

The Pennsylvania State University

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**ADVANCING AND TESTING A CONCEPTUAL MODEL  
THAT MEASURES STUDENT SUCCESS  
AT FOR-PROFIT COLLEGES AND UNIVERSITIES**

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Jihee Hwang

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The dissertation of Jihee Hwang was reviewed and approved\* by the following:

Leticia Oseguera  
Associate Professor of Higher Education  
Dissertation Advisor  
Chair of Committee

John J. Cheslock  
Associate Professor of Higher Education

Roger L. Geiger  
Distinguished Professor of Higher Education

Hoi K. Suen  
Distinguished Professor of Educational Psychology

Dorothy H. Evensen  
Professor of Higher Education  
Program Coordinator of the Higher Education Program

\*Signatures are on file in the Graduate School

## ABSTRACT

While for-profit colleges and universities (FPCUs) are touted for their ability to broaden college education opportunities for low-income and underrepresented students who would not otherwise be served in traditional, not-for-profit higher education institutions, their potential success with students is poorly understood. Further, there has been limited discussion or evidence on what contributes to FPCU college students' success. This study was developed to fill the gap by identifying and describing multiple ways to consider credential completion at the FPCU level as an indicator of student success. It also explored credential completion conditional on type of credential sought and program/field of study enrollment.

Higher education theories are rarely applied to FPCU students—thus, this study also proposed a conceptual model of credential completion for for-profit college students that built upon Tinto's model of institutional departure (1993), Pascarella's general model for assessing changes (1985), and Bean and Metzner's nontraditional college student attrition model (1985). The framework was used to examine the factors associated with credential completion and how the same conceptual model and same measures resulted in different findings across the for-profit, community college, and broad access four-year not-for-profit college sectors.

The following research questions guided this work.

- 1) How does using alternative measures to define credential completion in FPCUs influence who is counted as a completer?
  - a. Measure 1: Who completes when credential completion is defined as whether one attained any type of credential at the institution of initial entry?
  - b. Measure 2: Who completes when credential completion is defined as whether one attained a credential that matched their initial credential goal at the institution of initial entry?
  - c. Measure 3: Who completes when credential completion is defined as whether one attained a credential after leaving the FPCU of initial entry?
- 2) Using the conceptual framework as a guide, how are institutional structures, student services, student background characteristics, and student experiences associated with completion of any credential type by FPCU students?
  - a. How do the factors (stated above) differ among certificate- versus degree-seeking students at FPCUs?
  - b. How do the factors (stated above) differ among students enrolled in vocational/technical programs versus academic programs at FPCUs?
  - c. How do the factors (stated above) differ between for-profit and not-for-profit college attendees?

Using the Beginning Postsecondary Students 2004–2009 data and the Integrated Postsecondary Education Data System, a series of descriptive and multilevel logistic regression analyses were conducted on the completion measures. In-depth analyses were conducted on completion measure 1, which was understood to be the most inclusive definition of credential completion at the institution of initial entry over a six-year time period. Key findings were as follows:

- Credential completion rates varied substantially depending on method of measurement. Forty-eight percent of FPCU students attained a credential at a FPCU within six years. When exact match of initial credential goal and attainment was defined as completion, 55% of certificate seekers, 26% of associate's degree seekers, and only 22% of bachelor's degree seekers attained credentials as they had planned within a six-year period. From the longitudinal, multi-institutional perspective, only a handful of students completed a credential after leaving the FPCU of initial entry.
- Controlling for the variables in the model, attending four-year FPCUs decreased the odds of certificate completion by 84% relative to attending a less than two-year FPCU. No difference was found between attending four-year FPCUs or less than two-year FPCUs and degree completion (associate's or bachelor's degree). Compared to less than two-year FPCUs, attending two-year FPCUs did not differentiate on the likelihood of attaining a degree or certificate completion.
- This study found clear differences across for-profit and not-for-profit institutions in the role of three agents of socialization—adviser, faculty, and peers. While interactions with adviser, faculty, and peers were all found to be significant in predicting not-for-profit four-year college students' completion, interaction with adviser was the only significant variable for FPCU students' completion, and peer interaction was the only significant variable in community college students' degree completion.
- There was little evidence that FPCUs better serve marginalized students than those students in the not-for-profit sector. For-profit college students were negatively influenced by their nontraditional student status in a similar manner to students in broad access four-year not-for-profit colleges; nontraditional student status did not have a negative influence on credential completion in community colleges.

This study's findings contribute to theory, research, and policy. They suggest that modifications to traditional higher education theories can increase understanding of for-profit college students. In particular, this study offered new ways of operationalizing academic and social integration that more appropriately reflect the institutional norms of FPCUs. This study also contributed to policy discussions by offering multiple measures of completion and illustrating how varied measures lead to different completion rates.

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## Chapter 1

### INTRODUCTION

The focus of this research was for-profit colleges and universities (FPCUs) which are also known as proprietary colleges in U.S. higher education. Despite the rapid growth of proprietary higher education in recent years, scholarly interest in for-profit higher education has not kept pace with this sector's expansion. This study aimed to add to the higher education literature through a quantitative analysis of large scale national level data sets. Specifically, this study explored the private for-profit college sector and factors that contribute to the credential attainment<sup>1</sup> of students who attended FPCUs.

#### Problem Statement

For many years FPCUs have provided vocational training and career education in the U.S. higher education system (Kinser, 2006a). In 1635, proprietary schools began offering vocational training in the Plymouth Colony (Wilms, 1974). Since then, for-profit colleges have evolved and expanded, serving underrepresented students in traditional, not-for-profit higher education institutions.

The remarkable growth in for-profit colleges over the last decade provides a compelling reason for increased research on their model and levels of success. Although for-profit college enrollees comprised only 11% of all postsecondary education (PSE) institutions in 2010 (Aud et al., 2011)<sup>2</sup>, their enrollments have grown the fastest among

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<sup>1</sup> Here, the term 'credential' refers to certificate, associate's, or bachelor's degrees. The term 'credential attainment' and 'credential completion' are used interchangeably; in this study, they were regarded as proxies for student success in FPCUs.

<sup>2</sup> In this study, postsecondary education institutions only included those that participated in Title IV programs. Likewise, for-profit colleges and universities were those institutions eligible for federal student financial programs.

all higher education sectors. For example, while public college enrollment increased from 9.7 million in 1990 to 13.5 million in 2012 (39%), for-profit college enrollment increased from 0.2 to 1.5 million during the same period—a nearly 634% increase (Kena et al., 2014). Although enrollment in FPCUs has slightly declined since 2010, the trend in for-profit college enrollments has changed the landscape of the higher education structure (Apling, 1993; Bailey, Badway, & Gumport, 2001; n.a., 2011b; Tierney & Hentschke, 2007). From 2000 to 2011, the number of bachelor's degrees conferred at FPCUs increased by 476% and master's degrees by 583% (Kena et al., 2014). These increases have forced not-for-profit colleges to compete with for-profit colleges, given that traditional colleges are usually the preferred place to obtain bachelor's and advanced degrees. Recently, the Association of Private Sector Colleges and Universities (APSCU)<sup>3</sup> observed that for-profit institutions are not limited to offering vocational training but now offer:

...the full gamut of postsecondary education: from short-term certificate and diploma programs, to two- and four-year associate and baccalaureate degrees, to masters [sic] and doctoral programs. Some of the occupational fields for which APSCU institutions provide programs include: information technology; allied health; business administration; commercial art; radio and television broadcasting; and culinary and hospitality management (Association of Private Sector Colleges and Universities, 2012).

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<sup>3</sup> The Association of Private Sector Colleges and Universities is a major organization that advocates on behalf of private colleges and universities including the for-profit higher education sector (see <http://www.career.org/about/pscu/>).

Thus, today's for-profit colleges provide a broad range of certificates and degrees in numerous fields of study and are influencing the overall higher education market by competing with traditional colleges and universities. Tierney and Hentschke (2007) explained that changing societal and economic conditions are producing an increasingly diversified higher education market. They noted that "FPCUs can be framed as representing a fundamental shift in basic assumptions about higher education—a departure in public policy from exclusive reliance on public and private not-for-profit institutions to produce the broad definition of postsecondary education for society at large" (Tierney & Hentschke, 2007, p. 2).

The for-profit sector is now in the midst of a heated debate. First, scholars are offering different perspectives on the legitimacy of for-profit colleges. Many issues faced by for-profit colleges (e.g., profit-seeking education model, accountability issues—addressed in detail later in this thesis) have produced mixed perspectives on the legitimacy of the for-profit college or university as a postsecondary institution. Altbach (2001) described FPCUs as pseudo universities rather than as real universities, arguing that "they (FPCUs) do not fit the definition of a university and should not bear this title" (p. 2) because for-profit colleges do not bear the critical sense of responsibility for the public good, which is the root of universities in the U.S. Likewise, Heller (2003) argued that for-profit colleges' contributions through education, research, and service have not been as invaluable to society as those offered by the not-for-profit sector because FPCUs have narrow focus on making a profit. Thus, for-profit colleges have no obligations to contribute to the public good as research universities do for the broader society.

On the other hand, a different body of scholars believes that FPCUs do contribute to society, although not in ways identical to traditional universities. For example, FPCUs provide students with an opportunity to learn skills that meet employers' needs (Staklis, Bersudskaya, & Horn, 2011), and often provide opportunities to underserved students who might not have the chance to attain postsecondary credentials in the not-for-profit sector (Gonzalez, 2009; Kinser, 2009). Providing opportunities to persons who are underserved in higher education is critically important given that racial and socioeconomic disparities still exist despite the fact that education level has increased in overall population (Astin & Oseguera, 2004; Kurlaender & Flores, 2005). For-profit colleges are open access institutions that offer opportunities to anyone who wants to enter. More importantly, their open access policy reduces not only the education gap but also income disparities given the labor market's increasing need for employees with postsecondary education credentials that point to adequate skills and knowledge (Bosworth, 2010). Thus, for-profit colleges have the potential to ensure the underrepresented population's labor market transition (Rosenbaum, Deil-Amen, & Person, 2006). Further, Mintz (2014) argued that in spite of the many problems created by the for-profit sector, there are some lessons for the traditional, not-for-profit higher education sector. Ruch (2001) argued that FPCUs implement new (or better) approaches in order to accommodate various needs of underserved students by providing more proactive, accessible, and flexible supports than not-for-profit colleges do. In that sense, FPCUs' profit-oriented function does not necessarily run counter to the public good (Ruch, 2001). Tierney and Hentschke (2007) also asserted that for-profit colleges

contribute to the social good through “education, broadly defined, not unlike public safety, health, and social welfare” (p. 160).

In addition to the scholarly debate, the sector’s poor record on student outcomes has intensified controversies around higher education policies that pay increasing attention to reshaping regulatory rules on the for-profit sector. While expanding college access opportunity is noted as a contribution of the for-profit sector, many students attending for-profits accumulate significant debt and leave without attaining a degree. An analysis of a 2004 cohort of postsecondary students showed that those who began certificate programs at for-profit colleges were more likely to graduate within six years than those who began in the not-for-profit sector (Skomsvold, Radford, & Berkner, 2011). However, bachelor’s degree seekers at for-profit colleges were less likely to graduate within six years (Knapp, Kelley-Reid, & Ginder, 2011); the four-year graduation rate of bachelor’s degree seeking students was 51% at private not-for-profit institutions, 31% at public not-for-profit institutions, and 13% at for-profit institutions. Furthermore, students who began at for-profit colleges had higher student loan default rates even after controlling for student characteristics such as gender, age, income, and delayed enrollment status (Deming, Goldin, & Katz, 2011).

The need for effective regulatory policy in the proprietary sector has been one of the primary topics of discussion among higher education policy makers. In response to poor outcomes in the for-profit sector, the U.S. Department of Education has made an effort to launch a new regulatory rule, the Gainful Employment Rule, which measures program cohort default rates and debt-to-earnings ratios as indicators of institutional accountability. Although it is not yet known whether the rule can be effective or will

protect students from for-profit colleges' fraud and unethical practices (Fain, 2013; Harnisch, 2012; Kutz, 2010), policies that benefit students are imperative. This also signals that the for-profit sector will not be able to continue to use federal funding without increasing student success. Limited understandings on for-profit college student outcomes point to the need for more research evidence on student experiences and success in FPCUs.

### **The State of Research on FPCUs**

The for-profit higher education sector has been scarce in educational research as some researchers have expressed concern about the limited knowledge about this sector (Wilm, 1975). Miller and Hamilton (1964) asserted that “the lack of a national audit of all proprietary schools affords an incomplete picture of our total national educational resources” (Kinser, 2006a, p. 2). Belitsky (1969) also noted that for-profit colleges were ignored “except by students attending the schools and by employers who have hired their graduates” (p. 5). There is still a lack of reliable research resources on FPCUs and students enrolled in this sector, even though students are increasingly attending for-profit schools (Tierney & Hentschke, 2007).

The limited data source on for-profit colleges is a primary reason for the scarce research on this sector (Cellini & Chaudhary, 2012). The differences in the organizational natures of FPCUs and the traditional, not-for-profit sector may hinder the effective gathering of data. As stated earlier, the biggest difference between the two is the profit-seeking nature of FPCUs. For-profit colleges follow a business organization model that limits external constituencies' knowledge about what happens within the college. Therefore, FPCUs do not need to (or should not) share internal information with other

competitors, including other for-profit colleges and not-for-profit PSEs (Heller, 2003; Tierney & Hentschke, 2007). One exception is the FPCUs that participate in federal student aid programs because they are required to report institutional data to federal agencies. Yet, FPCUs do not publicize internal data except when fulfilling their federal regulation requirements.

This lack of transparency biases information and colors the overall understanding of the proprietary sector. Most for-profit colleges are non-degree-granting, vocational training schools and they do not participate in federal financial aid programs; these schools are not included in the numbers of students and institutions by the U.S. Department of Education. As a result, current national-level data only include FPCUs eligible for federal financial aid programs.

As concerns about and criticisms of FPCUs increase, efforts are being made to provide in-depth research on the sector. The U.S. Senate Committee on Health, Education, Labor and Pensions Committee collected data using a wide range of institutional sources and reported their findings on corporate-owned FPCUs. The genesis of this report, *For-profit higher education: The failure to safeguard the federal investment and ensure student success* (U.S. Senate on Health, Education, Labor and Pension, 2012; referred to as the *Harkin report*), was concerns about the lower success rate of FPCU students and lack of understanding of FPCUs' operation. This report helped to improve knowledge on FPCUs since it investigated FPCUs using various documents provided by institutions that are not publicly available. Such information includes finances, student outcome measures, and institutional practices relating to recruiting and services, which have been cited as particular interests of researchers. This report offers useful information on for-profit

colleges although it only focused on FPCUs owned by corporates. Another recent study conducted by Cellini and Goldin (2013) utilized state-level data and included non-Title IV-eligible for-profit colleges which comprised a substantial proportion of the sector. Their study found that the number of FPCUs was much greater than the official count offered by the U.S. Department of Education after including non-Title IV institutions. As such, recent research is highlighting the need for and importance of FPCUs and their students and demonstrating efforts to overcome limited data availability.

With regard to national level data sources, the Beginning Postsecondary Students 2004 cohort (BPS0409) is serving as a better data source for recent studies focusing on for-profit higher education. It is based on a survey of students who began their postsecondary education in 2004, the period during which FPCUs experienced rapid enrollment growth. Thus, the BPS0409 contains relatively large numbers of respondents who attended FPCUs, enabling researchers to be more confident about the sample size issue. Yet the BPS0409 is not representative for-profit college student universe as it only contains information from first-time college students.

Another limitation in existing research on FPCUs is that studies based on economic perspectives are dominant (for example, Lang & Weinstein, 2012, 2013) and there still need more studies on student experience and non-economic outcomes. Few studies have addressed FPCU students' completion rates and the importance of graduation. Cellini and Chaudhary (2012) found that completion rates at for-profit colleges are an important determinant of student success there. When compared to associate degree seekers at community colleges, associate degree completion is much more important for for-profit college students. Associate degree completers at FPCUs

earn 11% more per year of education while FPCU dropouts have much lower earnings than community college dropouts. Deming et al. (2011) found that FPCUs have higher completion rates for certificate or associate's degree programs than do public institutions, while higher unemployment rates and lower economic gains are found in the for-profit sector. Although studies on FPCUs are increasing, the extent of research on for-profit college students' persistence and program completion is still insufficient.

The most significant gap in existing studies of FPCUs is the limited number using theories of higher education and student and institutional viewpoints to enhance understanding of FPCU students. The lack of research on higher education theories and practices as they apply to FPCU students may be due to the fact that many such theories intensively focus on students in four-year residential campus, making it difficult to apply them to FPCU students. However, the need to extend traditional theories in higher education to diverse types of institutional settings and students has been emphasized by many scholars (see Rendón, 2006; Rosenbaum et al., 2006). Actually, efforts have been made in studies of community college students. For example, Tinto's student departure theory has been applied in myriad studies to examine the importance of the academic and social integration of community college students or distance education students (see Rosenbaum et al., 2006). Yet no study has attempted to apply a theory-driven model to explain for-profit college students' experience and outcomes.

Scholars have pointed out that the for-profit higher education sector cannot be defined in a simple manner because it offers a wider range of credentials than not-for-profit colleges in a variety of programs (Institute for Higher Education Policy, 2012; Kinser, 2006a). In 2011, 44% of certificates were awarded by the for-profit sector in

diverse fields such as auto mechanics, construction trades, healthcare, and cosmetology. FPCUs were responsible for 20% of the associate's degrees awarded in 2011 in the fields of business, healthcare, education, and computer services. Although bachelor's degrees conferred at FPCUs were only 8% of the total for such degrees in higher education, it increased by 476% between 2000 and 2011 (Kena et al., 2014). This tendency clearly demonstrates that FPCUs encompass both academic and vocational education programs. In terms of types of credentials, FPCUs enroll substantial numbers of certificate-seeking students in healthcare and other vocational services. However, the traditional approach to college student outcomes mainly focuses on degree attainment level and overlooks certificate programs (Bosworth, 2010). It is apparent that a disparity exists between students with academic versus vocational program orientations (Hirschy, Bremer, & Castellano, 2011). Although scholars have addressed the needs to examine FPCUs by programs or credential types, most current studies have neglected the heterogeneous nature of the for-profit sector.

For-profit higher education is often compared to the not-for-profit higher education sector in student enrollment, programs, and outcomes. Indeed, studies have mainly focused on whether or to what extent for-profit college students have better or worse outcomes than those who attended schools in the not-for-profit higher education sector (for example, Deming et al., 2011; Government Accountability Office [GAO], 2011b). Although stakeholders in FPCUs often claim that comparison with not-for-profit colleges is unfair, this comparison offers a better understanding of FPCU student outcomes relative to those in the not-for-profit sector. In that sense, this study showed how the same conceptual model and measures result in different findings across for-profit,

community college, and broad access four-year not-for-profit colleges<sup>4</sup>. Findings will help policy makers see the importance of considering institutional- and student diversity when establishing effective policies.

Due to the lack of balanced research, many areas in for-profit higher education have lots of unanswered questions. Specific concerns have been raised about for-profit colleges' educational quality and poor student outcomes. Opponents of for-profit higher education maintain that FPCUs have not provided quality education—the main problem is that their students have incredible debt and often leave with no degree to show for it (see Altbach, 2001). Staples (2014) mentioned that the problem in the for-profit sector is obvious even though “well-run” for-profit colleges make meaningful contributions by serving marginalized students. In fact, low-income, underprepared, and racial minority students are regarded as a target population of the for-profit sector but few institutions are praiseworthy. Despite some evidence of the positive aspects of for-profit colleges (see Porter, 2014; Rosenbaum et al., 2006), the student loan default rate, low completion rates, and high unemployment rates of graduates have been well covered in recent reports (e.g., *Harkin report*, GAO report).

All in all, while criticism of low student outcome levels is needed to inform students of what is happening in the sector, it is not helpful to students and graduates who are already re-paying loans or finding jobs. Given that some for-profit colleges have good reputations for student outcomes (see Porter, 2014), it is also important to recognize the variation in the for-profit sector. Hence, an improved understanding of the for-profit

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<sup>4</sup> Given this study's exclusive focus on the for-profit higher education sector, no additional disaggregation of the for-profit sector was considered in the comparison with the not-for-profit sector. For example, rather than comparing two-year FPCUs to community colleges, all levels of FPCUs were treated as a unit of analysis and compared to community colleges and broad access four-year colleges.

sector is imperative and may occur through an exploration of these students' backgrounds, their experiences, and the ways in which institution-related factors are associated with student outcomes. Identifying these associations based on relevant theories in higher education may advance current research on the for-profit sector.

### **Growing Attention to FPCU Student Outcomes**

One of the main reasons for gaining greater knowledge of this sector is its standing as a major recipient of federally-funded support for student financing.<sup>5</sup> For-profit colleges have increasingly participated in federal student financial aid programs since the 1950s, with secured funding dramatically increasing from \$49 billion to \$132 billion in the last 10 years (GAO, 2011b). In 2009–2010, the sector secured \$32 billion from the U.S. Department of Education student aid program and \$7.5 billion in Pell grants. The largest share of funding went to military educational benefit programs: 37% to the post-9/11 GI bill and 50% to U.S. Department of Defense Tuition Assistance programs (*Harkin Report*, 2012). In recent years there have been several reports of unethical practices in the use of federal funding and a lack of effort to educate students (DeSantis, 2013a, 2013b; Field, 2011). Therefore, the for-profit sector has been increasingly scrutinized to determine whether it is misusing taxpayer money. Public criticism of some for-profit colleges also stems from deceptive practices, such as using miscalculated employment statistics for marketing, and violating academic integrity policies relating to plagiarism, absence, or grading (see Field, 2011; GAO, 2011a). Criticism has intensified based on reports that for-profit colleges generate revenues by

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<sup>5</sup> Thus, the population of for-profit colleges in this study was restricted to the FPCUs that participate in Title IV programs. This decision was made based on the importance of gaining knowledge about for-profit schools that benefit from federal financial support programs in order to provide evidence of whether (or how) these schools promote desired student outcomes.

recruiting overwhelmingly poor students who need financial aid, fail to help them secure gainful employment, and finally leave them with substantial debt. Mettler (2014) maintained that higher education policy fails to guide low-income students by providing for-profit colleges with financial support without strong regulation.

Both researchers and policymakers are keen to address the issue of the accountability of for-profit colleges with subpar student outcomes. Indeed, in the *Harkin Report* (2012), a substantial number of corporate-owned for-profit college chains appear to fail to ensure positive student outcomes such as degree completion, job placement, and economic returns. For example, Corinthian Colleges (which is one of the large chains) failed to meet the gainful employment criterion although the company obtained \$1.4 billion from federal financial aid programs in 2010. This is not the only case in the for-profit sector—other companies that operate multiple campuses have failed to support students to program completion (Burd, 2014).

As mentioned earlier, Gainful Employment regulation is one example of monitoring career and vocational PSEs, including for-profit colleges (U.S. Department of Education, 2010), which aim to increase the accountability of for-profit institutions by ensuring that students graduate with the ability to gain employment with reasonable earnings that enable them to repay their college debt. The most recent version of the Gainful Employment rule, released in March 2014, proposed two criteria to test eligibility for federal funding: graduates' debt-to-earnings ratio and a program cohort's default rate (U.S. Department of Education, 2014). Since the first draft of the rule was proposed on June 2010, the GE has been challenged by the Association of Private Sector Colleges and Universities. A federal court ruled in 2012 that the criteria used in the GE were too

arbitrary. Heller (2011) expressed concern that the GE might harm students if the rule results in discontinuing education at for-profit colleges. In other words, the majority of graduates will take longer to repay their student debt, especially those from for-profit schools with programs for lower-skilled jobs, because those programs would produce workers with relatively lower wages. Considering the number of students enrolling in such programs and the economic downturn that impedes public schools' ability to expand their educational programs, an unexpectedly large number of students will lose the opportunity to pursue higher education.

Since the Gainful Employment rule only includes post-graduate measures in its metrics, existing studies tend to focus on returns to students who graduated from FPCUs rather than the completion issue. Few studies provide some level of description on the completion rates for FPCU students and lack an intensive focus on completion (see Deming et al., 2011). More attention on the completion rates of FPCU students is imperative when looking at their economic returns (Cellini & Chaudhary, 2012). Furthermore, there need to be more and better ways of explaining FPCU student completion. As mentioned previously, FPCUs offer a wider range of credential and program areas; this fact alone requires a more complex way of defining completers versus non-completers in FPCUs. For example, traditionally, completion is measured based on specific timeframes such as 100% or 150% of program length. This method is less effective, if even applicable, for FPCU students since their programs often vary in length. Moreover, traditional completion measures reflect normal full-time enrollment status, but FPCU students often have mixed enrollment statuses that delay their time to

completion. Thus, a range of methods are needed to more effectively reflect the for-profit sector's complexity and variety.

### **Research Purpose and Questions**

The purposes of this study were to examine for-profit college students' credential completion and expand definitions of completion using various perspectives. Further, this research tested one of the completion measures based on a theory-driven conceptual model in order to provide initial evidence on how FPCU students' background and experiences are associated with completion and how these relationships may differ with those of students in comparable not-for-profit institutions. To that end, the following research questions were asked.

- 1) How does using alternative measures to define credential completion in FPCUs influence who is counted as a completer?
  - a. Measure 1: Who completes when credential completion is defined as whether one attained any type of credential at the institution of initial entry?
  - b. Measure 2: Who completes when credential completion is defined as whether one attained a credential that matched their initial credential goal at the institution of initial entry?
  - c. Measure 3: Who completes when credential completion is defined as whether one attained a credential after leaving the FPCU of initial entry?

- 2) Using the conceptual framework as a guide, how are institutional structures, student services, student background characteristics, and student experiences associated with completion of any credential type by FPCU students?
  - a. How do the factors (stated above) differ among certificate- versus degree-seeking students at FPCUs?
  - b. How do the factors (stated above) differ among students enrolled in vocational/technical programs versus academic programs at FPCUs?
  - c. How do the factors (stated above) differ between for-profit and not-for-profit college attendees?

### **Contributions of This Research**

Findings from this study will contribute to research, policy, and practice by advancing empirical knowledge on FPCU students and their success, informing policy aimed to help students succeed in FPCUs, and identifying areas in which practitioners may better improve the student experience in for-profit colleges.

### **Scholarly Significance**

Findings hold scholarly significance in the higher education literature in two ways. First, the conceptual framework will broaden research perspectives on for-profit college students. Given the scarce examinations of student outcomes at for-profit colleges and limited reflections on the diversified college environment, this study's findings will benefit further studies. Rendón (2006) suggested that for-profit college students' experiences need to be the focus of further studies in order to reconceptualize the success of underserved students in higher education. In particular, this study provided an

opportunity to rethink what academic and social integration really means for nontraditional students in nontraditional college environments. This effort will offer a deeper understanding of student success models by extending them to diverse student populations and educational environments.

Second, by using national datasets that include multiple institutional characteristics, this study's findings offer an empirical understanding of FPCU students' credential completion and help other researchers to build advanced scholarly inquiries. The lack of available research evidence is the greatest barrier to examining for-profit colleges' impact on student development and outcomes. Mostly, available information on the sector is offered through newspaper or policy reports that mainly focus on controversial issues such as for-profit colleges' fraud, abuse of federal funding, and lack of academic integrity (see Field, 2011). Not only is the number of scholarly papers on FPCUs limited, but those that provide empirical evidence using student or institutional data sets are extremely limited.

### **Policy Contributions**

This study also provided insights into how for-profit colleges can help accomplish U.S. President Barack Obama's goal of having the highest proportion of college graduates in the world by 2020. The President has pointed to the importance of postsecondary degrees and successful transitions from college to work. Many researchers have argued that the way to accomplish this goal is by creating better opportunities for the underserved population, especially older adults (Nelson, 2010), low-income groups (Baum, Ma, & Payea, 2013), or racial minorities. The focus on this population is critical because some believe that a college education is becoming the minimum criterion for job

access (Rosenbaum et al., 2006). More specifically for disadvantaged populations, vocational training or postsecondary certificate credentialing enables them to secure better jobs with higher incomes (Bailey, Kienzl, & Marcotte, 2004; Horn & Li, 2009). In fact, for-profit sector plays an important role in providing vocational training and certificates. Among the 1.4 million recipients of sub-baccalaureate certificates or associate's degrees, 29% were from for-profit colleges in 2010 (Horn & Li, 2009). While the number of credential recipients from not-for-profit public colleges increased by 23% from 2000 to 2010 and those from not-for-profit private colleges decreased by 6%, the for-profit colleges recorded a 54% increase (Horn & Li, 2009). As such, the role of the FPCUs in enhancing the level of education credentials has grown rapidly and is believed to be essential to reaching the goal of increasing the number of postsecondary degree recipients in this nation (Gonzalez, 2009).

This study's findings can be a resource for higher education policy debates on federal financial support and regulation of the proprietary/vocational college sector and offer empirical evidence on which to build higher education policy. In particular, this research addressed deficiencies in knowledge and understanding of for-profit college students' completion rates as a longitudinal process. Current policy and national records are based on a traditional definition of college students and ignore the fact that more students are attending more than one institution and taking longer to complete postsecondary credentials (Bahr, 2012). Thus, diversified definitions of for-profit college student completion will benefit policy discussions as it reconceptualizes how to approach the completion agenda in the diverging higher education sector.

## **Educational Improvement at For-Profit Colleges**

In addition to advancing scholarly inquiry and policy debates, this study sought to offer insights into potential implications for practitioners in the for-profit college sector. First, the findings provided knowledge on whether and to what extent for-profit colleges are serving nontraditional students well. As Tierney and Hentschke (2007) pointed out, expansion of the for-profit college sector is one of the remarkable trends reflecting changes in U.S. higher education with its expanded mission in postsecondary education and the diversified needs of students and the labor market. Traditional college students, that is, recent high school graduates, degree-seekers, or residential students, are no longer the majority among contemporary college students. Instead, college students increasingly wish to take courses while working, enrolling on a part-time basis (Choy, 2002). While traditional postsecondary education institutions have been slower to adapt to the changing needs of students, FPCUs have survived by employing innovative, practical, and customer-centered educational practices (Tierney & Hentschke, 2007). However, it remains to be seen whether for-profit colleges are as effective in educating students as they state in their institutional mission and goals. For-profit colleges need to balance their profit-seeking motive with the fundamental value of education by paying more attention to students who are mostly underrepresented in higher education.

Second, this study provided information on those student experiences that help or hinder student success. Relative to criticism and concern about the low completion rates at for-profit colleges, few concerns, inquiries, and debates have focused on what happens in for-profit colleges and how to improve education at FPCUs. This study's findings can help instructors, class designers, and senior administrators at for-profit colleges and

universities to identify areas that may work better for their students. These findings also may stress the value and importance of providing support for students in FPCUs.

## **Chapter 2**

### **LITERATURE REVIEW**

This chapter provides background on the FPCUs and offers an overview on the sector's key elements in order to enhance general understanding of for-profit higher education. First, after identifying the relevant literature a review was conducted to gain an in-depth understanding of how the for-profit sector has evolved into its contemporary structure and educational practices. Then, information on student characteristics, experiences, and outcomes in current for-profit colleges is presented. Finally, the conceptual framework is described, which is built on the review of existing theories on student persistence. Given the conceptual framework that guided variable selections for the analyses, in-depth reviews of the literature that directly relates to each element of the conceptual model are presented in chapter 3.

