other control variables on demographics and student enrollment.

Findings

There were 1,434 participants included in this study. Most participants were female, non-underrepresented minority (URM), juniors/seniors, young, and higher performing students. About 6-in-10 participants were female, and 3-in-10 a URM. About 1-in-10 participants were freshmen, 2-in-10 sophomores, 3-in-10 juniors, and 4-in-10 seniors. Mean age is 23, and mean GPA is 3.36. Most participants were employed somewhere other than Alpha, and a plurality typically worked less than 20 hours per week. About 4-in-10 participants were employed by Alpha. Fewer than 1-in-10 participants provided no response regarding the number of hours they typically worked per week; less than 4-in-10 typically worked less than 20 hours per week; 3-in-10 typically worked 20-29 hours per week; and 2-in-10 typically worked more than 30 hours per week. Most participants did not interact with their supervisors for social support, supporting academics, or building confidence (Sesate, 2018). About 4-in-10 participants had a supervisor who provided social support, while 3-in-10 had a supervisor who supported academics, and 3-in-10 had a supervisor who built confidence. All descriptive statistics are found in Table 2.

Table 2
Descriptive Statistics (n=1,434)

Variables	<i>n</i>	%	<i>M</i>	<i>SD</i>	Range
Female	853		59.48		
URM	407		28.38		
Academic Level					
Freshman	160	11.16			
Sophomore	252	17.57			
Junior	431	30.06			
Senior	591	41.21			
Age	1434		23.02	6.60	18-70
GPA	144		3.36	0.55	0.00-4.31
Alpha Employed	580	40.45			
Hours worked/week					
Unknown	69		4.81		
<20	598		41.70		
20-29	446		31.10		
30+	321		22.38		
Provides social support	581		40.52		
Supporting academics	390		27.20		
Building confidence	402		28.03		

Note. Underrepresented Minority (URM): includes African American/Black, Hispanic/Latino, American Indian/Alaskan Native, and Native Hawaiian/Pacific Islander.

Of interest, no findings were significant for the three academic persistence models examined. However, all three job competency models evaluated were significant. The findings for the job competency model of teamwork has been selected for the purposes of this discussion.

Table 3
Logistic Regression using Teamwork as the Dependent Variable

Variable	Model 4: Provides Social Support	Model 5: Supporting Academics	Model 6: Building Confidence
	Odds Ratio (Robust SE)	Odds Ratio (Robust SE)	Odds Ratio (Robust SE)
Provides Social Support	2.270*** (0.283)		
Supports Academics		2.767*** (0.404)	
Builds Confidence			3.316*** (0.489)
Male	1.225* (0.148)	1.085 (0.129)	1.103 (0.133)
URM	1.125 (0.149)	1.143 (0.153)	1.160 (0.156)
Academic Level			
Freshman♦			
Sophomore	1.022 (0.219)	1.106 (0.242)	1.027 (0.224)
Junior	1.154 (0.232)	1.182 (0.241)	1.109 (0.229)
Senior	1.406* (0.279)	1.453* (0.293)	1.394 (0.284)
Age (Years)	0.971*** (0.009)	0.969*** (0.009)	0.972*** (0.009)
Cum GPA	1.006 (0.106)	1.036 (0.111)	1.061 (0.115)
Alpha Employed	1.415*** (0.190)	1.441*** (0.194)	1.484*** (0.201)
Total Hours Typically Work/Week			
Unknown♦			
<20	(0.106) 0.985	1.031 (0.283)	0.937 (0.262)
20-29	1.183 (0.327)	1.199 (0.333)	1.059 (0.300)
30+	1.354 (0.391)	1.368 (0.397)	1.281 (0.379)
Intercept	1.567 (0.780)	1.563 (0.795)	1.461 (0.751)
Observations	1,434	1,434	1,434
Pseudo R-squared	0.0396	0.0445	0.0556
Log Lik	-885	-880.5	-870.3

Note. Coefficients are in odds ratios. SE=Robust standard error in parentheses. Values rounded to hundredths place. Underrepresented Minority (URM): includes African American/Black, Hispanic/Latino, American Indian/Alaskan Native, and Native Hawaiian/Pacific Islander. ♦ = Reference group. Control Variables: Sex, URM, Academic Level, Age, GPA, Type of Employer, Hours Worked Per Week.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Supervisor Interactions and Teamwork.

