

FUNDING BELONGING: THE RELATIONSHIP BETWEEN HIGHER  
EDUCATION FUNDING AND SENSE OF BELONGING

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A Dissertation  
presented to  
the Faculty of the Graduate School  
at the University of Missouri-Columbia

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In Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Education

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May 2023

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FUNDING BELONGING: THE RELATIONSHIP BETWEEN HIGHER  
EDUCATION FUNDING AND SENSE OF BELONGING

presented by Bryan Goers,

a candidate for the degree of doctor of education,

and hereby certify that, in their opinion, it is worthy of acceptance.

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## DEDICATION

None of this was possible without my wife who somehow managed to raise our child and advance her career while I disappeared for hours at a time to do homework or write. A true dedication to her would be twice the length of this dissertation. Instead, I'll just say I love you and thank you for your unwavering support.

To my son: You were sleeping on my lap as I listened in on class lectures when you were only a month old. Thank you for sleeping so well back then. I hope you read this one day and are proud.

## ACKNOWLEDGEMENTS

I would like to thank a number of people who have assisted me with my research. First, I could not have done this without the support of my committee co-chairs, Dr. Dorner and Dr. Williams. From the random questions I would fire off by email to the formal meetings they guided me through this process, and I am forever thankful. Dr. Stackman and Dr. Page provided great insight and helped me to reset my perspective which ultimately led directly to this research topic. Additionally, they both were very supportive of me during my time working for Mizzou. Dr. Curs provided valuable input which helped me interpret prior research. NSSE researchers Dr. Miller and Dr. Gonyea enabled the research to happen by providing the data. Dr. Pike inspired my research and was kind enough to provide his original paper at no cost to me.

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## ABSTRACT

Sense of belonging is an important psychological and social factor for college students. Students who report a strong sense of belonging to an institution are more likely to return the next year (Hausmann et al., 2007), stay in school (Fine, 1991), graduate (Morrow & Ackermann, 2012), learn (Kernahan et al., 2014), thrive (Strayhorn, 2019), and have reduced drug use (Goff & Goddard, 1999). Various campus offices impact a student's sense of belonging including housing, academic advisors, campus activities, and counseling services (Berger, 1997; Kuh et al., 1991; Stebleton, 2011; Stebleton et al., 2014). There is no clear answer on which campus services have the largest impact on belonging. IPEDS expenditure data was combined with NSSE belonging data to attempt to answer the question: which college functional areas have the strongest relationship with sense of belonging. A three-block hierarchical regression model found the Adjusted  $R^2$  moved by less than .01 for expenditure variables. Most expense areas had a negative but not significant relationship with belonging. Spending on Scholarships had the strongest positive relationship on belonging. Total institution expenditures were weakly correlated with Student Services while Instruction and Research spending was highly correlated. Finally, NSSE's Engagement Indicators for Supportive Environment and Quality of Interactions were correlated with belonging while Student-Faculty Interaction was weakly correlated. Ultimately, this study has provided a solid foundation for future research around why hypothesized results were not found.

## Chapter 1: Introduction

How can a university increase students' sense of belonging on campus? Sense of belonging is an important aspect of a student's college experience. There are many factors that will impact a student's sense of belonging, including ones outside of the control of a school, but the results of feeling as though a student belongs on a college campus are wide ranging and positive, affecting such behaviors as drug use and retention (Goff & Goddard, 1999; Tinto, 2012). There are many programs and services that impact sense of belonging such as student housing, quality faculty, academic advisors, and college athletics (Berger, 1997; Bryant et al., 1995; Stebleton et al., 2014). Many student services are specifically designed to impact belonging, so does investing more in student services result in more belonging? Hypothetically, if a college leader was looking to improve sense of belonging and had money to invest in new or expanded programs, where should that leader put their resources? Adding one or two more counselors can have a major impact on student outcomes such as sense of belonging, grades, retention, and more (Breslan et al., 2008; Stebleton et al., 2014). Can adding one or two more faculty members have the same strength of impact? Both the counselor and the faculty member may only impact a limited number of students. If the goal is to create a strong sense of belonging on campus and there are limited resources, which area should an institution choose to invest in additional staffing? There will be a lot of factors that go into where campus leaders spend money, but a helpful tool would be knowing that if money is invested in a certain area, what would the impact on belonging be? This question does not have a clear solution based on existing literature and only a few studies have attempted to address such a broad question. As such, this dissertation research attempted to provide a look into the relationship between belonging and spending.



### **Statement of the Problem**

Higher education leaders across the United States are asked to justify the existence of programs in a time of tough budgets and a 158% increase in tuition over the last 30 years (Ma, 2021). Few areas of a college campus have escaped scrutiny – especially costly facilities like recreation centers and residential halls – with the greatest expense for most units being personnel. A single full-time staff member can cost anywhere from \$50,000 to \$200,000 after including salary and benefits depending on the type of role. So where should a college invest and where should they cut back if the goal is to increase sense of belonging on campus?

Few studies attempt to compare organizational areas and their impact on students even though there have been many studies looking at the impact of various individual units (Blimling, 1989; Bryant et al., 1995; Kuh et al., 1991; Stebleton et al., 2014). Research shows that living on campus, being involved in student organizations, and participating in recreation activities all positively impact a student's sense of belonging (Blimling, 1989; Strauss & Volkwein, 2004; Stebleton et al., 2014). This information is helpful, but not to a leader who is trying to decide between two requests to hire staff in two different areas and only has the funds to invest in one. One study did attempt to address this topic by using high level funding data through the Integrated Postsecondary Education Data System (IPEDS) in order to make their determinations. IPEDS is a national clearinghouse for university level data from every school in the United States who receives federal funding (Institute of Education Sciences, n.d.). Pike et al. (2006) used IPEDS funding data to look at the relationship between student engagement via data from the National Survey of Student Engagement (NSSE) and expenditures in the areas of instruction, research, public services, academic support, student services and institutional support. Their goal

was to “lay the groundwork for a conceptual model of the relationships among expenditures” (Pike et al., 2006, p. 867). However, they were challenged to find definitive results; they concluded their paper by stating: “much more research is needed to determine where and how financial investments shape institutional and individual behavior resulting in improved levels of student engagement and other indicators of student success and educational effectiveness” (Pike et al., 2006, p. 869).

Assuming the data needed was accessible, what should leaders use as a measure when comparing units? This presents another challenge for researchers because not every campus unit is designed to directly impact the same thing. One potential common impact is that most units have some effect on graduation rates, even if it is in a roundabout way. Consider this example: a student exercises at the gym and in doing so gains better mental health. They therefore do not need to use the counseling center on campus, and they persist to graduation. Does that mean campus recreation centers are better for graduation rates than counseling centers? It is very hard to tie individual units on campus to graduation and retention. A few studies have shown retention is higher among students who used a school’s counseling services (Turner & Berry, 2000; Wilson et al., 1997). However, even in these studies, the connection to retention is a weak one (Sharkin, 2004). Retention cannot be narrowed down to one thing, but rather needs to be seen as a list of reasons someone decides to stay in school (Bean, 2005). One of those factors is social integration (Tinto, 2012): the better one is connected to a place, the more likely they are to stick around, even when faced with adversity. This provides a potential avenue for comparing units to other units.

A placeholder for social integration is sense of belonging. Sense of belonging is a heavily researched area, and it has been clearly documented that a student with a higher sense of

belonging is much more likely to persist and graduate (Morrow & Ackermann, 2012). All students need to have a sense of belonging to continue their education, but at-risk students especially need it (Heisserer & Parette, 2002). What is missing from the research is the connection of which areas in a college create the highest levels of sense of belonging in students. Counseling centers, academic advisors, and campus activities provide different services that impact students differently, but all three increase a student's sense of belonging (Curtin et al., 2013; Strauss & Volkwein, 2004; Stebleton et al., 2014), even if at different levels and scope. More research is needed to look at all these areas collectively when studying sense of belonging, rather than as isolated areas.

### **Purpose of the Study**

The purpose of this study is to help administrators decide where colleges and universities should invest their resources by measuring sense of belonging across many institutions and comparing funding levels. For example, should a school invest in more student services or in academic support services? This is a question that is grappled with every day between unit leaders on a college campus. Asking students, faculty, or university stakeholders will result in a multitude of different responses. Students in particular may help shape where many leaders invest resources either by perceived needs or by demand.

Student demand is often used as justification for adding services to colleges. Some of the best examples of this come via demands for more counseling services and recreation centers at colleges (Binkley & Fenn, 2019). In 2017, Louisiana State University completed building its \$85 million recreation complex which included a lazy river (Stripling, 2017). Shortly after, editorials and news stories covering the reaction from community members and lawmakers painted the

institution's newest addition as "frivolous," while campus administrators argued it is what it takes to attract students in today's higher education market (Stripling, 2017).

This study intended to provide campus leadership another metric for evaluating where to invest resources other than student demand. Leaders can make grounded decisions by having research on how various aspects of a campus impact sense of belonging. This information may not be the only factor in deciding where to invest, but it will provide leaders with a foundation of an apples-to-apples comparison between various units under them. Specifically, the research questions are:

1. Do student services have a stronger relationship with sense of belonging compared to other areas?
2. If not, what areas of funding have the biggest relationship on belonging?
3. Do increases in student services expenses correlate to an increase in sense of belonging?

### **Conceptual Framework**

Sense of belonging and student services are very much linked together as this section will demonstrate. Student services or student affairs is a broad term that can refer to just about every type of service outside of the classroom (Schuh et al., 2011). Student affairs originated out of Harvard in 1870 when the school created the dean of students to oversee some of the records and registration management (Cowley, 1940). It would not take long for the school to add a dean of men with the task of developing students after their classes ended. This position was created roughly 80 years before Maslow developed his hierarchy of needs upon which the modern concept of sense of belonging is founded. As such the mission for most of these newly created deans of students was focused on discipline (Rhatigan & Crawford, 1978). It would take another 30 to 40 years before something resembling the modern student affairs would begin to form.