#### **Historical Overview**

The rapid expansion of FCPUs in recent years obscures their long history in the U.S. Rather than being a recent addition to the higher education landscape, proprietary colleges have existed in the U.S. since the nineteenth century, particularly in the medical profession (Rothstein, 1972).

The importance of the educational mission of these for-profit schools was well recognized in the 19th century. According to a report from the U.S. Bureau of Education in 1873, "the rapid growth of the schools and the large number of pupils seeking the special training afforded by them sufficiently attest that they meet a want which is supplied by no other schools in an equal degree. . . . Hence, it would seem that there

could be no question of their utility and importance nor of their title to recognition and encouragement” (Kinser, 2006a, p. 18). In fact, from 1820 to 1890, proprietary colleges expanded and developed a structure that was distinct from public higher education (Kinser, 2006a). The schools of this era primarily taught business skills to the local population, which needed to learn how to use newly developed technologies such as the typewriter or telegraph (Kinser, 2006a). These types of programs enabled the proprietary sector to grow by competing with vocational education programs offered at not-for-profit colleges because many of their programs were not offered at not-for-profit colleges (Belitsky, 1969). Also during this era, the passing of the Morrill Act of 1862 caused public higher education institutions to take on practical skills teaching. The land-grant universities established by the Morrill Act led the transition of public higher education from liberal arts education to instruction in practical skills (Geiger, 2005). Since this practical education in public higher education focused on agriculture or related sciences, proprietary colleges targeted the market for training office workers (e.g., accountants) who needed technological and business skills (Belitsky, 1969).

In addition to the benefit of meeting the needs of the country’s developing industry, proprietary schools were able to accommodate students’ changing demographics and needs. Proprietary colleges often employed distinctive education strategies such as evening classes (Belitsky, 1969), year-round operating schedules (Belitsky, 1969), and multiple campuses with a standardized curriculum (Kinser, 2006a). These practices were regarded as innovative because none of the institutions in the public sector provided such options for students. For example, the operation of flexible classes and an open admission policy by FPCUs helped attract more students by meeting their

needs for more expanded, diversified, and practical knowledge that emerged at the end of World War II and economic recessions thereafter (Belitsky, 1969). Bryant and Stratton College, with its multiple campuses, is an example of a for-profit college that incorporated these practices. The school was founded in the early 1850s in Ohio and started the branch campus system in order to fulfill the founders' decision to enroll more students who needed a special type of education to gain marketable skills. To increase access for the target population (i.e., local employees), the founders expanded their campuses to 45 locations across the nation in just 13 years. The college also used unified textbooks and created a standardized curriculum so that the students could take courses at any campus regardless of where they originally registered (Kinser, 2006a). The successful expansion of Bryant and Stratton points to the substantial need for the kind of educational opportunities provided by this type of institution. This strategy contributed to the rapid rise of the for-profit sector in the nineteenth century and has continued today.

Although vocational education began in the nineteenth century, it gained a much greater foothold in the early twentieth century (Grubb & Lazerson, 2005), and the competition between the not-for-profit and for-profit sectors subsequently increased. Vocationalism transformed the mission of not-for-profit public universities from being for the elite to offering a higher education for the masses, while a number of junior colleges, teachers colleges, and urban universities evolved to provide an education for a middle- or high-level profession such as teachers (Geiger, 2005). Due to the expansion of the number of public institutions that met local population needs, and their diversified missions and curricula, many for-profit colleges experienced decreases in enrollment and some disappeared altogether during this period. Cosmetology and trade/technical schools

survived and comprised more than 75% of the proprietary sector, whereas correspondence schools remained just 10% of this sector. For-profit medical schools declined and disappeared during this era (Kinser, 2006a).

Over the nineteenth and twentieth centuries, proprietary colleges continued to maintain their territory in U.S. higher education; it appears that both for-profit and not-for-profit colleges and universities influenced each other. An overview of FPCUs' evolution over time sheds some light on the reasons for this tiny sector's survival. The emergence of new types of students and changing demands from the local labor market demonstrated the necessity of for-profit higher education (Apling, 1993; Douglass, 2012; Lechuga, 2006). Kinser (2006a) noted that in spite of FPCUs' isolation from the higher education system in the U.S.<sup>6</sup>, "they [proprietary schools] did survive, taking advantage of enormous population growth in the first decades of the twentieth century to serve new students" (p. 19). In fact, in the twentieth century a college degree was increasingly required as a credential for getting a job. Lechuga (2006) suggested that the decline in blue-collar jobs reduced the need for vocational training, making a college degree necessary. Many of the underserved population began to seek college credentials, degrees, or certificates to obtain desired jobs. The Truman Commission Report in 1947 emphasized the goal of "education for all", and veterans were recognized as an important population that had abilities and rights to pursue college degrees. With this shift in the job market, for-profit colleges did better than public schools in serving students who had been marginalized in the quest for a college education. Cross (1971) noted that:

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<sup>6</sup> The for-profit sector has a shorter history in terms of government relations. Details on governance, regulation, and oversight are presented later.

. . . when community colleges were asked to rank the goals of special programs for new students in order of importance, they gave ‘to prepare students for regular college work’ top priority. Thus even the colleges most nearly designed for new students fall victim to the notion that the task is to convert new students into acceptable candidates for traditional higher education (as cited in Wilms, 1973, p. 3).

Indeed, for-profit colleges developed a narrow, specified, and distinct image. According to Apling (1993), proprietary schools are “single purpose” organizations that aim to prepare graduates for employment. Therefore, the schools consider their graduates’ job placement to be a critical indicator of their institution’s success. Since job placement is a fundamental and most critical purpose of education at FPCUs, the practitioners in this sector did not need to rely on classical methods of teaching and learning. For example, at a low cost, these schools have run work-study programs, used audio-visual aids, and offered programmed instruction that are effective for disadvantaged students (Apling, 1993). These practices enabled for-profit higher education institutions to demonstrate their ability to educate underserved students. In addition, the GI Bill passed in 1944 made a significant contribution to the growth of FPCUs by allowing them to participate in federal student aid programs.

Subsequent to the Higher Education Act of 1965 and the approval of the GI Bill, FPCUs were required to be accredited by regional/national accreditation agencies to maintain their eligibility to participate in federal financial aid programs. While FPCUs’ participation in financial aid programs led to a surge in student enrollment, FPCUs faced

challenges in meeting regulatory criteria. Thus, the for-profit sector has accelerated and enhanced its lobbying activities since the 1980s in order to acquire a legitimate place within the higher education system. The FPCUs' engagement in lobbying efforts to escape regulatory disadvantages included online program regulation. In the early 1990s, the federal government prohibited for-profit colleges from having online program enrollments exceeding 50% of their entire enrollment. This rule was set to prevent the sector from becoming diploma mills. This rule impeded FPCUs since online education was one of the strategies used by these colleges to attract more students. Active lobbying led to the elimination of the limited enrollment rule the year after its inception. This enabled the for-profit sector to expand further by taking advantage of its emphasis on distance education, which increased both enrollments and revenues. For-profit higher education's relationship with government and its regulation continue. Later in this chapter, current issues in government's regulation of for-profit colleges are further addressed.

### **Contemporary For-Profit Colleges and Universities**

This section contains a description of current for-profit colleges, including their organizational structure, curriculum and instruction, and government and regulation issues.

#### **Organizational Structure**

The University of Phoenix (UoP) is regarded as a representative model of current for-profit higher education, having the largest share of enrollments among for-profit colleges and multiple campus systems (Kinser, 2006c). When UoP, which is owned by the Apollo Group, began its public offering in 1994, for-profit colleges entered a Wall

Street era as Kinser (2006a) described. During this period, competition among large corporations had accelerated and the colleges they owned increasingly shared the higher education market with not-for-profit, traditional colleges and universities. This differentiated current FPCUs from their predecessors of a decade ago. The UoP played a significant role as a leading for-profit institution by changing the image of the sector. As founders of UoP and co-authors of *For-Profit Higher Education*, Sperling and Tucker (1997) noted that UoP produced an exemplary model for adult-centered institutions, which had not been a major focus of higher education. They identified the fundamental elements of the UoP model as:

- Working professionals and those who aspire to professional positions are the target population;
- All of the faculty are working professionals who are trained in the skills needed to deliver the curriculum;
- The curriculum is centrally produced by faculty members working with professional course designers and curriculum editors;
- The curriculum is outcome-driven;
- Both cognitive and affective learning outcomes are assessed;
- Classes are small, averaging 15 students, and all students belong to study groups of three to five members;
- All aspects of the model are guided toward gradual improvement by a quality management system;
- The students are viewed as valued customers and treated accordingly; and

- The enterprise is governed as an academic institution and managed as a for-profit business. (Sperling & Tucker, 1997, p. viii)

Recognizing the changing nature of student demographics and diversified student needs for college education, which include workforce development needs, Sperling and Tucker (1997) asserted the need for a new education model and argued that the college can pursue profits to meet the changing nature of the higher education market. They also pointed out the ineffectiveness of the not-for-profit public higher education sector. For example, high-cost, low returns on investment and poor accommodation of nontraditional students' needs often deterred those students from accessing postsecondary education. In contrast, Sperling and Tucker (1997) evaluated the UoP model and found that its advantages included efficient use of office space for cost reduction, availability of access to private capital that enables less reliance on federal or state funds, responsiveness to market demands, and year-round operations to provide all options for students to complete degrees (Sperling & Tucker, 1997).

After the University of Phoenix expanded to provide educational services for clients who sought college degrees but who had previously lacked the opportunity to access postsecondary education, other publicly traded companies adapted the UoP model and rapidly formed a large national chain by merging the independent proprietary colleges and accelerating the sector's growth by using aggressive investment and recruitment strategies. Those large companies, such as the Career Education Corporation, Concorde Career Colleges, Corinthian Colleges, DeVry, Education Management Corporation, EVCI Career Colleges, ITT Educational Services, Kaplan Higher Education, Laureate Education, Strayer Education, and Universal Technical Institute, still make up a

large proportion of the for-profit sector (Kinser, 2006a). These corporations vary in their history and strategies for student “prospecting”. For example, some corporations have a longer history than others. Strayer Education was the first public corporation to own for-profit colleges. Founded in 1892 as Strayer Business College in Baltimore, the institution was renamed Strayer University in 1998. Despite its long history, this institution enrolls fewer than 500 students in physical locations, with half enrolled in online campuses. The Strayer University system expanded by establishing new campuses in the Mid-Atlantic and southeastern U.S. Laureate Education, on the other hand, established its branch campuses across the nation. Additionally, Laureate Education is the leading company, with international branches in 11 countries, including 41 campuses and online options. ITT Educational Services, relatively recently founded in 1963, continues to grow. It has enrolled 42,000 students on 77 campuses and offers joint programs in for-profit colleges internationally, including China and Canada. All of the FPCUs owned by corporations continue to change.

Despite the past decade’s double-digit growth among FPCUs with a long tradition, some currently suffer from decreasing enrollments and loss of revenue (Wiseman, 2011). On the other hand, newer corporate owners of FPCUs, such as the American Public University System, Bridgepoint Education, and Grand Canyon, have had record growth in enrollment and revenue (n.a., 2012). While it is true that large corporations have taken the lead in current for-profit college education, the most appropriate word to use in describing contemporary FPCUs is “heterogeneity.” The current structure and characteristics of FPCUs are more complex than ever before and are more likely to be diversified. As described earlier, each corporation with a large national chain of FPCUs

has evolved following different strategies. As the competition accelerates, each has its own plan to maintain growth and revenue. For example, Kaplan Higher Education now offers online programs for a law degree (Tierney & Hentschke, 2007). The University of Phoenix provides doctoral degrees in business, psychology, and education (Kinser, 2006c) and has developed a new undergraduate program targeted at traditional college-age students (Kinser, 2006a). Both Strayer University and Kaplan Higher Education focus on international for-profit education, including Asian and European markets.

Currently, corporate-owned FPCUs share a substantial proportion of student enrollments while there are also many small, localized FPCUs with lower enrollment (Tierney & Hentschke, 2007). The coexistence of diverse types of organizations results in multiple institutional sizes. In terms of institutional size, for-profit schools are small in general; with a total enrollment median number of 64, only 25% of these schools had enrollments greater than 175 in 1988 (Apling, 1993). That pattern remained in 2012 when 88% of for-profit colleges had enrollments of fewer than 1,000 and only 1.5% had enrollments above 5,000 (author's calculation from IPEDS, 2012). In general, expansion of degree programs mainly occurs in large FPCUs owned by publicly traded corporations such as Kaplan, DeVry, and Apollo Group. Moreover, these groups are expanding the kinds of populations they serve, from working adults to traditional-age students (Tierney & Hentschke, 2007). As a result, the number of degrees conferred by FPCUs has dramatically increased. From 1998 to 2008, the number of associate degrees conferred by for-profit postsecondary institutions grew by 125% and the number of bachelor's degrees by over 400%. In contrast, the number of associate and bachelor's degrees conferred by public postsecondary institutions increased by 33% and 29%, respectively (Aud et al.,

2011). The facts that 60% of for-profit colleges were identified as non-degree-granting institutions in IPEDS in 2010 and experienced a dramatic increase in degree conferral rates indicate the harmonious coexistence of these substantially different colleges. This coexistence warrants the needs of considering diversity of institutional environments when explaining student experiences and outcomes at FPCUs.

Wildavsky (2013) pointed out that flexibility and speed are characteristics embodied by the for-profit sector and exemplars of the not-for-profit higher education sector. The for-profit higher education industry is more attuned to providing education for employers and students by accommodating their needs. For example, some FPCUs provide student services 24 hours/day using online communications. Often, counseling for financial aid is available promptly when students search the website. These characteristics of the for-profit sector enabled it to grow within a relatively short time period. However, FPCUs' marketing strategy, which included excessive investment in advertising and marketing and incentives for recruiters, prevented resources from being used for educational purposes (*Harkin Report*, 2012).

FPCUs' investment to maximize profits rather than education is a real problem given that tuition and fees at FPCUs are much higher than in the public not-for-profit sector. In 2010–11, average tuition in the for-profit sector (including 4- and 2-year) was \$14,670 whereas public not-for-profit's tuition and fees were \$5,225 (Aud et al., 2013). Even after considering student loan dollars, for-profit college students pay more than their counterparts attending other sectors.

The perspectives on for-profit schools' growth and direction are mixed. Some scholars believe that FPCUs will continue to play an important role. Deming, Goldin, and

Katz (2013) noted that FPCUs will increasingly serve disadvantaged populations in the budget constraint struggles within public higher education. The *Harkin report* (2012) also stated that FPCUs are playing an important role in an era of insufficient resources in the traditional higher education sector and of changing demographics and their resulting diversified needs from postsecondary education. Douglass (2012) suggested that the for-profit sector will continue to be a part of the higher education market, not because FPCUs do a great job in education, but because their entrepreneurship may better accommodate the changing needs of various student types. However, enrollments at four-year FPCUs decreased from 2011 to 2013 (National Student Clearinghouse Research Center, 2013) and this phenomenon raises questions about FPCUs' continued expansion.

### **Curriculum, Instruction, and Student Services**

For-profit colleges' curricular emphasis is intensively on career and vocational education. Whereas in vocational education at traditional colleges the emphasis is on acquiring factual knowledge developed following rigorous academic standards, the FPCUs' curricular structure emphasizes acquiring practical skills that can be applied to a desired job market (Bailey et al., 2001; Tierney & Hentschke, 2007). Sperling and Tucker (1997) believed that FPCUs prioritize learning tied to the professional worlds with specific and measurable goals. Thus, FPCUs make curricular decisions based on the local labor market after a thorough analysis of competitors, costs, and local demographics (Tierney & Hentschke, 2007). For example, Kincaid and Podesta (1966) found that:

. . . course content and time were two of the three factors mentioned most frequently by these students in explaining their decision to enroll in a proprietary school program . . . students mentioned that when they had reached a decision to

take a course, they could begin classes at once or at least within one or two weeks.

There were no scheduling problems to cope with, and registration was a simple matter that involved only signing a contract and arranging for payment. Course length is directly related to course content (as cited in Wilms, 1973, p. 10).

When it comes to credential types, FPCUs offer a wide range of programs.

Certificate programs are one of the significant offerings at FPCUs and traditionally have focused on career education and the acquisition of vocational skills rather than general education requirements. Associate-level degrees are also offered at FPCUs, with a greater emphasis on academic requirements that include completing at least two years and less than four years of a college-level curriculum. Bachelor's degrees offered at FPCUs resemble those at not-for-profit colleges, with a greater emphasis on practical use. As such, FPCUs offer all levels of postsecondary education—this encourages a variety of students to navigate various options (Tierney & Hentschke, 2007).

Among the fields of study provided by the FPCUs, Apling (1993) found that business, marketing, or cosmetology programs<sup>7</sup> comprised about 60% of proprietary college programs in 1988. At that time, nearly one-half of students attending for-profit colleges were in business programs. The FPCUs have been gradually expanding their curricular offerings toward academic degree programs. As Kinser (2006a) pointed out, curricula at the FPCUs expand as the sector grows; several large corporations that own for-profit national chains have taken a major role in that expansion of degree

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<sup>7</sup> Specific programs (see Apling, 1993, p. 385) are: Business/Marketing—general real estate, word processing, secretarial, travel/tourism; Personal Services—barbering, cosmetology, massage; Health—medical assisting, nurse assisting; Technology—general computer science, computer programming, data processing, electronic technology; Trade/Industrial—construction, heating/air conditioning, auto mechanics, welding; Transportation—truck/bus driving, airplane piloting; Other—floral design, security services.

programming as well as in general education offerings. Now, programs offered at for-profit colleges include both traditional fields of study such as vocational training in health and service occupations, and emerging professional studies such as education, psychology, and law (Kinser, 2006a). In 2003, FPCUs' traditional programs (e.g., personal services, public health, and computer technology) still comprised a substantial proportion of the higher education market (Tierney & Hentschke, 2007). In terms of degrees conferred according to fields of study in 2010, 50% were in computer and information science; 30% of associate degrees were in business, management and marketing, and nearly 25% were in the health professions. As to bachelor's degrees, communications, business, and personal and culinary service programs are prevalent in the FPCUs (Deming et al., 2011).

At the course level, little is known about what happens in individual classrooms. A look at the available information reveals that consistent major differences among faculty members may be one factor influencing student learning. Many scholars have argued that course development and teaching practices in FPCUs differ dramatically from those at traditional colleges (Bailey et al., 2001; Tierney & Hentschke, 2007) due to different expectations and roles of faculty members. For example, the FPCUs usually do not authorize curriculum development and assessment of student outcomes, whereas faculty members in not-for-profit colleges often have the authority to design their courses and assess student outcomes.

In addition to different expectations of faculty roles, faculty employment also differs at FPCUs, which are likely to hire adjunct faculty members on a part-time basis. Contrary to the traditional university's employment of predominantly full-time faculty

members on a tenure-track contract basis and encouragement of faculty to develop new methods or theories, FPCUs do not have the same expectations. This difference stems from the educational focus and student needs at the FPCUs. In these colleges, where the primary goal is to teach job-related skills and maximize student employability, faculty members are expected to teach students measurable skills for future employment. Given that vocational training emphasizes practical knowledge or know-how, many for-profit colleges tend to employ contingent faculty on a part-time basis or in non-tenure track positions because they tend to have expertise in a specific career field and usually maintain professional positions outside of the for-profit colleges. For-profit college faculty members often have connections to local labor markets, which is critically important when FPCUs hire instructors.

The research findings on part-time (or adjunct) faculty are mixed. Bailey, Calcagno, Jenkins, Kienzl, and Leinbach (2005) asserted that at vocational colleges, adjunct faculty teach practical skills required for the labor market since it is a way to save institutional costs. However, their study did not support the positive influence of part-time hiring on community college students' graduation. Jaeger and Eagan (2009) also found that the presence of part-time faculty reduced the likelihood of associate's degree completion. Ehrenberg and Zhang (2004) found no significant effect of part-time faculty on graduation rates at two-year colleges. Gappa and Leslie (1993) found that part-time faculty members are more effective teachers than are full-time faculty. To reflect previous studies of FPCUs, it is necessary to understand that the work responsibilities of for-profit school faculty are quite different from those of faculty at traditional colleges in that the FPCUs limit faculty members' participation in decision making, the process of

course design, student admission, and faculty evaluation (Lechuga, 2006). FPCUs' programs and curriculum are developed based on labor market needs; faculty members are required to have expertise in their professional fields. Rather than designing their own courses, faculty members in PFCUs often take roles in delivering developed curriculum to students (Lechuga, 2008). Further, faculty members at for-profit institutions often indicate their satisfaction with teaching, advising, and helping students gain knowledge based on the faculty's professional experiences (Seiden, 2009). In sum, research findings on the association between faculty hiring status and student outcomes are mixed—such studies are limited in FPCUs.

Student service is one major difference between traditional, not-for-profit colleges and FPCUs. Many FPCUs try to provide student-centered services, including academic, career, and personal counseling (Ruch, 2001; Sperling & Tucker, 1997). Faculty members and professional advisers are responsible for a wide range of advising and make efforts to collaborate with local communities when extended services are needed. Providing these services strongly supports a student's classroom, career, and social experiences in an institutional environment (Kinser, 2006b). Ruch (2001) acknowledged that although FPCUs often limit extracurricular experiences, student advising is an area fully addressed by for-profit colleges. Given that FPCUs intentionally try to attract low-income students and students of color (Chung, 2008; Fox Garrity, Garrison, & Fiedler, 2010; Tierney & Hentschke, 2007) who might have faced academic or personal challenges in traditional colleges, the greater emphasis on student services is closely related to their strategy for attracting students who are more likely to be from disadvantaged backgrounds (Tierney & Hentschke, 2007) or have academic deficiencies

(Chung, 2008; Deil-Amen & Rosenbaum, 2003). In fact, for-profit colleges have spent more than not-for-profit colleges on student services; in 2009, 67% of their total expenditures were on student services and support compared to 24% for not-for-profit colleges (Aud et al., 2011). Although FPCUs generally emphasize student services that meet a student's individual needs and try to remove individual barriers, it is unclear whether the services are effective in enhancing support for individual needs related to student outcomes. However, FPCUs are often criticized for only focusing on student services at the recruitment stage when they are assisting students with applying for financial aid programs. Tierney and Hentschke (2007) pointed out that the problems in the for-profit sector increase when institutions simply seek to use federal money without caring about educational quality and student outcome (e.g., employment). They also emphasized the importance of aligning student support services with the long-term process: recruitment, education, and well-paid employment. In fact, *Harkin Report* (2012) found that many for-profit colleges did not provide student-centered services once a student enrolled in a college. It turned out that the companies explored in *Harkin Report* (2012) invested more money on hiring recruiters rather than spending on supportive services for enrolled students. In 2010, there were three times more recruiters than student service representatives and \$4.2 billion was spent on marketing and recruiting (23% of all revenue).

Unfortunately, this data source cannot offer much information on how these spending patterns are associated with student outcomes. Among the few studies available, Rosenbaum and colleagues (2006) found that job placement services at private vocational schools have a positive influence on degree attainment, while public schools do not have

any such association. The authors asserted that the examination of the effects of school-employer linkage is critical as many other countries consider it important. Bailey et al. (2005) found that institutional expenditures on instruction and academic support had positive influence on student success. In terms of services, the literature shows that institutional support for student services makes the for-profit sector more successful and stronger than comparable sectors (e.g., community colleges) (Rosenbaum et al., 2006; Rosenbaum & Rosenbaum, 2013). While more data are required for researchers, studies need to include available resources (e.g., IPEDS) relating to student services and should examine its association with student outcomes.

### **Government Relationships and Regulations**

The regulatory rules for higher education institutions are important in ensuring quality education for students. The mixed nature of business and educational organizations has created regulatory models for proprietary colleges that are distinct from their not-for-profit counterparts. Unlike not-for-profit colleges, the FPCUs have had a relatively short history of federal oversight and regulation of accountability. Instead of being under federal policy, they have usually been monitored by the state government and often treated as a business organization rather than as part of educational entities (Kinser, 2006a). The regulatory rules shifted to federal oversight and regulation when the federal government decided to include for-profit colleges in the GI Bill in 1952. This decision compelled FPCUs into satisfying the criteria to get federal money and brought accreditation agencies into the for-profit sector for external evaluation (Kinser, 2006a). The federal government's earlier effort to monitor FPCUs was not very successful due to decentralized regulatory agencies and lack of recognition of problematic issues in the

proprietary sector. Bailey et al. (2001) noted that some FPCUs offered a high-quality education but many were not appropriately monitored in terms of recruiting and training students. One reason is that federal regulation occurred not from the associations directly related to higher education, but from other agencies, such as the Federal Trade Commission (FTC). Although the FTC made attempts to regulate FPCUs and proposed rules that forced them to publish their graduation rates, these efforts were not successful. Strong regulation did not begin until the 1980s when the U.S. Department of Education took over that role (Kinser, 2006a). As such, the proprietary sector has usually not been treated as being comprised of legitimate higher education institutions.

The systematic reporting of institutional data and oversight of FPCUs have increased more recently because for-profit colleges have been expanding their campuses and securing more federal money. In particular, federal investigations have revealed unethical uses of federal support by a number of FPCUs. According to a recent investigation by the U.S. Government Accountability Office (Kutz, 2010), “four of the 15 colleges encouraged undercover applicants to falsify their Free Application for Federal Student Financial Aid (FAFSA) form, including urging applicants to not report assets and instructing them to falsify the number of their dependents. The GAO reported 13 of the 15 colleges supplied undercover applicants with deceptive or otherwise questionable information pertaining to graduation rates, employment prospects upon graduation or projected earnings” (Harnisch, 2012, pp. 3–4).

In addition to deceptive practices to get federal funding, FPCUs have failed to provide applicants with accurate information on the possibility of job placement or transfer when they recruit students (see MacDowell, 2014). It is surprising that

substantial numbers of students who enrolled in FPCUs were unaware that they attended for-profit colleges. According to the report by Hagelskamp, Schleifer, and DiStasi (2014), 65% of for-profit attendees were unsure if their schools were for-profit and 12% thought that their school was in the not-for-profit sector. This finding suggests that more engaged efforts to enhance college information are needed to ensure appropriate college choices by students. Moreover, a few colleges in Kentucky and Illinois deceived students, indicating that their credits would be transferable to other institutions—a practice that is not allowed by the accreditation body. For example, Westwood College in Illinois, which has a nationally accredited criminal justice program, has a lawsuit pending against them since the institution failed to inform students that law enforcement employers in the Chicago area require regionally-accredited degrees. As a result, graduates from Westwood were not employable in Illinois law enforcement.

In many cases, students at for-profit colleges are disadvantaged by attendance of an FPCU and the lack of accurate information on the accreditation system. Although the accreditation of an institution is one good indicator of regulation and oversight, it is not always easy to determine whether a given for-profit institution has been accredited by the appropriate accreditation agencies. U.S. higher education has a decentralized system of maintaining and monitoring quality education in postsecondary education institutions. Not-for-profit colleges are usually accredited by regional agencies that are known for a higher standard; few for-profit colleges have been accredited by regional agencies. On the other hand, many FPCUs have difficulty gaining accreditation by regional agencies because their criteria are focused on traditional colleges' curriculum and standards. In fact, professionals working at FPCUs point out that applying the same regulatory criteria

to not-for-profit and for-profit colleges is not appropriate because for-profit colleges are significantly different from the not-for-profit sector in that many students at FPCUs are not first-time, full-time students. Therefore, major for-profit institutions, including the University of Phoenix, American Public, DeVry, and Kaplan Universities, now attempt to compute and publicize their own alternative completion rates. They expect these new methods to better reflect the nature of their student bodies and their institutional missions (Blumenstyk, 2012).

In sum, it is clear that there have been many challenges in increasing centralized oversight of for-profit higher education institutions. Considering the diversity of the for-profit sector and their distinctiveness, it is imperative to develop effective regulatory rules in order to ensure high-quality student learning environments.

### **Students at For-Profit Colleges and Universities**

Students attending for-profit colleges comprise only 11% of U.S. higher education students (Aud et al, 2011). The small number of students makes it hard to conduct quantitative research on their experiences and outcomes. Relying on the available literature on for-profit college students, the aim of this section is to identify what is known and what questions remain regarding student characteristics, experiences, and outcomes at FPCUs.

#### **Student Characteristics**

As stated earlier, for-profit colleges are accommodating the needs of a new type of student, called the nontraditional student in general. Although the term ‘nontraditional’ is difficult to define in a uniform way, a commonly accepted definition is one who is “older than 24, or does not live in a campus residence, or is a part-time

student, or some combination of these three factors” (Bean & Metzner, 1985, p. 489).

The notion of nontraditional is largely based on how traditional college students have been defined in the higher education literature: recent high school graduates, financially dependent, living on campus, and full-time students. It is well known that students at FPCUs are more likely to bear the characteristics of nontraditional students than their counterparts at traditional higher education institutions.

In the traditional higher education sector, community colleges represent a top destination for nontraditional students. Due to their similar characteristics, many researchers compare students at FPCUs with those who attend community colleges. In the older literature based on studies conducted in the 1970s (Wilms, 1973, 1974), students who chose vocational education in community colleges and in proprietary schools were compared. Relative to academic degree-seeking students, Wilms (1973) found that vocational students were more likely to be older, female, and a racial minority. When disaggregating vocational students by type of institution (i.e., proprietary versus community colleges), Wolman, Campbell, Jung, and Richards (1972) found that proprietary school graduates were more likely to be older (40% were older than 25 in proprietary whereas 20% were so in not-for-profit schools), a racial minority, and female. As such, FPCUs have been studied in juxtaposition to community colleges and are often treated as comparable institution types that share similar demographic characteristics, and personal and social backgrounds.

However, recent studies indicate that students in for-profit colleges and community colleges are increasingly differentiated from each other as the vocational education mission in higher education has received more emphasis. Mullin (2010) found

that for-profit students are more likely than community college students to enroll as full-time students. Apling (1993) found that students at FPCUs are more likely to be younger than community college students and are becoming younger, compared to for-profit school students in the 1970s. Chung (2008) found that for-profit college students are more likely to be GED holders than community college students and are more likely to have a parent or parents with lower levels of education. In terms of enrollment, 37% of for-profit college students were enrolled on a full-time basis whereas only 19% of community college students were so enrolled in 2010 (Staklis et al., 2011). Distance education opportunities offered by for-profit colleges—as options to attract students who have no other access to colleges—may account for the higher percentage of full-time students in for-profit colleges.

Students attending FPCUs are more likely to have specific and clear initial goals, whereas community college or four-year not-for-profit college students often have vague expectations or are unsure about their expected outcomes from education. For-profit college students evaluate the possibility of taking courses they desire and expected returns based on their credential goal completion (Tierney & Hentschke, 2007). Hagelskamp et al. (2014) indicated that 73% of undergraduates at FPCUs were satisfied with the program structure, and 92% felt that they had made good progress in FPCUs. Also, 91% of for-profit undergraduates perceived their schools to be good at providing effective guidance.

In terms of the reasons for attending for-profit schools, many students listed the distinct educational experiences that are offered. According to Apling (1993), students at FPCUs were more likely to consider the availability of desired courses, financial aid, job

placement rate, and institutional reputation as important factors when they decided to enroll, whereas lower tuition, distance to college, and work availability were more important to community college students. This suggests that students who attend for-profit colleges may have greater expectation of benefits (e.g., having desired jobs) from their education.

