Examining Baccalaureate Degree Completion: The Role of Debt Load and Dependency Status

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Hello and welcome! My name is Ray Mitic and I am representing the affectionately called Research Group 2 from the 2021 AIR/NCES Data Institute, and I'll be presenting an update on our project from last year called "Examining Baccalaureate Degree Completion: The Role of Debt Load and Dependency Status." and
I'm here on behalf of my colleague Katelyn DiBenedetto at the Institute of Higher Education Policy, Nicole Klassen at Cox Communications, Regina Lowery at the University of Wisconsin-Madison myself Ray Mitic at the University of North Dakota, and Pooja Patel, at the University of Pennsylvania. We'd also like to recognize our mentor, Alli Bell, who was instrumental in the genesis of this project.

Research Question

Do debt load and dependency status predict the likelihood of baccalaureate degree completion?

Spoiler: They do!

I'll start off really with the most important question, the research question: Do debt load and dependency status predict the likelihood of baccalaureate degree completion? I'll spoil the ending right away and say, yes, they do. But through the next few minutes I'll talk through our research design our approach to the data that we used as well as some of the findings we have related specifically to debt load but also dependency status. I'll also share some emerging work that we've had since we completed the Data Institute.

Summary of Literature Review

Rising Cost of College:

- Since the 1980s, the cost of college has increased 632% while the median family income has only risen 152% (Baker et al, 2013; Finney, 2014)
- Borrowers now owe a total of $1.57 trillion in student loans (Looney, 2021)
- "Student loan crisis" masks nuances in student borrowing (Baum, 2016)

So in terms of the literature review, I'll go through this part of the impetus for this project was the rising cost of college since the 1980s, and the period of disinvestment from higher education, particularly at the state level as we've seen the cost of college increase over 600%, while the median family income has only risen about 150%. We hear these statistics and news that, borrowers are now owe over 1.5 trillion dollars in student loans, and we hear a lot about the "student loan crisis." But there are some nuances in there. For example, you hear the story of a student owing $200,000 for the debt but in reality, only about 7% of borrowers owe over $100,000, and the vast majority of owe under $10,000. So we just kind of wanted to dig deep into that a little bit of this project.

Summary of Literature Review

Defining Dependent and Independent Students:

- Characteristics of independent students (Federal Student Aid, n.d.)
- Growing number of adult learners (Radford et al., 2015)
- Higher education systems are not built to meet unique needs of independent students (Baum, 2016; Chen & Hossler, 2017)

One thing to also keep in mind is how we define dependent and independent students. You know the there's a lot of federal guidelines for what counts as an independent student. We see a lot of adult learners. We also see definitions that include being over age 24, married, having children, being a veteran, or a widow, so there are a lot of different things that that may count when considering what an independent student is.

But typically these are the students that higher education systems were not built for. The higher education system was really built for the typical 18- to 24-year-old student coming right out of high school. So we're really interested in this project because we want to be able to meet the unique needs of the student population.

Summary of Literature Review

Borrowing Trends and College Completion:

- Independent students borrow larger loan amounts than dependent students (Baum, 2016)
- Independent student borrowers who attended for-profit and two-year institutions had lower completion rates and higher default rates on their student loans than their peers attending public and private non-profit institutions and graduate schools (Looney & Yannelis, 2015)