In the early 1900s, new positions started to be created called the deans of women as more women started to attend college (Holmes, 1939). These positions began to work with students on developing their whole life rather than just addressing conduct issues (Holmes, 1939). Around the same time, the first professional association for student affairs practitioners was founded (Student Affairs Administrators in Higher Education, n.d.). Over the next century the field of student affairs would become more defined and researched, eventually leading to what exists today. While there is no one standard template for a student affairs division most schools have the same services even if they are housed in various units. Specifically, nearly every large public institution has admissions offices, student health, counseling services, recreation centers, housing, and campus activities units on their campus. Before going into each of these areas it is necessary to understand what sense of belonging is on a college campus.

Psychology research around belonging can trace its origins to Maslow in 1943 when he introduced his hierarchy of needs. Maslow demonstrated that there were various levels that needed to be met before a human could self-actualize (1943). He theorized that there were five levels: physiological, safety, belonging, esteem, and self-actualization. Each level had to be satisfied before a person could have needs in the next level satisfied. Therefore, belonging is a critical component in education as a student cannot learn (self-actualization) until the previous four levels were met. Astin would build upon this foundation to show how students can find belonging on a college campus (1984). Astin came up with five assumptions around student involvement, including two important ones: students must invest in their experiences to get anything out of them, and student involvement is highly linked to academic achievement (1984). Astin's research would become the basis of student involvement theory and go on to shape student affairs today.

Baumeister and Leary's seminal work on belonging in 1995 set the stage for the next three decades of research by looking at all the research that had been done on belonging to put into one paper. They posed the question do humans need to belong and the answer they found was yes. In their research, they found that an ongoing bond and frequent interactions are sought by people. They confirmed the need to create and keep strong interpersonal relationships. Once someone has created a bond, they work hard to keep it. If a person was able to maintain those relationships, then there were positive impacts on cognitive processes (Baumeister & Leary, 1995). However, if a person were to never have any attachments, then there would be negative impacts on their health and well-being (Baumeister & Leary, 1995).

In more recent times, Allen et al. (2021) summarized the current state of research into belonging with a review of research and a look towards future research. They find that the need to belong has been well documented and exists on a biological level. Belonging is a construct that exists within surrounding systems. The lack of belonging continues to show negative effects on people. They go on to say that more people are showing signs of struggling to find belonging. Many studies have touched on belonging and as result the language used to describe and define belonging has become inconsistent (Allen et al., 2021). Allen et al. question if belonging has become too generic of a concept (2021). As an example, they ask if the "lack of a sense of belonging is equivalent to negative constructs such as loneliness, disconnection, and isolation, or if these are separate dimensions" (Allen et al., 2021, p. 91). Allen et al. (2021) go on to suggest that belonging comes from four interrelated areas: competencies (having skills and abilities needed to make connections), opportunities (the availability for belonging to occur), perceptions (one's own subjective feelings), and motivations (the need or desire to connect). They conclude the paper by providing six suggestions for future study (Allen et al., 2021):

1. Existing research is siloed within disciplines and future research needs to be more collaborative.
2. People studying belonging need to do more robust literature reviews.
3. There are large gaps between research and practice.
4. Researchers need more refined instruments to measure belonging.
5. More longitudinal studies on belonging are needed.
6. Multilevel research is ideal for looking at all the ways belonging impacts humans.

Sense of belonging has important impacts on a college campus. In general, as sense of belonging increases, so does social integration (Lindgren, 1990), positive health, and well-being (Baumeister & Leary, 1995), while depression decreases (Hagerty & Williams, 1999). Learning on a college campus requires a student to feel supported and that they belong (Combs, 1982; Kernahan et al., 2014). The lack of belonging is directly linked to students dropping out of school (Fine, 1991) and higher rates of substance use (Goff & Goddard, 1999). Students need to feel as though they fit in on campus and that they are valued there (Hagerty et al., 1992). The previously mentioned benefits may appear worth investing resources on face value, however, the real underlying assumption that forces schools to invest is the fact that the stronger a student's sense of belonging, the more likely the student is to return the following year (Hausmann et al., 2007). Put simply, sense of belonging will impact school budgets and small increases in sense of belonging can have major retention impacts worth millions of dollars in tuition revenue.

Individual student services units have documented impacts on belonging. Just living on campus impacts a student's sense of belonging in a positive way thanks to the support and access the living arrangements provide (Berger, 1997; Blimling, 1989; Pascarella et al., 1994; Rodger & Johnson, 2005). Positive mental health has a big impact on sense of belonging and a strong sense

of belonging has a positive impact on mental health (Stebbleton et al., 2014); therefore, counseling services play an important role in a student's sense of belonging. Recreation centers provide a place where students can find friendship and respect for others, two major contributors to sense of belonging (Bryant et al., 1995). Social integration is a key aspect of sense of belonging and student involvement is one way to greatly increase a student's social integration (Kuh, 1991; Strauss & Volkwein, 2004; Tinto, 1993; Tinto, 2012). Finally, a campus that is both mentally and physically healthy is an important part of sense of belonging, and student health centers are the primary location students use for their physical (and sometimes mental) health (Ma et al., 2005).

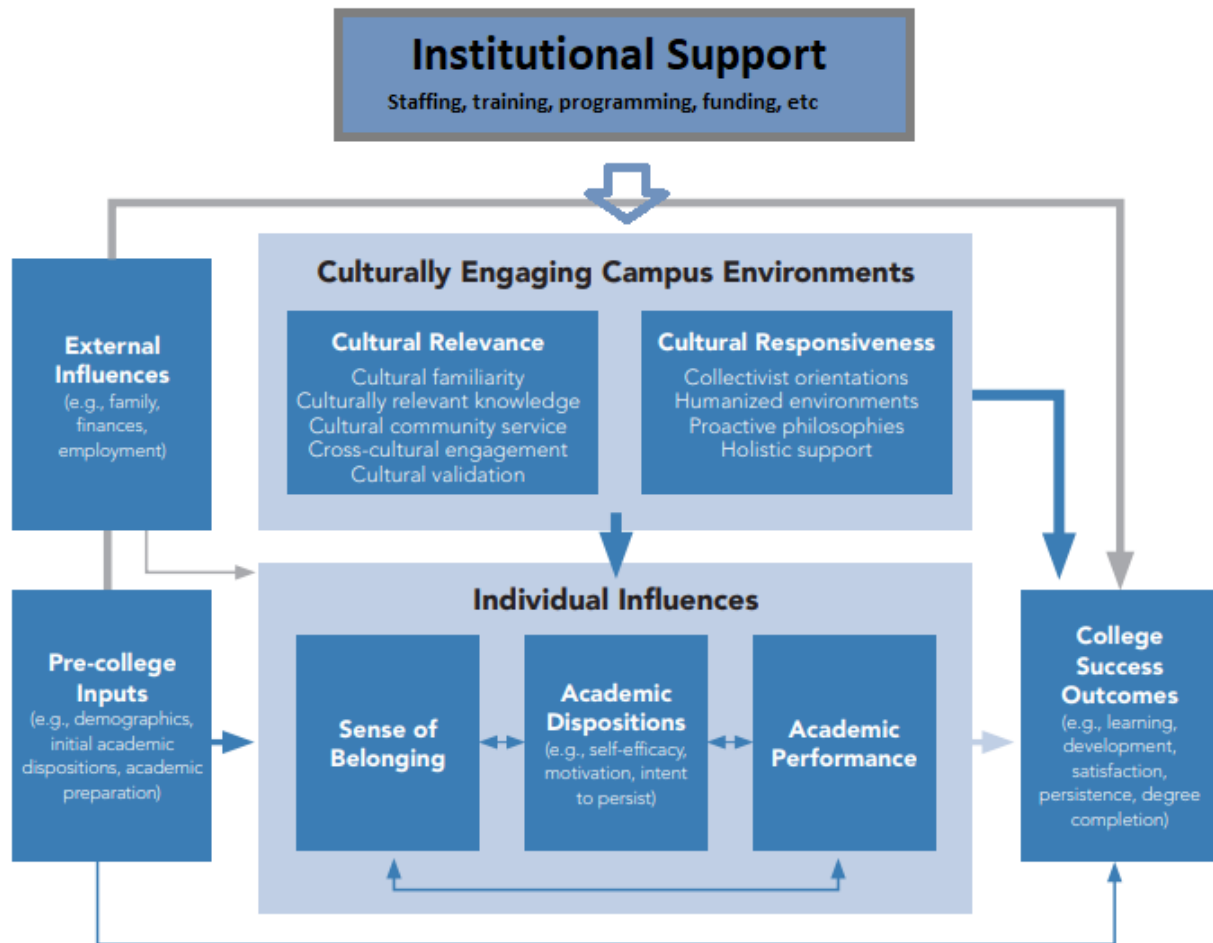
The relationship between campus funding and sense of belonging is not a straight line. Instead, campuses fund areas that then subsequently provide services or experiences to students which in turn impact belonging. Museus' (2014) culturally engaging campus environments (CECE) model provides a good visual for how belonging is impacted by various factors. Sense of belonging is impacted by campus and individual inputs, specifically external influences such as family, pre-college inputs such as preparedness, and campus environments (Museus, 2014). Astin's IEO model (1991) is too simplistic to describe all the factors impacting a student. Researchers such as Museus have in effect updated Astin's model to account for the numerous influences on a student. For the purposes of this study, what the model implies is that institutional support is provided to create cross-cultural engagement, community service, humanized environments, and proactive philosophies. I modified Figure 1 to show how I believe institutional support and funding influence belonging. External forces are outside of the control of an institution; however, the new Institutional Support box shows that this support impacts a campus environment through funding, training, and staffing. These supports are within the



control of an institution and allow for campus faculty and staff to then impact a student’s belonging.