In addition to the increasing differences between students at community colleges and FPCUs, proprietary college students are becoming more heterogeneous across for-profit campuses. In comparison to students at two-year for-profit colleges, Chung (2008) found that students at four-year for-profit colleges tended to be older, male, and white, and in comparison to not-for-profit four-year college students, they are more likely to have a higher income and to pursue bachelor's degrees. Therefore, studies that compare FPCU students with community college students do not mirror the increasing bachelor's degree aspirants at FPCUs. FPCU students should have an exclusive focus on them and efforts should be made to understand them. At the same time, including comparable four-year public/private colleges in studies of FPCUs' relative performance is necessary to reflect the increasing diversity of FPCU student characteristics.

### **Student Experiences**

The student experience in for-profit college is rarely studied (Bailey et al., 2001). Knowing what a student experiences within an institution is critical to understanding how an institution facilitates or hinders student success through the college experience and environment. Tinto (1988) argued that the college environment is less structured than any other type of organization and more informal in providing information to students to incorporate into the college environment. The degree of socializing within college can

vary across individuals depending on what they do and whom they meet within an institution. Through those experiences, students integrate themselves academically and socially, which are critical concepts in Tinto's institutional departure. As numerous studies have found, academic and social integration is the most important part of student experiences across institution types. The focus of the study described in this dissertation was the academic and social integration of for-profit college students.

However, student integration actually occurs in different ways. In a study of community college students, Hagedorn (2004) noted that student life for community college students challenges the commonly held definitions of academic and social integration. In addition, it appears that studies on nontraditional college students or settings offer mixed results on the extent to which integration is critical to student persistence (Braxton, Sullivan, & Johnson, 1997; see Hagedorn, Maxwell, Cypers, Moon, & Lester, (2007).

Findings on student experiences in FPCU classrooms are mixed. A case study of a for-profit college found that students evaluated their learning experiences as being valuable (Bailey et al., 2001). One of the student interviewees stated, "Some of these teachers were actually out in the field before they became teachers. At some places I've gone, the teachers just teach out of the teacher's book. Here they really know accounting" (Bailey et al., 2001, p. 28). As previously mentioned, some for-profit colleges provide class instruction aligned with their educational mission—that is, they provide practical knowledge that can be applied in the real world. Furthermore, the practical nature of for-profit colleges often requires students to form study groups as part of the course design

(Ruch, 2001; Sperling & Tucker, 1997) and peers take on a significant role in enhancing engagement by sharing academic or personal concerns.

On the other hand, a report from the GAO (2011a) disclosed that at some for-profit schools, academic dishonesties are ignored by instructors or administrators. For example, excessive class absenteeism was not a problem and a professor allowed students to pass exams with inadequate levels of response. Often, courses are selected based on student desire and can be retaken as many times as the student would like to do so (Bailey et al., 2001). This practice is also found among community college students and pointed to as a negative factor since it prevents first-time students from choosing their courses (n.a., 2011a).

The social experiences of for-profit college students are a far smaller focus in the literature. The lack of research in this area may stem from the fact that FPCU students actually are not given opportunities to socialize as students in traditional colleges do through extracurricular activities, school clubs, or sports (Ruch, 2001). In studying the social engagement of students in traditional colleges, out-of-classroom interactions with peers or faculty are regarded as a critical factor in positive student outcomes. Since Tinto (1975) proposed student departure theory, which emphasizes the out-of-classroom activities within an institution, several researchers have examined how social interaction in colleges affects educational outcomes. In terms of peer relationships, traditional college students were more likely to choose majors that their peers desired (Astin & Astin, 1993), and students whose peers' goals were to attend graduate programs in science, mathematics, and engineering were more likely to pursue a graduate degree in a similar field (Sax, 1996). Peers of students in traditional colleges also are strong agents in

influencing degree completion and persistence (Huang, 1995; Milem & Berger, 1997; Walpole, 1998). Astin (1993) argued that peer groups encourage or discourage students from joining groups while conveying normative rules. When an individual follows their peer's normative rules, beliefs, and behaviors, a student can persist or complete his or her own college goals. Bank, Slavings, and Biddle (1990) found that peer impact on persistence is stronger than the influence of faculty members.

Whereas the association between student social experiences and outcomes appears to be positive in studies of traditional colleges, the question of whether it works in the same way for for-profit college students remains. Studies that have looked at social integration in nontraditional college settings have found that social engagement and socialization occurs differently there, compared to traditional college settings (see Braxton, Hirschy, & McClendon, 2004). Even students at FPCUs expect to have different kinds of social experiences from those of traditional college students (Deil-Amen, 2011). Another body of studies has shown that nontraditional students who have frequent interactions with faculty or peers were more likely to persist or complete the programs (Lundberg, 2003; Tough, 1999). These studies indicate that social integration may be more important for nontraditional students because they are likely to be isolated or disconnected unless they interact with peers or faculty. More importantly, for-profit colleges are likely to provide smaller class and expect faculty to be more accessible to students (GAO, 2011). The nature of FPCUs enables students to feel engaged both academically and socially in the classroom. However, empirical studies have not been done on how for-profit college students' social integration influences their outcomes.

## **Student Outcomes**

Studies of student outcomes at for-profit colleges are emerging but the way in which those studies define student outcome is narrower than in studies on traditional college student outcomes. The narrow scope on for-profit college student outcomes may be due to a perceived greater emphasis on vocational education by FPCUs and the severe impact of poor economic gains on for-profit students.

In addition, FPCU student outcomes have often been compared to those for community college students based on completion rates, degree attainment, and job placement of recent graduates (Apling, 1993). Apling (1993) noted the utility and importance of comparing student outcomes at for-profit schools with community college students, especially because both schools have been major providers of career and technical education. Earlier studies found that both community colleges and for-profit college graduates trained effectively for the labor market (Freeman, 1974; Wolman et al., 1972). This positive effect was consistent even after controlling for differences in student backgrounds (Wilms, 1974). It seemed that FPCUs were more effective than community colleges in student persistence because FPCU students were less likely to drop out than community college students (Wilms, 1982). However, FPCU students were less likely to be satisfied with education, largely due to much higher costs of attendance (Wilms, 1974). Differences also existed across fields of study. Wilms (1982) found that for-profit college graduates from programs related to lower-paying occupations (e.g., secretarial, dental assistant, and cosmetology in his study) were more likely to have higher earnings.

Findings on the early 20th century seem not very different from those of recent studies. Certificate programs in FPCUs continued to be examined in comparison with

community colleges. When examining students' completion of their programs, Deming and colleagues (2011) found that those attending FPCUs were more likely to complete certificate or associate degree programs than were community college students. A GAO report (2011b), which focused on 11 published papers on student outcomes at FPCUs, offered the same findings. It seems clear that FPCUs are associated with a higher completion rate in certificate programs than are community colleges. Liu and Belfield (2014) added similar findings, including a greater likelihood of completing certificate or associate's degrees by students at for-profit colleges than those at community colleges. However, FPCUs recorded the lowest completion rate for bachelor's degrees among all sectors of higher education (Bennett, Lucchesi, & Vedder, 2010).

Another body of studies focused on economic gains of FPCU students. Lang and Weinstein (2012) found that even though students completed degree programs, the extent of earnings was higher for degree completers at traditional colleges. Lang and Weinstein (2012) employed propensity score matching analysis to adjust relevant factors that affected income level. This advanced methodology enabled them to make accurate comparisons of earnings for certificate or degree attainment at for-profit and not-for-profit public colleges. Their results showed that students who began at for-profit colleges earned less from their degrees, whereas students who earned an associate degree from a traditional college earned higher wages than their counterparts at for-profit colleges. In further analysis, Lang and Weinstein (2013) examined the differential wage effect between certificates earned at not-for-profits and certificates earned from for-profit colleges. Lang and Weinstein (2013) explored different programs that may significantly relate to different labor fields and income levels. They found that earning gains vary

across majors and with greater variability than among institutions. This finding suggests the need for further research on specific programs at for-profit colleges rather than a holistic look at the for-profit sector.

Research on for-profit college student outcomes still has gaps and findings are mixed. First, the results vary depending on the nature of selected institutions or programs. When it comes to outcomes for corporate-owned for-profit colleges, the *Harkin Report* (2012) revealed much higher rates of drop-out than had ever before been reported. Among students enrolled in FPCUs owned by 15 corporates, 54% left within two years without completion. Associate degree programs for 9 companies showed that 60% of students withdrew without completion. The report raises concerns regarding institutional practices regarding excessive investment in marketing and recruitment rather than on increasing efforts to promote student persistence. Second, no study has accounted for students' individual goals. FPCUs have different contexts and timelines for completion; as stated earlier, many FPCUs are non-degree-granting institutions and provide a wider range of programs than not-for-profit colleges. Existing findings about for-profit college students' completion rates allude to possible disparities in completion rates by institution types, program length, or level of degrees. Apparently, for-profit colleges are more likely to have higher completion rates in short-term programs (Deming et al., 2011). In terms of major fields of study, 58% of for-profit college students completed degrees in vocational/technical fields<sup>8</sup>, and 54% completed degrees in health. Yet, only 34% and

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<sup>8</sup> Vocational/technical fields include: construction trades; personal and culinary services; mechanic, repair technologies, and technicians; precision production; homeland security, law enforcement and protective services; architecture; public administration and social services; law and legal studies; and transportation and materials moving.

35% of for-profit college students completed degrees in business and STEM<sup>9</sup> fields, respectively (Staklis et al., 2011). It therefore seems clear that employing aggregated criteria when examining completion rates at FPCUs is not a desirable strategy. Even when an institution is classified as a four-year for-profit college, students attending it might have much more diversity in their time to completion, given that different kinds of programs will take varying lengths of time to finish. Nonetheless, there is a lack of research on for-profit college student completion that reflects variability in program length, fields of studies, and, importantly, types of programs in which students enrolled.

Bailey and colleagues (2001) emphasized that simple comparisons of student outcomes between community colleges and for-profit colleges might be misleading. After finding a positive association between for-profit colleges and student outcomes, Bailey et al. (2001) suggested that “the higher minority enrollment in the for-profit institution hints that the higher completion rates are not simply a reflection of greater selectivity in admissions and enrollment” (p. 52). This comment warrants employing advanced methodological techniques in studies of the for-profit sector to examine what factors other than student backgrounds are associated with credential completion (certificate, associate’s, and bachelor’s degree) at for-profit colleges.

### **Conceptual Framework**

Rendón (2006) noted that different models are needed for different students as well as for diverse learning environments in order to effectively measure student success. Nonetheless, the lack of attention to FPCUs highlights the deficiency of relying on extant

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<sup>9</sup> The STEM fields include: the life sciences, physical sciences, mathematics, computer and information sciences, and engineering and engineering technologies.

theory-driven models for student success because those models are intended for traditional college settings and do not apply well to FPCUs. While multiple scholars (e.g., Astin, 1970a, 1970b; Pascarella, 1985; Tinto, 1975, 1993) have advanced college impact models for gauging student success in traditional colleges and universities, FPCUs continue to be largely ignored. In building their conceptual model of nontraditional student attrition, Bean and Metzner (1985) claimed that a model should be built on a comprehensive review of the literature, including traditional student attrition theory, descriptive studies on nontraditional students, and attrition research on nontraditional students. Given that students at FPCUs are likely to be nontraditional not only because of their ages but also because of the substantial differences in their education environment and their commitment, this dissertation borrowed the traditional college impact model as a foundation for understanding for-profit college students' credential completion. In this initial attempt to build an FPCU impact model, the key components addressed in traditional college impact models can provide foundational information regarding FPCUs' impact on student credential completion.

The conceptual model in this study was built on three different models: Pascarella's general model for assessing change (1985), Tinto's student departure model (1993), and Bean and Metzner's nontraditional student attrition model (1985) (see Figure 2-1). These three frameworks are combined because one is not enough to address students attending for-profit colleges and institutions that are more diverse than the traditional college environment. For example, Tinto's model provides insights for examining traditional college students at residential-based institutions but does not include the diverse institutional aspects of the FPCUs. This shortcoming can be made up

by incorporating Pascarella's model, which does have this information. On the other hand, Tinto offers a better understanding of college students, but not for older adults or working students who in many cases are in FPCUs. However, Bean and Metzner's model can be incorporated to consider both. As such, given the diversity of both students and institutions, the combined frameworks' broader perspective better reflected the topic.

### **Pascarella's General Model for Assessing Change**

Pascarella (1985) theorized the impact of multiple institutional perspectives. He addressed how student background (i.e., achievement, aspiration, ethnicity, etc.) and institutional structure (e.g., enrollment size, student-faculty ratio, selectivity, etc.) jointly shape the institutional environment. While Pascarella acknowledged that student characteristics shape their experiences and influence their outcomes, he mainly emphasized that institutional structure or organizational nature influences individual efforts to engage in college experiences. In his General Model for Assessing Change (1985), Pascarella proposed five sets of variables as critical dimensions when explaining college impact on student outcomes: student background and precollege characteristics, structure and organizational features of an institution, college environment, student interactions within the institution, and quality of student effort. These five sets of variables indirectly and directly influence student outcomes. For example, student backgrounds and pre-college characteristics and institutional structure (e.g., size, selectivity, residential character) both shape the college environment. Then, all three clusters influence the way students interact with diverse individuals within an institution (e.g., peers, faculty, administrators). Finally, the quality of efforts that a student makes is

affected by the extent to which they are socialized through diverse experiences that are shaped by organizational influences.

Pascarella's model benefits this dissertation in accounting for an institution's structural aspects such as institutional size and level as they shape the institutional environment. Especially considering that the FPCUs' structural make-up has never been tested to show the ways in which they affect student outcomes, this conceptual model provides a useful lens through which to examine the influence of institutional structure on the completion of degrees or certificates at FPCUs.

### **Tinto's Model of Institutional Departure**

While Pascarella (1985) provided a connection between institutional structure and students, Tinto's model of institutional departure (1993) explained the internal institutional components that are critical for individual student's academic and social integration, which means the extent to which the individual shares normative values and commits to being a member of the institution while interacting with peers and faculty. The concept of integration has been continuously examined by researchers (e.g., Braxton et al., 1997), yet it has not been tested in research on proprietary colleges. Given that the discussion on its generalizability to diverse student groups (e.g., students of color, older adults) is mixed (see Pascarella & Terenzini, 2005, p. 56), it is still worth testing whether Tinto's model can explain for-profit college students' success.

Tinto observed that students enter colleges with their individual backgrounds, including family and social support, academic ability or skill, or intention or personal goal. He claimed that all of these precollege characteristics change when students are exposed to college environments. In other words, students are not isolated in college

environments; rather, they continue to interact with other individuals within the institutional structure, including peers, faculty members, or administrators. Tinto argued that, as a longitudinal process, students' involvement in their academic and social life within college significantly affects their outcomes in either a positive or negative way. The concept of social and academic integration is thus the core of his college impact model. Terenzini (1987) commented that:

Tinto's conceptions of academic and social integration in the more explicit structure than that given by Astin (1985) offers significant opportunities both to researchers who wish to study the college student growth process and to administrators seeking to design academic and social programs and services intended to promote education growth among students. (p. 30)

Academic integration refers to the following of explicit norms, such as earning passing grades and accepting the academic values of the institution—e.g., an engineering school that values the physical sciences over the arts (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006). Academic integration in for-profit colleges differs slightly in that their normative values emphasize career education, using diversified strategies of curriculum and instruction. As discussed earlier, the important academic values in FPCUs are not just in achieving high grades, but in learning and demonstrating skills related to a desired career. Hence, it seems worthwhile to examine academic integration by finding the appropriate variables that can be operationalized in FPCUs that differ from those selected to examine traditional college students.

Tinto (1993) defined social integration as the degree and quality of interaction that students have in the college environment. Social integration is a critical factor that affects traditional student attrition at residentially based four-year colleges. In numerous studies, social integration has been tested and measured according to number of extracurricular activities, peer relationships, relationships with faculty in and outside classrooms, and student evaluations of their relationships within the institution. As their counterparts at not-for-profit colleges, students at FPCUs often interact with instructors, faculty, or advisers. In fact, faculty members at FPCUs are often recruited from local industries that may play a major role in job placement for students (Tierney & Hentschke, 2007). Therefore, the role of faculty at FPCUs often includes being a counselor, adviser, and teacher while interacting with students (Ruch, 2001). Even for an extremely limited number, some FPCUs support extracurricular activities such as student clubs or athletics (Kinser, 2006a).

In order to borrow Tinto's concept of integration to explain for-profit college student outcome, it is essential to understand the limitations in Tinto's student departure theory. Melguizo (2011) pointed out that Tinto's institutional departure fails to account for the changing nature of the student, the higher education institutions, and the broader society. For example, Tinto's theory posits a narrow view on student departure without considering impacts of technology, state and federal policy, and the K-16 system. Importantly, Tinto's theory does not provide the ways to understand student departure in open access and nontraditional colleges. Rather, according to Melguizo (2011), Tinto's institutional departure is useful in understanding the privileged population who attends

selective four-year colleges although they comprise a small part of higher education students.

Despite the limitations, the key concepts in Tinto's institutional departure model—academic and social integration—seem still applicable in examining for-profit college students' degree/certificate completion because academic and social experiences occur every place in higher education institutions although the forms may differ. Many researchers have advanced Tinto's theory based upon the recognition of its limitations and through it, have broadened its applicability. For example, Braxton and colleagues (2004) attempted to re-examine Tinto's model to include expanded factors influencing social integration and found that an institution's commitment to student welfare, as recognized through faculty members, increased students' social engagement. Berger and Braxton (1998) revised Tinto to include the role of organizational attributes in student persistence and found that clear communications regarding academic rules, course policy, and graduation requirements had a positive impact. In terms of institutional differences, a series of studies provided mixed evidence on academic and social integration. Some (Bean & Metzner, 1985; Braxton et al., 1997) argued that neither type of integration has a significant influence on two-year college students while others (Halpin, 1990; Mutter, 1992; Pascarella & Chapman, 1983) see that academic integration influences student persistence at two-year colleges but social integration does not. Given the mixed findings, this study selected part of Tinto's model and integrated it with other theoretical grounds to overcome the limitations of each model.

Collectively, student experiences in for-profit colleges are not studied as much as student engagement in not-for-profit higher education. Moreover, student experiences

have rarely been examined relative to an excessive focus on poor outcomes within the for-profit sector. Assuming that students' academic and social engagement can make a difference at for-profit colleges, Tinto's integration model was adapted to the framework to help explain for-profit college student success.

### **Bean and Metzner's Nontraditional Student Attrition Model**

While both Tinto and Pascarella extensively explained traditional college students' decision to leave college, Bean and Metzner (1985) proposed a conceptual model for nontraditional students. They presumed that in terms of nontraditional students, who are identified as older than 24, or commuters, there may be different factors associated with their decision to leave before completing or attaining their academic goals. Based on an extensive review of existing theories and literature, Bean and Metzner's model includes the student background, academic and social integration variables, academic and psychological outcomes, and environmental context variables.

The model developed by Bean and Metzner (1985) arrives at similar assumptions to traditional theories proposed by Tinto (1975), Pascarella (1980), and Spady (1970), in that nontraditional students' attrition is also a longitudinal process which is influenced by similar elements found in the attrition process of traditional students. Yet Bean and Metzner maintained that the influential factors behind a nontraditional student's intent to leave differ substantially from those of traditional students. For example, social integration, which is an important element in the study conducted by Tinto (1975), could be less critical in a nontraditional student's decision to leave college, because nontraditional students were less likely to socialize with an institution's major agents, such as faculty members or peers. Rather, academic experience, such as course-taking

patterns, and personal environmental conditions, such as financial concerns or family responsibility, have stronger influences than social integration on nontraditional student attrition. Moreover, Bean and Metzner indicated that influential factors of a student's departure may vary across subgroups of nontraditional students, given that nontraditional student characteristics, such as age, employment, financial status, or other areas of their personal environment, are more diverse than those of traditional college students.

Bean and Metzner (1985) also addressed several issues to which researchers need to pay particular attention. Relative to traditional students, nontraditional students tend to attend two-year colleges or seek a sub-baccalaureate degree, which are usually provided through short-term programs. These students are assumed to have substantial differences to bachelor students in four-year residential colleges, in that they are not required to have the same length of enrollment. Bean and Metzner assumed that the students in this type of program might have a better chance of achieving their academic goals than other nontraditional students who seek a bachelor's degree at four-year residential campuses. Thus, they suggested that future studies use a disaggregated analysis for nontraditional students based on their intended degree types. They also suggest considering the types of programs or institutions (two-year or four-year residential campuses), given that nontraditional students are more likely to enroll in non-residential campuses in urban areas. This point also relates to Pascarella's General Model for Assessing Change, in that both emphasize the critical importance of the institutional environment as it shapes student experiences and indirectly affects student outcomes.

While Bean and Metzner recognized the necessity of exploring the relevant factors of nontraditional student attrition and proposed a conceptual model for

nontraditional students, this work has limitations. First, their model focuses on traditional colleges or programs that are oriented toward offering academic degrees. Their discussion was mainly based on traditional four-year colleges or community colleges, and did not explicitly explore nontraditional students seeking vocational training or certificate programs. As proposed in the model, the academic outcomes such as grade point average are one of the direct factors associated with a nontraditional student's intent to leave an institution, which could be less relevant to vocational training programs. Given that Bean and Metzner's model was proposed in mid-1980s, a time when the for-profit higher education sector was not as extensive as it is now, they naturally could not consider for-profit colleges in the institutional environment of nontraditional students. Further, they tended to exclude the importance of institutional supports for nontraditional students. Recently, a body of research focusing on nontraditional student success at nontraditional colleges demonstrated that institutional service is a key element in nontraditional student outcomes (see Hirschy, Bremer, & Castellano, 2011; O'Gara, Karp, & Hughes, 2009). Although Bean and Metzner alluded to the institutional environment's more critical role in nontraditional students' decision making, they did not specify an association between types of support and student outcomes. As discussed above, nontraditional college students are often deficient in academic preparation or have limited knowledge of how to become involved in campus life (Cabrera, Castaneda, Nora, & Hengstler, 1992; Deil-Amen & Rosenbaum, 2003; Pascarella & Terenzini, 2005). For this reason, FPCUs have strongly emphasized student services and used this emphasis as a marketing strategy to attract more nontraditional students (Kinser, 2006a). For example, research have noted that advising services at FPCUs are more proactive than those found at traditional

colleges by focusing on resolving the life challenges of nontraditional students (Breneman, 2006); further, services are more readily accessible (Bailey et al., 2001). Student services at FPCUs often provide assistance in a wide range of areas, including financial assistance, clear academic pathways, counseling, and specialized services such as child care and weekend classes, that are considered important to increasing student commitment (Hirschy et al., 2011; Ruch, 2001). Yet, due to limited research, the effectiveness of student support services at FPCUs is rarely understood. Bean and Metzner suggested that future studies modify their model by adapting relevant elements to suit subgroups of the nontraditional student populations. The conceptual framework in this study incorporated a recent trend reflecting an increasing emphasis on student support services for the nontraditional student population.

Therefore, the conceptual framework for this study included the hypothesis that institutional characteristics shape institutional environments in conjunction with student characteristics. Institutional environment includes classroom experiences and social integration, as supported by institutional efforts to provide student support services. Through positive experiences shaped by institutional context, it is clear that a student may successfully attain his or her academic goals.



## **Chapter 3**

### **METHODOLOGY**

This chapter addresses the methodology used in this study. The data sets and sample are described in detail. Variables included in the analyses are defined to indicate how the conceptual framework described in chapter 2 was operationalized by each variable selected for this study. The analytic strategy details specific procedures followed to answer each research question. Table 3-1 summarizes the overall research design including research questions, data sources, and analytic strategy.

Table 3-1

*Research Questions, Data Sources, and Methodology*

Research Questions	Data Source	Methodology
<p>1. How does using alternative measures to define credential completion in FPCUs influence who is counted as a completer?</p> <p>a. Measure 1: Who completes when credential completion is defined as whether one attained any type of credential at the institution of initial entry?</p> <p>b. Measure 2: Who completes when credential completion is defined as whether one attained a credential that matched their initial credential goal at the institution of initial entry?</p> <p>c. Measure 3: Who completes when credential completion is defined as whether one attained a credential after leaving the FPCU of initial entry?</p>	BPS0409	Descriptive Analysis
<p>2. Using the conceptual framework as a guide, how are institutional structures, student services, student background characteristics, and student experiences associated with completion of any credential type by FPCU students?</p> <p>a. How do the factors (stated above) differ among certificate- versus degree-seeking students at FPCUs?</p> <p>b. How do the factors (stated above) differ among students enrolled in vocational/technical programs versus academic programs at FPCUs?</p> <p>c. How do the factors (stated above) differ between for-profit and not-for-profit college attendees</p>	IPED2004 & BPS0409	Multilevel Logistic Regression Analysis

## Data Sources

This dissertation used two major data sources for institution and individual variables. Institution-related variables were drawn from the Integrated Postsecondary Education Data System (IPEDS). The IPEDS includes comprehensive information on more than 7,000 postsecondary institutions (including not-for-profit and for-profit) in the U.S., including institutional characteristics, enrollments, program completions, graduation rates, faculty and staff, finances, institutional prices, and student financial aid. IPEDS includes for-profit colleges that participate in federal financial aid programs and has a wide range of variables that indicate institutional characteristics. As such, it is the best source among few options for examining institutional effect and differences in the proprietary sector (Wine, Janson, & Wheelless, 2011).

To examine variables relating to individual students' background and experiences, the Beginning Postsecondary Students cohort of 2004 (BPS0409) was used. The BPS0409 survey was designed and collected from the NCES to examine experiences and outcomes for first-time beginning college students. The BPS data were drawn from the National Postsecondary Student Aid Study (NPSAS: 04), which included 90,000 students who represented all degree levels at 1,600 institutions in the U.S. The BPS0409 included approximately 15,000 students who represented 4 million undergraduates who were first-time enrollees in 2004, and who were followed in 2006 and 2009. Student information was collected from interviews and postsecondary transcript data from each PSE school that a sample student attended. Thus, the BPS0409 allows one to examine student characteristics and outcomes as well as specific information on college experiences such as course-taking patterns, academic performance, or migration among PSE institutions

over a six-year period. Although the BPS0409 may not represent all proprietary college students as for-profit colleges enroll many returning students, it is the most appropriate data source among few options given that the BPS includes a wide range of age levels. This benefit allows one to examine extensive student characteristics, experiences, and outcomes including older adults who represent a substantial portion of for-profit enrollees.

To better describe FPCUs included in this study's analysis, Table 3-2 shows key characteristics of FPCUs in IPEDS and a comparison with FPCUs in BPS0409. This comparison enhances understanding of the extent to which sampled for-profit colleges in BPS0409 were similar to the ones in the IPEDS universe. Comparing the FPCUs in IPEDS, two-year FPCUs were overrepresented and four-year FPCUs were underrepresented in BPS. In terms of highest level of offerings, bachelor's degree-granting FPCUs were underrepresented in BPS while longer-term certificate-offering FPCUs were overrepresented. Mid-size FPCUs were overrepresented in BPS compared to IPEDS. In terms of geographic region, FPCUs in the Plains area were underrepresented in BPS but FPCUs in the Rocky Mountains were overrepresented in BPS. All in all, for-profit colleges in BPS0409 seem to be well represented among FPCUs in IPEDS (see Appendix A for a list of institutions included in this study<sup>10</sup>).

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<sup>10</sup> In this study the number of FPCUs was counted based on the identification code provided in IPEDS. Accordingly, this did not necessarily account for the different strategy that FPCUs may employ in counting their multi-campus for reporting purposes. In addition, few students in this sample (less than 1% of the sample) appeared to attend online-exclusive FPCUs. Therefore, no additional examination was made for online-only FPCUs in this study.

Table 3-2

*For-Profit College Data Comparisons: BPS0409 and IPEDS*

	BPS0409	IPEDS 2004
<i>Sector</i>		
Four-Year	24%	14%
Two-Year	21%	31%
Less than Two-Year	55%	55%
<i>Highest level of offering</i>		
less than 1 academic year	11%	10%
At least 2 academic year	44%	45%
Associate	17%	18%
At least 2, but less than 4 academic years	4%	13%
Baccalaureate	12%	8%
Post-Baccalaureate certificate	0%	<1%
Master's	9%	5%
Post-Master's certificate	2%	<1%
Doctoral	1%	1%
<i>Enrollment</i>		
Under 1,000	82%	88%
1,000 – 4,999	16%	8%
5,000 – 9,999	2%	<1%
10,000 – 19,999	<1%	<1%
20,000 and above	<1%	<1%
Unknown	0%	4%
<i>Geographic region</i>		
New England (CT ME MA NH RI VT)	6%	5%
Mid-East (DE DC MD NJ NY PA)	14%	15%
Great Lakes (IL IN MI OH WI)	13%	14%
Plains (IA KS MN MO NE ND SD)	3%	7%
Southeast (AL AR FL GA KY LA MS NC SC TN VA WV)	22%	22%
Southwest (AZ NM OK TX)	16%	13%
Rocky Mountains (CO ID MT UT WY)	6%	4%
Far West (AK CA HI NV OR WA)	17%	16%
Outlying areas (AS FM GU MH MP PR PW VI)	3%	3%

### Sample<sup>11</sup>

Among the respondents in the BPS0409, 1,950 were identified as first-time students beginning their postsecondary education at for-profit colleges in 2004. These 1,950 students were the primary group of interest for this dissertation; at the same time, this study disaggregated these students into sub-groups. As described in Table 3-3, samples were disaggregated based on several criteria. First, institution level was considered when creating sub-samples due to limited capability to operationalize social integration variables. In the BPS0409, items relating to social integration variables were not asked of respondents who were attending less than two-year institutions—a substantial number of the for-profit college students. Since social integration is an important aspect of the conceptual framework for this study, it was necessary to separate four- and two-year FPCU attendees from less than two-year attendees to fully operationalize the conceptual model. As a result, the analysis was conducted based on two models: a fully-operationalized model and a partially-operationalized model. Respondents at less than two-year institutions were only included in the partially operationalized model which excluded social integration variables.

Second, another set of sub-samples was generated based on whether a student pursued a certificate versus a degree program. According to the BPS0409, four different credential goals, including non-credential, certificate, associate, and bachelor's degree, were identified; the analysis for this study disaggregated certificate seekers from degree seekers. This decision was made for two reasons. First, as addressed in the literature review, FPCUs have better outcomes in certificate programs than other programs. Second,

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<sup>11</sup> All sample sizes were reported rounded to the nearest 10.

certificate programs have received special emphasis in the nation's college attainment goal since they play an important role in providing job-related skills. Thus, the analysis for study distinguished certificate from associate and bachelor degree seekers and examined the groups separately.

Third, a sub-sample was based on programs of study: vocational/technical (voc-tech) versus academic programs. The same conceptual framework was also applied and analyses were conducted across sub-samples between students in academically-oriented programs versus those who attended vocationally-oriented programs at FPCUs. Specific majors in each group were detailed; a list is included in Appendix B. This made it possible to understand how these factors might differently influence credential completion across the groups and types of students.

Finally, this study included a not-for-profit college student sample to answer research question 3. For this comparison, community college students ( $n=2,490$ ) and students in broad access four-year not-for-profit colleges ( $n=5,860$ ) were included. These two sectors were selected for the comparison because for-profit colleges possess mixed characteristics of both sectors—the FPCUs cover a wider range of credential offerings and programs of study (Kinser, 2006a). Furthermore, studies have shown that FPCU students are more heterogeneous than those at community colleges or four-year not-for-profit colleges (Chung, 2008; Mullin, 2010). Given the lack of evidence to support whether four-year FPCUs can be equated with four-year not-for-profit colleges (or two-year FPCUs with community colleges), this study did not consider institution level in the comparison between for-profit and not-for-profit college students.

