

Identifying impediments to the academic success, retention, and graduation of first-generation college students

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Abstract

In the growing trend of persons holding a bachelor's degree, it is estimated that one-third of students in U.S. post-secondary institutions characterize as first-generation students. That means they are the first in the household to achieve a higher education degree since their parents did not attend college. Further, first-generation students are frequently characterized as multiple challenged because of recurrent associated characteristics. Frequent aspects related to life events include a delayed college entry after high school, attending college part-time while working full-time, and living close to home thus off-campus. Additional considerations involve concerns pertaining social economic status.

Keywords: First-Generation College Students, Academic Success, Higher Education.

Introduction

In the growing trend of persons holding a bachelor's degree, it is estimated that one-third of students in U.S. post-secondary institutions characterize as first-generation students (Skomsvold, 2015). That means they are the first in the household to achieve a higher education degree since their parents did not attend college (Cataldi, Bennett & Chen, 2018). Further, first-generation students are frequently characterized as multiple challenged because of recurrent associated characteristics. Frequent aspects related to life events include a delayed college entry after high school, attending college part-time while working full-time, and living close to home, thus off-campus. Additional considerations involve concerns pertaining social economic status (Engle & Tinto, 2008). Additional features verified at a higher rate in first-generation have been associated with reduced chances of earning a college degree (Chen & Carroll, 2005). Primary traits involve for instance being older, female, having a disability, coming from minority backgrounds, being a non-native English speaker, having dependent children and being a single parent, having earned a high school equivalency diploma, and being financially independent from parents (Berkner, He, & Cataldi, 2003; Terenzini, Eaegeer, Pascarella, & Nora, 1996).

A close examination of economic limitations imposing on first-generation academic success should also consider multiple variables reflecting general cost-of-attendance elements. While minimal estimates beyond the obvious

costs of tuition and fees include primary expenses such as room and board, books and other school-related supplies are also critical to a fulfilling academic experience. Furthermore, some incidentals are implicitly related to a rewarding and successful life on campus (Goldrick-Rab, 2017). A reduced campus involvement may be traced to financial restrictions for engagement in extra-curricular activities, as well as to extensive work hours off-campus.

As economy evolves and the world goes through waves of changes, new financial challenges are not met by opportunities and achievements that support an academic career (Goldrick-Rab, 2017). Imparities between college expenditures and financial support have been increasing over time. For example, the estimated percentage of college expenses coverage declined from approximately 70% to 20% over the last four decades from wide-ranging financial supportive programs such as Pell grants, awarded to students who present exceptional financial need and have not earned a higher education degree (The Pell Institute, 2018).

Previous Academic Preparation First-generation students tend to enter post-secondary programs with less academic preparation than their peers, which is demonstrated for example by relying more on remedial courses than peers who are not first-generation students. Past research has revealed that first-generation and low-income students are less likely to follow a rigorous high school curriculum; they also tend to lack important study and time management skills, have less confidence in their academic abilities, and experience more difficulty navigating the bureaucratic aspects of academic life due to their lack of exposure to college (Chen & Carroll, 2005). As a result, they are predisposed to have lower levels of performance and declined persistence in postsecondary education (Ishitani, 2006). Related challenges that first-generation college students may face are associated with the ability of understanding reading materials, particularly official documentation (Berry-Cabam Porter, Beaman, & Hoedebecke, 2014; Tokiwa & Yamasaki, 2014). For instance, evidence of lower health literacy has been found in populations identified with lower socioeconomic backgrounds as well as in Hispanic origins and among second-language speakers (Kutner, Greenberg, Yin, & Paulsen, 2006). Decisions taking place at any stage of an academic career, especially around the admission steps and most importantly those involving university and financial aid information, may have a long-term impact (Wen et al., 2016).

Financial Challenges and Related Aspects

Beyond plotting financial elements intrinsically related to covering college costs, a focus on essential thoughts about implicit deterrents such as food insecurity and poor sleep patterns since in college was inspired by this initiative. Additional considerations regarding extra-curricular activities attained also contributed for a descriptive scenario of overall engagement. This way, rates of extensive campus engagement were considered. Overall, national studies reveal disparities in higher education attainment across among first-generation populations (Perna & Finney, 2014; Pike & Kuh, 2005). This is important from an individual's standpoint as well as at a societal level (Perna, 2015). It stands to reason that comparable opportunities should be available to all.