Models 4, 5, and 6 have the dependent variable of teamwork and the independent variables of provides social support, supporting academics, and building confidence. All models found the relationship between each type of supervisor interaction and the competency of teamwork to be significant ($p < .05$). Accordingly, each null hypothesis was rejected. The probability of developing teamwork skills is 60%. This suggests that it is more common to

develop communication skills than teamwork skills.

As shown in Figure 1, the average marginal effect of having a supervisor who provides social support, as opposed to one who does not, is associated with about a 17% increase in the probability of developing teamwork skills.

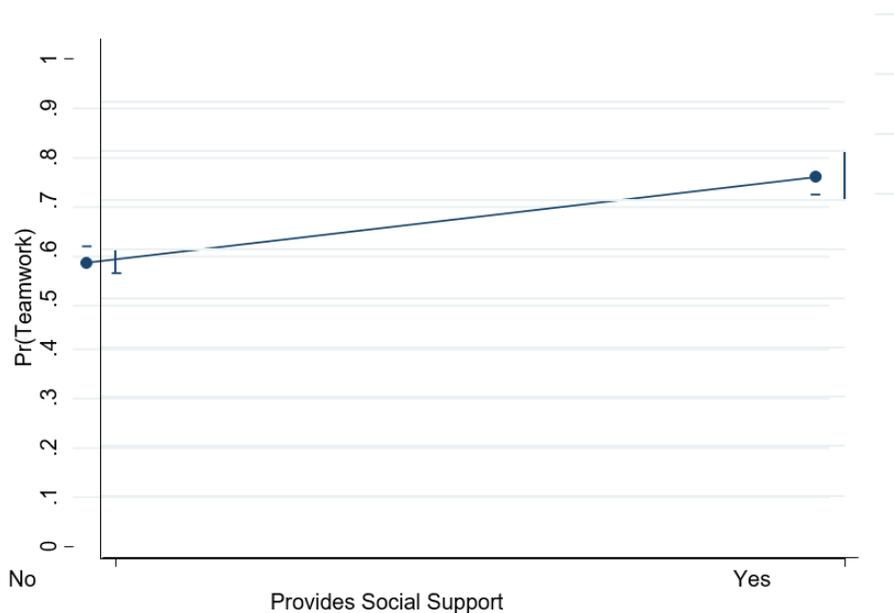


Figure 1. Model 4: Provides social support for teamwork.

As illustrated in Figure 2, the average marginal effect of having a supervisor who supports academics, as opposed to one who does not, is associated with about a 20% increase in the probability of developing teamwork skills.

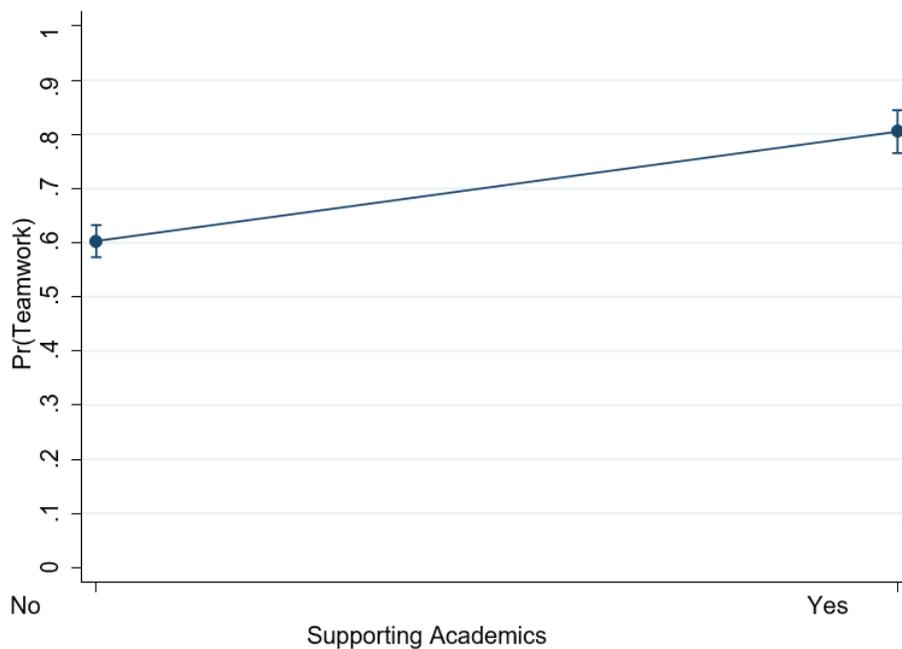


Figure 2. Model 5: Supporting academics for teamwork.