Table 3-3

*Description of Sub-Sample for Research Question 2*

RQs	Sample Description	Operation of Conceptual Model
RQ2. Using the conceptual framework as a guide, how are institutional structures, student services, student background characteristics, and student experiences associated with completion of any credential type by FPCU students?	Students in 4- and 2-year FPCUs	(Full model)
	Students in 4- , 2- , and less than 2-year FPCUs	(Partial model)
a. How do the factors (stated above) differ among certificate- versus degree-seeking students at FPCUs?	Students in 4- , 2- , and less than 2-year FPCUs disaggregated by credential types	(Partial model)
b. How do the factors (stated above) differ among students enrolled in vocational/technical programs versus academic programs at FPCUs?	Students in 4- , 2- , and less than 2-year FPCUs separated by programs of study	(Partial model)
c. How do the factors (stated above) differ between for-profit and not-for-profit college attendees?	Students in 4- and 2-year FPCUs Community college students Broad access four-year not-for-profit college students	(Full model)
	Students in 4- , 2- , and less than 2-year FPCUs Community college students Broad access four-year not-for-profit college students	(Partial model)

Note. Full-model includes all measures in the conceptual framework. Partial-model excludes social integration variables because these items were not asked of students attending less than two-year FPCUs.

## Variables

### Dependent Variable

College completion has been an extensive focus of scholarly and policy reports, yet a focus on college completion overly privileges traditional college-going trends and also employs a one-size-fits-all approach across the higher education sector. This might not be the best way to gain a good perspective on for-profit college students given that students possess diverse credential goals and a wide range of institutional curricula and programs coexist within FPCUs. Thus, rather than operationalizing completion as being attained in uniform ways, this study proposed measuring completion by considering a variety of completion scenarios.

First, completers were defined as those who finished any type of credential regardless of whether they were aspirants for a certificate, associate's, or bachelor's degree attainment ('measure 1'). The rationale for this measure reflects the college access mission of the for-profit sector, which has especially helped under-prepared students like those who enroll in the for-profit sector. It is based on the notion that even if an associate's degree aspirant actually attains a certificate, he/she will end up having some credentials that otherwise he/she would not have attained. This scenario is not considered to be a successful completion in the traditional ways of identifying completers.

Second, to reflect the levels of achievement of FPCU students, completion was defined as whether a student accomplished what he/she initially stated as a credential goal asked in their first year of for-profit college attendance ('measure 2'). Based on this definition, three categories were generated: whether a student undermet (e.g., the student expected to attain an associate degree but ended up with a certificate or failed to attain),

met (e.g., the student expected to attain a certificate and actually attained it), or exceeded his/her credential expectation (e.g., the student expected to receive a certificate but attained an associate or higher degree). Specifically, the credential level a student expected to earn was subtracted from an actual credential attained within six years. For this calculation, the variable ‘dgplny1’<sup>12</sup>, (coded 0=non-degree; 1=certificate; 2=associate; 3=bachelor) was used for credential goal and ‘atyth6y’<sup>13</sup>, (coded 0=non-degree; 1=certificate; 2=associate; 3=bachelor) was used for credential attainment. Then, degree goal was subtracted from credential attainment (i.e., completion level = ‘atyth6y’ – ‘dgplny1’). Thus, the level of completion obtained ranges from –3 to +3, which implies that ‘0’ indicates those who met degree goals, negative values indicate those who did not achieve or under-achieved credential goals, and positive values indicate those who over-achieved their credential goals. Among the final sample ( $n=1,950$ ) from the BPS0409, 1,060 undermet, 860 met, and 30 exceeded their credential expectations. The proposed completion measure, matching student initial credential goals and subsequent outcomes, allow a researcher to provide initial understandings about different ways of thinking completion. For more details, see Table 3-3, which presents a list of variables and calculations used to create outcome measures.

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<sup>12</sup> Student credential goal was tested using two variables available in the BPS: ‘dgplny1’ and ‘ugdeg’. The variable ‘dgplny1’ asks respondents to state the credentials for they worked on in 2004. The variable ‘ugdeg’ is recoded of ‘dgplny1’ to restrict responses only to the degree types that a respondent-attended institution actually awarded. While testing both variables in the analysis makes no significant differences in the estimation of coefficients, I chose to use ‘dgplny1’ because it ensures the diversity and complex nature of credential conferral at FPCUs.

<sup>13</sup> Using the variable institutional context when accounting for completion limits the response to a student’s first attendance of a for-profit college. For example, if a student began attending a for-profit college in 2004 but moved to another type of institution and attained a credential there, they were considered to have failed to complete a credential goal.

Third, an extended perspective was employed to define the third measure of completion ('measure 3'). Even though students might leave the first institution without completing programs, they could become a completer if they attained a credential at the next institution. This definition is often used in research on community college students because community colleges tend to be viewed as gateway institutions given their transfer mission. Yet this perspective has not received extensive interest in institutional sectors other than community colleges. Given that growing numbers of students are attending more than one institution and their time to credential is increasing, a few studies have demonstrated the need for a shift to longer-term, multi-institutional perspectives when it comes to studying credential completion. Hossler and colleagues (2012) found that one-third of students leave institutions before completion and transfer between community/technical colleges comprises 42% of all transfers in the state of Washington (Bahr, 2012). Likewise, for-profit colleges are a viable option for students considering their second or third PSE institution. Although limited, the role of FPCUs as a transfer destination has been recently examined. Recognizing the need to analyze transfer patterns that include all institutional options for students, Hossler et al. (2012) found that students who began at for-profit colleges were least likely to transfer to other institutions. Also, they found that four-year for-profit colleges are popular destinations for those who previously attended for-profit colleges. To align this definition, this study tracked first-time for-profit college students and their transition and outcomes at multiple institutions, which may include either for-profit or not-for-profit colleges.

In sum, this study proposed three measures as possible ways to understand the subject of completers versus non-completers. After approaching this exploration of

different perceptions of completion at for-profit colleges, this study then preceded with further analysis using one of these measures. Measure 1 was selected for running the multilevel logistic regression analysis, considering both the purpose of the study and methodological concerns. First, doing so would allow one to see whether a for-profit sector contributes to widening college access and whether the sector leads students to gain credentials even though the types are not exactly matched to students' initial goals. Second, it is a way to see institutional variables' contribution to student success. Although a longer-term perspective is beneficial in tracking student transitions between different PSEs, it is difficult to estimate which institution was the most helpful for making that accomplishment. Third, the exact match—undermet, met, or exceeded—has data-related limitations due to the small sample size of those who exceeded credential goals.

### **Independent Variables**

Independent variables were selected based on the literature review and was guided by the conceptual framework presented in chapter 2. Thus, this section provides an in-depth literature review with an intensive focus on each element of the conceptual framework. Table 3-3 provides a list of the independent variables and scaling (see Appendix C for descriptive statistics).

**Student backgrounds.** Many studies have found that students attending for-profit colleges are likely to be nontraditional students who are academically less prepared, a racial minority, or of at-risk status. Some argue that even though students attending FPCUs come from backgrounds that are less conducive to college success, their gains can be greater than those who attended traditional colleges (Wildavsky, 2013). On the other

hand, the for-profit sector argues that poor success rates at FPCUs are inevitable due to student characteristics that hinder academic engagement at colleges—thus, it is unfair to apply the same criteria when measuring success in the not-for-profit sector, which enrolls a relatively less-marginalized student body. Given the lack of evidence to support this argument, student characteristics were included in this analysis to see if and to what extent they contribute to credential completion. Student demographic characteristics include gender, race, income, at-risk status, and amount of federal student aid secured in 2004. These variables were selected considering a parsimonious analytic model given the limited number of sample respondents in for-profit colleges. The nontraditional student variable was drawn from the item provided through the BPS, which was the sum of the seven characteristics: 1) years of delayed enrollment, 2) no high school diploma, 3) part-time enrollment, 4) financially independent, 5) have dependents, 6) single parent status, and 7) working full-time while enrolled<sup>14</sup>. These characteristics have been widely used in identifying nontraditional students in higher education (Bean & Metzner, 1985; Horn, 1996). A higher value for the nontraditional index variable meant that a respondent had multiple characteristics consistent with being a ‘highly nontraditional student’ (Horn, 1996). The level of nontraditional student was also included as one of the institution-level variables so that the contextual effect could be examined<sup>15</sup>.

For-profit colleges enroll more women, minority, and low income students

(Chung, 2008, 2012). While many studies have found that the female, minority, and low-

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<sup>14</sup> More description is available in the BPS codebook at [http://nces.ed.gov/datalab/powerstats/pdf/bps2009\\_varname.pdf](http://nces.ed.gov/datalab/powerstats/pdf/bps2009_varname.pdf)

<sup>15</sup> This analysis includes the nontraditional student index at both individual- and institution-level variables. The individual-level nontraditional student factor score allows one to examine within-group variation. The institution-level aggregated nontraditional student factor score enables one to measure the contextual effect of nontraditional students on completion.

income population is the target of the for-profit sector, and contributes to reducing college education gaps for the less-served population in the not-for-profit sector, an understanding of whether this population benefitted by attending FPCUs is limited. Thus, gender, race, and income level were all included in the analysis model so that it would be possible to see whether gaps still exist in the for-profit sector like those that may be found in not-for-profit traditional colleges.

Many concerns have been raised about the higher amount of federal funding for students who may not be able to pay or who secured funding in inappropriate ways (e.g., institution's unethical tactics). According to Knapp et al. (2011), 79% of degree-seeking students at public four-year institutions, 87% at private, not-for-profit four-year institutions, and 87% at for-profit institutions received financial aid in 2009. Compared to the not-for-profit sector, for-profit college students who were financially supported through the Title IV program were less likely to repay the loans. This study included the amount of Title IV financial aid that students received in the 2003–04 academic year. This variable revealed the contribution of financial support to credential completion of FPCUs' students when other conditions were controlled.

**Institutional structure.** As emphasized in Pascarella's General Model of Assessing Change, institutional structure is an important aspect because it interacts with individual students and shapes student experiences within an institution.

When discussing for-profit colleges' institutional classification, the level (four-, two-, and less than two-year) has been one of the appropriate criteria (Kinser, 2006a). Across institutional level, there are different patterns of program offerings and types of credentials. Four-year for-profit colleges share similar characteristics with not-for-profit

four-year colleges in that they increasingly confer bachelor's degrees and offer graduate programs (Kinser, 2006c; Lechuga, 2008). On the other hand, less than two-year FPCUs' programs concentrate on short-term degrees, including certificates or vocational diplomas (Kinser, 2006a). Although the number of studies on differences between two-year and four-year for-profit colleges are limited, Chung (2008) found that two-year FPCUs have more students who are older, low-income, or in vocational training than do four-year FPCUs. Four-year FPCUs tend to be larger; less than two-year institutions tend to be much smaller in size. When it comes to its association with outcomes, Bailey and colleagues (2005) found that institutional size had a negative relationship with individual student success at community colleges. Hence, in the models that compare student credential completion with the not-for-profit sector, institutional size was included to control possible disparities among institution levels<sup>16</sup>.

Institutional reputation is often considered a reason for selecting for-profit colleges over other comparable college options (Apling, 1993). However, institutional reputation for FPCUs has rarely been examined due to the difficult nature of selecting criteria relating to reputation. This study attempted to measure the reputation variable using aggregated responses from individual students. In the BPS0409, respondents were asked whether institutional reputation was a reason for attending the institution (coded 0=no, 1=yes). This response was aggregated by institution (average by institutions), so

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<sup>16</sup> While this study has an extensive focus on for-profit colleges and students, multilevel logistic regression was conducted for not-for-profit college students to make comparisons between for-profit and not-for-profit college students. For the comparison models, institutional size substitutes for institutional level given that comparisons were made with community colleges (all are two-year) and broad access four-year colleges.

that institutions with a higher number were identified as having a better reputation than institutions with lower scores<sup>17</sup>.

In studies of traditional colleges, researchers have found negative impacts of part-time faculty on student outcomes (Bailey et al., 2005; Jacoby, 2006). The negative influence of part-time faculty on traditional college student outcomes may be due to an institutional culture which assumes that full-time faculty interact with full-time students, which both are in the realm of the traditional notion of faculty and students. For-profit colleges differ in that part-time faculty have important roles in teaching and learning (Lechuga, 2008). Whereas faculty in traditional colleges possess academic backgrounds based on their disciplines, faculty in FPCUs have real-world professional experiences rather than academic records. Often, faculty in for-profit schools are evaluated by students and peer faculty members in both informal and formal ways. In one evaluation, Lechuga (2008) found that student voice is more influential in FPCUs than traditional colleges because the nature of FPCUs is a business that values the opinions of customers. Given that the effort to “ensure quality in the classroom” (Lechuga, 2008, p. 297) is of the foremost importance to FPCUs, this study assumed that the part-time faculty role may not be as negative as in traditional colleges. Thus, this study included share of part-time faculty members in FPCUs as a measure in examining whether part-time faculty play a role in student outcomes.

**Academic and social integration.** This study adapted key concepts from Tinto (1993)—academic and social integration—which are assumed to be critical to student

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<sup>17</sup> The institutional reputation item more accurately reflects a student’s perceptions of institutional reputation and the importance of reputation for a student’s enrollment decision. Thus, this variable should be understood more as a proxy for institutional reputation.

experiences and outcomes. This study employed different approaches to operationalize these concepts within the for-profit college setting.

To measure academic integration of FPCU students, this study included three variables: 1) whether a student took any remedial course in the first year, 2) whether a student took distance education course in the first year, and 3) the number of credits a student earned out of classrooms (i.e., nontraditional credits). First, remedial course-taking is emphasized in broad access institutions such as community colleges. In FPCUs, remedial course-taking is not as prevalent in community colleges; Bailey and colleagues (2001) found that this contributes to the attractiveness of for-profit colleges for their enrollees because students were allowed not to take remedial courses such as mathematics, English, or writing skills during their first year of attendance. Often, community college students complained that remedial curricula at community colleges were not relevant to what they wanted to learn. Some pointed out that required remedial courses were the reason they dropped out of community colleges (Rosenbaum & Rosenbaum, 2013). Studies on remedial education suggested that such courses may discourage student transitions to college-level entry and lead students to drop out rather than ensure successful completion of college degrees (Edgecombe, 2011). In a study focusing on community college students, Hodara and Jaggars (2014) found that a shorter sequence of remedial education pathways enhanced student outcomes. As such, a lack of remedial requirements (or offerings) is thought to be one of the features that may help underprepared students persist through entry into postsecondary education and may offer important information to community colleges who seek to learn from for-profit higher education (Reed, 2014).

Distance education contributes to democratizing higher education by expanding college education opportunities for those limited to a certain type of campus. In 2006, 70% of four-year for-profit and 18% of two-year for-profit colleges offered distance education courses (97% of two-year public, 89% of public four-year, and 53% of private four-year offered in the same year) (Parsad & Lewis, 2008). When Parsad and Lewis (2008) examined what drove institutions to provide distance education courses, meeting student demand for flexible schedules and making more courses available were rated among the top reasons by for-profit colleges. It is apparent that institutions provide distance education options to students so that they may maximize the opportunity to enroll in college. However, whether this strategy is more effective than face-to-face courses in retaining students or whether it helps student complete programs is not yet clear. The drop-out rates seem lower in distance education than face-to-face courses (Carr, 2000). Some have argued that higher drop-out rates in distance education courses are due to student character—students taking a distance education option are more likely to be less-prepared (Carr, 2000). Yet others maintain that those students who benefit from distance education are motivated and have clear goals (Rovai, 2003). In addition to the mixed perspective, there is no evidence of distance education's influence on student outcomes despite the fact that FPCUs are large providers of distance education (Kinser, 2006c).

Another measure of academic integration includes nontraditional credits—that is, credits toward a credential are approved without course-taking. This is also known as prior learning assessment (PLA) and has been discussed as an effective way to increase nontraditional student success at postsecondary education institutions (Klein-Collins,

2010). PLA is described as “another important and often overlooked strategy for helping adults progress towards a credential. PLA is the process by which many colleges evaluate for academic credit the college-level knowledge and skills an individual has gained outside of the classroom (or from non-college instructional programs), including employment, military training/service, travel, hobbies, civic activities and volunteer service” (Klein-Collins, 2010, p. 6). PLA has been also used in traditional colleges to improve adult student retention and success; its positive influence on student outcome is also discussed in the literature. Freers (1994) found that community college students who participated in PLA using portfolio assessment were more likely to graduate than non-PLA participants. After controlling personal background (e.g., gender, age, high school performance, and number of credits earned from colleges), Pearson (2000) found that PLA itself was positively associated with student persistence. In the for-profit sector, the methods for PLA differ across institutions (see Blumenstyk, 2014; Glenn, 2011). The University of Phoenix provides two ways to qualify for credits: an evaluation of either a professional training portfolio or student-written essays and experiential learning on approved topics. In recognition of students’ various experiences outside of classroom settings, the American Public University (APUS), which is another national chain for-profit college, provides PLA programs for those who meet certain criteria. PLA programs provide students with the opportunity to enroll in 8-week courses to help them complete a portfolio that reflects their out-of-school experiences, such as work experience, military training, volunteer experience, and civic leadership. APUS also developed PLA programs that transfer labor experiences into credits through an evaluation of experiential learning in 100 classifications of jobs at Walmart (Fain, 2012). Admitting non-institutional

experiences as valid credits for certificate or degree programs is a growing interest among higher education professionals and policy makers—especially those concerned with the growing adult population in higher education institutions. The influence of this practice has not been tested to see whether it is effective in ensuring nontraditional students' success in postsecondary education.

When it comes to social integration of for-profit college students, this study attempted to use different variables from those widely used in the literature on traditional college students. Tinto (1973) defined social integration as the degree and quality of interaction that students have in a college environment. This integration has been studied as a critical factor affecting traditional student attrition at residential colleges. In many studies of traditional colleges, social integration has been measured via extracurricular activities, peer relationships, relationships with faculty in and outside classrooms, and student evaluations of their relationships within the institution (Kuh et al., 2006). On the other hand, focusing on nontraditional settings, Deil-Amen (2011) found that the traditional measure of social integration may not be relevant to community colleges or proprietary colleges. Furthermore, it is unclear whether social integration is as critical for students in nontraditional colleges as for those in traditional settings. In fact, Bean and Metzner (1985) found that most research in this area pointed to a lack of correlation between social integration and nontraditional student decisions to depart college.

Considering the contextual differences between traditional and for-profit colleges, this study included three variables for social integration: 1) how often students interact with faculty, 2) how often students meet with their adviser, and 3) study group participation. These variables were mostly used in defining academic integration in

traditional college studies and they are more closely related to Tinto's original notion of academic integration. Nonetheless, they were selected in this study if they reflected how students in nontraditional colleges socialize within an institution.

First, social integration includes how often students interact with faculty. Studies have found that the role of faculty in proprietary colleges may have a greater student emphasis given that the FPCUs have different cultures and different student characteristics. At FPCUs, the faculty role is more inclusive than at traditional colleges; they are expected to be a counselor, adviser, and teacher while interacting with students (Ruch, 2001). Faculty members make more active efforts to reach students than faculty in traditional colleges do (GAO, 2011a). They are more likely to be open to student opinions and provide alternate opportunities if students fail to meet goals (GAO, 2011a). Schreiner, Noel, Anderson, and Cantwell (2011) concluded that high-risk students' perceptions of supports differ by institutional type. For example, high-risk students at community colleges described faculty as supportive when they felt encouragement, beliefs, and high expectations. On the other hand, faculty at four-year not-for-profit colleges were expected to create a sense of belonging, challenge students, and push students to learn in new ways. Those findings imply that for-profit colleges also may have different norms and expectations about students' social engagement and relationship with faculty. Thus, the role of faculty is even more critical given that students in FPCUs spend most of their time in an institution with faculty members.

The role of the adviser has been important both in traditional and for-profit colleges. Studies have found that advising is critical to underprepared students—some for-profit colleges do better than their comparable institutions, such as community

colleges (Rosenbaum et al., 2006). The distinctive nature of advising in the for-profit sector is in offering diverse methods with more accessible options to students (Bailey et al., 2001; Deming et al., 2013). Students and alumni of FPCUs tend to be satisfied with the effectiveness of advising (Hagelskamp et al., 2014). This study included the number of times a student contacted an adviser to see whether number of contacts enhanced the likelihood of credential completion.

Finally, whether a student participated in a study group was included. Studies have found that being part of a learning community contributes to reducing the likelihood of student departure. Tinto (1997) revealed a positive influence of student learning communities, which enable students to share knowledge and information. It also has been shown that learning from peers rather than faculty increases student persistence. Learning communities also seem positive for nontraditional students. Braxton et al. (2004) found that commuter students who participated in learning communities were less likely to leave college. In FPCUs, students have the opportunity to form a group to work on class assignment or share their career interests (Kinser, 2006a) and this opportunity is rated as one of the areas in which FPCUs do well (Hagelskamp et al., 2014). All of these measures were identified as important factors, especially for nontraditional students who often do not possess sufficient knowledge to engage in college environment. Through interactions with faculty, mentors, and peers, nontraditional students feel encouraged and supported (Schreiner et al., 2011).

**Student services.** Variables for student service included in this study reflect the extent to which students are expected to have an opportunity to use resources provided through a FPCU. The variables include: 1) institutional expenditures on student services

and 2) the variety of available student services. Although these variables do not offer information on whether or how often students use supportive services, the examination of institutional investment and academic and counseling service availability can advance understanding of student service impact on credential completion. To examine the effect of institutional expenditure on student services, variables were drawn from IPEDS. IPEDS describes student services as “expenses for admissions, registrar activities and activities whose primary purpose is to contribute to students’ emotional and physical well-being and to their intellectual, cultural and social development outside the context of the formal instructional program. Examples include: career guidance, counseling, financial aid administration, student records, athletics, and student health services, except when operated as a self-supporting auxiliary enterprise.” As described in IPEDS, this variable includes a wide range of institutional activities relating to supportive strategies to improve student life at an institution.

FPCUs are also known to offer a variety of services that are more innovative than those found at traditional colleges. For example, Kinser (2006a) noted that for-profit colleges support student life by caring about personal issues such as dependent care, job placement services, or employment services (facilitating connections with local employers). However, existing data are limited in providing detailed information regarding these types of nontraditional services. Although rare, some FPCUs provide on-campus day care services for students. Hence, this study included a variable that measures the types of student services available in a FPCU to see whether an institution offers a variety of student support services. This variable was created using the sum of responses on five items in IPEDS that ask whether an institution provides

career/academic counseling, job placement, employment, on-campus day care, and remedial service (coded 0 if none of above provided, coded 5 if all of above services provided in a FPCU).

Table 3-4

*List of Variables and Scaling*

Variable	Scale	Description
<b>Institutional Structure</b>		
Level		
Four-Year	1=yes; 0=no	A classification of whether an institution's programs are 4-year or higher (4 year), 2-but-less-than 4-year (2 year), or less than 2-year.
Two-Year	1=yes; 0=no	
Less than Two-Year	1=yes; 0=no	
Size	1=300 or below; 2=300 - 500; 3=501- 1,000; 4=1,001-4,999; 5=5,000 and over	The total enrollment of the first institution the respondent attended in Fall 2004.
Institutional reputation (Institution mean)	1=yes; 0=no	Aggregated response of student report that he/she chose the institution because of its reputation.
Nontraditional student factor index (Institution mean)	0 through 7	Aggregated variable from an indicator how many nontraditional student factors a student possesses.
% of full-time faculty	1=10% or below; 2=10-20%; 3=21-30%; 4=31-40%; 5=above 40%	Percent of full-time faculty members out of all faculty in an institution.

Table 3-4 (Cont.)

*List of Variables and Scaling*

Variable	Scale	Description
<b>Student Service</b>		
Institutional expenditure on student services	1=below 300; 2= ~500; 3= ~1,000 4= ~2,000; 5= ~3,000; 6=above 3,000 (\$: 10,000)	Institutional expenditure includes expenses for student support services. The IPEDS identifies several categories including admissions, registrar activities, and activities that contribute to student emotional and physical well-being, cultural and social development, and intellectual growth out of classroom context. For example, student activities, cultural events, student newspapers, intramural athletics, student organizations, supplemental instruction outside the normal administration, and student records. Intercollegiate athletics.
Variety of student services provided	0=none to 5=five	The number of student service availability among followings: academic/career counseling, employment service, job placement, remedial service, and on-campus day care.
<b>Student Characteristics</b>		
Gender	1=female; 0=male	Student gender
Race		
Black	1=yes; 0=no	Student race is Black.
Latino/a	1=yes; 0=no	Student race is Latino/a.
White	1=yes; 0=no	Student race is White.
Other races	1=yes; 0=no	Student race is Asian, Multiracial, or Native American.

Table 3-4 (Cont.)

*List of Variables and Scaling*

Variable	Scale	Description
<b>Student Characteristics (Cont.)</b>		
Income quartile	1=below 25%; 2=25-50%; 3=50-75%; 4=above 75%	Level of household income if dependent; Student income if independent.
Amount of federal financial aid received in 2004	0 thru \$21,993 (\$: 1,000)	The amount dollar secured from federal financial aid programs in 2004
Educational aspiration	1=no degree; 2=certificate; 3=associate's degree; 4=bachelor's degree; 5=post-baccalaureate certificate; 6=master's degree; 7=doctoral degree; 8=professional degree	Highest degree that a respondent ever expected in 2004
Nontraditional student factor index	0 through 6	Sum of nontraditional student indicator: 1) the years of delayed enrollment, 2) no high school diploma, 3) part-time enrollment, 4) financially independent, 5) have dependents, 6) single parent status, and 7) working full-time while enrolled.

Table 3-4 (Cont.)

*List of Variables and Scaling*

Variable	Scale	Description
<b>Student Experience</b>		
<i>Academic integration</i>		
Took remedial course in 2004	1=yes; 0=no	Indicates whether the respondent took any remedial or developmental courses in 2004
Took distance course in 2004	1=yes; 0=no	Indicates whether the respondent took distance education courses for credit in 2004
Number of nontraditional credits	0=0; 1=under 3 credits; 2=3-6 credits; 3=6-9 credits; 4=above 9 credits	The total normalized credits awarded for non-course activities such as military or work experience, International Baccalaureate, and examinations.
<i>Social integration</i>		
Talked with faculty	0=never; 1=sometimes; 2=often	Indicates whether or how often the respondent talked with faculty about academic matters, outside of class time (including e-mail) in 2004
Met with an adviser	0=never; 1=sometimes; 2=often	Indicates whether or how often the respondent met with an adviser concerning academic plans in 2004
Participated in study groups	0=never; 1=sometimes; 2=often	Indicates whether or how often the respondent attended study groups outside of the classroom in 2004

### **Analytic Strategy**

Descriptive analysis and multilevel analysis techniques were used in the conduct of this study. To examine mean differences between completers and non-completers, a t-test was conducted. Multilevel analysis was used to examine institutional and individual variables and partitioning variances at each level. The Stata software was used for all analyses. Research questions are stated below to clarify which methods were used in seeking answers to each research question.

#### RQs:

- 1) How does using alternative measures to define credential completion in FPCUs influence who is counted as a completer?
  - a. Measure 1: Who completes when credential completion is defined as whether one attained any type of credential at the institution of initial entry?
  - b. Measure 2: Who completes when credential completion is defined as whether one attained a credential that matched their initial credential goal at the institution of initial entry?
  - c. Measure 3: Who completes when credential completion is defined as whether one attained a credential after leaving the FPCU of initial entry?
- 2) Using the conceptual framework as a guide, how are institutional structures, student services, student background characteristics, and student experiences associated with completion of any credential type by FPCU students?

- a. How do the factors (stated above) differ among certificate- versus degree-seeking students at FPCUs?
- b. How do the factors (stated above) differ among students enrolled in vocational/technical programs versus academic programs at FPCUs?
- c. How do the factors (stated above) differ between for-profit and not-for-profit college attendees?

### **Descriptive Analysis**

The purpose of descriptive analysis is to answer research question 1 by examining how proposed measures of credential completion look at FPCUs and whether completion differs across student and institutional characteristics. To do so, both institution-level and individual-level variables as described in chapter 3 were examined. For this comparison, completion measure 1, attainment of any types of credential, was only examined since this study included the measure for subsequent analyses of multilevel logistic regression. Thus, an independent sample t-test allowed a comparison of mean differences between two groups—completer and non-completer—based on measure 1.

### **Multilevel Logistic Regression**

To answer research questions 2, 2a, 2b, and 2c, multilevel logistic regression (MLR) was used. MLR is an appropriate analytic strategy for two reasons. First, the clustered nature of the BPS0409, with students nested within colleges, necessitated multilevel analysis. While single-level analysis assumes the respondents were randomly selected so that each respondent within a unit has equal probability of being selected, the BPS0409 employs a complex sampling design that violates random sampling assumptions (Wine et al., 2011). If a single-level analysis is applied to data with a

complex sampling design, standard errors are underestimated and Type I errors increase (Thomas & Heck, 2003). Thus, this study employed two-level analysis to separate individual variances from institutional ones.

Second, the conceptual model, which was built to gain an extended understanding of student completion at FPCUs by taking both individual- and institution-related aspects into account, warrants the use of multilevel analysis. MLR enabled an exploration of which individual-level variables (i.e., student characteristics and student experiences in the conceptual model) influence completion while institutional ones (i.e., institutional structure and student service in the conceptual model) were controlled and vice versa. This analysis advances research on the for-profit sector and identifies where to improve to increase student credential completion.

To run multilevel models, Stata 13 software was used. The command *xtmelogit* enabled the running of multilevel models with dichotomous dependent variables—in this study, completion versus incompleteness. All independent variables at level-1 were centered on grand-mean<sup>18</sup>, which is the overall mean for the for-profit college sample. Enders and Tofghi (2007) recommended using group-mean centering when the primary focus of research is on individual-level variables while grand-mean centering is recommended when a study's primary interest is to understand level-2 variables' impact on a dependent variable. Since this study focused on evaluating students' credential completion, including both individual- and institution-level variables (as suggested in the conceptual model) rather than an extensive focus on individual-level variables' influence

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<sup>18</sup> When the analysis was conducted for the non-profit college sector, independent variables were also centered on the grand-mean (e.g., community college students' independent variables centered on community college students' overall mean score).

on the outcome variable, grand-mean centering was the appropriate method. Thus, the interpretation of coefficients was based on the overall mean score for each variable.

The analytic technique applied to two models: 1) a fully-operationalized model and 2) a partially-operationalized model. The fully-operationalized model includes social integration variables and tested for four- and two-year for-profit students only. The partially-operationalized model excludes social integration variables and tested for all levels of for-profit colleges. Given that the traditional way of discussing completion rates often neglects the complex nature of students pursuing nontraditional pathways (Rassen, Chaplot, Jenkins, & Johnstone, 2013), disaggregating samples into specific interests allowed this study to explore the ways in which credential completion might differ across student groups and what may affect this difference.