**Figure 1**

*Culturally Engaging Campus Environments*



*Note.* Adapted from Museus (2014) Culturally Engaging Campus Environments with the addition of how institutional support impacts the model.

**Design**

Leaders in higher education are increasingly forced to make difficult financial decisions based on mostly anecdotal information from students, their staff, or internal surveys. Often the

reason a school invests in an area is because students or staff have requested it. This study looked to provide more generalizable data about what areas have the biggest impact on sense of belonging and if it is worth investing in student services assuming a goal is to impact sense of belonging. This is not an easy undertaking since the data required to make generalizable statements on this level has limitations. A qualitative approach could provide good information for how individual units impact sense of belonging, but this research has already been done. Instead, a quantitative approach seemed the most appropriate to provide a high-level comparison across multiple institutions and to control for many factors.

### *Sample*

This study focuses on institutions who participated in the National Study of Student Engagement (NSSE) survey. NSSE data is already available for multiple years and accessible for a fee by request. Each of the schools who participate in NSSE are required to submit data to IPEDS. This study did not exclude any schools immediately other than ones who either did not submit spending data to IPEDS or institutions not participating in NSSE. Instead, the study categorized schools into various groups: size, Carnegie Classification, location, and other factors. The student bodies of large public schools look very different by comparison to small private schools. The size of institutions varies widely across the U.S and small public colleges do not always have the same resources as large public institutions. Most large public schools offer the student services previously mentioned in this dissertation through independent units rather than having one person who may do multiple roles as is common at smaller colleges. Knowing the region a school is located is important because most schools will compete for students from their region. For example, in the Midwest many schools will recruit from similar urban areas (Chicago, St. Louis, Memphis, etc.) and their student populations are similar as a result while

schools on the west coast will pull from cities and regions on the west coast. Finally, athletic programs bring a different kind of belonging to a school so identifying schools with athletic departments is important. Moreover, success in football and basketball directly impacts the number of applications a college receives (Pope & Pope, 2009).

### *Data Collection Tools and Procedures*

This study uses the pre-existing NSSE data sets on student sense of belonging from as many schools as completed the most recent NSSE survey that is available to me. I then used data from IPEDS on spending from these schools. The study's three hypotheses are (a) increasing spending in an area will increase sense of belonging; (b) student services will have a larger positive relationship on sense of belonging than other categories; and (c) race and year in school will be significant measures for changes in sense of belonging.

**NSSE.** The NSSE provides good data on sense of belonging for many universities in easy to find datasets (About NSSE, n.d.). The NSSE survey is a long-standing tool that results in hundreds of thousands of responses from undergraduate students every time it is administered. It provides a long list of questions to students, but the key for this study is the questions around sense of belonging and their benchmarks.

The data from the NSSE has been used in hundreds of studies and reports. The survey began as of a combination between years of research and college rankings. George Kuh was a well-known researcher around campus engagement and considered student engagement a better indicator of quality than the national rankings of U.S. News (NSSE Website, n.d.). The first survey was administered in 2000 and before long it became a benchmarking tool for many schools. In 2013, the survey was updated to reflect new terminology, provide better clarity, refine measures, and add new measures (NSSE Website, n.d.). It also updated its benchmarks in

2013, which is important because it means the previous research done with NSSE prior to 2013 may not align with research done today. This survey is especially well suited for this study for two reasons; first, it provides a common sense of belonging metric for many schools across the U.S. and second, it has been administered over many years. The NSSE survey asks many questions, but the three important questions for this study are: “To what extent do you agree or disagree with the following statements? a. I feel comfortable being myself at this institution. b. I feel valued by this institution. c. I feel like part of the community at this institution” (NSSE Website, n.d.). These questions are combined into a Sense of Belonging score for every student by NSSE.

**IPEDS.** The Integrated Postsecondary Education Data System is a series of surveys sent to every college, university, and technical school that receives federal funding for financial aid programs (IPEDS Website, n.d.). Information collected in the surveys varies widely from institutional characteristics and spending to outcomes and human resources dating from 1980 through present day. For the purposes of this study, finance data is available since 1987 and broken into various subcategories including instruction, research, public services, academic support, student services, institutional support, scholarships, auxiliaries, hospital services, independent operations and other. Each subcategory is explained by IPEDS so there is some uniformity to how schools report data. Student services is defined as:

[The] total expenses is the sum of all operating expenses associated with 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 student activities, cultural events, student newspapers, intramural athletics, student

organizations, supplemental instruction outside the normal academic program (remedial instruction for example), career guidance, counseling, financial aid administration, and student records. (IPEDS Website, n.d.)

Data from IPEDS was available for download for free from the IPEDS website.

### *Data Preparation*

After downloading IPEDS data on spending from every school that participated in the 2020 NSSE study, I eliminated fields that I did not need for my study. I additionally eliminated any institutions who were Associate Degree granting institutions only, not Carnegie classified, Special Focus schools such as law schools, exclusively graduate, and those that did not report any funding data. I then divided each category of expenses by the total number of students attending the school to control for spending per student. After determining the averages of these fields I created categorical variables based on a Significantly Below Average, Below Average, Average, Above Average, and Significantly Above Average scale. I also created dummy variables for testing if there were funding threshold levels that impact belonging. This spreadsheet was then sent to the administrators of NSSE along with my request for data. The institution name and IPEDS numbers were included in the first two columns as requested by NSSE staff. NSSE sent me back a dataset of 232 masked schools and 66,968 student responses with my data added to each response. NSSE stipulated that no category group can have fewer than five institutions in the field. While the data is masked, NSSE provided institution level information such as Carnegie Classification, percent of women, percent of white students, enrollment size, and public/private variables to use as controls for every response. The main variables were the responses to key questions and composite benchmark scores. A formal agreement between my institution and Indiana University, plus a fee, ensured my access to the

data. After receiving the data from NSSE I created five new dummy variables to use as controls. Those included Carnegie Classifications, Region, Race, Sex, and First-Generation Status.

### ***Data Analysis***

This study developed a hierarchical regression model using NSSE data on student sense of belonging with funding data from IPEDS on spending while controlling for other factors such as institution size, demographics by race, gender, and first-generation status. Having data from multiple schools on both sense of belonging and spending allowed for a linear regression model to be built and analyzed. Linear regressions are a good way to find relationships between two variables while controlling for other variables (Field, 2018). This model used a hierarchical linear regression to understand the amount of variance explained by the dependent variable when adding in new independent variables. The model ran in three blocks: a control block, a block with the NSSE engagement indicators, and a block with the funding variables. If there were any differences in adjusted  $R^2$ , then funding did have an influence on belonging. From there, I looked for correlations between spending levels and sense of belonging. Did schools with larger expenditures increase or decrease the overall sense of belonging in any meaningful ways? Did funding impact students from various races, genders, or status differently? Does having more funding in any particular area have any impact on sense of belonging? The regression model and correlations allow researchers to look for patterns in the data and test hypotheses (Field, 2018).

### ***Efforts to Support Quality of Research***

Given that the NSSE survey has been administered over a period of many years and collected data on sense of belonging for over 20 years, its data and the measures used in this study have been found to be valid and reliable. The NSSE survey has been studied through generalizability theory (GT), which is used to determine the dependability and reliability of

measurements through ANOVA testing (Fosnacht & Gonyea, 2018). Specifically, Fosnacht and Gonyea (2018) found that the NSSE Engagement Indicators, which were used in this study, are “reliably generalized to a larger population from small samples of students at postsecondary institutions” (p. 69). Moreover, while some NSSE measures not used in this study have weak validity and reliability, measures around sense of belonging and a supportive campus environment have been found to be more reliable and valid than other measures such as level of academic challenge and enriching educational experiences (Campbell & Cabrera, 2011). Using data from multiple years would have been ideal since that will help to increase reliability (Field, 2018), but that is beyond the scope of this study.

This study controlled for objectivity by assigning each school a random number rather than a name. Special consideration went to the regression model’s dependent variables to account for any major shifts in sense of belonging. For example, how well a school’s football team does in a year might increase a student’s sense of belonging on campus. Using multiple schools and controlling for universities that are large, public institutions with athletic programs helped to mitigate sport teams' impact on belonging relative to other schools. To address concerns around external validity, control variables such as institution size, percent of white students, and percent of women were added to the model to control for varying populations. The large number of schools in the study also helped to provide some generalizability to the findings.

IPEDS has been collecting data for more than 40 years and is used in many peer reviewed studies. IPEDS data is self-reported by the institution, and while it is likely that most institutions report data to IPEDS the same every year, it is possible that some institutions include a unit in one category while another institution includes the same unit in a different category. The bigger

concern for using IPEDS data is related to the Parent-Child relationships that system schools have with the main campus. Some system schools report all their data through the main campus, while others report some of their data themselves and other data through the main campus. Jaquette and Parra (2014) found “in 2004–2005, each of the 24 Pennsylvania State University campuses reported separate Fall Enrollment data, but they all reported Finance data as part of the University Park campus” (p. 486). This dissertation controlled for the Parent-Child relationship by eliminating any institutions from the dataset who did not report their expenditure data or who did not report any students as attending.