Food insecurity. Struggling with hunger in college is impairing at many levels beyond obvious physical consequences, including social stigma and inclusion limitations (Allen & Alleman, 2019). This increasing problem, deeply linked to spiraling cost of living can potentially shape the university experiences of affected students (Goldrick-Rab, 2017). Critical challenges associated with inability to attain sufficient nutrition are hindering academic performance across the U.S., particularly among first-generation students (Camelo & Elliot, 2019).

Many students struggle with the unique experience of transitioning to college, but the challenges may be intensified for first-generation college students, who are often left to navigate the transition without guidance from their families. Institutions that offer programs specifically for first-generation students have been shown to have a significant impact on student success. Because first-generation students enter college at a greater disadvantage than other students, they need more support to thrive in a competitive higher education atmosphere. Failure to meet the needs of this growing population will only exacerbate the retention challenges that many institutions face. These concerns reflect circumstances shown across the country as well as in the Midwest region, where this project was developed (Morris, 2012).

Background Scenario: First-Generation in the Midwest This examination of the target population used as background a public university located in the U.S. Midwest region, with a current enrollment of approximately 20,000 students; roughly 20% of them from various minority populations, including students coming from rural communities. Around half of the Southern Illinois University Carbondale (SIUC) undergraduate population is composed by individuals who are the first in their family attending a four-year college. They belong to an increasingly large group facing even higher progressive demands for a higher-education qualified workforce (Carnevale, Smith, & Strohj, 2013). More than ever, their realization is vital from every perspective (Goldrick-Rab, 2017). This includes considerations of community impact and regional sustainability.

Improving chances of a successful academic career among historically underserved populations demands a team effort engaged on a comprehensive approach (Perna & Jones, 2013). Assessment of characteristics and needs of this population in context is essential in designing effective strategic plans (Perna, 2002).

Purpose of the Project

Promoting an inclusive environment, supportive of academic success, entails deep examination of student affairs. This study was guided by the need of a clear understanding of first-generation college students, as well as key factors associated with their success in achieving higher education. These included personal descriptors such as demographics as well as social and financial elements, including progressive cost of attendance in contrast with minimal wage. Accordingly, primary inquiries comprised the examination of subjective impressions reported by first-generation students along with demographic, academic, and financial aspects associated with their higher education experiences. Relationships among intrinsic (personal) and extrinsic (general) factors upon academic performance were also explored, mostly concerning persistence and graduation.

A combination of quantitative and qualitative information involved continuing unfolding applications of this assessment. Quantitative data was identified through university administrative centers and authoritative resources targeting population and scenarios purposefully selected. The second phase of this explanatory sequential design was related to subjective data collection using survey and focus groups, providing further insight to quantitative indicators (Creswell, 2014).

In summary, the primary aims of this project were to establish a demographic profile of the institution's first-generation students and to identify academic and non-academic challenges that they face. Contrasts involving retention and graduation rates for first-generation versus non-first-generation student were also pursued, and well as examination of financial aspects and financial aid eligibility. A central part of this study was associated with perspectives of first-generation students on the challenges they encountered over the course of their college experience. To achieve this, an in-depth data-driven project was undertaken, identifying and analyzing data from multiple sources. Ultimate goals of this project were to validate evidence-based recommendations to increase retention and graduation of first-generation students, and to substantiate the creation of a dedicated center of first-generation excellence at the university. In essence, overall results were considered from a concurrent prospect, using both objective and subjective aspects (Goldrick-Rab, 2017). Hence, objectives of this project included examination of the university's student body in order to enhance the understanding of needs and incongruities that would support risk control and increase graduation rates among first-generation students. For this end, variables relevant to the university's first-generation students were examined, including the following: 1) Demographic variables, including race and ethnicity, gender, college major, county of origin, and eligibility for federal aid; 2) Financial variables, including cost of college attendance and affordability; 3) Academic variables, including retention and graduation rates, GPA, ACT scores, credit enrollment, and likelihood of being on academic probation; and 4) self-reported challenges to completing college, as expressed by students themselves. A number of faculty, staff, and administrators contributed to this project, including a First-Generation Community of Practice.