Thus, the following equations represent analytic models developed to answer research questions 2a through 2c. When students ( $i$ , level-1) are nested in for-profit colleges ( $j$ , level-2):

Statistical model for RQs 2, 2a, and 2b (*Italics for fully-operationalized model only*)

Level 1:

$$\begin{aligned} \text{Log}(p/1-p) = & \beta_{0j} + \beta_{1j} (\text{Gender}) + \beta_{2j} (\text{Race}) + \beta_{3j} (\text{Income quartile}) + \\ & \beta_{4j} (\text{Amount of federal financial aid received}) + \beta_{5j} (\text{Educational} \\ & \text{Aspiration}) + \beta_{6j} (\text{Nontraditional student index}) + \beta_{7j} (\text{Took remedial} \\ & \text{course}) + \beta_{8j} (\text{Took distance education course}) + \beta_{9j} (\text{Number of} \\ & \text{nontraditional credits}) + B_{10j} (\textit{Talked with faculty}) + B_{11j} (\textit{Met an} \\ & \textit{academic adviser}) + B_{12j} (\textit{Participated in study groups}) + r_{ij} \end{aligned}$$

Level 2:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} (\text{Level}) + \gamma_{02} (\text{Reputation}) + \gamma_{03} (\text{Aggregated nontraditional student index}) + \gamma_{04} (\% \text{ of full-time faculty}) + \gamma_{05} (\text{Institutional expenditure on student services}) + \gamma_{06} (\text{Variety of student services provided}) + u_{0j}.$$

In answering research question 2c, MLR analyses included students in for-profit institutions and those who attended comparable not-for-profit sector institutions: community colleges and broad access four-year colleges. Running the not-for-profit sample included all of the same variables but the institutional level was substituted for the institutional size variable. Thus, the following equations represent analytic models for research question 2c.

Statistical model for RQ2c (*Italics for fully-operationalized model only*)

Level 1:

$$\text{Log}(p/1-p) = \beta_{0j} + \beta_{1j} (\text{Gender}) + \beta_{2j} (\text{Race}) + \beta_{3j} (\text{Income quartile}) + \beta_{4j} (\text{Amount of federal financial aid received}) + \beta_{5j} (\text{Educational Aspiration}) + \beta_{6j} (\text{Nontraditional student index}) + \beta_{7j} (\text{Took remedial course}) + \beta_{8j} (\text{Took distance education course}) + \beta_{9j} (\text{Number of nontraditional credits}) + B_{10j} (\textit{Talked with faculty}) + B_{11j} (\textit{Met an academic adviser}) + B_{12j} (\textit{Participated in study groups}) + r_{ij}$$

Level 2:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} (\text{Institutional size}) + \gamma_{02} (\text{Reputation}) +$$

$\gamma_{03}$  (Aggregated nontraditional student index) +  $\gamma_{04}$  (% of full-time faculty)  
 +  $\gamma_{05}$  (Institutional expenditure on student services) +  $\gamma_{06}$  (Variety of  
 student services provided) +  $u_{0j}$ .

### **Missing Data**

Missing values due to item non-response are a common problem in survey data. In order to account for missing data on each item included in the analysis, the multiple imputation technique was employed. Multiple imputation is a method used to replace missing responses utilizing information from the sample distributions of the variables themselves to replace missing values with randomly generated but contextually appropriate values (Rubin, 1987). Three variables contained missing responses and generated imputed variables: number of nontraditional credits, institutional expenditures on student services, and percent of full-time faculty. The proportion of missing values in each variable was 19%, 21%, and 22%, respectively.

### **Limitations**

#### **Representativeness of FPCUs**

This study did not represent the entire for-profit higher education sector. As aforementioned, for various reasons, this study involved an analysis of for-profit college data available through IPEDS, which are restricted to FPCUs who participate in Title IV programs. The IPEDS is the most appropriate data available at this point and for this study because institution information may be merged into student-level data drawn from BPS0409. Also, IPEDS is one of the few options among publicly available data sources that include substantial numbers of for-profit colleges. For this reason, IPEDS has been

used for many other studies on the for-profit sector; policy analysis also has relied on IPEDS. Despite its strengths, it should be pointed out that non-Title IV-eligible for-profit schools assumed to comprise a substantial proportion of the FPCU sector were excluded from this study (Cellini & Goldin, 2013). Considering that a possible disparity may exist between Title IV-eligible and non-eligible FPCUs, further study is needed.

### **FPCU Student Representation**

In addition, the student sample in the BPS0409 data only includes first-time college students in 2004. This sample characteristic may not fully address the nature of for-profit college students, who are often former students who are returning to college having had previous college experiences. Despite this limitation, the BPS0409 offers the most appropriate data among existing large data sets because it includes respondents with a wider range of ages and backgrounds.

### **Variable Operationalization**

As in many cases in quantitative studies, it was also difficult to select the variables that best describe some constructs in the conceptual model. Variables that measure student services especially need to be interpreted with caution. These variables do not measure the quality of student support services or students' actual use of such services because this study included student service measures at the institution level. In other words, the items did not explicitly ask students how often or whether they used counseling services. Rather, these variables offered insights into the extent to which a FPCU makes resources available to students and implies that more resources can have a positive impact on students as they seek to attain postsecondary education credentials.

## Sample Size

Though the number of students attending FPCUs has increased since the 1990s, it is still not a sizable proportion in secondary data sets. And while the BPS0409 contains a larger number of for-profit college students, making statistical analyses more feasible than in other secondary data sets collected before 2004, some analytical results should be interpreted with caution due to the small sample size. For example, in the analysis conducted on FPCU students in academic programs (for research question 2b), the student-level sample included 520 students nested in 160 for-profit colleges.

Although the small sample size may increase Type I error by underestimating standard errors, there are no clear thresholds for determining adequate sample sizes. Recommended sample sizes vary in the existing literature. Maas and Hox (2005) indicated that a sample size of 50 at the group level and 30 units within each group ensure reliable parameter estimation for the linear multilevel regression analysis. Moineddin, Matheson, and Glazier (2007) argued that a group size of 5 causes biases in the variance component estimation. Maas and Hox (2005) found no biased estimation of regression coefficients even when the lower level sample was 10 and 5 upper-level units. Hox (2010) concluded that 50 groups with 5 cases per group may be sufficient to avoid underestimation of standard errors. Thus, all analytic models (except academic program analysis) in this study satisfied the minimum sample sizes recommended by Hox (2010) and Maas and Hox (2005).

Additionally, the following conditions relieve concerns about the small sample size for this study. The study sample included enough cases at the group level. For a reliable estimation of multilevel modeling, it was consistently reported that the number of

cases at the group level is more important than that for individual-level cases. Maas and Hox (2005) found that the standard error at the group level was biased when the group numbers were 50 or less. The group level sample size for this study exceeded this guideline.<sup>19</sup> Second, this study did not include cross-level interactions that require more cases in each group (Mathieu, Aguinis, Culpepper, & Chen, 2012). Although evidence indicates that some analytic models with small sample sizes may not be severely biased, the results for academic program students should be interpreted with caution.

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<sup>19</sup> Sample size at both level-1 and level-2 are reported in Tables 4-7 through 4-12.

## **Chapter 4**

### **FINDINGS**

Analyses results are presented in this chapter, beginning with the descriptive analysis results for a student's initial credential goal and a student's program of study. Since students' credential goals and programs of study are important aspects of this study's analysis models, this description provides a snapshot of the FPCU sample in the BPS0409 and offers a better understanding of subsequent analyses results. In addressing research question 1, three different ways of defining completers are proposed and descriptive analysis results for each measure are provided. Employing one of the completion measures, research questions 2–2c are addressed in order to present the association between independent variables and credential completion for all FPCU students, certificate- versus degree-seeking FPCU students, and voc-tech versus academic program FPCU students, respectively. Finally, the same analytic model was applied to students in for-profit, community college, and broad access four-year not-for-profit colleges; results are compared.

#### **Descriptive Analysis**

This section offers a snapshot of the FPCU students sample in the BPS0409 before findings for the research questions are presented. As discussed earlier, FPCU students have specific goals in terms of credential types and areas of study (Tierney & Hentschke, 2007). Researchers also found that student outcomes at FPCUs vary based on types of credentials and program (Bennett et al., 2010; Deming et al., 2011). Thus, this section provides a snapshot of the sample in the BPS0409 in order to furnish a foundation for subsequent analyses and findings.

### Student Credential Goal

Table 4-1 describes the categorical distribution of student credential goals, ranging from no credential to certificate, associate's, and bachelor's degree. It also shows how the types of credential were distributed by level of for-profit colleges. In 2004, 51% of for-profit college students planned to earn a certificate, 22% planned to earn an associate's degree, and 24% planned to earn a bachelor's degree. Four percent of for-profit college enrollees indicated no credential goal. Over 80% of these students (i.e., non-credential-seeking students) took one or two classes in FPCUs.

Across institution levels, it is apparent that more students in four-year FPCUs tend to seek associate's (56%) or bachelor's degrees (39%) while most of less-than-two-year enrollees sought certificates (90%). At two-year FPCUs, associate's degree seekers represented more than 50% of the student population, which was more than the overall level for FPCUs, which one would expect given that students at two-year FPCUs have no option but to pursue an associate's degree.

Table 4-1

#### *Distribution of Student Credential Goals at FPCUs*

	All FPCUs (n=1,950)	Four-year FPCUs (n=340)	Two-year FPCUs (n=550)	Less than two- year FPCUs (n=1,060)
Non credential	4%	1%	8%	2%
Certificate	51%	4%	33%	90%
Associate	22%	56%	56%	7%
Bachelor	24%	39%	4%	2%
Total	100%	100%	100%	100%

## Programs of Study

For the subsequent analysis including multilevel modeling, this study collapsed fields of study into two categories: academic and voc-tech majors. Based on the classification made in Levesque et al. (2008), academic program included humanities, social/behavioral sciences, life sciences, math, engineering, engineering technician, education, business, and computer/information science and technology. Voc-tech field included health professions, construction trades, personal or culinary services, and transportation. Non-classified vocational fields were also merged into the voc-tech category.

Table 4-2 provides cross-tabulation results for student credential goals and programs of study. As expected, many students pursued voc-tech programs in FPCUs—64% of major-declared students enrolled in such programs. Voc-tech programs include career-oriented majors such as healthcare professions ( $n=410$ , 29%), personal and culinary services ( $n=220$ , 15%), and mechanic and repair technologies ( $n=80$ , 6%) (Appendix B provides a full list of programs). Most of these students sought certificates (72%) or associate's degrees (24%).

Students who chose academic-oriented programs included business ( $n=200$ , 14%), computer and information science ( $n=130$ , 9%), visual and performing arts ( $n=60$ , 4%), and Engineering technologies ( $n=40$ , 3%) (see Appendix B for a full list of programs). Students in academic programs were more likely to pursue associate's degrees (40%) or bachelor's degrees (23%) than their counterparts in vocational programs. Respondents who did not declare majors in 2004 were not included in the analysis for research question 2b.

Table 4-2

*Crosstabs: Programs of Study by Credential Goals in 2004*

	Credential Goal				Total
	Non-credential	Certificate	Associate's	Bachelor's	
Programs of Study					
Voc-tech	0%	72%	24%	3%	920 (100%)
Academic	2%	35%	40%	23%	520 (100%)
Undeclared or not in a degree program	12%	57%	25%	6%	510 (100%)

### **RQ 1: Measures of Credential Completion**

This section provides the results for research question 1: How does using alternative ways to define credential completion FPCUs influence who is counted as a completer? The three measures of completion included: 1) attainment of any types of credential, 2) attainment of credential matched with initial credential goal, and 3) attainment of credential at another institution after leaving FPCUs of initial enrollment.

#### **Completion Measure 1: Attained any type of credential**

The first way to approach student credential completion was based on the simple notion of credential attainment: completer versus non-completer. To identify these two groups, this study considered whether a respondent was a credential-seeking student (including certificate, associate's, or bachelor's) and whether he/she attained any credential by 2009. As shown in Table 4-3, any credential type seeker was combined to differentiate this group from non-credential-seeking students. Also, attainment status by 2009 was tracked to see whether students in each group actually attained a credential.

Following this procedure, 48% of the sample ( $n=50+10+870=930$ ) in this study was defined as “completer” because the student in the sample attained some level of postsecondary-level credential. Although 50 students did not attain any credential, they were not identified as non-completer because their initial goals were not seeking credential. On the other hand, 52% of the sample ( $n=1,020$ ) was defined as “non-completer” because the student left the FPCUs without attaining a credential.

Table 4-3

*2×2 Matrix of Credential Goal Completion*

	Credential Goal		Total (n)
	No Credential	Certificate/Associate/ Bachelor	
Attainment			
No Credential	50	1,020	1,070
Certificate/Associate/ Bachelor	10	870	880
Total (n)	60	1,880	1,950

**Mean comparison of completers and non-completers<sup>20</sup>.** Table 4-4 shows the results for an independent sample t-test that examined mean differences in predictor variables between the completer and non-completer groups. Independent variables were presented according to the conceptual framework guiding the study (Figure 2-1). When examining institutional structure, students who attended less than two-year FPCUs were more likely to have completed a credential, and those who attended four-year for-profits were less likely to have completed a credential. Institutional size was also significantly different between the non-completer and the completer groups; those who completed a

<sup>20</sup> The mean comparison between groups was only made for completion measure 1 because the subsequent analyses using multilevel logistic regression were only conducted using this measure. The mean comparison provides a preliminary perspective on how independent variables differ between the completer and non-completer designations.

credential were significantly more likely to have enrolled in a smaller institution. More students in the completer group had considered their institution's reputation when choosing to enroll. Students in the completer group attended institutions with higher percentages of full-time faculty and lower levels of nontraditional student enrollment.

Students in the completer group attended institutions that spent more on student services although this difference was not statistically significant. When variety of student support services available at a FPCU was considered, the average number of student services available at an institution was higher for the non-completer group. That is, non-completers attended FPCUs that provided more student services than FPCUs attended by completers (mean=3.03 vs. 2.90).

When examining student characteristics, there were significant differences based on gender and race between completers and non-completers. More women than men were likely to complete a credential (mean=0.71 vs. 0.65, respectively). Black students were significantly less likely to complete a credential (28% of Black students did not complete and 19% completed), while Latino/a students were significantly more likely to complete (24% did not complete and 29% completed). No significant differences were found between the groups for Whites and other race groups, or for differences in level of income. For-profit college students with more nontraditional student characteristics were less likely to complete credentials. The average amount of federal financial aid received was significantly higher for completers. Non-completers had higher levels of educational aspirations than completers (mean=4.24 and 3.80, respectively, where 1=no credential and 8=professional degree).

Student academic integration also significantly differed between completers and non-completers. When examining remedial course-taking patterns, 5% of completers took one or more remedial course, while 8% of non-completers did so. There were no significant differences between completers and non-completers based on distance education course taking experience. When number of nontraditional credits were examined, completers were more likely to earn credits in nontraditional ways such as prior experiences or portfolios that reflect individuals' out of classroom experiences.

When it came to for-profit college students' social integration, there were no significant differences between completers and non-completers based on interaction with faculty and study group activities. However, the frequency of meeting with an academic adviser was significantly higher for completers than non-completers (0.84 vs. 0.71, respectively).

Table 4-4

*Mean Comparison between Completers and Non-Completers<sup>21</sup>*

	All	Non-completer (n=1,020)	Completer (n=930)	t
<b><i>Institutional Structure</i></b>				
Level				
Four-Year	0.19	0.25	0.13	6.63***
Two-Year	0.27	0.28	0.25	1.84*
Less than Two-Year	0.54	0.47	0.62	-6.88***
Size <sup>22</sup>	843.23	995.42	676.79	3.69***
Reputation	0.52	0.50	0.54	-4.00***
Aggregated nontraditional student index	2.44	2.50	2.38	2.70**
% of full-time faculty	28.68	26.87	30.65	-5.78***
<b><i>Student Services</i></b>				
Expenditure on student services	1.56	1.58	1.53	1.15
Variety of student services provided	2.97	3.03	2.90	2.55**
<b><i>Student Characteristics</i></b>				
Female	0.67	0.65	0.71	-2.85***
Race				
Black	0.24	0.28	0.19	4.59***
Latino/a	0.26	0.24	0.29	-2.78***
Other races	0.08	0.08	0.09	-0.35
White	0.42	0.40	0.43	-1.26
Income quartile	1.83	1.79	1.86	-1.64
Amount of federal financial aid received in 2004	5,280	4,862	5,738	-5.58***
Educational aspiration	4.03	4.24	3.80	5.56***
Nontraditional student Index	2.44	2.58	2.30	3.31***
<b><i>Academic Integration</i></b>				
Took remedial course in 2004	0.07	0.08	0.05	2.67***
Took distance course in 2004	0.14	0.11	0.17	-1.50
Number of nontraditional credits earned	0.19	0.14	0.24	-3.26***
<b><i>Social Integration<sup>a</sup></i></b>				
Talked with faculty	0.79	0.76	0.82	-1.18
Met academic adviser	0.76	0.71	0.84	-2.89***
Participated in study group	0.51	0.52	0.50	0.41

<sup>a</sup> Four- and two-year FPCUs only (non-completer n=540; completer n=350);

\*\*\*p<.001, \*\*p<.01, \*p<.05

<sup>21</sup> Three variables—size, % of full-time faculty, amount of federal financial aid—used continuous scaling for t-test while they were recoded as categorical variables for multilevel logistic regressions analyses.

<sup>22</sup> The institutional size variable was only included in answering research question 3. This variable substituted for institutional sector in the for-profit analysis model.

**Completion Measure 2: Undermet, met, or exceeded initial credential goal**

The first measure of credential completion looked at whether a student desired to attain a credential and how they differed between students who desired and attained a credential versus those who desired but did not attain a credential. While measure 1 differentiated credential-seeking students from non-credential-seeking students, it did not differentiate among the types of credentials being sought. Thus, the second measure of completion disaggregated credential types into certificate, associate's, and bachelor's degree (see Table 4-5). Non-credential seekers were also included in the matrix. Again, completion was counted only when a student attained a credential at the first for-profit college attended in 2004.

**Undermet credential goals.** A substantial number of students did not meet their credential goals. Forty-four percent of certificate seekers left without any credential attainment. Among associate's degree seekers, 67% left their institutions without any credential attained and 5% attained a certificate. Among bachelor's degree seekers, 72% ended up not earning any credential, 3% attained a certificate, and 4% attained an associate's degree, which for this study's purpose represented a lower credential than they initially planned to earn and hence were categorized as undermet their goal.

**Met credential goals.** Cross-tabulation showed that 55% of certificate seekers, 26% of associate's degree seekers, and 22% of bachelor's degree seekers met their credential goals. This finding confirmed Deming et al. (2011) and Cellini and Chaudhary (2012) that for-profit colleges recorded higher completion rates in certificate programs than degree programs. The completion rate of bachelor's degree is the lowest among all

types of credentials in this study and others (Bennett et al., 2010; Cellini & Chaudhary, 2012; Deming et al., 2011).

**Exceeded credential goals.** Although the case was rare, there were students who achieved higher credential levels than they had planned. Among non-credential-seeking students, 17% attained certificates and few students (below 1%) earned associate's degrees. For certificate seekers, 1% attained associate's degrees and few students (below 1%) attained a bachelor's degree. Two percent of associate's degree seekers ultimately earned a bachelor's degree, which this study equated to a higher credential than they planned.

Table 4-5

*4×4 Matrix of Credential Goal Completion*

		Credential Goal at 2004			
		Non-Credential	Certificate	Associate's	Bachelor's
Attained Credential by 2009	Non-Credential	83%	44%	67%	72%
	Certificate	17%	55%	5%	3%
	Associate's	<1%	1%	26%	4%
	Bachelor's	0%	<1%	2%	22%
Total <i>n</i>		60	1,130	570	180
(% )		(100%)	(100%)	(100%)	(100%)

**Completion Measure 3: Attained credential after leaving FPCU of initial enrollment**

The third completion measure examined completion from a multiple institution perspective. As mentioned earlier, the previous completion measures restricted the scope of completion within the first institution. This perspective is helpful in understanding the student outcome at first FPCUs, yet this measure misses one of the important realities in higher education, namely, students attend multiple institutions in pursuit of a credential.

Table 4-6 illustrates the overall student transition and outcomes by initial credential goals. Among non-credential seekers at first FPCU, 83% ( $n=50$ ) ended up having no credentials, 17% ( $n=10$ ) attained certificates or associate's degrees. When the students who did not attain any credentials were tracked to see if they completed any credentials at other institutions, 94% (47 out of 50) had not while 6% (3 out of 50) had earned a certificate, associate's, or bachelor's degree, respectively.

While 56% ( $n=630$ ) of certificate seekers at their first FPCUs attained a certificate, associate's, or a bachelor's degree, approximately 44% ( $n=500$ ) of certificate-seeking students did not earn any credentials. When these students were tracked to examine their subsequent completion at an institution other than where they had started, 96% (480 out of 500) had not earned a credential, 3% (16 out of 500) had attained a certificate, and less than 1% (4 out of 500) had completed associate's degree programs at another institution.

When it came to associate's degree seekers, more than half (67%,  $n=380$ ) had not secured any credentials, 5% ( $n=30$ ) had attained a certificate, 25% ( $n=160$ ) had completed an associate's or a bachelor's at their first FPCUs attended. Among no-credential completers, 92% (350 out of 380) remained without further attainment, 3% (10 out of 380) completed a certificate, 4% (15 out of 380) attained an associate's, and 1% (5 out of 380) attained a bachelor's at another institution after leaving FPCUs without completion.

Among 180 bachelor's degree seekers, 72% ( $n=130$ ) did not complete any credentials at their first FPCUs and 28% ( $n=50$ ) completed a credential among certificate, associate's, or bachelor's degree. Among 130 students who did not complete any credentials at their first FPCU, 8% (10 out of 130) completed a credential (including

certificate, associate's, or bachelor's) at another institution. Students who had undermet their degree goals (i.e., certificate or associate's degree completers) did not have subsequent enrollment or attainment. It turned out that higher credential aspirants were less likely to continue other goals and also were less likely to attend other institutions after leaving the first FPCUs.

Table 4-6

*Credential Attainment after Leaving FPCUs*

Initial goal	Attainment at first FPCU	Attainment at another PSEs (Including FPCUs and non-FPCUs)
Non-credential	No attainment (n=50)	No subsequent attainment (n=47) <b>Certificate (n=1)</b> <b>Associate's (n=1)</b> <b>Bachelor's (n=1)</b>
	Certificate/Associate's (n=10)	
Certificate	No attainment (n=500)	No subsequent attainment (n=480) <b>Certificate (n=16)</b> <b>Associate's (n=4)</b>
	Certificate/Associate's/Bachelor's (n=630)	
Associate's	No attainment (n=380)	No subsequent attainment (n=350) <b>Certificate (n=10)</b> <b>Associate's (n=15)</b> <b>Bachelor's (n=5)</b>
	Certificate (n=30)	Certificate (n=29) Associate's (n=1)
	Associate's/Bachelor's (n=160)	
Bachelor's	No attainment (n=130)	No subsequent attainment (n=120) Certificate (n=3) Associate's (n=3) Bachelor's (n=4)
	Certificate/Associate's/Bachelor's (n=50)	

## RQ 2: Multilevel Logistic Regression Results

A series of multilevel logistic regression analyses were conducted to estimate the likelihood of completing credentials at for-profit colleges. For this section, completion measure 1—attainment of any types of credential was employed as a dependent variable. This dependent variable enabled multilevel analysis including institution- and individual-level variables. The results were further organized following the second research question: how are institutional structures, student services, student background characteristics, and student experiences associated with credential completion of overall for-profit college students (RQ2), certificate- versus degree-seekers (RQ2a), and students in academic versus vocational programs (RQ2b)? In examining completion of overall for-profit college students, two models were analyzed mainly because the BPS0409 did not ask social integration items for students in less than two-year institutions. Hence, fully-operationalized models included students in four- or two-year FPCUs and social integration measures of the conceptual framework. The partially-operationalized model included all students who attended four-, two-, or less-than-two-year FPCUs but did not examine social integration variables

The intraclass correlation (ICC)<sup>23</sup> represents the total variance between groups as a proportion of the total variance between and within groups. Heck (2001) noted that homogeneity within groups should be considered when ICC is greater than 0.05. When analyzing intercept-only models across sub-samples in this study, ICCs were obtained ranging from 0.04 to 0.11. This means that multilevel analysis should be conducted

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<sup>23</sup>  $\rho = \sigma_b^2 / (\sigma_b^2 + \sigma_w^2)$ , where  $\sigma_b^2$  is between-group variance and  $\sigma_w^2$  is within-group variance.

because students at a same institution may have similar characteristics; this homogeneity influences estimation of the statistical model.

### **Results for All FPCU Students**

This section addresses research question 2: Using the conceptual framework as a guide, how are institutional structures, student services, student background characteristics, and student experiences associated with completion of any credential type by FPCU students?

**Fully-operationalized model.** The ICC of the intercept-only model was 0.06, which means that 6% of variance in the outcome variable (i.e., credential completion) was explained by variances between FPCUs. Table 4-7 shows the results of fully-operationalized conceptual model. Among institution level variables, attending a FPCU that has a good reputation was associated with higher odds of completing credentials. Institutional reputation was the only variable statistically significant at the institution level.

Among student-level variables, most variables in student characteristics were significantly associated with completion, but female, Latino/a or other race category were not significant as compared to male and White students, respectively. Black students had a significantly lower likelihood of completion than White students by 37%. One unit increase in income quartile was associated with an 18% increase in the odds of credential completion. If the amount of financial support from federal grant or loans increased by \$1,000, the likelihood of completion increased by 11%. Contrary to the existing findings for college success of not-for-profit college students, higher educational aspirations among for-profit college students actually decreased the likelihood of completion by 10%.

If a student possessed multiple indicators of being a nontraditional student, the likelihood of completing the credential decreased by 13%.

In examining academic integration variables, taking remedial courses in the first year at an FPCU decreased the odds of completing a credential by 42%. No significant association was found in taking distance education courses. If a student earned more credits from nontraditional (out of classroom) experiences, the likelihood of completion increased by 44%.

Social integration variables were examined—the only significant association was found in the meeting with an academic adviser item. For-profit college students who had frequent meetings with an adviser were 37% more likely to complete a credential.

Table 4-7

*Credential Completion in Four- and Two-Year FPCUs: Fully-Operationalized**Conceptual Framework*

	b	Odds Ratio
<b><i>Institution-level Variables</i></b>		
Institution structure		
Four-Year (ref.= Two-Year)	-0.21 (0.21)	
Reputation	1.13 (0.44)	3.09**
Aggregated level of nontraditional student index	0.05 (0.10)	
Percent of full-time faculty	0.07 (0.07)	
Student service		
Expenditure on student services	-0.08 (0.08)	
Variety of student services provided	-0.12 (0.09)	
<b><i>Student-level Variables</i></b>		
Student characteristics		
Female	-0.02 (0.19)	
Race (ref.=White)		
Black	-0.46 (0.24)	0.63*
Latino/a	-0.20 (0.25)	
Other races	0.02 (0.29)	
Income quartile	0.17 (0.09)	1.18**
Amount of federal financial aid received in 2004	0.11 (0.02)	1.11***
Educational aspiration	-0.10 (0.05)	0.90*
Nontraditional student index	-0.14 (0.05)	0.87***
Academic integration		
Took remedial course in 2004	-0.55 (0.27)	0.58**
Took distance course in 2004	0.07 (0.09)	
Number of nontraditional credits earned	0.36 (0.13)	1.44***
Social integration		
Talked with faculty	0.03 (0.13)	
Met academic adviser	0.32 (0.13)	1.37**
Participated in study group	-0.10 (0.12)	
Constant	-1.23 (0.64)	
Number of cases		890
Number of groups		110

Standard errors in parentheses.

\*\*\*p&lt;.01, \*\*p&lt;.05. \*p&lt;.10

**Partially-operationalized model.** Table 4-8 shows the results for a partial operationalization of a conceptual framework, excluding social integration items since they were not available in the BPS0409 for students enrolled in less than two-year institutions. The ICC of the intercept-only model was 0.11, which means that 11% of variance in the outcome variable (i.e., credential completion) was explained by variances between FPCUs. When examining institutional structure variables, attending four-year for-profit and two-year for-profit colleges lowered the likelihood of credential completion by 55% and 35%, respectively. Institutional reputation increased the odds of completion by 91%. The likelihood of completing credential goals was not significantly associated with institutional share of nontraditional students. Percent of full-time faculty was associated with slightly higher odds of credential completion. No student service variables were significantly related to the odds of for-profit college student's credential completion.

Among student-level variables, women were 34% more likely to complete credential goals than men. Black students were 30% less likely to complete than their White counterparts. If a student's income level increased by 1 unit, the odds of completing a credential increased by 21%. The amount of federal aid increased the odds of completion by 12%. For-profit college students' educational aspiration decreased the likelihood of credential completion by 8% as found in the fully-operationalized model. If a student possessed multiple indicators for nontraditional students, the odds of credential completion decreased by 11%.

Looking at academic integration variables, remedial courses were associated with lower odds of completing a credential. Distance course-taking was not significantly

related to credential completion. When a student obtained more credits in nontraditional ways (e.g., portfolio, professional experience), they were 33% more likely to earn credentials.

Table 4-8

*Credential Completion in Four-, Two-, and Less than Two-Year FPCUs: Partially-Operationalized Conceptual Framework*

	b	Odds Ratio
<b><i>Institution-level Variables</i></b>		
Institutional structure		
Level (ref.=Less than Two-Year)		
Four-Year	-0.79 (0.18)	0.45***
Two-Year	-0.44 (0.15)	0.65***
Reputation	0.65 (0.28)	1.91**
Aggregated level of nontraditional student index	-0.05 (0.07)	
Percent of full-time faculty	0.08 (0.05)	1.08*
Student service		
Expenditure on student services	0.02 (0.06)	
Variety of student services provided	-0.08 (0.06)	
<b><i>Student-level Variables</i></b>		
Student characteristics		
Female	0.29 (0.14)	1.34**
Race (ref.=White)		
Black	-0.36 (0.16)	0.70**
Latino/a	-0.02 (0.17)	
Other races	0.00 (0.21)	
Income quartile	0.19 (0.06)	1.21***
Amount of federal financial aid received in 2004	0.11 (0.02)	1.12***
Educational aspiration	-0.09 (0.03)	0.92***
Nontraditional student index	-0.12 (0.03)	0.89***

Table 4-8 (Cont.)

*Credential Completion in Four-, Two-, and Less than Two-Year FPCUs: Partially-Operationalized Conceptual Framework*

	b	Odds Ratio
Academic integration		
Took remedial course in 2004	-0.33 (0.20)	0.72*
Took distance course in 2004	0.11 (0.07)	
Number of nontraditional credits earned	0.28 (0.08)	1.33***
Constant	-0.13 (0.35)	
Number of cases		1,950
Number of groups		250

Standard errors in parentheses.

\*\*\*p<.01, \*\*p<.05, \*p<.10

### **Results Disaggregated By Credential Type: Certificate versus Degree Seeker**

This section addresses research question 2a: how do the factors (stated above) differ among certificate- versus degree-seeking students at FPCUs?

**Degree seekers.** Table 4-9 presents the results of certificate seekers and degree seekers. An analysis restricted to associate's or bachelor's degree seekers at FPCUs found that 3.6% of the variance in degree completion was explained by between-institution variances (ICC=0.036). Examining institutional structure, institution level was not significantly associated with completion of degree-seeking students. Only institutional reputation had a significant association with degree completion, raising the likelihood of completion by 120%.

Student-level variable estimation showed that women were not significantly more likely to complete degrees than men. Black students were 41% less likely than White to complete an associate's or a bachelor's degree. Student income level was not significantly associated with the probability of completion. The amount of federal

financial aid slightly increased the odds of completion by 11%. Students with multiple nontraditional student characteristics decreased the odds of completion by 13%. Among academic integration variables, only the number of nontraditional credits was significantly related to higher odds of completing an associate's or bachelor's degree.