**Limitations.** There are several potential limitations for this study from a data perspective. The most significant is that all the data included in this study is self-reported. Both the NSSE and IPEDS rely on the people they survey to accurately report data. Incorrect data reported to IPEDS has potential ramifications on federal funding while incorrect data reported to NSSE has no impact on the student. A second limitation is that IPEDS funding data is for an entire school, but NSSE sense of belonging data is from undergraduates only. Some universities have large graduate student populations that a school spends millions of dollars on. While controlling for expenditure per student will reduce some of this variance, it will not control for it all. Previous studies attempted to control for this limitation by dividing the total expenses by the percentage of undergraduate students who attend the institution. This study did not do that as spending on undergraduate verse graduate students is rarely equally divided in that way and many of the services available to graduate students will also impact undergraduate students (spending funds on graduate teaching assistants reduces the faculty to student ratio in classrooms for example).

### **Key Terms**

This study will have several key terms that are important for the reader.



- Sense of belonging - Sense of belonging has dozens of definitions. It is a concept used today in multiple industries and studied by economists, psychologists, higher education researchers, and many more. A student has a sense of belonging if they feel that they fit in and are connected at a place (Strayhorn, 2019). For this study, sense of belonging refers to a student's response to various NSSE questions including: does a student feel valued by their institution, does a student feel like a part of their community, and does a student feel comfortable being themselves at their institution?
- Retention and Retention Rates - At its simplest definition, retention is a student staying in school until graduation and not dropping out (Hagedorn, 2005). The retention rate of a school is the percentage of students who return for the next year of schooling. This is usually measured as a freshmen, sophomore, and junior rate. For example, a school might have a 90% freshman retention rate which means 90% of freshmen return after their first year. The term can be misleading as not all freshmen return as a "sophomore", it simply measures if they returned at all.
- Higher education auxiliary funding - The funding of higher education in the United States is complicated however there are generally three main revenue streams for institutions: Paying students, government funding, and private donations/investments (Whitford, 2021). This study will reference auxiliary operations funding models which typically charge students for their use or receive a student fee which is separate from tuition. Student fees are usually voted on by students and self-imposed. They fund a wide range of services at universities such as counseling centers, campus activities, and more.
- Student Services - Student Services or Student Affairs is a broad term used generally to describe any service focused on students outside of the classroom. It is also the name that

many colleges give to a unit that specializes in programs for students. For example, at the University of Missouri the Division of Student Affairs encompasses a dozen subunits such as housing, recreation, and activities (University of Missouri, n.d.).

- **Types of universities:** This study looked at different types of schools: large/small, public, residential/commuter, doctoral/bachelor granting institutions. The Carnegie Classification system separates universities into categories for simple comparisons. They define a large institution as a school with more than 10,000 students. The term public refers to a school being publicly funded by a state government. Primarily residential is a term referring to how many students live on campus. Doctoral granting means that a school confers doctoral degrees. Most of these doctoral granting schools fall into a Research 1 or Research 2 designation which means that the school produces a large amount of research and therefore employs the faculty and staff to achieve that goal.
- **NSSE -** The NSSE survey is sent out by hundreds of schools across the United States (NSSE Website, n.d.). It measures various student engagement factors, but this study will focus on the questions about student sense of belonging. The survey has been around for more than 20 years and is widely used in research (NSSE Website, n.d.).
- **IPEDS -** National survey of all institutions that receive federal funding for student aid. This study collects thousands of data points including on expenses and graduation rates. (IPEDS Website, n.d.)

### **Significance of the Study**

A lack of research on this topic makes for a rich opportunity to investigate the impact of spending on students' sense of belonging. Beyond that, knowing where to invest extra resources or what units to protect from cuts is an invaluable tool to have in a leader's possession. Instead of

approaching a conversation with staff and stakeholders with only internal data and anecdotes, these findings should provide leaders with some data to start the conversations. While the findings are limited, the results can provide higher education leaders insight into where they need to be investing if they are trying to impact belonging. Finally, this research provides a foundation for future studies comparing units across a campus. Few studies have even attempted to make such comparisons, and this study will provide insight into how researchers may approach the topic.

### **Dissertation-in-Practice Summary**

Being a leader in today's higher education field is increasingly complex and challenging. This study attempted to give leaders a roadmap for where to provide future funding to have the biggest impact on an important element of higher education: sense of belonging. It is one of a few studies attempting to compare various areas' impact on sense of belonging. Research continues to show that as a student's sense of belonging increases, so does their chance of continuing at that institution and graduating (Morrow & Ackermann, 2012). Research has been done on various units' impact on sense of belonging, but it has yet to connect all those separate pieces of information. Does investing in student services impact belonging is an interesting enough question to ask, but going one step further and asking if investing in academic support versus student services provides leaders a way to make decisions. The goal of this study was to help leaders to make better decisions on where to invest to impact belonging on their campus.

## **Chapter 2: Practitioner Setting**

In 2018, I found myself standing in front of a nine-student committee where I made a presentation on why my department wanted every student at the University of Missouri to pay \$1.40 more in student fees next year. This presentation was the culmination of a long, internal negotiation process where various campus units sought permission to ask for fee increases from the committee. I was competing against units such as parking, recreation services, counseling, and the student union for an increase in funding. The committee was never privy to the internal conversations that pre-dated their meetings. In those prior discussions a decision was made to increase funding for a new Care Coordinator instead of investing new funding into my area. This was, in part, the result of my inability to articulate my argument through data compared to other units. The leadership in my division decided that based on the information they had it was better to invest new resources in another area. Reflecting on this decision, I am unable to say if it was a good or bad decision because of a lack of data. Thus, the seeds for this dissertation was born.

### **Background of the Context**

I have always enjoyed budgeting and looking at finances from a macro level. This probably dates to my time as an undergraduate student when I was a part of a university committee tasked with solving a multi-million-dollar budget deficit. However, what is relatively new to me is my interest in sense of belonging and tying the two together. My introduction to sense of belonging came in the form of doing assessment for programs that I was responsible for at Mizzou. We were required to turn in annual reports and show (to some extent) the impact of our programs on students every year. Buried in all our surveys was a common theme: belonging. Most of my programs provided something for students to do outside of the classroom that would also give them skills to get a job after college. We would use “fun” to bring students in and get

them participate in our programs. Once they were participating we would provide experiential learning and debriefing to connect what they just did (be it participating in a student organization or go on a service trip) to what they want to do after college. At first, I thought the main goal of all my programs was to provide students with these real-world applications to what they were studying. However, as the years went on, I came to believe an equally important goal of my programs was to provide students a sense of belonging on campus. That connection they made with others enabled them to persist through college. Yes, they learned other things in my programs, but this sense of belonging they were developing would serve them more in the short term than any understanding of real-world application because it would help to keep them at Mizzou.

I am not a “traditional” student affairs employee in terms of education. My degree was in Public Affairs, and I had planned on working for the federal or state government. However, I was hooked on higher education and made that my career when I received a graduate assistantship through the leadership and service office at Mizzou. As a result, I did not have a formal education in all things students that most student affairs practitioners have these days. When I realized sense of belonging was such an important topic, I began to teach myself about it by Googling “sense of belonging” and reading articles. The literature was clear about its benefits, but it was one assessment coordinator at Mizzou who really put it into perspective. She helped me see how belonging was a placeholder for retention and how retention was the best predictor of graduation we had at Mizzou. Belonging was a leading indicator of retention which meant we could act on it to impact our retention rate. Fast forward to today, and I am a huge proponent of programs and initiatives that attempt to impact belonging.

This brings me back to the committee presentation that I referenced earlier. The programs that I wanted to fund impacted belonging, but so did Care Coordinators. There were many units asking for fee increases that also impacted belonging in addition to their unit missions. This committee is a great example of how higher education finance meets creating belonging at an institution. We were competing for scarce resources without any way of truly comparing the work that various units did. Everyone was doing special things that would have benefited students, but not everyone could be funded.

### **Implications for Research in the Practitioner Setting**

If I would have been able to show that my programs had a larger impact on students than another unit, I certainly would have had a stronger case to get more funding. However, nothing like that existed and instead we were left to show our campus leadership various survey data then make the case of how we thought we had a big impact. For example, each spring Mizzou would release a survey called the “Mizzou Student Experience Survey” that assessed several things my areas cared about: sense of belonging, wellness, food insecurity, student engagement/involvement rate, and more. There was little doubt that my area had a strong impact on these numbers, but no one was quite sure at what rate. The Office of Student Engagement (my office) clearly impacted the engagement rate of our students, but so did half the college. How am I to show that by investing in this one unit, it will have the biggest impact on the thing the University leadership cares about? Our assessment person would have had to drop every other project to try and answer that question. This dissertation aimed to provide a foundation to that question. It attempted to answer on a generalized level if it is better to invest in more student services instead of another unit to impact belonging. I wanted this dissertation to at least give leaders some way to compare the sense of belonging between all these units. Sense of belonging

is not the end all metric and one data point will never make a funding decision an easy one, but this dissertation should give leaders another data point to build decisions. I was not able to accomplish everything I wanted with this dissertation. Instead, I view it as the starting place for me and something on which I can build. There is so much rich data out there but putting it all together is a challenge.

Data is a critical aspect in decision making. Having more data makes decisions easier and sometimes harder. Too much data results in noise that needs to be filtered out, but having the right data in front of a leader at the right time leads to excellence. Data informed decisions are not new and have been in practice for student affairs leaders for decades. Surveys typically inform decisions, but also so does past experience and research. However, over the past 10 years it has been my experience that surveys are driving the day-to-day decisions of campus leaders. There are exceptions to this, however I can think of many instances where leaders cited recent survey data when announcing new programs or changes. Good leaders also will cite research as the foundation to which the surveys are built. I have said before that I hope research data from this dissertation will be the foundation to which decisions can be grounded. What I mean by that is that starting with a base comparison of a unit's impacts on sense of belonging is something that is meant to be built upon. My hope is a leader will take this body of work and apply campus level data to it.