Method

The first phase of this study involved the examination of descriptive data collected from the offices of Institutional Research and Financial Aid. Academic reports were collected from the institution's Student Information System. The second phase involved an assessment of personal challenges, feelings, and attitudes associated with academic success that were obtained via survey and focus group studies.

Descriptive Data

Extant data related to undergraduate students at the university was used to identify variables involved in this investigative study. Information related to first-generation students as well as to their traditional college counterparts were extracted from university records. Data was extracted from institutional academic and financial aid records over a period of approximately eight years. Academic reports were mined from the Student Information System. Information associated with economic status and support was obtained from the university's financial aid and institutional research databases.

Data on student cohorts from 2009-2017 were extracted from Banner by the Office of Institutional Research; Banner is the main student information system at the university and contains information about current and past students. Subjective information was obtained from qualitative data collection performed by the Applied Research Consultants (ARC). ARC is an organization composed of graduate students and faculty members housed within the Psychology Department at the university. Further insight was obtained through results from the Campus Climate Survey, conducted by the office of Student Conduct Programs, responsible for campus surveys. In summary, information existing in various sets of data within the university's departments associated with undergraduate academic programs and supportive systems were pursued for inspection. Visual examination of data with organization of tables and graphs was implemented to demonstrate results.

Subjective Data

Further development of this project took in account outcomes of discussions led by focus groups as well as from surveys generated from these deliberations. Focus group discussions and survey topics included financial strategies used for covering college costs as well as related and unrelated expenses. It was fundamental to seize this opportunity to foster considerations of intrinsic elements of academic quality of life. Relevant feelings and attitudes regarding attending college were examined, with special attention directed to basic well-being and health such as sufficient nutrition and rest. Extra-curricular activities attained, and overall campus engagement were also contemplated.

Results

Results suggested that first-generation students face many unique obstacles that may affect their ability to persist to graduation. These findings concur with previous indications in literature, corroborating academic and financial challenges typically associated with first-generation students (Goldrick-Rab, 2017).

Analyses of outcomes of this study revealed gaps in academic standards such as high school and college GPA, as well as discrepancies in admission, retention, and graduation rates between first-generation and non-first-generation students (Tables 1, 2). For example, between 2009 and 2016 retention and 6-year graduation rates among first-generation students at SIUC was 65% versus 72% for traditional students, and 48% versus 57% for traditional students, respectively. This retention and graduation disproportion between first-generation students and their traditional counterparts may be partially accounted for by both academic and non-academic precollege differences between these two groups of undergraduate students as well as their academic choices and performance in their first year of college. In addition, a greater proportion of first-generation students were shown to have been placed on academic probation relatively to their traditional counterparts.

First-generation students reported numerous financial challenges that they believed impacted their success while in college. For example, concerns related to room and board affordability were reported at a higher rate by students who identified as first-generation. Evidence-based studies on first-generation college students indicates that 36% of students at 4-year post-secondary institutions and 42% of students at 2-year postsecondary institutions experience food insecurity, including acute hunger (Allen & Alleman, 2019; Goldrick-Rab, Richardson, Schneider, Hernandez, & Cady, 2018).

Descriptive Data

Demographics. From a total of 32,393 admitted first-generation undergraduate students at SIUC between 2009 and 2016, 48% (15,556) self-identified as first-generation students. Thirty-eight percent of first-generation FTFT students identified as White, whereas 35% identified as Black or African-American, 10% identified as Hispanic, and 2% identified as Asian. Three percent of the first-generation students reported belonging to other racial backgrounds and 12% did not identify their race. Fifty-five percent of the institution's first-generation students

are female. Most first-generation freshmen were Black or White, but the number of Hispanic students has increased steadily over the course of this time span.

A majority of SIUC's first-generation students were found to be from northern Illinois. The top five counties from which first-generation students' families resided the years 2009-2016 include Cook (3785), Will (387), Lake (338), DuPage (294), and St. Clair (187), all located in the greater Chicago region. The top five counties from which non-first-generation students' families were found to reside include Cook (2,539), Will (513), DuPage (507), and Jackson (328), the latter of which is the county that includes the SIUC main campus. It is interesting to note that more of the institution's local students seem to be non-first-generation.