**Certificate seekers.** When the analysis was conducted for certificate-seeking students only, ICC indicated that 6.1% of variances in certificate completion were explained by between-institution variances. For institution structure, four-year for-profits had lower odds of certificate completion than the less than two-year for-profits. Unlike the results for degree seekers, institutional reputation was not significantly associated with certificate completion. The likelihood of certificate completion increased by 10% as the share of full-time faculty went up.

Among student-level variables, women were more likely to complete certificate programs than men by 59%. Black students were 32% less likely to complete certificates than White students. Higher income status was positively associated with certificate completion, increasing the odds by 35%. The amount of federal financial aid was associated with higher odds of certificate completion. Students with more nontraditional student markers were 12% less likely to complete certificate programs. When it came to academic integration, no significant influence was found for remedial course-taking or distance education. A positive association was found for number of nontraditional credits earned.

Table 4-9

*Completion by Credential Types in FPCUs: Degree versus Certificate*

	Associate's or Bachelor's Degree		Certificate	
	b	Odds Ratio	b	Odds Ratio
<b><i>Institution-level Variables</i></b>				
Institutional structure				
Level				
Four-Year	0.04 (0.29)		-1.84 (0.84)	0.16**
Two-Year	-0.10 (0.29)		-0.09 (0.20)	
Reputation	0.79 (0.44)	2.20*	0.48 (0.34)	
Aggregated level of nontraditional student index	-0.05 (0.10)		-0.10 (0.09)	
Percent of full-time faculty	-0.04 (0.07)		0.10 (0.06)	1.10*
Student service				
Expenditure on student services	-0.03 (0.08)		0.09 (0.08)	
Variety of student services provided	0.13 (0.10)		-0.10 (0.07)	
<b><i>Student-level Variables</i></b>				
Student characteristics				
Female	0.06 (0.20)		0.46 (0.23)	1.59**
Race (ref.=White)				
Black	-0.53 (0.27)	0.59**	-0.38 (0.22)	0.68**
Latino/a	-0.32 (0.28)		0.14 (0.23)	
Other races	-0.09 (0.32)		-0.02 (0.29)	
Income quartile	0.07 (0.10)		0.30 (0.09)	1.35***
Amount of federal financial aid received in 2004	0.10 (0.03)	1.11***	0.13 (0.02)	1.14***
Educational aspiration	-0.08 (0.06)		-0.03 (0.04)	
Nontraditional student index	-0.14 (0.06)	0.87**	-0.13 (0.04)	0.88***
Academic integration				
Took remedial course in 2004	-0.26 (0.28)		-0.22 (0.31)	
Took distance course in 2004	0.08 (0.10)		0.13 (0.10)	
Number of nontraditional credits earned	0.46 (0.12)	1.58 ***	0.19 (0.11)	1.21**
Constant	-1.37(0.61)		0.06 (0.43)	
Number of cases	750		1,140	
Number of groups	170		180	

Standard errors in parentheses.

\*\*\*p&lt;.01, \*\*p&lt;.05, \*p&lt;.10

### **Results Disaggregated by Programs of Study: Voc-tech versus Academic Program**

This section addresses research question 2b: how do the factors (stated above) differ among students enrolled in voc-tech programs versus academic programs at FPCUs?

**Voc-tech programs.** Table 4-10 presents the results of the multilevel logistic regression run for programs of study. The ICC of voc-tech program analysis was 0.144. For those enrolled in voc-tech programs at FPCUs, attending four-year or two-year for-profit colleges decreased the likelihood of completion by 58% and 41%, respectively, compared to less than two-year institutions. Institutional share of full-time faculty increased the odds of completing vocational programs by 17%. Among student service variables, institutional expenditures on student services increased the odds of completion by 20%.

When examining student-level variables, no significant differences were found based on gender and race. However, the level of income significantly increased the likelihood of completing vocational programs by 18%. As found with students enrolled in academic programs, the amount of financial aid increased credential completion in vocational programs by 14%. If a student held higher educational expectations, the odds of completing vocational programs decreased by 10%. If a student possessed multiple nontraditional student indicators, the odds of completing a credential decreased by 11%. Among academic integration variables, only the distance education course-taking significantly increased the odds of completion (in this case, by 26%).

**Academic programs.** The ICC of intercept only model for academic program students was 0.124. Looking at FPCU students who were enrolled in academic programs,

students who attended two-year FPCUs were less likely than less-than-two-year attendees to complete a credential. Institutional reputation increased the odds of credential completion in academic programs by 315%. No significant differences were found in student service variables.

When examining student-level variables, Black students were 60% less likely to complete academic programs than their White counterparts. As the amount of financial support increased, the odds of completion increased slightly by 8%. Students with more nontraditional student characteristics were associated with a lower likelihood of completing credentials in academic programs. In terms of academic integration variables, taking remedial classes lowered the odds of completion by 52%. The number of nontraditional credits was associated with higher odds of completion.

Table 4-10

*Credential Completion by Programs in FPCUs: Voc-tech versus Academic Programs*

	Voc-tech Program		Academic Program	
	b	Odds Ratio	b	Odds Ratio
<b><i>Institution-level Variables</i></b>				
Institutional structure				
Level (ref.=Less than two-year)				
Four-Year FPCUs	-0.87 (0.31)	0.42***	-0.37 (0.32)	
Two-Year FPCUs	-0.53 (0.22)	0.59**	-0.58 (0.32)	0.56*
Reputation	0.23 (0.40)		1.42 (0.54)	4.15***
Aggregated level of nontraditional student index	-0.15 (0.10)		-0.16 (0.12)	
% of full-time instructor	0.16 (0.07)	1.17**	-0.10 (0.09)	
Student service				
Expenditure on student services	0.18 (0.09)	1.20**	-0.13 (0.1)	
Variety of student services provided	-0.07 (0.08)		-0.07 (0.11)	
<b><i>Student-level Variables</i></b>				
Student characteristics				
Female	0.29 (0.25)		0.24 (0.26)	
Race (ref.=White)				
Black	-0.15 (0.24)		-0.93 (0.34)	0.40***
Latino/a	0.05 (0.26)		-0.12 (0.35)	
Other races	0.31 (0.33)		0.20 (0.37)	
Income quartile	0.16 (0.10)	1.18*	0.04 (0.12)	
Amount of federal financial aid received in 2004	0.14 (0.03)	1.14***	0.08 (0.03)	1.08**
Educational aspiration	-0.10 (0.04)	0.90**	0.01 (0.07)	
Nontraditional student index	-0.11 (0.05)	0.89**	-0.14 (0.07)	0.87**
Academic integration				
Took remedial courses in 2004	-0.28 (0.30)		-0.73 (0.40)	0.48*
Took distance courses in 2004	0.23 (0.14)	1.26*	0.05 (0.09)	
Number of nontraditional credits earned	0.11 (0.12)		0.56 (0.17)	1.74***
Constant	-0.15 (0.52)		0.08 (0.65)	
Observations	920		520	
Number of groups	200		160	

Standard errors in parentheses.

\*\*\*p&lt;.01, \*\*p&lt;.05, \*p&lt;.10

## Results for Not-for-Profit College Students

The final set of multilevel logistic regressions were conducted to test the conceptual framework introduced in chapter 2 for not-for-profit college students and to compare differences in results from the analysis of for-profit college students. Thus, this section addresses research question 2c: How do the factors (stated above) differ between for-profit and not-for-profit college attendees? As stated earlier, to make comparisons reasonable, this model substituted institution-level with institutional size for two reasons: for-profit college level was highly correlated with size and not-for-profit colleges included in the analyses were four- and two-year not-for-profit colleges, respectively.

**Broad access not-for-profit four-year college students (fully- operationalized model).** Table 4-11 presents the results of fully-operationalized conceptual model for students in broad access, four-year, not-for-profit colleges. The ICC of intercept only model was 0.083. When the analysis was restricted to students who attended broad access four-year PSEs, institutional reputation increased the odds of completion by 165%. Aggregated level of nontraditional students in the institution significantly lowered the odds of completion by 23%. Among student service variables, institutional expenditures on student services slightly increased the odds of completion by 7%.

Among student-level variables, women were 29% more likely than men to complete credentials. Black students and those classified as other races were less likely than Whites to complete credentials, by 21% and 22%, respectively. Higher amounts of financial aid were associated with lower odds of completion. As nontraditional student indicators increased, the odds of completion decreased by 11%. Among academic integration variables, the number of nontraditional credits were associated with higher

likelihood of completion by 10%. The findings for social integration variables confirmed those from previous research on non-profit college settings as all three variables increased the odds of completion. If a student talked with faculty frequently, the odds of completion increased by 27%. Meeting an academic adviser was also associated with a higher likelihood of completion (14%). Participating in study groups increased the odds of completing credentials by 33%.

**Broad access not-for-profit four-year college students (partially-operationalized model).** Table 4-12 presents the results for the partially-operationalized conceptual model. Using this model to look at students in broad access four-year institutions revealed that institutional reputation significantly increased the likelihood of completion by 159%. Enrolling in an institution with a larger proportion of nontraditional students decreased an enrollee's odds of completing credentials by 24%. Institutional expenditures on student services at non-profit four-year institutions increased student credential completion by 8%.

Among student-level variables, women were 34% more likely than men to complete a credential. When social integration variables were excluded, Black students were no longer less likely to complete than their White counterparts. Yet, other race students were still less likely to complete than White students. Students who obtained more financial aid were 3% less likely to complete a credential. Those with higher educational aspirations were 6% more likely to complete credentials. If a student possessed multiple nontraditional student indicators, he/she was 14% less likely to complete credentials. There was no significant influence of taking remedial classes or

distance education while the number of nontraditional credits was associated with higher odds of completion.

**Community college students (fully-operationalized model).** The ICC of intercept only model was 0.131. As shown in Table 4-11, for community college students, being at a larger institution lowered the odds of completion by 12%. Unlike the analysis for broad access four-year college students, all variables in student services were significantly related to completion for community college students. A positive influence of diverse student service programs was found as it increased the odds of completion by 16%. However, institutional expenditures on student services slightly decreased the odds of completion. Further study should be conducted in order to interpret this result.

With regard to student-level variables, no significant differences in completion were found by gender and race. Students with higher incomes were 14% more likely to complete credentials. As found among broad access four-year college students, the amount of financial aid slightly decreased the odds of completion by 5%. Students who expected higher levels of education were 16% less likely to complete credentials.

For academic integration variables, number of credits from nontraditional courses increased the odds of completion by 20%. For social integration variables, the only significant variable was study group participation, which increased the odds of completion by 29%.

**Community college students (partially-operationalized model).** With regard to community college students' credential completion, the negative association of institutional size and completion remained after removing social integration variables (Table 4-12). Among student service variables, the findings were the same as those for

the fully-operationalized model analysis; institutional expenditures on student services lowered the likelihood of completion while diversity of student services increased the odds of completion.

When examining student-level variables, no significant influences of race and gender were found. Students with higher income status were more likely to complete than lower-income students by 15%. The amount of financial aid also decreased the odds of completion by 4%. The influence of a student's educational aspirations appeared to have an opposite direction, with prevailing findings for four-year college students: higher educational expectations reduced the odds of completing a credential at community colleges by 15%. No significance was found in the level of nontraditional student indicator. For academic integration variables, the number of nontraditional credits increased the odds of completion by 20%.

**For-profit and non-profit sector differences.** Analyses for students in broad access four-year colleges and community colleges pointed to significantly different associations between individual variables and credential completion across the sector. In a fully-operationalized model, relatively more variables in the not-for-profit college sector's institution level were significantly associated with completion. Whereas institutional reputation was the only significant institution-level variable predicting FPCU students' credential completion, reputation and aggregated level of nontraditional students were significantly related to completion among four-year college students. For community college students, institution size mattered as found in prior studies (Alfonso, 2006; Bailey et al., 2005). Interestingly, student service variables were significant for not-

for-profit college students only; no positive or negative association was found in for-profit college students' credential completion.

With regard to student characteristics, gender and race differentiated the likelihood of credential completion among four-year college students, but not community college students. For proprietary college students, only Black students were found to be less likely to complete than White students. Controlling other variables, income level was associated with completion for community college students and for-profit college students, while it was not related to four-year college students' likelihood of completing a credential. The amount of financial aid had a negative association with completion among four-year and community college students while increasing the odds of for-profit college students' completion. Higher educational expectations decreased the odds of completion at community college and for-profit schools. The nontraditional student indicator decreased the odds of completion among four-year non-profit and for-profit college students.

Among academic integration variables, remedial course-taking decreased the odds of for-profit college students' credential completion. The influence of nontraditional credits was found to be positive across all three sectors.

Interestingly, social integration variables clearly differed across the three sectors. For not-for-profit four-year college students, all three measures—talk with faculty, meet academic adviser, and participate in study group—were significantly associated with higher odds of completion. For community college students, study group participation was significant while the other social integration items were not significant. Frequent

meetings with an academic adviser appeared to increase the odds of credential completion of FPCU students.

Table 4-11

*Credential Completion in Broad-Access Four-Year, Community College, and Four- and Two-Year FPCUs: Fully-Operationalized Conceptual Model*

	Broad-Access Four-Year Not-for-Profit		Community College		FPCU	
	b	Odds Ratio	b	Odds Ratio	b	Odds Ratio
<b><i>Institution-level Variables</i></b>						
Institutional structure						
Institution size	-0.02 (0.05)		-0.13 (0.07)	0.88*	-0.03 (0.09)	
Reputation	0.97 (0.18)	2.65***	0.05 (0.33)		1.17 (0.45)	3.21***
Aggregated level of nontraditional student index	-0.26 (0.07)	0.77***	0.12 (0.08)		0.05 (0.10)	
% of full-time faculty	-0.04 (0.03)		-0.01 (0.05)		0.09 (0.07)	
Student service						
Expenditure on student services	0.07 (0.03)	1.07**	-0.09 (0.05)	0.91*	-0.09 (0.09)	
Variety of student services provided	-0.05 (0.05)		0.15 (0.08)	1.16*	-0.12 (0.09)	
<b><i>Student-level Variables</i></b>						
Student characteristics						
Female	0.25 (0.06)	1.29***	-0.08(0.10)		-0.02(0.19)	
Race (ref.=White)						
Black	-0.23(0.12)	0.79*	-0.26(0.16)		-0.46(0.24)	0.63**

Table 4-11 (Cont.)

*Credential Completion in Broad-Access Four-Year, Community College, and Four- and Two-Year FPCUs: Fully-Operationalized Conceptual Model*

	Broad-Access Four-Year Not-for-Profit		Community College		FPCU	
	b	Odds Ratio	b	Odds Ratio	b	Odds Ratio
Latino/a	-0.11(0.13)		-0.07(0.18)		-0.21(0.25)	
Other races	-0.25(0.11)	0.78**	-0.06(0.19)		0.03(0.29)	
Income quartile	0.04(0.03)		0.13(0.05)	1.14***	0.17(0.09)	1.18*
Amount of federal financial aid received in 2004	-0.03(0.01)	0.97***	-0.05(0.03)	0.95**	0.11(0.02)	1.11***
Educational aspiration	0.03(0.02)		-0.18(0.03)	0.84***	-0.11(0.05)	0.90**
Nontraditional student index	-0.12(0.03)	0.89 ***	0.04(0.03)		-0.14(0.05)	0.87***
<b>Academic integration</b>						
Took remedial courses in 2004	-0.06(0.07)		-0.11(0.11)		-0.55(0.27)	0.58**
Took distance courses in 2004	0.01(0.04)		-0.01(0.05)		0.07(0.09)	
Number of nontraditional credits earned	0.10(0.03)	1.10***	0.18(0.08)	1.20**	0.37(0.13)	1.44***
<b>Social integration</b>						
Talked with faculty	0.24(0.05)	1.27***	-0.09(0.08)		0.03(0.13)	
Met academic adviser	0.13(0.05)	1.14**	0.06(0.08)		0.32(0.13)	1.38**
Participated in study group	0.29(0.05)	1.33***	0.25(0.07)	1.29***	-0.11(0.12)	
Constant	-0.15(0.32)		-0.90(0.50)		-1.28(0.66)	
Observations	5,860		2,490		890	
Number of groups	530		360		110	

Standard errors in parentheses.

\*\*\*p<.01, \*\*p<.05, \*p<.10

Table 4-12

*Credential Completion in Broad-Access Four-Year, Community College, and FPCUs: Partially-Operationalized Conceptual Model*

	Broad-Access Four-Year Not-for-Profit		Community College		FPCU	
	b	Odds Ratio	b	Odds Ratio	b	Odds Ratio
<b><i>Institution-level Variables</i></b>						
Institutional structure						
Institution size	-0.01(0.05)		-0.13(0.07)	0.88*	-0.10(0.06)	0.90*
Reputation	0.95(0.17)	2.59***	0.07(0.33)		0.54(0.29)	1.72*
Aggregated level of nontraditional student index	-0.27(0.07)	0.76***	0.12(0.08)		-0.03(0.07)	
% of full-time faculty	-0.03(0.03)		-0.01(0.05)		0.13(0.05)	1.14***
Student service						
Expenditure on student services	0.08(0.03)	1.08***	-0.09(0.05)	0.91**	0.00(0.06)	
Variety of student services provided	-0.04(0.05)		0.15(0.08)	1.16*	-0.10(0.06)	0.90*
<b><i>Student-level Variables</i></b>						
Student Characteristics						
Female	0.29(0.06)	1.34***	-0.05(0.10)		0.29(0.14)	1.33**
Race (ref.=White)						
Black	-0.20(0.12)		-0.22(0.16)		-0.36(0.16)	0.70**
Latino/a	-0.13(0.13)		-0.06(0.18)		-0.02(0.17)	
Other races	-0.23(0.11)	0.79**	-0.05(0.19)		0.01(0.21)	
Income quartile	0.05(0.03)		0.14(0.05)	1.15 ***	0.19(0.06)	1.21***

Table 4-12 (Cont.)

*Credential Completion in Broad-Access Four-Year, Community College, and FPCUs: Partially-Operationalized Conceptual Model*

	Broad-Access Four-Year Not-for-Profit		Community College		FPCU	
	b	Odds Ratio	b	Odds Ratio	b	Odds Ratio
Amount of federal financial aid received in 2004	-0.03(0.01)	0.97**	-0.05(0.02)	0.96*	0.11(0.02)	1.12***
Educational aspiration	0.06(0.02)	1.06***	-0.17(0.03)	0.85***	-0.10(0.03)	0.90***
Nontraditional student index	-0.15(0.03)	0.86***	0.04(0.03)		-0.12(0.03)	0.89***
Academic integration						
Took remedial courses in 2004	-0.05(0.07)		-0.10(0.10)		-0.38(0.20)	0.69*
Took distance courses in 2004	0.00(0.04)		-0.01(0.05)		0.10(0.07)	
Number of nontraditional credits earned	0.10(0.03)	1.10***	0.18(0.08)	1.20**	0.29(0.08)	1.34***
Constant	-0.19(0.32)		-0.89(0.49)		-0.22(0.38)	
Observations	5,860		2,490		1,950	
Number of groups	530		360		240	

Standard errors in parentheses.

\*\*\*p<.01, \*\*p<.05, \*p<.10

## Chapter 5

### CONCLUSION, DISCUSSION, AND IMPLICATIONS

#### Summary

This study aimed to produce new research on for-profit higher education, a sector that has recorded remarkable growth in recent years but has not been sufficiently studied as an entity separate from traditional, not-for-profit higher education. Considering the many unanswered questions, concerns, and hopes related to for-profit higher education, it is high time that researchers look specifically at this sector. In particular, concerns about poor educational outcomes among for-profit college students drove this study's examination of multiple definitions of completion and identification of factors relating to student credential completion at for-profit higher education institutions. To better capture student credential completion in the FPCU sector, the following research questions were asked:

- 1) How does using alternative measures to define credential completion in FPCUs influence who is counted as a completer?
  - a. Measure 1: Who completes when credential completion is defined as whether one attained any type of credential at the institution of initial entry?
  - b. Measure 2: Who completes when credential completion is defined as whether one attained a credential that matched their initial credential goal at the institution of initial entry?

- c. Measure 3: Who completes when credential completion is defined as whether one attained a credential after leaving the FPCU of initial entry?
- 2) Using the conceptual framework as a guide, how are institutional structures, student services, student background characteristics, and student experiences associated with completion of any credential type by FPCU students?
    - a. How do the factors (stated above) differ among certificate- versus degree-seeking students at FPCUs?
    - b. How do the factors (stated above) differ among students enrolled in voc-tech programs versus academic programs at FPCUs?
    - c. How do the factors (stated above) differ between for-profit and not-for-profit college attendees?

Critical elements of traditional theories used to capture college student success (i.e., Tinto's institutional departure, Pascarella's general model for assessing change, and Bean and Metzner's nontraditional college student success) were adapted to produce the conceptual framework that guided analyses. Using the BPS0409 and IPEDS data sets, multilevel logistic regression analyses were conducted on aggregated and disaggregated (by credential types and programs) samples of for-profit college students. The same analytic model was also applied to comparable non-profit college students (broad access four-year and community college) to examine any differences between sectors.

In sum, this study attempted expanded analyses of for-profit college students' outcomes by exploring in greater depth one of the completion measures proposed here. Completion measure 1—attain any types of credentials—was selected because it offers

information on whether a for-profit sector contributes to widening college access and whether the sector leads students to attain credentials. Results from multiple sets of multilevel logistic regression provided empirical evidence that the application of traditional theories in higher education can contribute in part to a better understanding of for-profit college students. In particular, findings indicated that new ways of operationalizing academic and social integration promote understanding of different institutional norms in FPCUs. Study findings also hold policy implications for those concerned about completion issues by pointing to the ways in which extended measures of completion demonstrate different results.

### **Discussion and Conclusion**

This section revisits major findings and addresses topics for discussion and conclusions.

### **Strengths and Weaknesses of Applying Each Completion Measure in the FPCU**

#### **Context**

In answering research questions 1, this study proposed three ways of identifying completers at FPCUs. Overall, student success and ultimately completion can be conceived as: 1) a student's intention to seek a credential, 2) the specific type of credential sought, and 3) whether the credential was attained at the first for-profit institution attended or at a different one. The descriptive analysis showed that each proposed measure of completion produced varying rates of completion. The strengths and weaknesses of employing each measure were identified as follows.

The first measure took a student's desire—whether they sought credentials or not—at FPCUs into consideration. The descriptive analysis indicated that 52% of credential-seeking students left without attainment and 48% actually attained credentials, including a certificate, associate's, or bachelor's degree. The benefit of this measure is in providing a relaxed definition of completion, which may better reflect the nature of for-profit college students (and some students in other sectors). As noted earlier, for-profit college students are likely to be nontraditional and have a greater chance of dropping out before degree attainment for various reasons. These types of students spend many years taking credits to meet credential completion requirements and may be very close to meeting those requirements but fall short of completion (see Carey, 2010). For such students, tracking credit hours and awarding appropriate alternative credits would help their transition to further education or employment. That is, this completion measure demonstrated ways to reduce the rate of 'no credential attainment' (52% of the for-profit college student sample in this study). Given that the advantage of giving access to and experiences in higher education has been well documented, it is essential to focus on who leaves college without credentials versus those who attain credentials, especially for nontraditional students. Furthermore, this measure identified how many non-credential seekers actually moved toward educational credentials six years after entrance. A major shortcoming of this measure was its aggregation of all credentials, making it impossible to know the effect of seeking a specific degree or certificate. Also, its singular focus on students' first institution did not capture students whose continued efforts might lead to success at other institutions.

To address the problem of aggregation in the first measure, the second measure took specific credential types into consideration and identified different rates of completion by degree types. The descriptive analysis indicated that 55% of certificate seekers, 26% of associate's degree seekers, and 22% of bachelor's degree seekers actually met their credential goals. This finding was consistent with those from previous studies (Deming et al., 2011; Wilms & Hansell, 1982), showing that for-profit colleges are relatively successful in their certificate program offerings. Lower completion rates among associate's and bachelor's degree seekers point to a need to pay more attention to these students so that they attain postsecondary degrees, given that 67% of associate's degree seekers and 72% of bachelor's degree seekers ended up without any credential attainment (Table 4-5). This finding highlights both a need to increase academic support for degree seekers and to increase scholarly interest in those who drop out of degree programs in FPCUs. Given that degree programs in FPCUs tend to cost a lot more than comparable degree programs in public institutions (*Harkin Report*, 2012), these higher drop-out rates can be problematic as these students are likely to find themselves in difficult situations when it is time to repay the debt or find a job without educational credentials. As with measure 1, the limitation of this measure was its restriction of the initial institution and not counting whether a student transferred or re-enrolled after leaving.

The third measure looked at credential completion longitudinally and filled the gaps in measures 1 and 2 by including completion status at an institution other than the first attended for-profit college. The subsequent institutions included both for-profit

colleges and nontraditional colleges. As described in Table 4-6, some students identified as non-completers in measure 2 became completers in measure 3 after tracking their enrollment after leaving the original institution. This measure offered a more realistic perspective on those students who may not remain at the same college when pursuing education credentials. This reflects an emerging trend of multiple institution enrollments and strengthens the rationale for viewing student success as a longitudinal process (Bahr, 2012). The limitation of this measure was in not allowing researchers to examine clearly those influences that lead these students to change institutions and the possible associations between institutional characteristics and completion.

All in all, these extended ways of tracking for-profit college degree completion may help minimize the gaps created using traditional measures of completion and provide broader understandings of student success that may be more appropriately applied to the nontraditional student population in FPCUs and perhaps in higher education more broadly.

### **Factors Associated with Completion of Overall FPCU Students**

In answering research question 2, two sets of multilevel logistic regression analyses were conducted. The first set of analyses (Table 4-7, fully-operationalized model) examined all elements in a conceptual framework and the second set (Table 4-8, partially-operationalized model) excluded social integration from the analysis due to data limitations. The findings from these analyses provided an understanding of how overall for-profit college students' completion was associated with each element of the conceptual framework.

**Stronger institutional reputation increases a student's likelihood of credential completion.** The existing literature indicated that institutional reputation is a vague term but is seemingly treated as institution ranking that reflects various measures, including the level of academic preparation (e.g., SAT score) of students and their outcomes (e.g., graduation rate). Institutional reputation in such measures has been regarded as an important factor affecting students' college choice process (Higher Education Research Institute, 2007; Kinzie et al., 2004) and mainly focuses on not-for-profit traditional college population.

The paucity of research on institutional reputation in for-profit higher education is due to the fact that the measure of institution ranking system is less applicable to the FPCUs given that most students can enroll without standardized test scores. Thus, this study did not use the similar manner, the prevalent use of rankings, to define institutional reputation for FPCU students and others who attended community colleges or less selective four-year institutions. Rather, institutional reputation in this study was measured based on a self-reported item on whether a student chose the institution for its reputation. The individual student's response was aggregated to an institution level—in other words, to what extent does a FPCU enroll students who considered its reputation in their enrollment decision. The finding indicated that institutional reputation, which is based on a student's subjective evaluation and perception, appeared to increase the odds of completion at FPCUs. Considering this item's nature, a student exposed to significant others such as parents, siblings, or friends who had positive experiences at a FPCU might decide to attend the same institution and were more likely to complete the program at that

institution. The higher likelihood of completion may be due in part to good educational programs offered at the FPCU or perhaps to the student's close relationship with others who succeeded at FPCUs, who could then provide better information on how to complete the program. Research evidence can partly support this presumption in that social capital attained from family, friends, or other social networks is critical to underrepresented students' college choice and persistence (Kinzie et al., 2004; Perez & McDonough, 2008). This finding warrants further investigation of how students navigate a FPCU's reputation and the criteria used by them in evaluating an institution with a higher reputation.

**Attendance of less than two-year FPCUs is associated with a better chance of completion than four- and two-year FPCU attendance.** The results of the partially-operationalized model suggested that the level of FPCUs also had a significant association with completion. Attending four- and two-year FPCUs lowered the likelihood of completion by 55% and 45% compared to attendance of a less than two-year FPCU (Table 4-8). Thus, this finding confirmed better student outcomes at less than two-year FPCUs after considering differences in student background and experiences between institutions. This is supported by a recent report (Knapp et al., 2011) which offered details on the higher graduation rates of students in less than two-year FPCUs (67%), compared to students attending four-year (35%) and two-year FPCUs (61%).

The better student outcome in less than -two-year FPCUs than other FPCUs supports the argument that mixed levels of outcomes exist within the for-profit higher education sector. As highlighted in the literature, FPCUs have served underrepresented students better than not-for-profit higher education in some ways (Kinser, 2006a; Wilms,

1973, 1974). Kinser (2006a) noted that small, family-owned, localized for-profit colleges historically tended to provide quality vocational training while many cornering issues such as low completion rates were evident in contemporary for-profit institutions characterized by large corporate ownership. This finding supports prior evidence that four-year FPCUs may not offer students' significant advantages in credential attainment.

More importantly, this finding indicates that attending a less than two-year college may be a better choice, especially for certificate seekers, since there is a greater likelihood of completing certificates at those institutions after adjusting for individual students' background and experiences. That is, students are more likely to complete a short-term program (the typical certificate program is no more than two years in length) at less than two-year FPCUs than four-year FPCUs. The extant literature showed that FPCUs are better on short-term program completion than community colleges, without disaggregating for-profit college types (Deming et al., 2011). Findings from this study advance Deming and colleagues (2011) by adding the fact that the likelihood of completing a short-term program was not the same across all levels of for-profit colleges. Additional discussion of the factors associated with certificate versus degree completion is offered in the next section.

**Student backgrounds influence completion.** Both the fully- and partially-operationalized analyses provided similar results regarding students' individual background variables (except for gender). After adjusting institution-level variables and student experience variables, race, the level of nontraditional student indicator, educational aspiration, and financial status were significantly associated with the odds of

completion at FPCUs. When examining race, Black students were found to be less likely to complete than White students. Although Black students disproportionately enrolled in the for-profit sector and had a greater share of bachelor's degree attainment (Iloh & Toldson, 2013), this study finding pointed to a continuing completion gap between White and Black students at FPCUs.

Both full- and partial-model analytic results in this study indicated that a student with more types of nontraditional conditions was less likely to complete at FPCUs. In other words, disparities in credential completion depended on nontraditional characteristics between students at the same FPCU. Thus, FPCUs may need to pay more attention to students with higher risk factors so that they complete their credentials. Thus far, research findings have indicated that for-profit colleges enroll many nontraditional students (Chung, 2008, 2013), but there is limited evidence on how nontraditional characteristics influence outcomes. Without research evidence on nontraditional students' outcomes at FPCUs, it is difficult to claim that FPCUs better serve racial minorities, low-income students, and other students who have difficulties with college access and success at not-for-profit higher education institutions.

Since research on student characteristics and outcomes in not-for-profit college sectors is well established, deeper discussions of nontraditional characteristics, educational aspirations, and financial status are offered in the next sections, along with a comparison of results across the three sectors.

### **Factors Associated with Completion of Certificate- versus Degree-Seeker**

In addition to examining overall for-profit students' completion, disaggregated analyses of FPCU students were conducted by credential types (research question 2a). The fact that for-profit colleges offer a wider range of credentials than other higher education sectors (Kinser, 2006a) necessitated separate analyses by credential types. Given that certificate programs especially emphasize the enhancement of postsecondary credentials for the disadvantaged population, certificate seekers were examined separately from degree seekers (associate's and bachelor's levels).