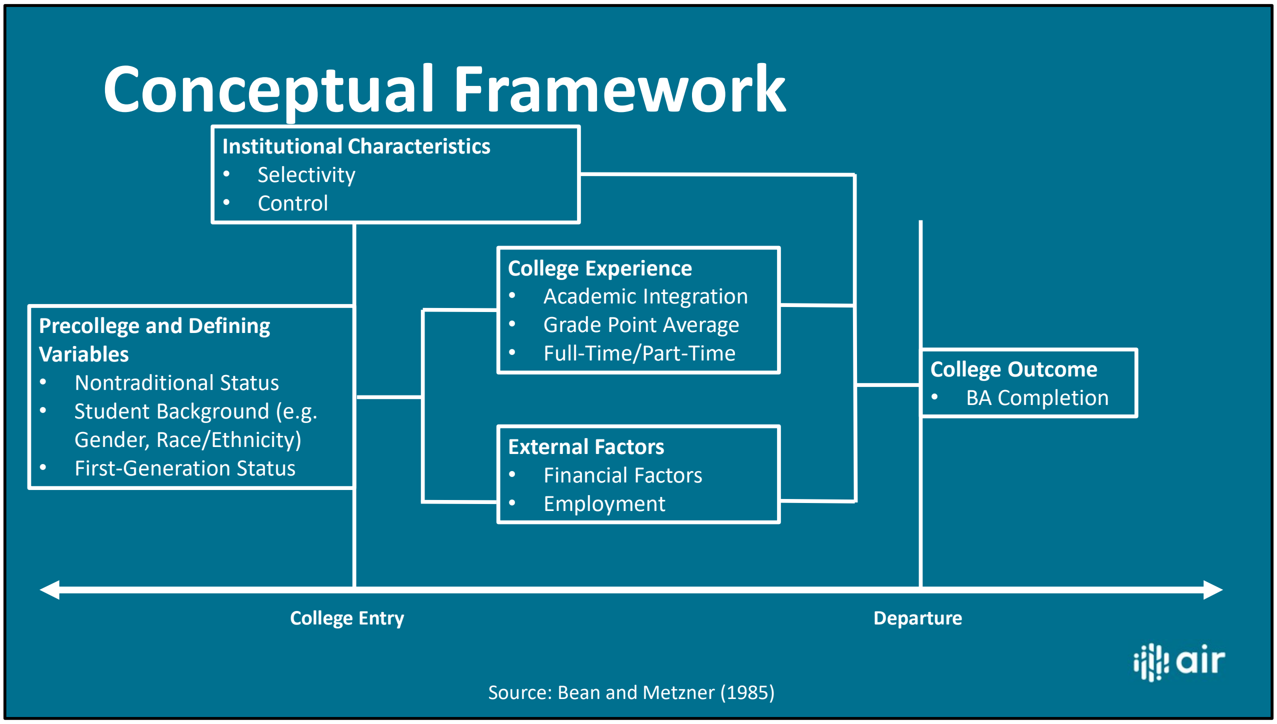
We also think it's also important to keep in mind some of the trends we think about student loans as well as college completion. Independent students borrow larger amounts than dependence students, perhaps a function of not having the parents to rely on as part of that. But we also see the independent students borrowers typically attending for profit, and 2-year institutions that had lower completion rates and higher default rates on their student loans than their peers at public and nonprofit institutions and graduate schools. We're seeing sort of a stratification in terms of where independent students end up, and it's leading to potentially deleterious outcomes financially after college.

Summary of Literature Review

This study aims to present a more nuanced understanding of:

- How student loan borrowing and dependency status impact baccalaureate degree completion
- Also examine other factors associated with student debt and college achievement. (See: Looney & Yannelis, 2015, Furquim et al., 2017, Craig & Raisanen, 2014, and Ma et al., 2019)

This study aims to present a more dualized understanding of how student borrowing and dependency status impact bachelor's degree completion as well as to look at some of the other factors associated with student college completion, We condensed it for this presentation but things like the institution type, the institutional selectivity, urbanicity of where you grew up and where you attend college. All of this fits into this larger literature. Review and informs our regression model that I'll talk about in a few minutes.



In terms of theory and conceptual model , we relied on Bean and Metzner's student attrition model for nontraditional students.

Here you see, a timeline of the types of variables that I discussed previously in the literature review slides that grounded this entire study. We have a lot of these pre-college and defining ascribed characteristics, nontraditional status, student background: race, gender, ethnicity, first-generation status. We also threw in their urbanity as I mentioned.

There are also some institutional characteristics: selectivity, control. For example, a highly selective private institution will cost more than a public two-year institution.

We also looked at some parts of the college environment: academic integration, grade point average, enrollment intensity: full time, part time.

All this led to a dichotomous outcome: 0: no completion, 1: Bachelor's degree within six years of starting college when data collection began.

Dataset and Methods

Dataset:

Beginning Postsecondary Students: 2012/2017 because of alignment with the research question in that it has information from students on demographics and debt load

Methods:

- Descriptive analysis, bivariate correlations, and **logistic regression** performed using NCES DataLab's Powerstats tool. Sample size, N=13,900.
- Interaction analysis using restricted-use dataset.

We had explored several different data sets to see which data sets had the variables that to align with our research question and the BPS: 2012/2017 had the best alignment with the research questions.

When we were part of the Institute, we ran descriptive statistics, bivariate correlations, binary logistic regression using the NCES DataLab's PowerStates tool Our sample size was just under 14,000.

Since we completed the Institute, we were able to obtain a restricted-use data license and have been able to continue analyses examining some interactions among these variables that I'll present at the end of the presentation that were not possible in the DataLab.