As identified in Figure 3, the average marginal effect of having a supervisor who builds confidence, as opposed to one that does not, is associated with about a 23% increase in the probability of developing teamwork skills.

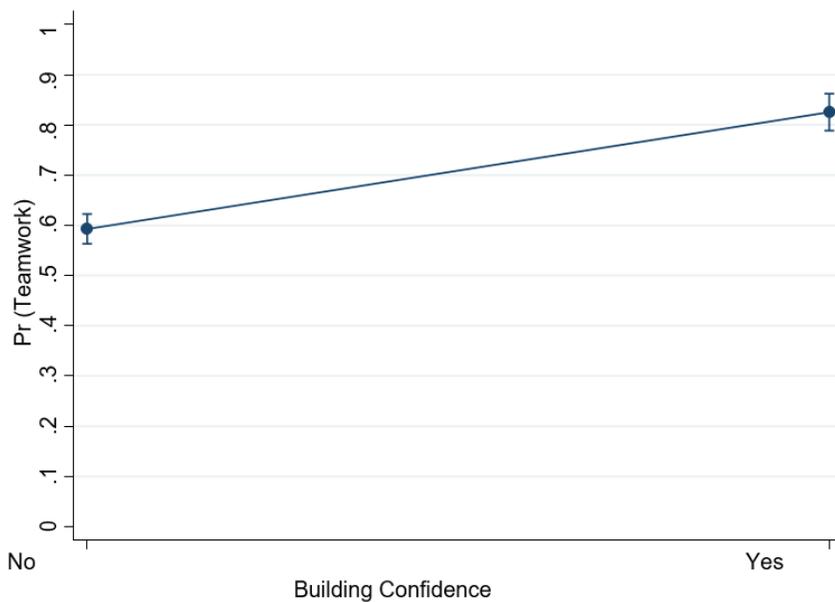


Figure 3. Model 6: Building confidence for teamwork.

Together these findings suggest that while any of the three types of supervisor

interactions are important for working learners, supporting academics is greater than providing social support. Building confidence, however, is most strongly related to the competency of teamwork, as opposed to providing social support or supporting academics.

Recommendations for Future Research

It is recommended that future research replicate this research in three ways. First, it would be informative to analyze data from additional years as it becomes available. While the research may potentially translate to other large, public, research institutions in the western United States, it may not do so to institutions with different characteristics and contexts. The results may change when examining other timeframes. Additional variables may also be added beyond what was used to conduct this research. For instance, financial aid variables are missing from this study. Additionally, this work may be extended to other student populations (e.g., online, athletes, or international students), and/or other competencies not examined here (e.g., conflict resolution, critical thinking, and interpersonal skills). Second, the same timeframe of fall 2017 should be examined at different large, public, research institutions, as well as those possessing different policy, missions and visions, and internal dynamics. In so doing, comparative studies would emerge from alternative institutions which account for context and other relevant factors. Third, national-level longitudinal data analyses would be informative. Despite a cross-sectional quantitative study providing a snapshot in time of Alpha University, it does not fully capture the trends or outcomes of the institution (Babbie, 2007). A national approach could provide further insights by examining the overall demands being imposed on state colleges or universities and how this relates to type of employment, supervisor interactions, and student outcomes.

Discussion

Despite the resources available at higher education institutions, degree-seeking bachelor's students are not graduating. Even for students who do graduate, employers do not believe students are prepared for the workforce. Academic persistence is an important metric to increase graduation outcomes and working is pervasive amongst those who attend college. Universities will need to reexamine this relationship as they prepare 21st century learners for the future global economy. Supervisors provide an underexplored outlet for working learners who are seeking learned job competencies as a form of mentoring. As the needs of employers only become more intricate in the future, supervisors can help students and the marketplace succeed through shared practices.

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