**A likelihood of completing a certificate is higher at less than two-year FPCUs than four-year FPCUs.** FPCU level had a significant influence on certificate completion but not on associate's or bachelor's degree completion (Table 4-9). Attending four-year FPCUs decreased the odds of completing a certificate by 84% while no statistically significant association was found in the degree-seeking student sample. The results disaggregated by credential types indicated no advantage in attending and completing a degree at four-year FPCUs while there was a better chance of completing a certificate at less than two-year FPCUs than four-year FPCUs.

This study's finding that students have a better chance of certificate attainment at less than two-year FPCUs is important because it indicates that not all sectors of for-profit institutions have better certificate programs. Research has shown that the for-profit higher education sector plays an important role in certificate attainment—FPCUs conferred 44% of certificates in 2011 (Kena et al., 2014). While percent of certificates conferred from public institutions decreased from 56% to 53% between 2000 and 2011,

for-profit colleges' share of certificate conferrals increased from 39% to 44% in the same period (Kena et al., 2014). Although subpar rates of bachelor's degree completion continue to be cause for concern, research findings are showing that the for-profit sector is doing a relatively better job with short-term programs such as certificate programs (Deming et al., 2011). This study's finding is significant because it shows disparities between institution types within the for-profit higher education sector—an area to which existing studies have not paid enough attention.

Greater attention should also be paid to FPCUs' institutional characteristics and to characterizing the sector. When evaluating student degree completion in not-for-profit higher education, the typical number of requirements for completion is often used to track first-time full-time students to ascertain whether they are completing degree programs within a certain timeframe. This study's finding implies that a disaggregated look may be necessary in examining FPCU students' completion because FPCUs are more complex than previously thought. For example, student enrollment patterns are mixed (full-time and part-time) and first-time college students are not the majority in FPCUs. Further, less than two-year FPCUs exclusively offer short-term certificate programs that tend to attract full-time students only (Institute for Higher Education Policy, 2012). This means that the same levels of credential programs are provided with very different formats across types of for-profit colleges. This finding sheds light on the potential benefits of exploring student outcomes by credential types in the for-profit higher education sector.

**Women are more likely to complete a certificate than men.** Even though women composed a larger population in the for-profit sector than men (63% of total

FPCU enrollment), level of success based on gender did not look much different. With regard to the results for student-level variables, women were more likely to complete certificate programs, while no statistical significance was found in degree completion (Table 4-9). The recent trend shows women's higher achievement at the postsecondary level. In 2012, 56% of men and 61% of women completed a bachelor's degree at four-year institutions (Kena et al., 2013). While women were more likely to attain bachelor's degrees than men in four-year public (60% vs. 54%) or private not-for-profit colleges (68% vs. 63%), women in for-profit colleges were less likely to complete bachelor's degree than men (28% vs. 35%) (Kena et al., 2014). Yet women outnumbered men in certificate attainment in the for-profit college sector. In 2008, women were awarded 72% of the certificates conferred from the for-profit sector, while men only received 28% of the certificates from that sector. Considering that gender differences in the share of certificate attainment at community colleges were very similar (47% for men and 53% for women), for-profit colleges seem to be favorable places for women who seek certificates (Bosworth, 2010). This finding indicates that women have a better chance of completing certificates at FPCUs, controlling for their individual backgrounds and institutional characteristics. However, for-profit college may not be the best choice for women who seek bachelor's degrees.

### **Factors Associated with Completion of Voc-tech versus Academic Program**

#### **Enrollment**

Previous studies on for-profit college students have neglected the variability in programs provided at FPCUs (see Apling, 1993; Kinser, 2006a). The necessity of looking

at for-profit college students by programs of study has been also alluded to in the report from the U.S. Government Accountability Office (2011b), which identified differing outcomes (i.e., exam passage rates) by fields. This study contributed to filling the gaps by finding that factors which influence completion vary by programs of study (research question 2b).

**Attending an institution with a greater proportion of full-time faculty increases the likelihood of completing a voc-tech program.** Percent of full-time faculty in a FPCU was significantly associated with greater likelihood of completing certificate (Table 4-9) and voc-tech program (Table 4-10). Percent of full-time faculty also was positively associated with credential completion in the partially-operationalized model, which excludes social integration variables including adviser, faculty, and peers (Table 4-8). This study's findings, like those from prior studies, offered mixed results across different analysis models. In traditional not-for-profit colleges where tenure-track faculty hiring practices dominate the culture, full-time faculty have a positive influence on student outcomes, such as retention or graduation rates (Jaeger & Eagan, 2011; Jacoby, 2006). However, Figlio, Schapiro, and Soter (2013) argued that students can learn more from adjunct faculty than from tenure-track full-time faculty because adjunct faculty are mainly responsible for student teaching. Their finding was supported by Wildavsky (2013) who pointed out that the tenure-track culture prevalent in not-for-profit colleges may lead faculty members to allocate their time and energy to various responsibilities, including research and administration. Looking at the influence of part-time faculty on community college students, part-time (adjunct) faculty tend to spend less time teaching

and advising; one of the reasons may be that they do not receive the same level of support from the institutions (Center for Community College Student Engagement, 2014). Even though part-time faculty teach more than half of the classes at all community colleges and that these classes are mainly remedial, the lack of institutional support prevents them from in-depth involvement in student teaching and advising (Center for Community College Student Engagement, 2014). Given that part-time faculty tend to teach many less-prepared students, institutional strategies such as continued financial support, work space, and decision-making authority can be key to enhancing student success (Center for Community College Student Engagement, 2014). In other words, the negative influence of part-time faculty on community college student outcomes may have indirect impacts on limited institutional support for part-time faculty, such as limited work space, lack of authority to participate in department decision-making, or lack of support for effective teaching.. This point is well aligned with the finding from Yu, Campbell, and Mendoza (2013), whose study examined the association between part-time faculty and community college completion rates. Yu, Campbell, and Mendoza (2013) found that percent of part-time faculty was not significantly associated with lower completion rates (both certificate and associate's level degree) for community college students after adjusting institutional characteristics. Most significantly associated with completion were community college's institutional characteristics, such as institutional size and location. Since the current study also found insignificant influences of percent of full-time faculty on community college student completion rates, while community colleges' institutional size influenced completion, this finding further confirms Yu, Campbell, and Mendoza (2013).

Research evidence of a positive association between percent of full-time faculty and student credential completion at FPCUs is limited. Rather, the literature hints that it may be necessary to consider the different nature of FPCUs' faculty hiring practices and institutional expectations of faculty at not-for-profit institutions. Whereas traditional not-for-profit colleges consider faculty members' disciplinary background such as field of highest degree earned, FPCUs consider faculty members' work experience and professional fields to be important in the hiring process. Thus, FPCUs hire practitioners who possess field experience and those who are well aware of real-world problems (Lechuga, 2008). This significant difference between FPCUs and not-for-profits might influence voc-tech program teaching and learning because these programs typically require real-world experience to help students acquire job-relevant skills. Importantly, FPCUs' emphasis on connecting students to local employers may be a positive influence on voc-tech program completion. As shown in the report by the Center for Community College Student Engagement (2014), institutional support and value may be associated with the extent to which full-time faculty influence student outcomes. Thus, FPCUs' impacts on voc-tech programs may reflect greater support for full-time faculty, which may indirectly increase completion of voc-tech programs at FPCUs. Yet this finding needs to be interpreted with caution given that this study did not include a measure to understand the extent to which students were exposed to part-time faculty teaching. This study's findings provide initial evidence of the potential importance of full-time faculty on voc-tech in higher education but still points to the need for further study on the exact

role of full-time versus part-time faculty across institutional types (community colleges, FPCUs, four-year not-for-profits) and types of programs (academic versus vocational).

**Institutional expenditures on student services increase the probability of completing voc-tech credentials and are not significant in completing academic credentials.** In addition, one finding about students enrolled in voc-tech programs points to an important area of further research—FPCUs’ expenditures on student services. In a series of for-profit college sample analyses, the positive association between student service expenditures and completion was only found when the analysis was restricted to FPCU students in voc-tech programs. This finding aligned with that in Chaney (2010), who showed that institutional expenditures on student services contribute to increasing completion rates and that student services have a positive influence on the completion and retention of students in both four- and two-year public institutions (Chaney, 2010). Webber and Ehrenberg (2010) found that student service expenditures have positive influences on graduation rates and persistence of four-year not-for-profit college students. They also found that the effect of student service expenditures was particularly greater for institutions with underrepresented students (i.e., low income and lower entrance test scores). Chaney (2010) and Webber and Ehrenberg (2010) also supported one aspect of this study’s finding—a positive influence of expenditures on student services at broad access four-year not-for-profit colleges (see Tables 4-11 and 4-12). Yet, other studies have provided different results. Gansemer-Topf and Schuh (2006) found no significant influence of expenditures on student services and completion at small private universities

(all not-for-profit). Ryan (2004) also found that student services expenditures had an insignificant influence on degree attainment at four-year not-for-profit colleges.

No empirical study has examined the relationship of FPCUs' expenditures on student services and student outcomes. This study's finding—that institutional expenditures on student services only contributed to completion of voc-tech programs—implies that for-profit colleges' resource allocation for student services may be oriented toward students who are vocationally oriented rather than students in academic programs. In addition, findings from Webber and Ehrenberg (2010) may aid the interpretation of this finding—Webber and Ehrenberg discovered that student service expenditures had a stronger influence on underrepresented students' persistence. Given that students in voc-tech programs are more likely to be from low-income families and underprepared for college, this study showed that increased spending on student services may raise their completion rates at FPCUs.

For-profit colleges emphasize the distinctiveness of their student services, but their excessive allocation of resources on marketing and recruiting over continued support for enrolled students is problematic (*Harkin Report, 2012*). The *Harkin Report* (2012) revealed that corporate-owned for-profit colleges spent a substantial amount (23% of all revenue) on marketing and recruiting. Unfortunately, the student service expenditure variable in IPEDS does not provide sub-categories of student services—a limitation in this study. Rather, the variable includes a wide range of categories, including “admissions, registrar activities, and activities whose primary purpose is to contribute to students' emotional and physical well-being and to their intellectual, cultural, and social

development outside the context of the formal instructional program” (U.S. Department of Education, n.d.). Thus, further studies need to explore better data sources on student services at FPCUs and examine the ways in which FPCUs’ student service practices are associated with student outcomes.

### **Comparing Factors Associated with Completion across For-Profit, Community, and Broad Access Four-Year Colleges**

This study applied the same conceptual framework from for-profit analyses to not-for-profit college sectors to evaluate differences between the sectors (research question 2c). Through this comparison, three points emerged relating to whether FPCUs serve their students well in comparison to not-for-profit institutions (Table 4-11 fully-operationalized model and Table 4-12 for partially-operationalized model). These require further discussion.

**There is little evidence that FPCUs are better places for nontraditional students.** Most apparently, nontraditional student indicators seem to have different patterns of influence across the three sectors: broad access four-year, community, and for-profit college. When taking all other variables into account, both the institution-level and student-level nontraditional student indicators were negatively associated with credential completion by broad access four-year college students. This result indicated that even when highly competitive four-year colleges were taken out of the analysis, four-year not-for-profit colleges were still less conducive to nontraditional students’ completion. An examination of FPCUs and community college students showed that for FPCU students, only the individual-level factor was negatively associated with credential

completion. For-profit college student analyses consistently showed that nontraditional characteristics lowered the likelihood of completion at the individual level but not at the institution level. For community college students, neither the institution level nor student level of nontraditional student indicators were significantly related to completion. This means that nontraditional student characteristics do not appear to harm the outcome measures for community college students, at least. This comparison emphasized the needs of for-profit colleges (and broad access four-year not-for-profit) in order to pay more attention to nontraditional students who are often the major target of their marketing and recruitment efforts. This result merits attention given that community college students' completion rates were not found to be associated with nontraditional indicators.

**Educational aspiration lowers completion rates for FPCU and community college students.** A student's educational aspiration has been regarded as an important asset that drives persistence through postsecondary education. While the results for students in broad access four-year colleges confirmed this belief, the opposite results arose for for-profit college students and also for community college students. That is, both community college and for-profit college students were less likely to complete when their expectations were higher. Some studies have provided similar findings and suggested that a student might have limited knowledge of what he/she actually needs to complete college-level courses. Based on analyses using California Community Colleges Chancellor's Office data, Driscoll (2007) found that educational aspirations decreased when students enrolled in community colleges, leading him to argue that students may

not fully understand the time and effort required to meet their goals, or they may be overestimating their level of college readiness, resulting in feeling discouraged and lower attainment. Ender and Wilkie (2000) also noted that at-risk students are likely to have unrealistic expectations for their career or grade. This study advanced this finding in showing that the negative association between a student's educational aspiration and completion was still negative even after controlling students' pre-college characteristics, institutional experiences, and institutional characteristics.

**Receiving financial aid decreases the likelihood of credential completion for students in not-for-profit sector colleges while increasing FPCU students' likelihood of completion.** Financial support is a big concern for many college students but appears more relevant to FPCU students from low-income families (Bean & Metzner, 1985; Goldrick-Rab, Harris, & Trostel, 2009). This study supported the positive influence of receiving federal financial aid on FPCU students' completion when other variables in the model were controlled. That is, among students from families with the same reported income, securing financial aid to attend a FPCU helped students complete programs and attain credentials.

While many studies on financial aid have focused on four-year not-for-profit colleges and found a positive influence of financial aid on a student's decision to attend college, there has been relatively less consensus on the effect of financial aid on degree attainment (Dowd, 2004). Furthermore, studies on a financial aid effect on FPCU students' credential attainment are extremely rare. In this sense, this study's finding—a

positive effect of financial aid on FPCU students' credential completion—was initial evidence that warrants further research.

This study alluded to the possibility that the actual amount of financial aid received may influence completion likelihood since the financial aid variable in the analysis model reflects the actual amount. One possible interpretation of this result is that for-profit college sectors actively review a student's financial aid application in order to maximize a student's aid. The fact that FPCUs received 25% of all federal financial aid dollars while enrolling 11% of all students in postsecondary education institutions (Aud et al., 2011; *Harkin Report*, 2012) demonstrate their efforts to maximize financial aid for students. The FPCUs' emphasis on helping students obtain the maximum amount of financial aid supports previous studies which have shown that underrepresented students are less likely to receive financial aid due to limited access to relevant information and lack of knowledge on available financial resources, both of which prevent them from attending college (Frick Cardelle, 2013; Goldrick-Rab et al., 2009).

In terms of financial aid assistance, for-profit colleges have emphasized the need to provide personal advice to students unfamiliar with the process of securing financial aid (Kinser, 2006a; Iloh & Tierney, 2013). Bettinger, Long, Oreopoulo and Sanbonmatsu (2009) found that assistance in applying for financial aid promoted the numbers of FAFSA applications. In particular, financial aid counseling could be more important for low-income students who are more likely to rely on counselors than are their higher-income peers (Terenzini, Cabrera, & Bernal, 2001). When the financial aid process included one-on-one support, it appeared to be more effective than conferences or group

workshops (Kennedy, Olivérez, & Tierney, 2007). All together, the positive effect of financial aid amount on credential completion at FPCUs may be associated with personalized financial counseling which enables students to receive a greater amount of aid. This finding warrants more studies on whether or to what extent financial aid counselors at FPCUs serve as a critical asset for students in not only helping them access postsecondary education but also promoting student credential attainment.

Looking at students in community colleges or broad access four-year colleges, this study found that amount of financial aid decreased the likelihood of completing credentials at community colleges by 5% and at four-year colleges by 3% (fully-operationalized model; see Table 4-11). The opposite result for the for-profit and not-for-profit sectors may be interpreted based on three points. First, there may be an association with varying completion rates for the FAFSA, which is the initial process in making a financial aid application. For-profit college students appear to be more likely to complete FAFSA than community college and four-year college students (Baum & Payea, 2013; Davidson, 2013; Kantrowitz, 2009). In 2007, 96% of FPCU students completed the FAFSA application whereas only 52% of public four-year and 44% of community college students actually completed it (Kantrowitz, 2009). Considering that both community colleges and FPCUs tend to enroll lower-income students, the discrepancy in FAFSA application rates between the two sectors means that many low-income community college students do not secure financial aid although they are eligible to receive it (Frick Cardelle, 2013).

The financial aid variable in this study included both federal grant and loans, which may have different effects on student outcomes. Studies on not-for-profit colleges have found that loans have positive effects on student persistence—those who take loans can spend more time on college activities and work fewer hours for pay (Dowd, 2004). Dowd (2004) found that students in four-year not-for-profit colleges who take out loans in the first year were more likely to persist, while receiving federal grants had insignificant associations with persistence. FPCU students were more likely to take out loans (21% took subsidized federal loans), while community college students tended to be underrepresented among loan borrowers (only 15% took subsidized federal loans in 2012) (Baum & Payea, 2013). Therefore, there is a possible disparity between the percentage of students who took grants versus loans, yet their decision also may be related to other factors (e.g., self-selection, family contribution) not included in this study's analysis. Though the financial aid effect on credential attainment was not a primary interest of this study, this finding pointed to compelling needs for in-depth study of different types of aid sources and their association with student outcomes across the for-profit and not-for-profit higher education sectors.

In sum, findings of this study provided initial evidence of new areas in for-profit college research and also confirmed some existing literature. The complex nature of for-profit college students' background, experience, and institutional environment and the paucity of research evidence on these areas required speculation in the interpretation of some findings. Still, this study significantly advances research on for-profit higher education and provides evidence that new theory for this sector is needed.

### **Application of Conceptual Model to FPCU Students**

This study borrowed key elements from three theories on student success, proposed a combined conceptual framework, and tested it to examine for-profit college students' completion. As discussed in a previous section, several findings confirmed that the combined theoretical framework can contribute to advancing empirical research on for-profit college students. This section highlights how each theoretical lens provides implications for understanding FPCU students' credential completion process.

**Pascarella's General Model for Assessing Change.** This study adopted Pascarella's model (1985) to propose a conceptual framework combined with Tinto (1973) and Bean and Metzner (1985). Among five sets of elements addressing student development in Pascarella (1985), this study selected the first (student precollege characteristics) and the second set (institution's structural and organizational characteristics) because they were assumed to be applicable in explaining FPCU students' outcomes. By testing the conceptual model, this study provided findings on how FPCUs' institutional structure and student characteristics are associated with completion. Institutional structure variables included the level, reputation, aggregated level of nontraditional student enrollment, and percent of full-time faculty. Across various sets of multilevel logistic regression analyses, this study demonstrated that Pascarella's theory may be applicable to FPCU students even though it was originally designed for a traditional college environment. Application of Pascarella (1985) allowed us to see FPCU students' completion as being influenced by an institution's general environment, including level, reputation, and percent of full-time faculty.

In terms of student precollege characteristics, this study confirmed that race, gender, and economic and educational background had significant associations with completion. As discussed above, lower completion levels associated with Black, low-income, and nontraditional students in FPCUs warrants greater efforts to advance theories that explain student development among the disadvantaged.

**Different norms for academic integration.** This study proposed new variables to operationalize the traditional concepts of academic and social integration for for-profit college students. With regard to academic integration, remedial course-taking, distance education-taking, and nontraditional credits were tested to see how they were associated with completion. The traditional literature has not considered these variables in operationalizing academic integration because they are not considered to be the institutional norms of academic integrity in traditional four-year colleges. Rather, they are regarded as less-dominant or less-prestigious means of seeking credentials in traditional colleges. Yet, this study used these variables because they are commonly accepted and practiced at for-profit colleges and thus are presumed to be student behaviors associated with institutional values and mission.

First, this study found that taking distance education courses in the first year only increased voc-tech program students' likelihood of completion. This finding suggested that distance education may work positively for students in voc-tech programs but not for overall for-profit college students. Distance education is widely provided at for-profit colleges and has contributed to the rapid growth of the sector (Kinser, 2006a). Distance education attracts many students, especially those who are not able to physically attend

college. While distance education options benefit those students by providing an opportunity to learn and thus are a good way to democratize higher education, research findings on outcomes are mixed. In a study on not-for-profit higher education, researchers found that distance education courses do not necessarily increase student completion or persistence to the same degree that face-to-face classes do (Moore, Bartkovich, Fetzner, & Ison, 2003). On the other hand, some studies have reported that distance education can help students persist if institutions understand student needs and provide appropriate supports (Rovai, 2003). Mixed findings from the previous studies make it hard to ascertain whether distance education itself contributes to promoting student outcomes. Rather, it seems important to consider student characteristics, subject areas, and other supportive strategies to discuss how distance education can serve underrepresented students across different institutional types. Looking at community college students in distance education class, Jaggars and Xu (2013) found that student outcome is poor in distance course than face-to-face class because institutional support for distance course does not keep pace with expansion of distance education offering. In addition, the level of student outcome even differs across areas of study as Xu and Jaggars (2013) found that community college students in certain fields of study such as computer science appeared to have better student outcomes than students in social sciences partly because of students' level of academic preparedness was different. Additionally, Xu and Jaggars (2013) explained that student interaction with instructor was influential for student success in distance course and also peer influence was evident. In studying student persistence in online classes at DeVry University, one of the large

national chain FPCUs, researchers found that student outcome in online class was not affected by class size whereas the smaller size of face-to-face class is known to be better for enhancing student outcomes (e.g., grade, persistence) in not-for-profit college setting (Jaschik, 2015). Taking prior studies on different institutional settings into account, distance education needs to be considered one of the ways for underrepresented students to meet academic standards of the institution. Further, FPCUs' long held practice as a distance education provider using centralized curriculum system needs to be better understood as instructional technology can be an important element to better support students in distance education (Community College Research Center, 2013; Kinser, 2006a). More research on distance education disaggregated by fields of study, institutional types, or class environment will help building academic integration model for disadvantaged students.

Second, this study found that taking a remedial class in the first year reduced the completion rate for for-profit college students in general. The inclusion of remedial education in operationalizing academic integration at FPCUs is based on the assumption of a possible link between underprepared students' success and fulfilment of the remedial education mission. In fact, many discussions have focused on remedial education at community college and for-profit schools—which underrepresented students are likely to attend (Goldrick-Rab, 2007; Levin & Calcagno, 2007; Schwartz & Jenkins, 2007). Although remedial education can be an effective way to enhance student outcomes (Roksa & Calcagno, 2010), existing studies of not-for-profit colleges have pointed to many students' need for remedial education but found no significant positive influence of

remedial education itself. According to the Complete College America (2011), 23% of certificate-seekers without remedial courses graduated within 1.5 years; only 13% of certificate-seeking students with remedial courses graduated. Although this report only included public college students and did not examine the net effect of remedial courses on graduation rates, the finding is well aligned with this study's finding. Another way to interpret the negative influence of remedial education is selection bias. Students who needed to take remedial education are assumed to be less prepared for college-level work than their peers who did not take remedial courses.

Third, nontraditional credit is an example of higher education's adoption of new credentialing systems to ensure nontraditional student success. This practice appears to be effective in attracting more students who face barriers and in helping them complete degree programs (see Complete College America, 2011); this study found that number of nontraditional credits had a positive association with completion at for-profit colleges. Moreover, this positive influence has been found in not-for-profit sectors including broad access four-year and community colleges. This result indicates that expanding the credentialing system to admit credits based on students' pre-college experiences, special exams, or other related work experiences can prove very beneficial.

In sum, all three academic integration variables in this study attempted to reflect different ways of operationalizing the concept to more appropriately reflect the student experience at FPCUs. As Hagedorn and colleagues (2007) pointed out, more research on what academic integration really means for diverse student types is warranted.

**Social integration.** This study provided a baseline discussion of for-profit college students' socialization within an institution. The extant literature indicates that for-profit higher education shapes students' academic and social experiences in different ways than traditional non-profit colleges do (Bailey et al., 2001; Tierney & Hentschke, 2007). However, the ways in which and the extent to which they differ are unknown. In borrowing the academic and social integration concept from Tinto (1975, 1993), this study tested the influence of the most widely tested concept in higher education research, although not in the for-profit sector. Based on multilevel logistic regression analyses, this study showed that interaction with adviser was the only significant social integration variable positively associated with credential completion at FPCUs. That is, frequent meetings with the adviser increased the odds of completion, while talking with faculty or participating in study groups were not significantly associated with completion. The finding on the role of social integration partially confirms previous studies of community college student persistence and social engagement (Deil-Amen, 2011; Deil-Amen & Rosenbaum, 2003; Rosenbaum et al., 2006). Previous studies showed that social contact in- and outside of class contribute to persistence among community college students. Deil-Amen (2011) noted that the social relationship with faculty, counselors, advisers, and peers can add social capital for community or for-profit college students, enabling them to succeed in college and meet their career or academic goals. In particular, Deil-Amen (2011) pointed to the critical importance of procedural assistance such as proactive guidance and explicit information to "show them (students) the way" (p. 78; parentheses added). Other studies on the social integration of underserved students such as

commuting students also emphasized that institutional agents—faculty, staff, and administrator—should understand those students’ distinctive needs and play a vital role in accommodating them (Braxton et al., 2004). These previous findings suggest that orienting FPCUs’ proactive advising practice toward the nontraditional student population and the primary focus on student advising for matriculation, persistence, and completion (Kinser, 2006a) may help students find the way to complete their programs. That is, after controlling individual and institutional characteristics, advisers at FPCUs help student complete programs—this finding may be attributed to the fact that FPCUs are likely to provide procedural assistance as described in Kinser (2006a). While this study’s finding highlighted the important roles of advisers for FPCU students’ completion and was well aligned with those from previous studies in emphasizing the importance of social ties for nontraditional college students (Deil-Amen, 2011; Deil-Amen & Rosenbaum, 2003; Karp, Hughes, & O’Gara, 2008; Rosenbaum et al., 2006), studies identifying the possible different roles of each agent (adviser, faculty, and peers) are still needed. Moreover, more speculation on the FPCUs’ advising practice is needed to help confirm this study’s finding.

**Bean and Metzner’s model for nontraditional students.** In proposing a conceptual model for nontraditional student attrition, Bean and Metzner (1985) emphasized the importance of student background and environmental support and noted that stronger factors influence nontraditional student persistence. As a proxy for such environmental support, this study included student service variables (institutional expenditures on student service and diversity of student services available at the

institution). Yet this study did not find sufficient evidence of these variables' association with FPCU student completion. Institutional expenditures were only significant for higher odds of completion in voc-tech programs at FPCUs. When the analysis was conducted for community college students, a variety of student services (e.g., academic/career counseling, job placement service) variables were associated with higher likelihood of completion.

Insufficient evidence of the student services component and for-profit student credential completion in this study may suggest a need for further study and more appropriate student-level measures for this sector. As previously stated, one of this study's limitations was that while institutions collect data on student experiences in institutional environments, these data do not indicate the extent to which such services are actually utilized by students or how students are informed or even informed at all about service availability.

This study also implicitly reflected significant associations between student characteristics and completion, as Bean and Metzner (1985) emphasized. Many variables described as critical components in Bean and Metzner (1985) were also included in the student characteristic variables selected for this study. For example, this study used a nontraditional student status variable as a proxy to reflect family responsibility, employment, and enrollment status (Bean & Metzner 1985). In addition, finance and educational goals are also included in both Bean and Metzner's model (1985) and this study. This study supported the proposed model of Bean and Metzner (1985) and

confirmed that the factors they suggested are still important and applicable in seeking a better understanding of FPCU students.

### **Implications for Research**

This study provided various measures of credential completion and applied them to for-profit college students. There has been little focus on for-profit college students in the higher education literature. Moreover, nationally representative large data sets have rarely been used in building and testing predictive models of credential completion for proprietary college students. Hence, this study filled the gaps in the higher education literature as follows.

### **Various Measures of Completion**

This study defined credential completion using three different measures. Each measure underwent descriptive analysis using the BPS0409 which represents first-time college students beginning in 2004. Each measure had strengths and limitations in fully accounting for the complex nature of college enrollment patterns. Moreover, exploring different ways to measure success offers insight into how we can make up the gaps in the traditional ways of measuring success.

There were implications for broadening understanding of student completion, as each of the three measures focused on individualized goals and pathways. This approach is particularly well suited for studying nontraditional postsecondary education. Considering individual students' credential goals and the possibility of attending multiple institutions is rarely incorporated into traditional measures of student success. To this

point, scholarly discussion of college student success has focused on four-year, non-profit colleges, which have been the representative sector of 'traditional' higher education. In fact, much research has been conducted on baccalaureate degree attainment, traditional college-age student development, and pathways between non-profit sectors of postsecondary education (e.g., transfer between community colleges and four-year colleges). As mentioned earlier, U.S. higher education is in the midst of significant changes due to advances in technology, changes in student needs, and shifting paradigms (Tierney & Hentschke, 2007). Academic research should keep pace with the reality of these changes; this study contributed to expanding the examination of credential completion to better reflect changes in U.S. higher education.

### **Advancing a Conceptual Model of For-Profit College Student Completion**

In addition to various ways of measuring credential completion, this study proposed a conceptual framework that combined existing theories on student success. Combining critical elements of three renowned theories enabled this study to test them and add empirical evidence to studies of underrepresented areas in higher education research. This combined framework also provided insight into how weaknesses in each theory can be adjusted to connect with emerging trends in higher education.

In particular, adopting traditional theories to study for-profit college students revealed that applying academic and social integration to these nontraditional types of students is not a straightforward process. The application of Tinto (1973, 1993) to less-traditional college students is not new given that many studies have used this work as a theoretical framework in research on community college student engagement and

outcomes (see Bean & Metzner, 1985; Berger & Braxton, 1998; Braxton et al., 2004; Braxton et al., 1997; Halpin, 1990; Mutter, 1992; Pascarella & Chapman, 1983).

However, there have been fewer attempts to apply Tinto when studying these new types of students, especially in the for-profit sector. Tinto's concepts are still useful and can be modified to be appropriate in explaining nontraditional student experiences (Berger, 2000; Berger & Braxton, 1998; Kuh & Love, 2000). This study added to this discussion by providing thoughts on how to shift our views on what 'integration' means for the majority of college students who commute, are seeking voc-tech training, or enroll in distance education, for-profit colleges, and so on. At least in this study, what traditionally looked like less integrated behavior appeared to be the way the students are integrated based on the institution's norms.

### **Additional Ways to Understand For-Profit College Students' Experiences**

The nature of quantitative data analysis enabled this study to examine a large sample of students in for-profit colleges. However, there is ample opportunity for further study. In particular, much remains unknown about student experiences in for-profit colleges. This study identified the importance of meeting with an adviser over faculty or peers. Although this finding is meaningful given that limited studies provided evidence in the for-profit sector, many related questions can be answered through further study. This study's finding was based on a student self-report regarding how often she/he met with an adviser, faculty, or peers, which limits thorough understandings on the quality of such relationships. Thus, further study may focus on in depth explorations of the quality of social interactions in order to identify in which way each agent promotes student

experiences and outcomes at FPCUs. To that end, a qualitative study may be a better way to overcome the limitations that originate from quantitative data analysis.