Financial Indicators. Percentages of first-generation freshmen students who received financial aid relative to non-first-generation students for the years 2009-2016 are displayed in Figures 1 and 2. The figures show that a substantially larger percentage of first-generation students received federal grants and loans relative to non-first-generation students. This discrepancy is greatest for the students who received federal grants.

Academic Variables. Academic programs found to have the largest number of first-generation students were Workforce Education and Development, Psychology, and Criminology and Criminal Justice. The academic programs found to have the largest number of non-first-generation students were Pre-Civil-Engineering, International Studies, and Pre-Foreign Language and International Trade.

Disparities between first-generation and non-first-generation students were verified on every single variable, including retention and graduation rates, high school GPA, first and second semester GPA, mean ACT scores, mean number of credits enrolled in during the first and second semesters, and the percentage of students placed on academic probation during their first and second semesters. The most striking discrepancies include the graduation rates between the two sets of students (48% vs. 57%, respectively), and the fact that first-generation students were more likely to be placed on academic probation (< 2.0 GPA) after their first semester (57% vs. 43% students respectively) and second semester (56% vs. 44% students, respectively) (Tables 1, 2).

Gaps in retention and graduation were also verified between first-generation students and their counterparts. For example, first-generation students transitioning from freshman to sophomore status were retained at an average of 60%, as opposed to an average 66.3% for all students. According to the National Center for Education Statistics, 64% of students in the United States graduate within six years, while only 50% of the nation's first-generation students accomplish this goal. Further, retention and persistence rates for first-generation students systematically declined from first to second, and second to third year. Thus, first-generation students appear to be less likely to persist to degree completion the longer they attend school (Table 2, Figure 3).

Retention for this group of students was 65% versus 72% for traditional students and 48% versus 57% for traditional students. Graduation rates for this group of students was 48% versus 57% for traditional students. Additionally, first-generation students enrolled in fewer freshmen-year first (12.8 vs. 13.3) and second-semester (12.8 vs. 13.5) credit hours. Additionally, first-generation students were more likely to be placed on academic probation (< 2.0 GPA) after their first (55% vs. 45%) and academic probation or suspension after their second (56% vs. 44%) semester.

Subjective Data

Campus Climate Survey. Twenty-two percent of students who completed SIUC's Student Affairs administered the EAB Campus Climate Survey (BE HEARD: A Sexual Misconduct Survey) during the 2018 academic year were first-generation students. The majority of those students were in years 1-4 and were attending college full-time. Response patterns from the first-generation students who completed the Basic Needs section of the survey alluded to financial challenges that affected their ability to be successful in school: forty percent of the first-generation students reported skipping meals or eating less because of not having enough money; 48% of first-generation students reported not being able to afford balanced meals; 26% of the students reported being hungry and not being able to eat because of lack of money; and 12% of the first-generation students who responded to the survey reported not being able to pay rent. In addition, the survey results suggested minimal engagement in campus activities: Thirteen percent reported being involved in Greek Life; 12% were involved in Cultural Groups, and 7% reported involvement in Performing Arts Groups, Intramurals, Sport Clubs, and Student Government. These results were compared with results for the non-first-generation students who completed the same survey: Twenty-six percent of non-first-generation students reported skipping meals or eating less because of not having

enough money; 38% reported not being able to afford balanced meals; 26% reported being hungry and not being able to eat because of lack of money; and 12% of non-first-generation students reported being hungry.

First-Generation Student Interviews and Survey. Twenty-eight first-generation students participated in one-on-one interviews designed to collect qualitative information about their experiences and challenges. The students responded to a request to participate that was sent to all of the campus' first-generation students. They completed a brief informational survey following completion of the interview in order to capture additional details.