Key Variables

Bachelor's Degree Attainment: Earned Bachelor's degree by sixth year of the study.

Independent Student Status: Students who are age 24+, married; have legal dependents other than a spouse; a U.S. veteran; active-duty service member; or orphan, ward of the court, emancipated minor, or in legal guardianship or foster care in first year of study.

Student Loan Debt: Cumulative Direct Subsidized and Unsubsidized Loan (also known as subsidized and unsubsidized Stafford Loans) amount the respondent borrowed through sixth year of the study.

I just wanted to take one moment, though, and to define some of these key variables again. Bachelor's degree attainment. Students had to earn their bachelors by their sixth year.

Independent student status: Again, above age 24, married, having a legal dependent other than a spouse, as veteran, active duty, service, member, orphan, ward of the court, emancipated minor, or in legal guardianship, or foster care in the first year of the study. Just for some context, some estimates say that about half the college students have one of these characteristics. It wasn't true in the sample that we had (23%) but some may have more liberal definitions of independent student status. And without doubt we are finding more and more students with one of these potential challenges to college completion.

In terms of student loan debt, we looked at the cumulative direct subsidized and unsubsidized loans, also known as the Stafford loans: the amount that they had borrowed through their sixth year of the study.

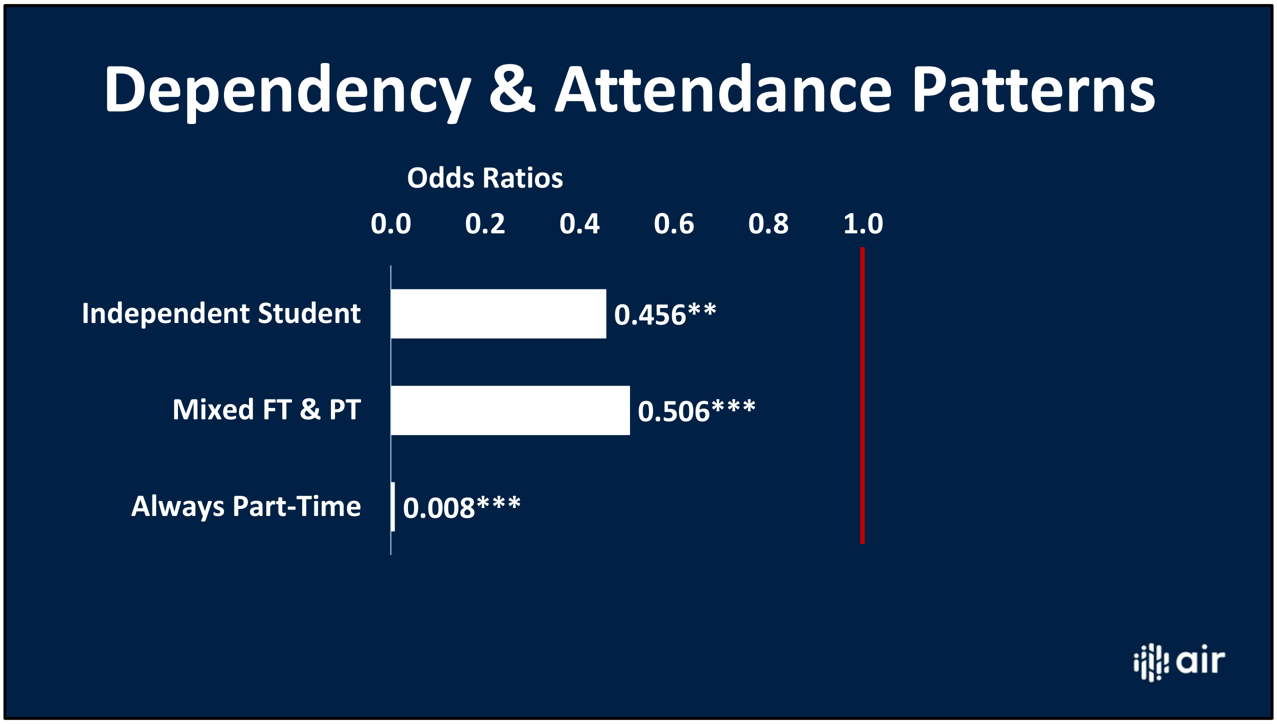
Results Summary

- An increase in cumulative subsidized and unsubsidized loans increases the likelihood of a student's Bachelor's degree attainment.
- Independent students are less likely to earn a Bachelor’s degree than their dependent student counterparts.
- First-generation students are less likely to earn a Bachelor’s degree than their continuing-generation peers
- Adjusted gross income also strongly predicted Bachelor’s degree attainment.