### **Practitioner Setting Summary**

I found a place to belong on my undergraduate campus and even in graduate school. I never thought of my time in school in terms of belonging like I do now. The fact that I can connect belonging with my passion of education is something that I am very excited about. I

sincerely hope that this research begins a long journey of future discovery. Regardless, it will be one more datapoint for university leaders to make informed decisions.



### **Chapter 3: Reviewing the Literature**

Many colleges and universities in the United States are being forced to make difficult funding decisions as tuition costs increase and state support dwindles. Practitioners in higher education often do not have a roadmap to navigate these tough budgetary decisions and instead rely on anecdotal evidence to make decisions. Leaders looking to make an impact on their students have a wide range of potential solutions at their disposal. For example, mental health is a documented growing concern to those in higher education (Hartocollis, 2021). When faced with a decision to invest in more mental health counselors or recreation services, which should the school choose? On face value counselors seem the best to address mental health, but students that use recreation services have been shown to have more stratification with their life and university experience (Ellis et al., 2002). What does the literature say about which should be funded?

Academic advisors, campus housing, counseling centers, recreation services, and campus activities are all staples of student services units for most major universities. Each of these units can provide a long list of positive benefits for students and justify a request for increased funding. In fact, each of those units can show they impact a student's sense of belonging through decades of research. What is missing is the ability to compare these units in some meaningful way to units outside of student services. This study sought to do that through a single, but important metric: sense of belonging. Sense of belonging may be able to give leaders at least one apples-to-apples comparison between units that previously could not be compared if researchers control for factors like socioeconomic status and race. These factors all impact a student's sense of belonging on campus. Finally, to fully understand the impact of various units, this section

takes a brief look into the various ways higher education is funded and how that funding is spent.

### **Sense of Belonging**

Defining sense of belonging with one sentence is challenging because so many researchers have applied different meanings to it. For example, Strayhorn (2019) says:

In terms of college, sense of belonging refers to student's perceived social support on campus, a feeling or sensation of connectedness, and the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the campus community or others on campus such as faculty, staff, and peers. (p. 4)

Tovar and Simon (2010) take a slightly different approach considering belonging to be “an individual's sense of identification or positioning in relation to a group or to the college community, which may yield an affective response” (p. 200). Vaccaro and Newman (2016) found that students themselves define belonging as comfort, respect, safety, and fitting in with their environment. It is best to start with the underlying psychology of belonging and look at how colleges use the term to really understand sense of belonging.

Belonging or the need to belong has been a well-researched area in psychology and education. It was Maslow in 1943 who set the tone for the modern idea when he included belonging as one of his basic human needs which needed to be satisfied before other needs could be met. Before belonging can be met though, Maslow (1954) laid out two basic needs: physiological (food, water, etc.) and safety (security, shelter, etc.). Once these two needs are met, then humans can begin to meet their psychological needs, the first of which is belongingness (Maslow, 1954). What is most important for this review is that until the belongingness needs are met, self-actualization cannot occur. Each individual person defines self-actualization

differently; however, Maslow suggested it could be a person becoming a parent, playing a sport, or being an artist (1943). Self-actualization takes the form of learning in the world of higher education. Regardless of a person's goal, achieving that goal cannot be contemplated until each level of need prior is met. Belonging is not just a luxury that some people get to have; it is an essential part of human existence that humans cannot fully operate without.

Maslow's work is still used to help people understand belonging, but researchers have found many impacts of belonging. Many researchers have commented on the evolutionary need to belong as it would increase survival and allow for reproduction (Axelrod & Hamilton, 1981). People have a desire to create strong relationships with others and the lack of such relationships have negative health and well-being effects (Baumeister & Leary, 1995). More specifically, anxiety decreases (Anant, 1969), depression is less likely (Hagerty & Williams, 1999), and social integration increases (Lindgren, 1990) as a sense of belonging goes up.

Maslow's Hierarchy laid the groundwork for research for decades to come and similarly Astin's research on student involvement laid the foundation for understanding how students experience belonging on a college campus through student involvement (1984). Student involvement has five basic assumptions according to Astin (1984):

1. Students must invest energy in their experience to have any benefit.
2. Involvement must be continuous, but the energy that a person invests is different from person to person.
3. Involvement can take the form of quantitative or qualitative.
4. Students gain what they put into their involvement.
5. Student involvement and academic achievement are highly correlated.

These five assumptions have become the bedrock of student affairs and are taught almost universally to students seeking to become student affairs professionals.

Astin's assumptions are important for this study because they show that a student must put effort into their involvement and involvement will translate to belonging. However, it was Astin's 1991 work on input-environment-outcomes that best articulated this point. In 1991, Astin created a I-E-O model that showed how student outcomes are impacted by the things around the student. A student's background in the input while the various programs a college offers are the environment (Astin, 1991). This environment is created by student affairs units, and others, on campus.

Baumeister and Leary's seminal work on belonging in 1995 set the stage for the next three decades of research by looking at all the research that had been done on belonging to put into one paper. They posed the question do humans need to belong and the answer they found was yes. "Human beings have a pervasive drive to form and maintain at least a minimum quantity of lasting, positive, and significant interpersonal relationships" (p.497). In their research, they found that an ongoing bond and frequent interactions are sought by people. They confirmed the need to create and keep strong interpersonal relationships. Once someone has created a bond, they work hard to keep it. If a person was able to maintain those relationships, then there were positive impacts on cognitive processes. However, if a person were to never have any attachments, then there would be negative impacts on their health and well-being. They concluded their paper by saying that there is "the existence of a large body of empirical evidence with which to evaluate [humans have a need to belong]" (p. 522).

In more recent research, Allen et al. (2021) summarized the current state of belonging with a review of research and a look towards future research. They find that the need to belong

has been well documented and exists on a biological level. Belonging is a construct that exists within surrounding systems. The lack of belonging continues to show negative effects on people. They go on to say that more people are showing signs of struggling to find belonging. Many studies have touched on belonging and as result the language used to describe and define belonging has become inconsistent (Allen et al., 2021). They question if belonging has become too generic of a concept. As an example, they question if the “lack of a sense of belonging is equivalent to negative constructs such as loneliness, disconnection, and isolation, or if these are separate dimensions” (Allen et al., 2021, p. 91). Allen et al (2021) go on to suggest that belonging comes from (a) competencies or having skills and abilities needed to make connections with other people; (b) opportunities or the availability for belonging to occur by having the time, money, and places to connect; (c) perceptions or one’s own subjective feelings as though they belong; and (d) motivations or the need or desire to connect with others. They conclude the paper by providing six suggestions for future study (Allen et al., 2021):

1. Existing research is siloed within disciplines and future research needs to be more collaborative.
2. People studying belonging need to do more robust literature reviews.
3. There are large gaps between research and practice.
4. Researchers need more refined instruments to measure belonging.
5. More longitudinal studies on belonging are needed.
6. Multilevel research is ideal for looking at all the ways belonging impacts humans.

### ***Impact of Belonging***

The effects highlighted in the previous section have major consequences for education and have been commented on frequently by academics. In the educational world, sense of

belonging is defined as the extent to which a student feels supported, included, and accepted while in the social environment at school (Tinto, 2012). Student learning cannot happen until students feel as though they are supported and belong (Combs, 1982). Studies repeatedly show that a sense of belonging is critical to learning (Kernahan et al., 2014). Goff and Goddard (1999) found that students who value sense of belonging had lower substance use. Academic engagement increases if students feel their teachers are providing a space for them to belong (Routt, 1996). A lack of sense of belonging is even a direct cause for dropping out of school (Fine, 1991). Being connected has shown a strong relationship between performance (Baumeister et al., 2002) and motivation to achieve (Walton et al., 2011).

Connecting with others is important and when that connection does not happen loneliness creeps in (Hagerty & Patusky, 1995). Hagerty and Patusky (1995) showed that sense of belonging is conceptually unlike loneliness. Taking that concept one step further, the opposite of loneliness is the idea that someone has resources available to them and is joined to a social network (Cohen & Wills, 1985). A student needs to feel as though they fit in on campus and are valued. These two ideas of fit and value are eventually a sense of belonging (Hagerty et al., 1992).

A full list of benefits from sense of belonging would be extensive, but perhaps the most important benefit of a strong sense of belonging to a school is that a student is more likely to return the next year if they feel as though they belong (Hausmann et al., 2007). For colleges, this means that investing in programs that increase a sense of belonging should also see a rise in student retention from year to year or at least will not see a decline because of a lack of belonging. Increasing retention rates is one way that schools can increase tuition income without raising tuition prices. Retaining students is not easy and 30-40% of students who start at a school

will leave for one reason or another (Hagedorn, 2005). Even a small increase in retention rates can lead to millions of extra dollars for large universities.

### *Equality in Belonging*

Sense of belonging does not impact all students in the same way, nor does every group of students have the same sense of belonging. Astin's I-E-O model showed that students' backgrounds impact their outcomes (1991). Colleges have students coming to campus from all over the United States and even the world. These students bring with them experiences and backgrounds that are not shared by the entire student body. Schools set up resources to support many students but not every student finds their home on campus. Race, gender, socioeconomic status, and first-generation status all impact sense of belonging as this section will show. The reason it is important to identify these impacts is that not all institutions will have similar student bodies. Some schools have higher numbers of minority students on campus while others have very few first-generation students. These differences make it difficult to compare sense of belonging from place to place but knowing there are differences means they can be accounted for in a quantitative analysis.