The sample of first-generation students that participated were predominantly women (71.4%) between the ages of 18-22 years old (82.1%). Approximately 68% of the students identified as White, 39.3% identified as Black, 10.7% identified as Hispanic/Latino (a), and 3.6% identified as Asian (with 5 students identifying with 2 or more races/ethnicities). The majority of students were Juniors (35.7%), with the rest being Freshmen (28.6%), Seniors (14.3%), Sophomores (10.7%), and Super-Seniors (5+ years; 10.7%). Participants were from a variety of majors. When asked about the highest level of education they planned to achieve, over half the students (57.1%) indicated that they planned to continue their education and achieve a graduate or professional degree, while the remaining indicated that they planned to achieve their bachelor's degree (39.3%) or a trade school certification (3.6%).

An overwhelming majority (90.8%) of the students interviewed worked one or more part-time or full-time jobs or internships, with 24.5% working more than 20 hours per week and 64.3% working 1-20 hours per week. About half of the participants reported working on-campus (57.1%), with the remaining working off-campus (21.4%) or having multiple jobs (10.7%). The majority of working participants reported that their work schedule was predictable (64.3%), and that their workplace was very accommodating of their school workload (67.9%). Lastly, 35.7% of participants reported that they contribute a portion of their income to their family. All students reported receiving less than \$35,000 per year in financial aid to attend SIUC, with 35.7% reporting receiving less than \$10,000 per year, 35.7% reporting receiving \$10,000-\$19,999 per year, and 25.0% reporting receiving \$20,000-\$34,999 per year (with 3.6% declining to answer).

The students also identified several challenges during both the admission process and during their course of study. The majority of students (78.6%) did not have any older siblings that had attended or completed college. When asked about their motivation to apply for college, many participants reported wanting to attend college due to their personal drive (50.0%), their own or their family's expectations that they would go to college (42.9%), and their hopes of avoiding other outcomes (39.3%).

When asked about the challenges they faced in preparing for college, most participants discussed that they learned about the application process at the same time as their parent(s) (82.1%) or all on their own (60.7%). Although many of the participants found the information on admissions and financial aid available on the university website to be helpful, some nonetheless found the information to be confusing, difficult, or unhelpful (21.4%—35.7%). Participants suggested that more information about financial and academic resources (64.3%), more public outreach to their high schools and communities (28.6%), more support and resources for first-generation students (21.4%), and more scholarships (21.4%) would have been beneficial over the course of their college pursuits.

When asked about the challenges they faced while preparing for college, the clearest theme that emerged was having to learn the process together with their parents (e.g., "me and my mom just had to wing it"). A majority of students also lamented about a general lack of information (e.g., "no idea what it was going to be like") and reported that they had to just "figure it out" on their own. Additional themes included a lack of financial information (e.g., "no idea that there was financial aid"), living away from home (e.g., "not being able to come home"), and stress (e.g., "it was stressful"). A few students also alluded to financial struggles (e.g., "wow, I really have to owe all of this").

When students were asked about the challenges they faced once enrolled in college, the most frequently reported concerns were tied to finances, including worries about paying for school, lack of guidance from parents, and challenges maintaining a balance between academics and work. Students frequently commented on their difficulties with time management and their desire to have been better prepared. Nonetheless, several students referenced their own personal motivation in persisting to graduation and expressed pride that they were "relying on themselves" or "figuring things out on their own." Some students reported that they worked as much as they possibly could.

Challenges/Limitations

The biggest challenges were as follows: first, the institution lacks an official definition of first-generation student. Some might categorize only the first child in the family attending college as first-generation, whereas others might categorize all children from parents who do not hold an university degree as first-generation. The process also requires students to self-identify as first-generation, and many may not even know what the term means. Additional concerns are related to age categorization, as older adults identifying as non-traditional may also be defined as first-generation college students. Second, we experienced challenges in obtaining some of the necessary data for analyses, as data were contained in a variety of different offices and included in different databases across campus. Third, it was necessary to take steps to ensure privacy of student information, including omitting directly identifying information such as social security and university tag numbers prior to manipulation of data. Such precautions are to be expected in institutional research of this sort. The Community of Practice, which represented faculty, students, and staff from across campus, was instrumental in providing guidance on these challenges as the project progressed.

