

## **Proposal Summary.**

### **Title**

The Influence of Financial Aid Packages on Enrollment Decisions at a Large, Public, 4-Year University

### **Abstract**

I utilized regression analysis to estimate the relationship between financial aid packages and college enrollment at a public four-year university, particularly for students with financial need and Black and Hispanic students. Results provided a specific ratio of gift aid to financial need that incentivizes enrollment for each population.

### **Proposal Text**

In 2016, 83% of recent high school completers from high income families enrolled in college, compared to 65% of those from low- and middle-income families (National Center for Education Statistics, 2018). Furthermore, income intersects with race and ethnicity in the stratification of access to higher education (Rendon, 2020). In 2020, 65% of White recent high school completers enrolled in college, compared to 58% of their Black peers and 56% of their Hispanic peers (National Center for Education Statistics, 2021). The purpose of this study was to explore the relationship between college enrollment decisions and financial aid packages, while considering the socio-demographic characteristics of applicants. The research questions I answered were: 1) How do financial aid packages influence enrollment decisions, considering the composition of the aid? 2) To what extent does this vary by a student's race/ethnicity and financial need?

### **Theoretical Framework**

In studying the effects of financial aid on dropout behavior at four-year institutions, Chen (2008), hypothesized that the effect of aid type and amount of aid would vary based on the student's family income and race/ethnicity due to factors like liquidity constraints, price elasticity, debt aversion, and unobservable cultural factors. Chen (2008) proposed a new conceptual framework that incorporates psychological, sociological, and organizational theories with economic theories. The independent variables influencing dropout behavior included: student background characteristics such as race/ethnicity, family income, and parental education; the highest level of education a student aspires to; pre-college preparation such as high school GPA and SAT scores; college experience factors such as major and academic/social integration; organizational characteristics of the institution such as whether it is private or public; and financial factors such as financial aid, the cost of college, and student perceptions about college costs. In this study I applied Chen's (2008) model for studying college dropout behavior to the study of college enrollment behavior.

### **Literature**

Previous research has shown that enrollment increases as the price of college decreases, and that students with lower incomes are more sensitive to price (Heller,

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1997; Hemelt & Marcotte, 2011; Jackson & Weathersby, 1975; Lassila, 2011; St. John & Asker, 2003). Further research consistently indicates that financial aid increases enrollment and in particular, grant aid increases enrollment of students with financial need (Heller, 1997; Hurwitz, 2012; Lassila, 2011; St. John, 1990; St. John & Asker, 2003). Van der Klaaw (2002) found that the elasticity of first-time enrollment decisions relating to grants was much greater for students who applied for federal financial aid than for students who were ineligible for federal aid. Lassila (2011) found a significant positive relationship between the average amount of all grant aid received and a public institution's overall enrollment of low-income students. In studies of students who were admitted or likely to be admitted to selective institutions, Hurwitz (2012) and Hoxby and Avery (2003) found that an additional \$1,000 in grant aid increased the probability that a student would enroll in that college; this choice elasticity was higher for students from families with lower incomes.

Important work in the 1980s and 1990s demonstrated that there are interactions present between students' race/ethnicity and financial aid when it comes to enrollment in college (Heller, 1997; St. John and Noell, 1989). St. John and Noell (1989) found that all types of financial aid positively impacted the enrollment of minority students; however, grants were more effective than loans alone. Heller (1997) demonstrated that lower-income students and Black students show more price elasticity than their higher-income and White peers. Linsenmeier et al. (2006) found that replacing loans with grants in financial aid packages was associated with a significant increase in the enrollment of minority low-income students. Allen and Wolniak (2018) found that increasing tuition at non-selective public four-year institutions had a significant, negative impact on the racial/ethnic diversity of all enrolled students. Students from different racial/ethnic backgrounds may also have different thresholds for taking on debt. Chan et al. (2019) found that Hispanic students were less likely to borrow than White students and Black students were more likely to borrow than White students.

### Data and Analytical Approach

The study site was Urban University (UU), a large public university in an urban area of the southwest. The participants were first-time in college (FTIC) freshman applicants who were admitted to UU in the fall 2017, fall 2018, or fall 2019 semesters and were offered some type of financial aid. The final sample included 29,994 admitted students.

The dependent variable was enrollment, which indicates whether the student enrolled at UU that term, enrolled at another institution that term, or did not enroll at any institution that term. The key independent variables were gift aid total (which does not need to be paid back), loan aid total (which must be paid back), and gift aid ratio (the proportion of a student's financial need which is met by gift aid). Other control variables included estimated family contribution (EFC), race/ethnicity, sex, first-generation status, permanent address region, application date, class rank, SAT score, and UU college choice.

I analyzed the data using multinomial logistic regression to estimate the relationship

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between the applicant's financial aid offer and one of three outcomes in the dependent variable given multiple independent variables. To isolate effects by race/ethnicity and income level, I ran independent multinomial logistic regression models for six groups: Black students, Hispanic students, White students, high financial need students, moderate financial need students, and low financial need students.

### Findings

Overall, students who were offered more loan aid were less likely to enroll at UU than enroll elsewhere or nowhere and students who were offered more gift aid were more likely to enroll at UU than enroll elsewhere. Students whose ratio of gift aid to financial need was at least 40% were more likely to enroll at UU than enroll elsewhere, and students whose gift aid ratio was 60% or higher were more likely to enroll at UU than enroll nowhere. In both cases, the influence was stronger as the ratio increased. These findings imply that if UU intends to enroll more of its admitted students, it should consider offering more gift aid and less loan aid in its financial aid packages and increasing the percentage of need that is being met by gift aid. If the institution's goal is to enroll more students who may otherwise be lost to other institutions, it should aim for a gift aid ratio of at least 40%. If its goal is to increase access to students who may not enroll in college otherwise, it should aim for a gift aid ratio of at least 60%.

Black students who were offered more loan aid or more gift aid were more likely to enroll at UU than enroll elsewhere. Hispanic students who were offered more loan aid were less likely to enroll at UU than enroll elsewhere or enroll nowhere. For both Black and Hispanic students, those with a higher gift aid ratio were more likely to enroll at UU than enroll elsewhere or enroll nowhere. The findings implied that if UU intends to enroll more Black students, it should consider increasing the gift aid ratio in its financial aid packages to at least 60%; if it intends to enroll more Hispanic students, it should consider increasing the gift aid ratio to at least 40%.

Students with high financial need who were offered more gift aid were more likely to enroll at UU than enroll elsewhere or enroll nowhere. Students with high or moderate financial need who were offered more loan aid were less likely to enroll at UU than enroll elsewhere or enroll nowhere. The findings implied that if UU intends to enroll more high need students who may otherwise not enroll in college, the gift aid ratio should be at least 40%; to enroll more moderate need students who may otherwise enroll at another institution, the gift aid ratio should be at least 60%; to enroll more moderate need students who may otherwise not enroll in college, the gift aid ratio should be at least 80%.

### Significance

This study's findings inform institutional financial aid packaging policies that enroll more students with financial need and more students from underrepresented racial/ethnic groups. As the analysis distinguishes between students who enrolled elsewhere and students who did not enroll anywhere, it can impact both institutional enrollment goals and equity gaps in college access. This study contributes to the literature base by

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providing a specific ratio of gift aid to financial need that incentivizes enrollment for each population, thereby informing the amount of institutional grants an institution may need to offer to move the needle in enrollment.

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