**Race.** Race and ethnicity are perhaps one of the most studied differences in people when it comes to sense of belonging. Study after study shows that White students have a higher sense of belonging at majority-White institutions (Duran et al., 2020; Gopalan & Brady, 2020; Hunter et al., 2017; Rainey et al., 2018;). A study conducted by Johnson et al. (2007) used a national survey of 34 institutions with 24,000 student responses to look at race and belonging. It found that the overall sense of belonging was highest in White students and lowest in Asian American and Hispanic students (Johnson et al., 2007). Duran et al. (2020) came to a similar result with their study where nearly 8,000 students from across the United States reported that White

students were more likely to have a higher sense of belonging than non-White students through a regression model. When they ran their test for each of the races individually, they found that Black students had a significantly lower sense of belonging to their institutions (Duran et al., 2020). Another national survey done by Gopalan and Brady in 2019 again reported similar results that underrepresented minority students (students who are Black, Hispanic, or Indigenous) had lower belonging than other students at the same institutions. The Gopalan and Brady study is significant for their findings related to race and 2-year colleges. Modeling showed that both underrepresented minority and first-generation students had a higher sense of belonging than non-underrepresented minority and non-first-generation students (Gopalan & Brady, 2019). This finding leads to some very interesting questions that are worth exploring but are outside the scope of this review, as this study was focused on comparing various college units' impact on belonging.

There are many reasons why a student may or may not have a high sense of belonging on a four-year college campus. Researchers have taken different approaches to analyze the differences between majority and minority populations on campus. Most focused on what students were involved in, where they lived, and how frequently they used various services. Walton and Cohen (2007) set up an experiment to try and control for one aspect that drives down sense of belonging in Black students by creating an intervention to “de-racialize the meaning of hardship in college and the doubt about belonging that it can trigger” (p. 94). They concluded the following:

First-year students learned that hardship and doubt were unique neither to them nor to members of their racial group but rather were common to all 1st-year students regardless of race. On nearly every outcome assessed, this intervention benefited Black students.



Immediately afterward it improved their sense of fit on campus. It boosted Black students' belief in their potential to succeed in college by 20 percentile points. (Walton & Cohen, 2007, p. 94)

Extracurricular activities are one way that students develop sense of belonging, but different students report the reason for that connection differently. Minority students often describe being involved only providing a sense of belonging if they could be authentic and develop real connections with people (Vaccaro & Newman, 2016). This idea contrasts with White students reporting that belonging was mostly related to fun, accomplishment, or mattering (Vaccaro & Newman, 2016).

**Gender and Sex.** The previous section could be easily summarized as White students have a higher sense of belonging; unfortunately this section cannot be put so simply First, it is important to note that most researchers use sex over gender identity when conducting or analyzing surveys. That is not to say that someone who considers themselves a woman was excluded, but it is an important note that woman and female are used frequently together. Gender and sex have been less studied than race when it comes to sense of belonging and most studies focus on the intersectionality of gender with other factors (such as Black women or rural men). This has led to a strange gap in the literature on sense of belonging and gender. Many studies include gender as a control variable in their modeling, but few major studies focus entirely on it. When gender is the focus of a study it seems to mostly take the form of very specific types of research such as analyzing women in STEM fields. Many studies find there are statistically insignificant differences between men and women (Freeman et al., 2007; Hausmann et al., 2009; Hurtado & Carter, 1997; Johnson et al., 2007). This could offer one explanation as to why research around sense of belonging and gender is so specific.

While most research studies avoid studying gender, they typically still include it in their study as a control. Studies have found gender to play a statistically significant role in their modeling. One such study is Gopalan and Brady's (2019) attempt to get a national perspective on sense of belonging. Thanks to their broad approach to the subject, they have included gender in their modeling and reported on the results. They found that females are more likely to persist from year to year at both 2-year and 4-year institutions and have significantly higher belonging at 2-year institutions (Gopalan & Brady, 2019).

**SES and First-Generation Students.** Socioeconomic status (SES) is a commonly studied metric used to explain many differences in various fields of study and it is no different for sense of belonging. Students who come from low-SES backgrounds have less access to economic resources and are in turn more concerned about their financial well-being than high-SES students (Jury et al., 2019). As students worry more about finances it prevents them from participating as much in extracurricular activities that impact social integration (Rubin & Wright, 2017). These students have barriers that others do not, including families and working longer hours at their jobs to make up for the lack of wealth; these barriers then give students less time to dedicate to developing a community on campus (Terenzini et al., 1996). Frequently, research around SES falls into the divide of high and low. It is simpler and cleaner to do it this way and research shows nice large gaps between these two categories. However, even middle-class students who attend elite schools have shown less belonging than upper-class students (Ostrove & Long, 2007).

Low-SES students are often first-generation college students meaning that they are the first student in the family to attend or complete college (Pascarella et al., 2004). These first-generation students have lower retention from year to year, and they are less likely to use campus

services while being more likely to report mental health issues (Gopalan & Brady, 2019). First-generation students have lower sense of belonging regardless of race or gender (Duran et al., 2020; Stebleton et al., 2014). Researchers have tried to identify reasons associated with lower belonging. Duran et al. (2020) showed that first-generation students are more likely to live off-campus which likely decreases their access to social networks – a key ingredient in belonging.

The family support that many college students lean on in times of stress is often not available to first-generation students because their families have no experience with college life. This results in students increasingly leaning on mentors, peers, and structured environments to make up for what non-first-generation students can simply call home to figure out (Hahs-Vaughn, 2004). Extracurricular activities have a disproportionately positive impact on first-generation students throughout college as a result (Pascarella et al., 2004).

### **Defining Student Services**

Now that there is a basic understanding for sense of belonging it is important to look at how colleges can impact that sense. Faculty and staff both have the means to impact belonging but the programs of student services in many ways have been created to explicitly improve or increase belonging on a college campus. To get a better picture of how, it is important to look back to when student services – and modern colleges – were developing before looking at individual units within student services itself.

Higher education institutions in the United States look similar and yet simultaneously different. Each college or university typically has an office for registrar, admissions, conduct, human resources, information technology, and building services. However, how these offices are arranged and where they report vary wildly from institution to institution. This system dates to the very beginning of U.S. colleges when there was no United States. Power was given to a

college board and each college did what they saw as best for their college (Schuh et al., 2010). Many students did not graduate with a degree but instead attended college for a few years and then moved on while most state governments provided little funding for higher learning (Schuh et al., 2010). It would not be until the late 1800s and early 1900s that increased public interest, funding, and students really took off for colleges and universities (Schuh et al., 2010). The mid-1900s and the GI Bill started a “golden age” for higher education – but only for White students and it would not be until the 1970s when colleges truly opened their doors to non-White students (Olson, 1973). The Carnegie Classification system was also introduced in the 1970s to categorize the many different types of higher education schools in the U.S. (Schuh et al., 2010). This extremely short version of history leaves out many factors but is important to understanding today’s 6,000+ colleges and universities in the United States.

The earliest-founded university in the present-day United States is Harvard College and while they did not have a traditional student services division, their faculty were responsible for managing students’ co-curricular lives. In fact, “colonial college presidents and faculty were empowered to act in loco parentis” (Schuh et al., 2010, p 62) an idea that somewhat holds through today. While those who work in student affairs have no legal authority over students, many can tell a story of having to act as a parent at some point for a student. Student groups were organized around academic pursuits (Harding, 1971), and fraternities developed in the early 1800s (Schuh et al., 2010). Some colleges tried to ban fraternities as they operated outside of the college’s control, but efforts failed (Lucas, 2016). The first dean of students was officially appointed in 1870 at Harvard to manage student records and registration and eventually, the first dean of men was created (Cowley, 1940). These positions were responsible for developing students outside of the classroom and were the precursors to the modern-day chief student affairs

officers, even if their scope mostly focused on disciplinary issues (Rhatigan & Crawford, 1978). The idea that students were doing more than just going to class and institutions should do something to help manage that time spent outside of class was new. It was not until the early 1900s when dedicated student services started to really take shape by providing services to students. Deans of Men and Women – two separate positions – started to look at the “whole life” of students (Holmes, 1939). Around this time professional associations began to be formed, including the Association of College Unions International which still exists today (Schuh et al., 2010). Modern-day student affairs is arguably most closely associated with a professional association called the National Association of Student Personnel Administrators or NASPA for short which has its roots in the early 1900s as well. This association considers itself the “professional home for the field of student affairs” (Student Affairs Administrators in Higher Education, n.d.).

There is no one standard student affairs template, however, there are many services that most doctoral-granting institutions provide on their campuses. Those are student health, counseling services, recreation centers, housing, advisors, and campus activities. Every school in the Southeastern, Big 12, and Big 10 athletic conferences has those six services located on their campus as an example. Many of these services are usually student fee-funded or generate revenue by other means. Each of these services contributes in some way to sense of belonging on campus. The next few sections will highlight how these student services impact belonging.

### ***Housing***

Living on campus can have a large impact on a student’s sense of belonging (Berger, 1997). Research has suggested that a residence hall is a major contributor to sense of belonging and that effect can be measured even amongst different races and ethnicities (Johnson et al.,

2007). Students who live on campus in residential facilities report higher levels of peer support and social integration (Pascarella et al., 1994). Research has been conducted on the connection between sense of belonging and on-campus living for decades. Some of the early work happened in 1935 when Walker found that students who lived on campus had greater success than students who lived on private property. Many studies focus on academic outcomes and show that living on campus significantly increases those outcomes compared to living off-campus (Blimling, 1989). Blimling would continue by saying “this sense of community, including the feelings of belongingness that are part of it, may be proposed to lead to increased peer interaction and better student outcomes within the university residence community” (1987, p 72). Freshmen who live in on-campus housing options take part in campus activities at nearly double the rate of off-campus freshmen (Maestas et al., 2007). Study after study shows that participation in extracurricular activities impacts sense of belonging and Maestas et al. also found this to be true (2007). Research on housing and belonging has even looked at the difference between living in a suite or a dormitory setup. Rodger and Johnson (2005) concluded that students who live in a suite-style of a residence hall have a higher sense of belonging than students who lived in a dorm-style.