Discussion

Data analyses informed about specific details associated with academic discrepancies and general challenges faced by college students identifying as first-generation students at the university. Performance of first-generation students examined in this project was inferior to that of non-first-generation students on every single academic measure examined, including graduation and retention rates, mean high-school and first-year GPA, mean number of credits enrolled in as freshmen, and percentages of students being placed on academic probation. The most revealing discrepancies discovered between first-generation and non-first-generation students identified were the percentage of students on probation and the percentages of students who persisted to graduation. That first-generation college students are experiencing considerably less success than other students, despite the fact that first-generation students comprise approximately half of the institution's student body, warrants attention. These results are consistent with the published literature on first-generation college students (Goldrick-Rab, 2017).

A verified retention and graduation gap between first-generation students and their traditional counterparts may be partially accounted for by both academic and non-academic precollege differences between these two groups of undergraduate students as well as their academic choices and performance in their first year of college. Given that most of the dimensions on which first-generation students differ from their traditional counterparts have been linked to academic performance and persistence, first-generation students at academic risk. This increased academic risk contributes to lower retention and graduation numbers for first-generation students, and because first-generation students make up nearly 50% of the undergraduate student body, it impacts a sizeable number of students and represents a broad challenge that is important for the university to overcome.

Much was learned about the challenges experienced by first-generation students via results from the one-on-one interviews and surveys conducted. An alarming percentage of students reported financial obstacles that interfere with their ability to meet their basic needs while attending college, and very few students reported participating in campus organizations or activities. Not surprisingly, a very large percentage of students reported working one or more part-time and full-time jobs, with many providing money for their family. The students identified a number of obstacles during both the admission process and during their transition period over the course of their freshmen year, including little guidance from parents or siblings, confusion regarding information presented on university websites, and a lack of preparation in how to balance their school and work obligations. These findings suggest that the experience of being the first from one's family to attend college, coupled with financial hardship, make the goal of persisting to degree completion even more trying. Despite these findings, many of the students interviewed reported that they were highly motivated to not only complete their undergraduate degree but pursue professional or graduate training as well. Needed are support mechanisms that will facilitate the students' realization of these goals. The newly implemented First Saluki Center has several goals for its first year of operation and will be monitoring its progress toward promoting first-generation students' transition into college and continuation from one year to the next.

The most critical artifact generated by this effort was a thorough report containing findings to the university's administration as supportive information to promote and support academic success of students. Additional resources were associated with paths related to identification, organization, and filing of multiple datasets accrued and organized over this project to substantiate current goals and hopefully future studies as well. Further aspects presented as vital learning points included the need to design methods to overcome difficulty in accessibility and

storing of data for future manipulation. Tasks related to effective use of financial measures in order to elicit helpful inferences were also posed learning points. The project promoted the implementation of a First Saluki Center by the Division of Student Affairs at the university. The center is conceptualized as a campus-wide collaboration dedicated to academic, cultural and social integration of first-generation students with university faculty, administration, staff, alumni, and the community. The center consists of a peer-to-peer mentoring program, providing support and guidance for family members.

Conclusion

The goal at the heart of this project was to support strategies close the graduation gap between first-generation students and their traditional counterparts. Central points learned were associated with a deep understanding of entailment on being a first-generation university student in general, and specific characteristics of this group at the university. For example, knowledge of demographic features, regional concentration, and typical majors are helpful components in future planning for services delivering. Yet, it would be helpful to resolve ambiguity regarding a consistent definition of first-generation students. This could also potentially help reducing challenges in identifying first-generation students on campus.

Furthermore, it is critical to address vital aspects associated with a rewarding college experience and a thorough education involvement. This includes the high risk of food insecurity alongside the rising cost of attending college. Apparently, attending college is increasingly unaffordable for most students owing to rising tuition and the declining availability of need-based federal aid (Camelo & Elliot, 2019; Goldrick-Rab, 2017).

Key findings from this project should be useful to other public institutions of similar size in rural settings. This information should be accessible for forthcoming considerations and fruitful discussions leading to meaningful actions on behalf of academic success of first-generation students in the university and in general. It is our hope that this work will support further endeavors such as identifying potential funding sources and increasing opportunities to support academic success among first-generation students. Ultimately, reasoning originated from this initiative supported the development of a dedicated center. Hopefully, these procedures will support future endeavors such as identifying potential funding sources and increasing opportunities to support academic success among first-generation students.

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