In addition, this study was among the first studies to include for-profit colleges' institutional reputations as a factor influencing credential completion from broad access higher education institutions. The finding—better reputation is associated with greater chance of completion—warrants further studies on for-profit colleges, community colleges, or other types of broad access institutions. Institutional reputation traditionally was defined according to selectivity measures such as acceptance rates and standardized test scores (e.g., SAT, ACT). However, for broad access colleges such as FPCUs or community colleges, such indicators would not be appropriate and often are not available because many nontraditional students do not have such information. This study made an attempt to redefine institutional reputation by measuring students' statements about the extent to which reputation was a factor in their enrollment decision. Though a significant relationship between student-perceived institutional reputation and student likelihood of completing credentials was found in this study, this evidence still needs to be extended to explain why and how a student evaluates the reputation of a FPCU (or other broad access institutions) they attended. For example, a student may believe that a FPCU has a good reputation because her/his relatives, friends, or siblings attended the FPCU, recounted their good experiences, and saw that they had jobs after graduation. If so, this finding well supports the literature highlighting the existence of good for-profit schools such as small, mom-and-pop schools specializing in vocational education—scholars have documented these successes (Kinsler, 2006c). Still, the nature of quantitative data analysis

does not allow such an explanation. Further study may require the use of qualitative methods to reveal the influences that affect a student's perception of institutional reputation and the extent to which students' responses vary. These findings may advance understanding of institutional reputations in the broad access higher education sector.

Finally, for-profit college students' in-depth understandings may be influenced by observation of returning students rather than focusing on first-time students only. As noted, this study limited the sample to first-time enrollees in for-profit colleges. Future research can look at returning students' experiences and the ways in which they may differ from outcomes for first-time, for-profit college students.

### **Implications for Policy**

In developing the College Completion Agenda by 2020 plan, researchers and policy makers have shed light on vocational/certificate higher education and its emphasis on broad access for underrepresented populations. At the same time, projections indicate that 22 million workers with college degrees and 4.7 million workers with certificates are needed in the U.S. workforce by 2018 (Carnevale, Smith, & Strohl, 2010). This fact highlights the increasing emphasis on the importance of vocational education and certificate programs in higher education institutions. As an historic location for such education, FPCUs are now in the midst of policy debates that aim to increase institutional accountability and protect students from misguided education.

This study's findings may inform policy that encourages current for-profit college students to persist through their programs and to complete their degree. As much of the research on college-to-workplace transitions has shown, students with degrees are

assumed to be more likely to succeed in labor market transitions (Carnevale, Smith, & Strohl, 2010). Yet this study found that substantial numbers of students do not complete so they do not attain credentials from FPCUs. Without paying attention to increasing completion rates at FPCUs, emphasis on labor market returns cannot improve the educational attainment of students who seek degrees in this emerging sector of higher education.

Thus, this study's added significance in the development of federal policy is in advocating for stronger regulations and monitoring the for-profit higher education sector. Since the Gainful Employment rule was proposed by the U.S. Department of Education in 2010, stakeholders in the for-profit sector have initiated appeals, stating that it unfairly targets FPCUs with arbitrary measures of outcomes, such as program cohort default rates and debt-to-earnings ratios. Public opinion also questions the proposed measures due to the lack of clear evidence on the metrics. Importantly, the proposed measures do not adequately protect students from engaging in misguided education-related decision making because they do not receive timely information on programs with subpar standards (e.g., American Council on Education).

Additionally, in debates on federal policy, concerns about low completion rates at FPCUs are being missed. As this study found, disadvantaged students are still less likely to complete programs in for-profit colleges, so more attention to the completion issue may enhance program accountability and lower drop-out rates. Furthermore, this study described how extended measures of completion demonstrate different results. For example, some students who left a FPCU before completing a degree actually attained a

credential at another institution—a finding made possible when multiple institutions were included in the completion measure. This result hints that federal policy can be geared toward establishing diversified strategies to encourage students with incomplete or delayed progress in FPCUs to continue to pursue their educational goals.

This study finding may help policy makers broaden their perspectives on how for-profit colleges' institutional characteristics influence completion rates. For example, contrary to the experiences of four-year for-profit college students, those attending less than two-year for-profit colleges are more likely to complete degrees or certificates. This study found that this influence remains even after controlling for individual student differences. In addition, institutional reputation has a positive association with completion. Further investigation employing these criteria may identify characteristics of FPCUs that increase student completion rates. Identified institutional characteristics can drive meaningful policy debates to include the need to identify FPCUs with varying levels of student success-related indicators.

### **Implications for Practice**

This study's findings emphasized the importance of advising to students at for-profit schools. Among other ways for students to socialize within an institution, researchers pointed out that adviser, faculty, and peers may be key agents in nontraditional students' social integration (Rosenbaum et al., 2006). This study partially supported this argument in finding that the adviser is the only significant person to promote credential completion. The salient positive influence of frequent contact with an

academic adviser to ensure student credential completion proves that some intervention can improve for-profit college students' transition from college to the labor market.

In addition, practitioners in the for-profit higher education sector may pay more attention to students who are more disadvantaged. This study consistently found that students who possess multiple nontraditional student characteristics complete a degree or certificate less often than their less-nontraditional counterparts. This finding warrants attention to policies that mandate support for students who experience multiple difficulties in pursuing academic and career goals while enrolled in for-profit schools.

Throughout this study, existing data sets limited the ability to examine what really matters to students at for-profit colleges. While the BPS0409 was the most recent and appropriate data source, it was limited in its capability to fully operationalize measures of student experiences in for-profit higher education. Furthermore, no data sets better represent for-profit college student populations composed of returning adults with some college experiences prior to enrolling in for-profit colleges. Given that the number of for-profit students is tiny relative to those in the non-profit sector, establishing a reliable data source for the sector itself seems a good start. The accumulation of such data will allow student tracking and offer a better understanding of short- and longer-term outcomes, including loan repayment or job placement, and further education. This information will help the for-profit sector and enhance understanding of nontraditional college students who attend voc-tech training programs at postsecondary education institutions.

### **Concluding Thoughts**

This study of for-profit college student outcomes made significant contributions by serving as a starting point for discussions on the relationships among student characteristics, experiences, and outcomes and providing empirical evidence gained through use of a theory-driven model. Considering the novel nature of this study's findings, further studies may advance our understanding of nontraditional student success in nontraditional higher education settings. Due to limited previous research on the for-profit sector, explanation on some parts of this study's findings remains incomplete. Limitations in the data sources also complicated the interpretation of this study's findings. All in all, this study's findings remind us that new types of students in diversified higher education structures need to be understood using new frameworks. This study helped move research and discussion in that direction.

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## Appendix A

## List of For-Profit Colleges in This Dissertation Analyses

Institution Name	Highest Degree Offered
<b>Four-Year FPCUs</b>	
Berkeley College-New York	Bachelor's degree
Berkeley College-Woodland Park	Bachelor's degree
Briarcliffe College	Bachelor's degree
Collins College	Bachelor's degree
DeVry University addison IL	Bachelor's degree
DeVry University Long Beach	Bachelor's degree
DeVry University-New Jersey	Bachelor's degree
International Academy of Design and Technology-Chi	Bachelor's degree
ITT Technical Institute-Everett	Bachelor's degree
ITT Technical Institute-Fort Wayne	Bachelor's degree
ITT Technical Institute-Jacksonville	Bachelor's degree
ITT Technical Institute-Rancho Cordova	Bachelor's degree
ITT Technical Institute-Seattle	Bachelor's degree
ITT Technical Institute-Spokane Valley	Bachelor's degree
ITT Technical Institute-Torrance	Bachelor's degree
Monroe College-Main Campus	Bachelor's degree
National American University-Bloomington	Bachelor's degree
National University College-Arecibo	Bachelor's degree
National University College-Bayamon	Bachelor's degree
Remington College-Tampa Campus	Bachelor's degree
Southwest University of Visual Arts-Tucson	Bachelor's degree
The Art Institute of Atlanta	Bachelor's degree
The Art Institute of California-Los Angeles	Bachelor's degree
The Art Institute of Fort Lauderdale	Bachelor's degree
The Art Institute of Seattle	Bachelor's degree
The Illinois Institute of Art-Chicago	Bachelor's degree
Westwood College-Anaheim	Bachelor's degree
Westwood College-Denver North	Bachelor's degree
Academy of Art University	Master's degree
American InterContinental University	Master's degree
DeVry College of New York	Master's degree
DeVry University-Arizona	Master's degree
DeVry University-California	Master's degree

## Appendix A (Cont.)

## List of For-Profit Colleges in This Dissertation Analyses

Institution Name	Highest Degree Offered
DeVry University-Illinois	Master's degree
DeVry University-Missouri	Master's degree
DeVry University-Virginia	Master's degree
DeVry University-Washington	Master's degree
Everest University-Jacksonville	Master's degree
Everest University-Lakeland	Master's degree
Everest University-Largo	Master's degree
Everest University-Melbourne	Master's degree
Everest University-Pompano Beach	Master's degree
School of Visual Arts	Master's degree
Strayer University Maryland	Master's degree
Strayer University Virginia	Master's degree
Sullivan University	Master's degree
University of Phoenix-Boston Campus	Master's degree
University of Phoenix-Houston Campus	Master's degree
University of Phoenix-Las Vegas Campus	Master's degree
Virginia College-Birmingham	Master's degree
University of Phoenix-Albuquerque Campus	Post-master's certificate
University of Phoenix-Phoenix-Hohokam Campus	Post-master's certificate
University of Phoenix-Southern California Campus	Post-master's certificate
University of Phoenix-Utah Campus	Post-master's certificate
Argosy University-Twin Cities	Doctoral degree
University of Phoenix-Online Campus	Doctoral degree
University of Phoenix-San Diego Campus	Doctoral degree
<b>Two-Year FPCUs</b>	
Brown Mackie College-Cincinnati	Associate's degree
Brown Mackie College-Louisville	Associate's degree
Bryant and Stratton College-Albany	Associate's degree
Buck's County School of Beauty Culture Inc	Associate's degree
California Culinary Academy	Associate's degree
Centura College-Virginia Beach	Associate's degree
College of Art Advertising	Associate's degree
Colorado School of Healing Arts	Associate's degree
Concorde Career College-Memphis	Associate's degree

## Appendix A (Cont.)

## List of For-Profit Colleges in This Dissertation Analyses

Institution Name	Highest Degree Offered
Daymar Institute-Nashville	Associate's degree
ECPI University	Associate's degree
Everest College-Aurora	Associate's degree
Everest College-San Bernardino	Associate's degree
Everest College-West Valley City	Associate's degree
FIDM/Fashion Institute of Design & Merchandising	Associate's degree
FIDM/Fashion Institute of Design & Merchandising	Associate's degree
Florida Technical College	Associate's degree
Fortis College	Associate's degree
Fortis College-Centerville	Associate's degree
Harrison College-Muncie	Associate's degree
Heritage College-Denver	Associate's degree
ITT Technical Institute-Houston West	Associate's degree
ITT Technical Institute-Norwood	Associate's degree
ITT Technical Institute-San Antonio	Associate's degree
ITT Technical Institute-Tarentum	Associate's degree
Lincoln College of Technology-Dayton	Associate's degree
Lincoln College of Technology-West Palm Beach	Associate's degree
Living Arts College	Associate's degree
Miami-Jacobs Career College-Dayton	Associate's degree
Mildred Elley School-Albany Campus	Associate's degree
Miller-Motte Technical College-Lynchburg	Associate's degree
Nashville Auto Diesel College	Associate's degree
New Castle School of Trades	Associate's degree
Northwestern College-Southwestern Campus	Associate's degree
Pittsburgh Technical Institute	Associate's degree
San Joaquin Valley College-Bakersfield	Associate's degree
Sanford-Brown College-Boston	Associate's degree
Santa Barbara Business College-Ventura	Associate's degree
Technical Career Institutes	Associate's degree
Universal Technical Institute of Arizona Inc	Associate's degree
Wyotech-Long Beach	Associate's degree

## Appendix A (Cont.)

## List of For-Profit Colleges in This Dissertation Analyses

Institution Name	Highest Degree Offered
Advanced Technology Institute	Award/diploma; At least 2, but less than 4 academic years
ATI Career Training Center-Dallas	Award/diploma; At least 2, but less than 4 academic years
College of Cosmetology	Award/diploma; At least 2, but less than 4 academic years
Empire Beauty School-Chenoweth	Award/diploma; At least 2, but less than 4 academic years
Marinello Schools of Beauty-Provo	Award/diploma; At least 2, but less than 4 academic years
Ohio State School of Cosmetology-Westerville	Award/diploma; At least 2, but less than 4 academic years
Sanford-Brown College-Houston	Award/diploma; At least 2, but less than 4 academic years
Tennessee Career College	Award/diploma; At least 2, but less than 4 academic years
Universal Technical Institute-Auto-Motorcycle	Award/diploma; At least 2, but less than 4 academic years
<b>Less than Two-Year FPCUs</b>	
Arizona College of Allied Health	Award/diploma/cert; less than 1 academic year
Audio Recording Technology Institute	Award/diploma/cert; less than 1 academic year
Caliber Training Institute	Award/diploma/cert; less than 1 academic year
California Career School	Award/diploma/cert; less than 1 academic year
Capstone College	Award/diploma/cert; less than 1 academic year
Career Quest	Award/diploma/cert; less than 1 academic year
Concorde Career Institute-Miramar	Award/diploma/cert; less than 1 academic year
Cooper Career Institute	Award/diploma/cert; less than 1 academic year
DPT Business School	Award/diploma/cert; less than 1 academic year
Everest College-Anaheim	Award/diploma/cert; less than 1 academic year

## Appendix A (Cont.)

## List of For-Profit Colleges in This Dissertation Analyses

Institution Name	Highest Degree Offered
Everest College-Gardena	Award/diploma/cert; less than 1 academic year
Everest College-Skokie	Award/diploma/cert; less than 1 academic year
Everest Institute-Greenspoint	Award/diploma/cert; less than 1 academic year
Lincoln Technical Institute	Award/diploma/cert; less than 1 academic year
Lincoln Technical Institute-Edison	Award/diploma/cert; less than 1 academic year
Lincoln Technical Institute-Paramus	Award/diploma/cert; less than 1 academic year
Milan Institute-Boise	Award/diploma/cert; less than 1 academic year
National Holistic Institute	Award/diploma/cert; less than 1 academic year
New England Tractor Trailer Training School	Award/diploma/cert; less than 1 academic year
North-West College-Pomona	Award/diploma/cert; less than 1 academic year
Recording Workshop	Award/diploma/cert; less than 1 academic year
Ross Medical Education Center-Lansing	Award/diploma/cert; less than 1 academic year
Suncoast II the Tampa Bay School of Massage Therapy	Award/diploma/cert; less than 1 academic year
Tri State Semi Driver Training Inc	Award/diploma/cert; less than 1 academic year
Universal Therapeutic Massage Institute	Award/diploma/cert; less than 1 academic year
Virginia School of Massage	Award/diploma/cert; less than 1 academic year
Akron Institute of Herzing University	Award/diploma; At least 2 academic year
American Career College-Anaheim	Award/diploma; At least 2 academic year
American Career College-Los Angeles	Award/diploma; At least 2 academic year
American Commercial College-San Angelo	Award/diploma; At least 2 academic year

## Appendix A (Cont.)

## List of For-Profit Colleges in This Dissertation Analyses

Institution Name	Highest Degree Offered
Anthem College-Irving	Award/diploma; At least 2 academic year
Anthem Institute-Jersey City	Award/diploma; At least 2 academic year
Apex Technical School	Award/diploma; At least 2 academic year
Arizona Academy of Beauty-North	Award/diploma; At least 2 academic year
Arkansas College of Barbering and Hair Design	Award/diploma; At least 2 academic year
Arnolds Beauty School	Award/diploma; At least 2 academic year
ATI Technical Training Center	Award/diploma; At least 2 academic year
Atlanta School of Massage	Award/diploma; At least 2 academic year
Automeca Technical College-Aguadilla	Award/diploma; At least 2 academic year
Automeca Technical College-Bayamon	Award/diploma; At least 2 academic year
Beauty Schools of America-Hialeah	Award/diploma; At least 2 academic year
Beauty Schools of America-Miami	Award/diploma; At least 2 academic year
Bellus Academy	Award/diploma; At least 2 academic year
Bennett Career Institute	Award/diploma; At least 2 academic year
Branford Hall Career Institute-Branford Campus	Award/diploma; At least 2 academic year
Brick Computer Science Institute	Award/diploma; At least 2 academic year
Career Academy of Beauty	Award/diploma; At least 2 academic year
Career Institute of Health & Technology	Award/diploma; At least 2 academic year
Carrington College-Portland	Award/diploma; At least 2 academic year
Central Florida Institute	Award/diploma; At least 2 academic year

## Appendix A (Cont.)

## List of For-Profit Colleges in This Dissertation Analyses

Institution Name	Highest Degree Offered
Central Texas Commercial College	Award/diploma; At least 2 academic year
Chic University of Cosmetology	Award/diploma; At least 2 academic year
COBA Academy	Award/diploma; At least 2 academic year
Concorde Career College-Garden Grove	Award/diploma; At least 2 academic year
Concorde Career College-San Diego	Award/diploma; At least 2 academic year
Concorde Career Institute-Tampa	Award/diploma; At least 2 academic year
Conservatory of Recording Arts and Sciences	Award/diploma; At least 2 academic year
Cutting Edge Hairstyling Academy	Award/diploma; At least 2 academic year
Dallas Nursing Institute	Award/diploma; At least 2 academic year
Don Roberts School of Hair Design	Award/diploma; At least 2 academic year
EDIC College	Award/diploma; At least 2 academic year
Educational Technical College-Recinto de Bayamon	Award/diploma; At least 2 academic year
Empire Beauty School-Brooklyn	Award/diploma; At least 2 academic year
Empire Beauty School-Queens	Award/diploma; At least 2 academic year
Everest College-Everett	Award/diploma; At least 2 academic year
Everest College-Reseda	Award/diploma; At least 2 academic year
Everest Institute-Atlanta Downtown	Award/diploma; At least 2 academic year
Everest Institute-North Miami	Award/diploma; At least 2 academic year
Everest Institute-San Antonio	Award/diploma; At least 2 academic year
Fortis College-Miami	Award/diploma; At least 2 academic year

## Appendix A (Cont.)

## List of For-Profit Colleges in This Dissertation Analyses

Institution Name	Highest Degree Offered
Fortis College-Mobile	Award/diploma; At least 2 academic year
Four-D College	Award/diploma; At least 2 academic year
Fox Institute of Business-West Hartford	Award/diploma; At least 2 academic year
Glendale Career College	Award/diploma; At least 2 academic year
Hair Fashions By Kaye Beauty College-Indianapolis	Award/diploma; At least 2 academic year
Harrison Career Institute-Allentown	Award/diploma; At least 2 academic year
Harrison Career Institute-Ewing	Award/diploma; At least 2 academic year
Harrison Career Institute-Oakhurst	Award/diploma; At least 2 academic year
Harrison Career Institute-Philadelphia	Award/diploma; At least 2 academic year
Harrison Career Institute-South Orange	Award/diploma; At least 2 academic year
Hohokus School-RETS Nutley	Award/diploma; At least 2 academic year
Houston Training School-Gulfgate	Award/diploma; At least 2 academic year
Institute of Beauty Careers	Award/diploma; At least 2 academic year
Instituto de Banca y Comercio Inc	Award/diploma; At least 2 academic year
Instituto de Educacion Tecnica Ocupacional La Rein	Award/diploma; At least 2 academic year
International Junior College	Award/diploma; At least 2 academic year
James Albert School of Cosmetology-Costa Mesa	Award/diploma; At least 2 academic year
Kaplan College-Riverside	Award/diploma; At least 2 academic year
Kaplan College-San Antonio-San Pedro	Award/diploma; At least 2 academic year
Lincoln College of Technology-Columbia	Award/diploma; At least 2 academic year

## Appendix A (Cont.)

## List of For-Profit Colleges in This Dissertation Analyses

Institution Name	Highest Degree Offered
Lincoln College of Technology-Melrose Park	Award/diploma; At least 2 academic year
Lincoln Technical Institute-Moorestown	Award/diploma; At least 2 academic year
Lincoln Technical Institute-Union	Award/diploma; At least 2 academic year
Long Island Beauty School-Hempstead	Award/diploma; At least 2 academic year
Lowell Academy Hairstyling Institute	Award/diploma; At least 2 academic year
Maison D'Esthetique Academy	Award/diploma; At least 2 academic year
Margate School of Beauty Inc	Award/diploma; At least 2 academic year
Maric College-Irwindale	Award/diploma; At least 2 academic year
Marinello Schools of Beauty-Bell	Award/diploma; At least 2 academic year
Marinello Schools of Beauty-San Francisco	Award/diploma; At least 2 academic year
MBTI Business Training Institute	Award/diploma; At least 2 academic year
Milan Institute of Cosmetology-Amarillo	Award/diploma; At least 2 academic year
Modern Hairstyling Institute	Award/diploma; At least 2 academic year
Modern Hairstyling Institute	Award/diploma; At least 2 academic year
New Tyler Barber College Inc	Award/diploma; At least 2 academic year
New Wave Hair Academy-Jackson	Award/diploma; At least 2 academic year
Newbridge College-Santa Ana	Award/diploma; At least 2 academic year
Nouvelle Institute	Award/diploma; At least 2 academic year
Ogle School Hair Skin Nails-Arlington	Award/diploma; At least 2 academic year
Ohio Institute of Health Careers	Award/diploma; At least 2 academic year

## Appendix A (Cont.)

## List of For-Profit Colleges in This Dissertation Analyses

Institution Name	Highest Degree Offered
Opelousas School of Cosmetology Inc	Award/diploma; At least 2 academic year
Orlo School of Hair Design and Cosmetology	Award/diploma; At least 2 academic year
P B Cosmetology Education Center	Award/diploma; At least 2 academic year
Pierres School of Cosmetology	Award/diploma; At least 2 academic year
Premiere Career College	Award/diploma; At least 2 academic year
Ravenscroft Beauty College	Award/diploma; At least 2 academic year
Rivertown School of Beauty Barber Skin Care and Nail	Award/diploma; At least 2 academic year
Robert Fiance Beauty Schools-West New York	Award/diploma; At least 2 academic year
Rogers Academy of Hair Design	Award/diploma; At least 2 academic year
Rogies School of Beauty Culture-Santurce	Award/diploma; At least 2 academic year
Salter College-West Boylston	Award/diploma; At least 2 academic year
Sawyer School	Award/diploma; At least 2 academic year
South Louisiana Beauty College	Award/diploma; At least 2 academic year
South Texas Vocational Technical Institute-McAllen	Award/diploma; At least 2 academic year
St Louis College of Health Careers-St Louis	Award/diploma; At least 2 academic year
Stevensons Academy of Hair Design	Award/diploma; At least 2 academic year
Stone Academy-Hamden	Award/diploma; At least 2 academic year
Texas School of Business-Friendswood	Award/diploma; At least 2 academic year
Texas School of Business-Southwest	Award/diploma; At least 2 academic year
Utah College of Massage Therapy Inc-Salt Lake City	Award/diploma; At least 2 academic year

## Appendix A (Cont.)

## List of For-Profit Colleges in This Dissertation Analyses

Institution Name	Highest Degree Offered
Utah College of Massage Therapy Inc-Utah Valley	Award/diploma; At least 2 academic year
Xenon International Academy-Wichita	Award/diploma; At least 2 academic year

Appendix B  
Classification of Programs of Study

Program Orientation	Major	Specific Category of Majors	N	%
Academic program	Humanities	Visual and performing arts	60	3.9%
		Liberal arts, sciences and humanities	20	1.4%
		English language and literature/letters	10	0.6%
		Foreign languages and literatures	0	0.1%
		Theology and religious vocations	0	0.1%
	Social/behavioral sciences	Psychology	10	0.6%
		Political science and government	10	0.4%
		History	0	0.1%
		International relations and affairs	0	0.1%
		Sociology	0	0.1%
	Life sciences	Biological and biomedical sciences	0	0.3%
		Parks, recreation, and fitness studies	0	0.3%
		Natural resources and conservation	0	0.1%
		Natural sciences, other	0	0.1%
	Math	Mathematics and statistics	0	0.3%
	Engineering/engineering technologies	Engineering technologies/technicians	40	2.6%
		Engineering	10	0.5%
	Education	Education	30	1.8%
	Computer/information science	Computer and information sciences	130	9.0%
	Business/management	Business/management	200	14.0%

## Appendix B (Cont.)

## Classification of Programs of Study

Program Orientation	Major	Specific Category of Majors	N	%	
Voc-tech program	Other technical/professional	Personal and culinary services	220	15.4%	
		Criminal justice	40	2.8%	
		Legal professions and studies	30	1.9%	
		Communications technologies/technicians	30	1.8%	
		Communication and journalism	10	1.0%	
		Architecture and related services	10	0.6%	
		Public administration and social service	10	0.4%	
		Agriculture and related sciences	0	0.1%	
	Voc-tech		Science technologies/technicians	0	0.1%
			Transportation and materials moving	10	0.8%
			Mechanic and repair technologies	80	5.8%
			Construction trades	10	0.5%
			Precision production	0	0.3%
	Health		Health professions and related sciences	410	28.6%
Residency programs			50	3.6%	
Major not declared			510	510	
Total			1,950		

Note. For the rounding issue, the majors with sample size below 5 are identified as 0 in this table.

## Appendix C

## Descriptive Statistics of For-Profit, Not-for-Profit Broad Access Four-year, and Community College Students

	For-Profit								Not-for-Profit			
	Total		Four-Year		Two-Year		Less than Two-Year		Broad Access Four-Year		Community College	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
<b>Degree/Certificate Completion</b> (1=completed; 0=did not complete)	0.48	0.50	0.32	0.47	0.44	0.50	0.55	0.50	0.56	0.50	0.37	0.48
<i><b>Institution-level Variables</b></i>												
<b>Institutional Structure</b>												
Level												
Four-Year	0.19	0.39	-	-	-	-	-	-	-	-	-	-
Two-Year	0.27	0.44	-	-	-	-	-	-	-	-	-	-
Less than Two-Year	0.54	0.50	-	-	-	-	-	-	-	-	-	-
Size	2.23	1.20	3.32	1.05	2.30	1.13	1.81	1.03	4.48	0.75	4.40	0.81
Reputation	0.52	0.22	0.49	0.22	0.56	0.21	0.50	0.22	0.58	0.21	0.36	0.16
Aggregated level of nontraditional student index	2.44	1.04	2.25	1.25	2.36	1.07	2.55	0.91	0.45	0.65	1.95	0.80
Percent of full-time faculty <sup>a</sup>	3.32	1.34	2.44	1.21	3.30	1.34	3.63	1.23	3.93	1.09	2.57	1.12
<b>Student Service</b>												
Expenditure on student services <sup>a</sup>	1.56	1.10	2.21	1.32	1.49	1.02	1.36	0.95	3.19	1.51	2.07	1.30
Variety of student services provided	2.97	1.12	3.32	1.17	3.24	0.89	2.71	1.14	4.11	0.79	4.50	0.76

## Appendix C (Cont.)

## Descriptive Statistics of For-Profit, Not-for-Profit Broad Access Four-year, and Community College Students

	For-Profit								Not-for-Profit			
	Total		Four-Year		Two-Year		Less than Two-Year		Broad Access Four-Year		Community College	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
<i>Student-level Variables</i>												
<b>Student Characteristics</b>												
Female	0.67	0.47	0.53	0.50	0.57	0.50	0.55	0.50	0.58	0.49	0.60	0.49
Race												
Black	0.24	0.43	0.22	0.42	0.21	0.41	0.25	0.43	0.10	0.30	0.16	0.37
Latino/a	0.26	0.44	0.22	0.41	0.18	0.38	0.32	0.47	0.09	0.29	0.11	0.32
Other races	0.08	0.28	0.12	0.32	0.08	0.27	0.07	0.26	0.08	0.27	0.08	0.26
White	0.42	0.49	0.44	0.50	0.53	0.50	0.35	0.48	0.73	0.44	0.65	0.48
Income quartile	1.83	0.94	1.99	0.96	1.97	1.01	1.70	0.88	2.57	1.10	2.20	1.05
Amount of federal financial aid received in 2004	5.28	3.48	5.33	3.63	5.37	3.54	5.22	3.41	2.71	3.01	1.45	2.07
Highest level of educational expectation	4.03	1.75	5.03	1.34	4.05	1.54	3.67	1.84	5.72	1.30	4.20	1.59
Nontraditional student index	2.44	1.84	2.25	2.01	2.36	1.84	2.55	1.78	0.45	1.08	2.33	1.90
<b>Academic Integration</b>												
Took remedial course in 2004	0.07	0.26	0.12	0.32	0.08	0.28	0.05	0.21	0.19	0.39	0.28	0.45
Took distance course in 2004	0.05	0.22	0.09	0.29	0.06	0.23	0.04	0.19	0.07	0.25	0.12	0.32
Number of nontraditional credits <sup>a</sup>	0.19	0.64	0.20	0.69	0.13	0.55	0.21	0.66	0.34	0.93	0.11	0.51

## Appendix C (Cont.)

## Descriptive Statistics of For-Profit, Not-for-Profit Broad Access Four-year, and Community College Students

	For-Profit								Not-for-Profit				
	Total		Four-Year		Two-Year		Less than Two-Year		Broad Access Four-Year		Community College		
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	
<b>Social Integration<sup>b</sup></b>													
Talked with faculty	0.79	0.69	0.79	0.65	0.78	0.71	-	-	1.24	0.63	0.85	0.69	
Met academic adviser	0.76	0.66	0.74	0.64	0.77	0.67	-	-	1.14	0.58	0.83	0.66	
Participated in study group	0.51	0.66	0.59	0.73	0.45	0.61	-	-	0.90	0.65	0.55	0.68	

Notes. <sup>a</sup> Denotes imputed items; <sup>b</sup> Items include four- and two-year institutions only

## CURRICULUM VITAE

### Jihee Hwang

#### EDUCATION

- 2015 Ph.D. in Higher Education, Minor in Educational Psychology  
Pennsylvania State University (PSU), University Park, PA
- 2007 M.A. in Education (Educational Psychology Concentration)  
Yonsei University, Seoul, South Korea
- 2005 B. A. in Education; Korean Language and Literature  
Yonsei University, Seoul, South Korea

#### SELECTED PUBLICATIONS

Loya, I. K., & Hwang, J., & Oseguera, L. (2015). Latina/o students' college destinations: Gender, generational status, and college sector selectivity. In P. A. Pérez, & M. A. Ceja. (eds.), *Higher education access and choice for Latino students: Critical findings and theoretical perspectives* (pp.165-186). New York, NY: Routledge.

Oseguera, L., & Hwang, J. (2014). Using large data sets to study college education trajectories. *New Directions for Institutional Research*, 158, 37-50.

#### SELECTED AWARDS

- 2013 Jonathan Fife Scholarship amount of \$1,000  
The Center for the Study of Higher Education, PSU, UP, PA
- 2013 Martorana Family Award amount of \$1,500  
College of Education, PSU, UP, PA
- 2012 Dissertation Grant amount of \$20,000  
Association for Institutional Research (AIR)

#### SELECTED PROFESSIONAL EXPERIENCE

- 2010-2015 Graduate Research Assistant, Center for the Study of Higher Education, PSU
- 2011-2013 Data Analyst Graduate Assistant, Student Affairs Research and Assessment, PSU
- 2007-2008 Assistant Researcher, Korean Educational Development Institute, Seoul

#### SELECTED TEACHING

*Teaching Assistant* Designing Institutional Research Studies (IR830; Spring 2013; graduate level, online class)

*Invited Lecture* "Introduction of developing research proposal." In Student Affairs Research and Assessment class (Spring 2013; Master's level, face-to-face class)

#### SELECTED PROFESSIONAL SERVICE

- Proposal Reviewer*, American Educational Research Association (2014), Association for Institutional Research (2013 – ), Association for the Study of Higher Education (2012, 2014)
- Reviewer*, College Student Affairs Journal (2014 – present)
- Consulting Editor*, Higher Education in Review (2012 – present)