### ***Academic Advising***

Academic advising is a key process for all college students and advisors have the ability to impact a student’s sense of belonging. Strayhorn writes about academic advisors being cultural navigators who “help students build supportive connections with others on campus so they can find that sense of belonging that means so much” (2015, p. 60). It has already been established that involvement impacts belonging. Research shows that academic advisors’ direct contact with students allows for the promotion of involvement (Soria et al., 2003). Advisors have

a particular sense of belonging impact on students of color, first-generation students, and low-income students because of their interactions (Stebbleton, 2011). The one-on-one relationship inherent to academic advising is key in facilitating a sense of belonging among students. This is mostly done by helping students make a connection with others on campus, but because an advisor meets with a student regularly and gets to know the individual, the advisor can connect the student with things that will have a bigger influence on their sense of belonging – including everything from major selection to getting involved in the right student organizations (Soria & Stebleton, 2013). The referrals to other units are brought up again and again in the literature (Allen & Smith, 2008).

### *Counseling Services*

Mental health is a hot-button issue on most college campuses, but it is not a new issue. Most counseling services are separate from their schools' student health services (The Association for University and College Counseling Center Directors Annual Survey, 2013). From a pure headcount perspective, a mentally healthy student body will result in greater student retention, and many students leave early due to psychological issues (Kitzrow, 2009). Anxiety and depression are two prominent psychiatric issues that if left unchecked can lead to students dropping out (Breslan et al., 2008). A better sense of belonging and a robust mental health service can mitigate both issues. Counselors from a school's counseling services can engage students and address issues of a lack of sense of belonging (Stebbleton et al., 2014). A strong sense of belonging leads to positive mental health when students feel integrated and valued (Stebbleton et al., 2014). Little research has been conducted on directly linking counseling services with sense of belonging.

### ***Recreation Centers***

The benefits of campus recreation programs are often talked about from a recruitment perspective. The prevailing thought being that fancy, new recreation centers attract more students. However, campus recreation programs have received more attention in recent years from researchers using surveys and retention data. These studies found that there were students who considered campus recreation services an important part in their decision to continue at the school they attended (Bryant et al., 1995; Forrester, 2015; Henchy, 2011; Belch et al., 2001). In talking about the retention and persistence of students and the relationship with college recreation programs, most of these researchers describe various aspects of sense of belonging in their findings. For example, Bryant et al. (1995) stated that the biggest benefits of campus recreation programs are friendships and respect for others. Finally, students who frequently use recreational services report much higher satisfaction with their life as a whole and with their university experience (Ellis, et al., 2002). Friendship and satisfaction with the institution are both pieces of sense of belonging (Bryant et al., 1995; Ellis, et al., 2002).

### **Campus Activities**

Getting involved on campus can have many different meanings. The most common and simplest way for students to get involved would be to attend events such as speakers, concerts, and community service opportunities. These activities are usually hosted by student organizations and governments which students can join. Research on belonging has been conducted on various aspects of campus activities including community service, involvement, events, and more. For example, “community service is positively associated with students’ sense of belonging” (Soria et al., p 79, 2012). The same study by Soria et al. (2012) also found that participating in student organizations also increased sense of belonging. Campus activities is a



broad term that for this dissertation's purposes, lumps all these involvement opportunities together. Researchers have found that these on-campus experiences have a strong influence on social integration (Strauss & Volkwein, 2004). Schools that actively promote involvement in campus life tend to have students who are more satisfied with their education and feel more loyalty to their school (Kuh et al., 1991). Both Tinto (1993, 2012) and Kuh et al. (1991) indicate that student involvement results in better social integration at a school. Jorgenson, Farrell, Fudge, and Pritchard's 2018 study on belonging found that persistence and belonging improve when students are engaged intentionally with campus activities. Lastly, Berger and Milem (1999) updated these findings and reinforced the idea that involvement leads to both academic and social integration.

### ***Student Health***

Physical and mental health are important aspects to belonging because social support is a predictor of physical health (Ma et al., 2005). Mental health services seem like they would have a greater impact on belonging than physical health, but that is not necessarily the case. The lack of physical health prevents participating in many college programs designed to increase belonging. For example, a student who is sick or injured cannot participate in recreational sports programs. Similarly, a student who is sick likely would not attend an event on campus. Therefore, the services provided by most student health centers or clinics are an important part of belonging on campus.

### **Higher Education Finance**

Higher education funding can be complex, but there are two sides to understanding how it all works: revenue and expenses. Universities spend their budgets in very predictable ways on people and things. Personnel is the largest expense for most colleges in any given year as schools

need to cover the salaries and benefits for full time employees. The rest of a university's expenses are spent on a wide range of things including electricity, water, food, grass seed, computers, phones, claw machines, pens, stickers, pool chemicals, HVAC units, copy machines, paper, white noise machines, rocket fuel, and more. Expenses can be easily broken up into two major categories while revenues come in many different shapes and sizes. Large universities have massive budgets with multiple revenue streams to fund their operations. These revenues have changed slightly over the years but generally fall into a few categories including tuition, auxiliary income, government support, and other smaller sources like donors.

Revenue for large universities can top more than a billion dollars while smaller schools will feature smaller budgets. For example, the University of Missouri-Columbia with more than 30,000 students had a \$1.5 billion budget in 2021-2022 (University of Missouri System, 2021). The average institution receives money in many ways, but the main cost for most universities are the people it employs. Just over 56% of the University of Missouri's \$1.5 billion budget goes to salaries and wages while another 17% goes towards employee benefits (University of Missouri System, 2021). Nationally, 20% of a college's revenue comes from student tuition, 34% is from government support, and 23% from self-supporting operations with the rest being made up of smaller sources (Whitford, 2021). These self-supporting operations are everything from billion-dollar hospitals to small centers on a campus. The hospital that sits on the University of Missouri's Columbia campus was expected to bring in \$1.2 billion in 2021-2022 (University of Missouri System, 2021). At the same time, a small auxiliary operation such as the experiential education office had a budget of \$150,000 over the same year (University of Missouri System, 2021). Self-supporting operations charge people for using their services. Hospitals charge patients or bill insurance, on-campus housing operations charge residents rent, campus activities

units charge students for tickets to concerts, and recreation centers charge students for personal training. However, there's another funding source that is very important for this study: student fees.

While a university hospital will bill insurance and charge patients for each use, a campus student health center typically assesses all students a fee at the start of each term. Similarly, student fees are used in campus activities, student conduct, and recreation services which allow students to use the facilities or activities (Kelchen, 2016). Student fees exist in all different kinds of configurations and amounts. The student recreation fee at both the University of Missouri and University of Iowa is more than \$150 per semester (University of Missouri, 2021; University of Iowa, 2021). The student health fees at both schools are more than \$100 per semester (University of Missouri, 2021; University of Iowa, 2021). Smaller fees at the two example schools include activities and events. Some fees will be bundled together into a larger, overarching fee that funds multiple areas. Student fees are oftentimes self-imposed meaning students proposed the fee through their student governments and then the student body voted on creating it. For example, the University of Illinois and the University of Missouri both have a fee that goes towards supporting green sustainability efforts on campus (University of Illinois, 2020; University of Missouri, n.d.). These fees were pushed by student leaders on campus and then voted on by the entire student body. Student fees are not trivial amounts for students anymore. The median student fee for the United States was \$1,300 a year in 2012-13 and five states had average student fees of more than \$2,500 (Kelchen, 2016). Student “fees increased by 104% at community colleges and 95% at four-year public colleges” over the last decade (Kelchen, 2016). Student fees do not have a great reputation in part because they have been used over the previous decade to circumnavigate state rules and laws regarding tuition increases. States have passed

laws preventing tuition from increasing past various metrics, but these laws exclude student fees (Carlson, 2013). In fact, if a tuition cap is implemented by a state, there is a strong likelihood that student fees will increase (Kelchen, 2016).

Student fees are important to a campus for a few reasons. First, research shows that the activities and amenities they fund attract students (Jacob et al., 2013). Second, “quality of life reputations” impact the number of students applying to a school (Alter & Reback, 2012). While quality of life does not exactly line up with sense of belonging, it is not a stretch to think the two are highly correlated. For example, Alter and Reback’s study used “students are happy” and “students are not happy” as a variable (2012). Happiness is linked to sense of belonging (Tan et al., 2021; Leung et al., 2013). Finally, student fees often fund the programs and offices directly responsible for creating a sense of belonging on campus. Campus activity offices at major universities across the Midwest and South are almost exclusively funded through student fees. Recreation services, student health, and counseling centers are all also funded through student fees at many institutions. IPEDS collects information on these revenues and expenses then breaks them down into various categories: Student services, Academic support, Research, Instruction, Institutional support, Auxiliary enterprises, and Scholarships and fellowships expenses (IPEDS Website, n.d.).

### **Non-Student Services Impact on Belonging**

While this study was focused on the impact that student services have on sense of belonging, it needs to be noted that other expenditure areas from IPEDS has a role to play with sense of belonging. For example, faculty has been linked to impacting student’s sense of belonging (Hoffman et al., 2003). Hoffman et al. (2003) used learning community participation to analyze the impact of faculty-student relationship on belonging. They found that interpersonal

ties between students and faculty were important for fostering belonging and persistence. Faculty can impact all types of students' sense of belonging including international students (Glass et al., 2015). Research on the undergraduate level can lead to belonging even when it is done virtually according to Samad et al. (2021). In today's virtual environment institutional support becomes critical. Auxiliary enterprises like bookstores and parking services play a part in the student experience and therefore on belonging - especially if a student is commuting (Bloomquist, 2014). Each area of campus likely impacts a student in a way that will help or hinder belonging.