So in terms of what we found, here is summary and then some nice charts and graphs.

1) We saw that an increased in the cumulative loan amount increases the likelihood of a student attaining their bachelor's degree.
2) Independent students are less likely to earn a Bachelor's degree than their dependent student counterparts.
3) First-generation students are less likely to earn a Bachelor’s degree than their continuing-generation peers, and
4) Adjusted gross income also strongly predicts Bachelor’s degree attainment

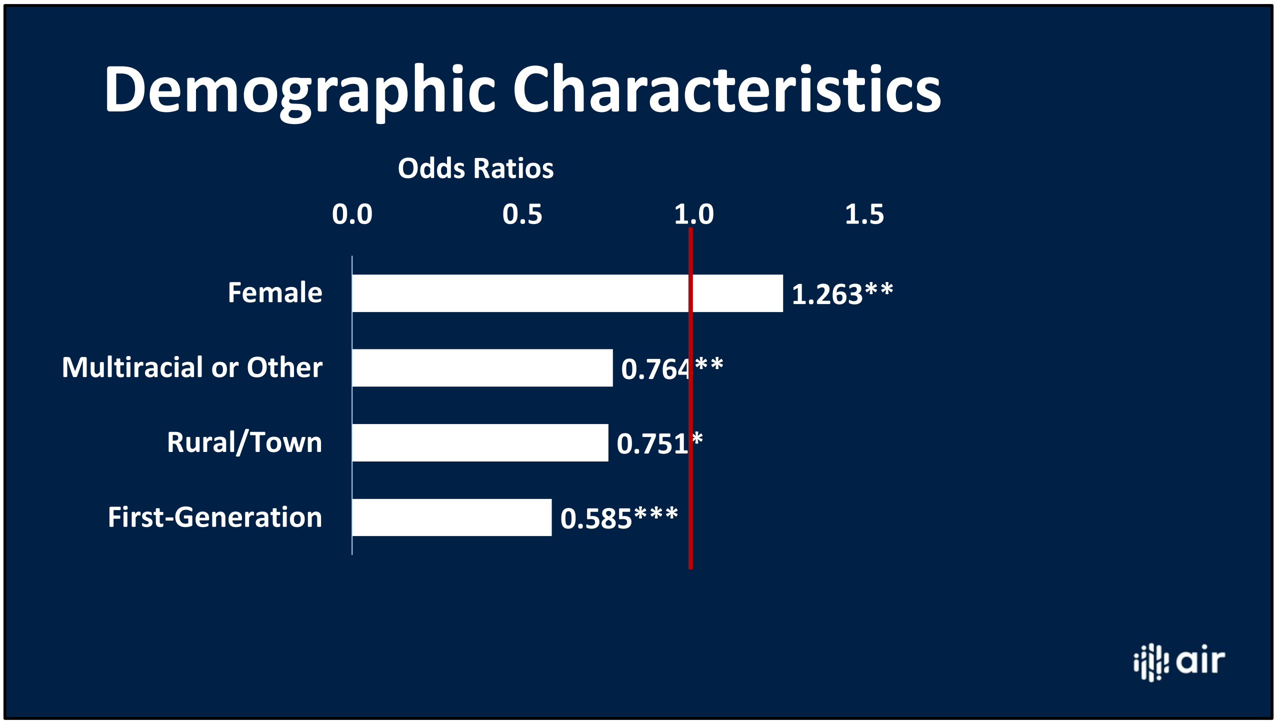
We had a strong list of controls here to strengthen our confidence in our conclusion.



For the next few slides, I'll present some odds ratios here. For those of you not familiar, odds ratios in logistic regression start at 0 and go in a positive direction. At 1.0 is the dividing line to say that someone, having a certain characteristic, has its equal likelihood of predicting Bachelor’s attainment compared to the reference group.

For example, the first one is independent student, with a comparison group being dependent students. So here we see about a 55% lower likelihood of attaining a bachelor's just for that characteristic holding all other variables constant.

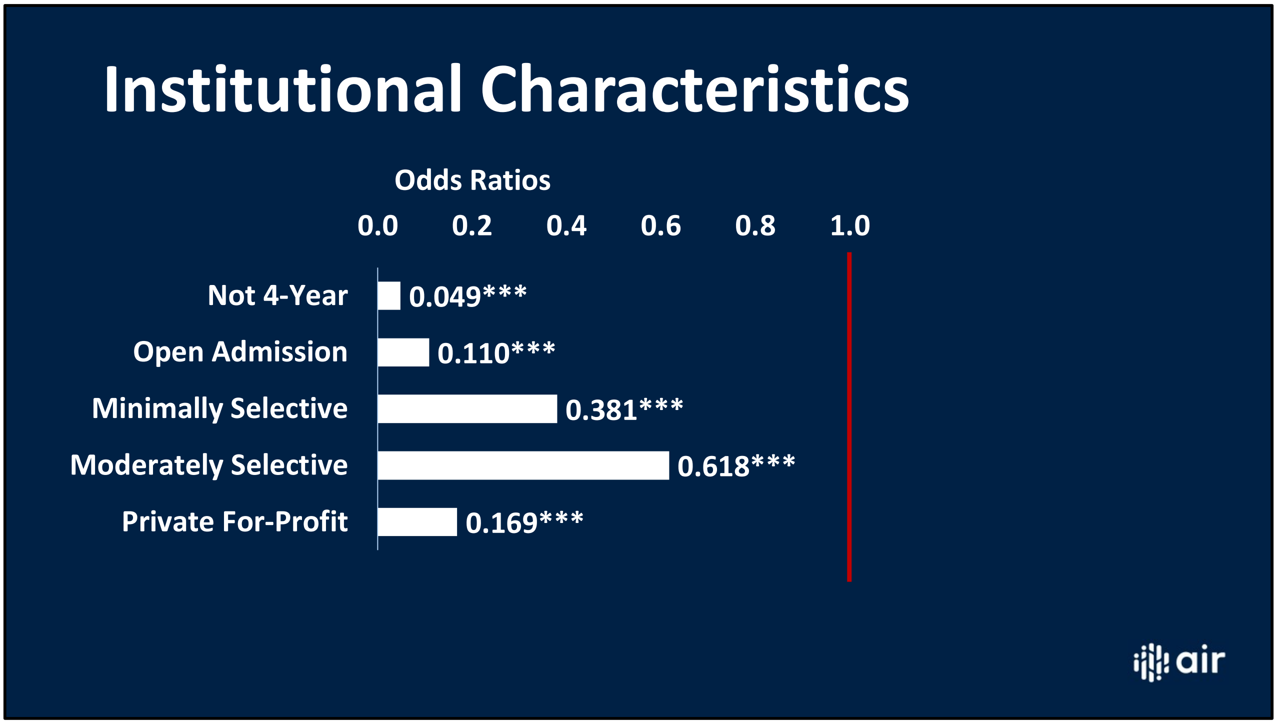
We also see when compared to students with full-time status, mixing part-time full-time, or only going part-time again, has a deleterious effect on the Bachelor’s degree attainment.



I also want to include in here a few demographic characteristics. We did see that female students are much more likely than their male counterparts to graduate.

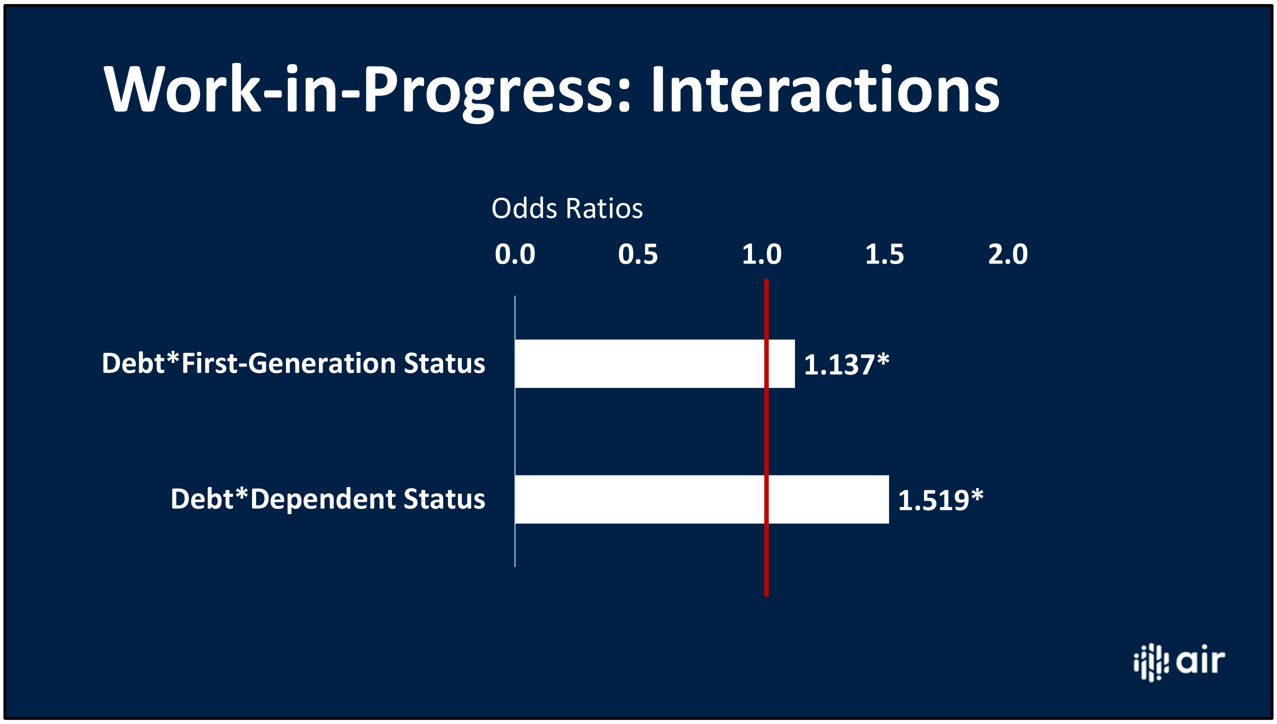
And then we see here in terms of multiracial and other races not listed students being less likely than the white counterparts. Students from rural backgrounds, less likely than their suburban counterparts.

And first-generation students, 41%-42% less likely to graduate than their continuing-generation peers.



In terms of institutional characteristics, because those matter as well when compared to highly selective institutions, all other categories of institutions in terms of selectivity, particularly open admissions, and minimally selected schools: a much lower likelihood compared to their highly selective institutional colleagues.

And then we see the for-profit sector again, over 80% less likely to graduate than someone going to a private institution.



And I promised one of the things that we were working on this as part of our research group.

We're really interested to see what sort of nuances we can find in terms of interaction effects. But unfortunately, the PowerStats tool doesn't allow that. So after the Institute was over, we obtained a restricted-use data license and started playing around with some of the interaction terms and here are some preliminary results that we're hoping to present at some conferences coming up as well as in peer-reviewed journals.

So we first looked at debt times first generation status: we see first-generation students having a stronger likelihood of graduating dependent on their debt level

And then for dependent students, it’s an even larger effect.

So what we're seeing here is that first-generation students and independent students are really relying on loans in order to graduate. That's all well and good but we want to see the graduations, but there's sort of the question of whether they are surviving or thriving?

Implications

Federal/State Policy:

- Long-term effects of loans on independent students
- Additional low-interest options?
- Integration with College Promise

Campus Policy:

- Wraparound services (e.g. financial counseling)
- A breaking point for retention and success?

This brings us to the implications and for the Federal and State policy level. We think it's really important to understand the long-term effects of loans on independent students.

We see that independent students come from less wealthy backgrounds in terms of adjusted gross income. So what does this for buying a home, starting a family things of that nature based off of their loan amount granted. Granted some of these individuals might have already started a family, might already have a home. But $15,000 in loans can be different for an independent student versus the dependent student who can have a parent co-sign a loan and provide other financial support. So looking long-term, things like saving for retirement come into question.

When thinking of types of federal/state support, perhaps some additional low-interest options for independent students can help ease the burden. For example, parent PLUS is not an option for independent students. Is there something more that can be done at the Federal or State level in order to sort of bridge that gap?

And a lot of this will come into discussions about integrating with the College Promise where you see a lot of different policy levers at play, generally at the local state level.

First-dollar, last-dollar programs in order to ensure a student success but some of those awards are dependent on students continuing straight from high school or maintaining a full-time status. As we see, that might not be the most conducive to where the student is at that point in their lives. If they have to give up on some need-based aid, they will turn to loans. You can kind of see what some of those negative impacts are.

There are also implications at a campus level. Talking about things like wraparound services, financial counselling, increasing financial literacy for students to be able to find those need-based options. First, exhaust all those before going to the to the to the loan route, And again, we have questions about the surviving versus thriving. Bachelor’s degree attainment is only one market and it doesn’t tell the whole story.

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Please find our references here.

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Thank you for your time and please do not hesitate to reach out to us if you have any questions about this project or our findings.