### **Literature Review Summary**

Researchers such as Maslow (1954), Astin (1984), Baumeister and Leary (1995), Hausmann et al. (2007), and Tinto (2012) have provided a theoretical framework for the concept of belonging and how it interacts with students. Kuh (1991), Tinto (1993, 2012), Bryant et. al. (1995), Stebleton et al. (2014), Pascarella et al. (1994), and many more have provided research into individual units. Now it is time to combine all these efforts into a comprehensive look at belonging and student services rather than the patchwork that currently exists. The research listed above shows how various units play a large role in impacting a student's sense of belonging on campus. Missing from the research on sense of belonging is an understanding of how various areas on campus compare to each other's impact on belonging. The studies that look at how a single unit impacts belonging does not provide any help in showing what unit has the bigger impact on belonging. As leaders in education look to invest resources in these units there is no guide or best practice for how much to spend. Those resources are largely being spent on personnel through various funding sources. As a result, higher education officials are forced to make their own judgments on which service has the biggest impact and where to invest those

funding sources. This study seeks to provide leaders a guide while providing researchers a framework to build on going forward.

## Chapter 4: Contribution to Scholarship

The need to belong is a well-established principle in psychology that applies to many environments and settings (Maslow, 1954; Baumeister & Leary, 1995). The benefits of belonging are extensive; especially in higher education where belonging is critical to learning (Combs, 1982; Kernahan et al., 2014) and can prevent students from dropping out (Fine, 1991). Higher education leaders spend a significant number of resources ensuring that students feel like they belong at their institution especially in student services and student affairs units. But can belonging be bought? Is there a formula for where to invest resources that ensures students feel a sense of belonging at their institution? And if there is, what units at an institution impact belonging the most?

This study examined the link between spending and belonging at colleges across the United States using the National Survey of Student Engagement (NSSE) and the Integrated Postsecondary Education Data System (IPEDS). It combined the two datasets and used a hierarchical linear regression model to examine the relationships between spending at institutions in various categories and students' sense of belonging. The results show little relationship between spending and belonging despite controlling for several key factors and set the stage for a whole host of future research. These findings, described in the following sections after a brief review of the guiding frameworks and research methods of this study, would fit nicely with the work published in the *Journal of Student Affairs Research and Practice*.

### Framework

In the educational world, sense of belonging can be defined as the extent to which a student feels supported, included, and accepted while in the social environment at school (Strayhorn, 2019). It is a “yearning for connection and need for interpersonal relationships”

(Allen & Furlong, 2021, p. 1). Maslow (1943) set the tone for the modern idea when he included belonging as one of his human needs. Once two basic needs are met, then humans can begin to meet their psychological needs, the first of which is belongingness (Maslow, 1954). Only after meeting the need to belong can self-actualization (or learning) occur (Maslow, 1954).

Maslow's Hierarchy laid the groundwork for research for decades to come and similarly Astin's research on student involvement laid the foundation for understanding how students experience belonging on a college campus through student involvement (1984). In 1991, Astin created the I-E-O (Input - Environment - Output) model that showed how student outcomes are impacted by the things around the student (see Appendix D). A student's background is the Input while the various programs a college offers are part of the Environment (Astin, 1991). This environment is created by student services and others on campus.

Student learning cannot happen until students feel as though they are supported and belong (Combs, 1982). Studies repeatedly show that a sense of belonging is critical to learning (Kernahan et al., 2014). Goff and Goddard (1999) found that students who have sense of belonging had lower substance use. Academic engagement increases if students feel their teachers are providing a space for them to belong (Routt, 1996). A lack of sense of belonging is even a direct cause for dropping out of school (Fine, 1991) and increased health risks (Cacioppo et al., 2015; Hari, 2019). Being connected has shown a strong relationship between performance (Baumeister et al., 2002) and motivation to achieve (Walton et al., 2011). A student needs to feel as though they fit in on campus and are valued. These two ideas of fit and value are eventually a sense of belonging (Hagerty et al., 1992).

A full list of benefits from sense of belonging is beyond the scope of this section, but perhaps the most important benefit of a strong sense of belonging to a school is that a student is



more likely to return the next year if they feel as though they belong (Tinto, 2012; Hausmann et al., 2007; Hausmann et al., 2009). For colleges, this means that investing in programs that increase a sense of belonging should also see a rise in student retention. Increasing retention rates is one way that schools can increase tuition dollars. Retaining students is not easy and 30-40% of students who start at a school will leave for one reason or another (Hagedorn, 2005).

### ***Services Impacting Belonging***

Various units within a school impact belonging in different ways. Research has suggested that a residence hall is a major contributor to sense of belonging (Berger, 1997; Blimling, 1989; Pascarella et al., 1994) and that effect can be measured even amongst different races and ethnicities (Johnson et al., 2007). Academic advisors positively impact belonging through their interactions with students (Allen & Smith, 2008; Strayhorn, 2015; Stebleton, 2011). Faculty have also been linked to impacting student's sense of belonging (Hoffman et al., 2003). Counselors from a school's counseling services can engage students and address issues of a lack of sense of belonging (Stebleton et al., 2014). Participating in campus activities and organizations increases belonging and integration (Berger & Milem, 1999; Kuh et al., 1991; Strauss & Volkwein, 2004; Soria et al., 2012).

### ***Equity and Belonging***

Sense of belonging does not impact all students in the same way, nor does every group of students have the same sense of belonging. Race and ethnicity are perhaps one of the most studied differences in people when it comes to sense of belonging. Study after study shows that White students have a higher sense of belonging at majority-White institutions (Duran et al., 2020; Gopalan & Brady, 2020; Hunter et al., 2017; Rainey et al., 2018;). Gender and sex have been less studied than race when it comes to sense of belonging and most studies focus on the

intersectionality of gender with other factors (such as Black women or rural men). Many studies find there are statistically insignificant differences between men and women (Freeman et al., 2007; Hausmann et al., 2009; Hurtado & Carter, 1997; Johnson et al., 2007). Gopalan and Brady's (2019) found that females are more likely to persist from year to year at both 2-year and 4-year institutions and have significantly higher belonging at 2-year institutions (Gopalan & Brady, 2019). Students who come from low-SES backgrounds have less access to economic resources and are in turn more concerned about their financial well-being than high-SES students (Jury et al., 2019). Middle-class students have shown less belonging than upper-class students (Ostrove & Long, 2007). Low-SES students are oftentimes first-generation college students meaning that they are the first student in the family to attend or complete college (Pascarella et al., 2004). First-generation students have lower sense of belonging regardless of race or gender (Duran et al., 2020; Stebleton et al., 2014).

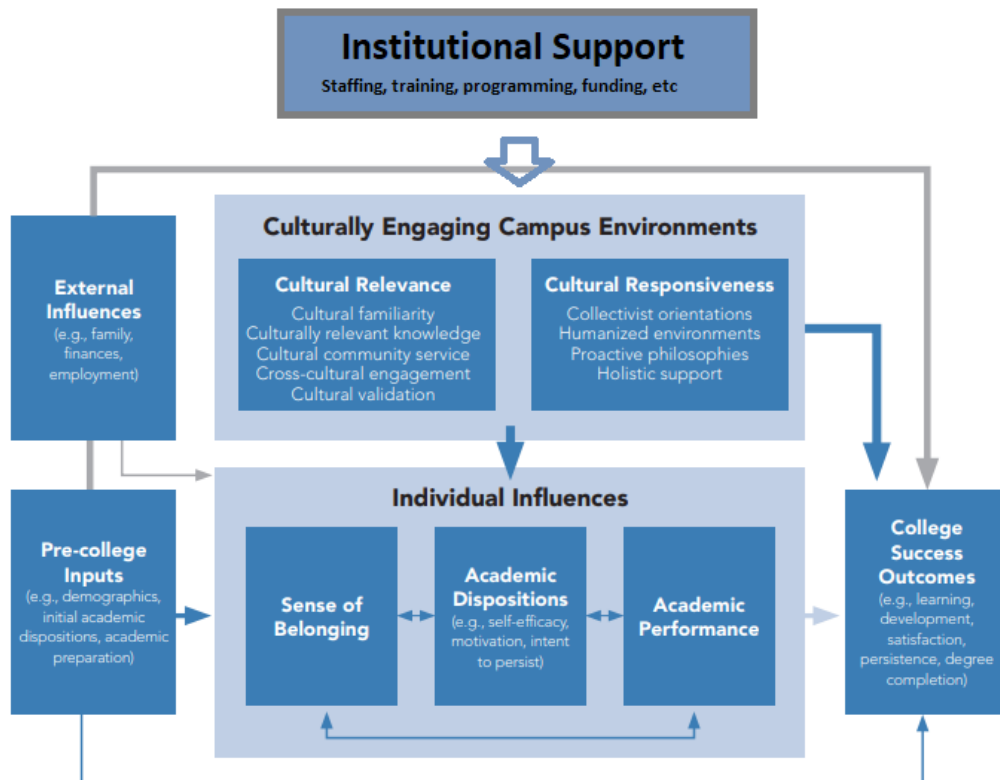
### ***Conceptual Model***

The relationship between campus funding and sense of belonging is not a straight line. Instead, campuses fund areas that then subsequently provide services or experiences to students which in turn impact belonging. Museus' (2014) culturally engaging campus environments (CECE) model provides a good visual (see Figure 1) for how belonging is impacted by various factors. Sense of belonging is impacted by campus and individual inputs, external influences such as family, pre-college inputs such as preparedness, and campus environments (Museus, 2014). Astin's IEO model (1991) is too simplistic to describe all the factors impacting a student. Researchers such as Museus have in effect updated his model to account for the numerous influences on a student. The model implies that institutional support is provided to create such important opportunities as cross-cultural engagement, community service, humanized

environments, and proactive philosophies. Figure 1 has been modified to show how institutional support and funding influence belonging. Institutional support is separate from other external influences because, in the Museus model, external influences only impact individuals—not the environments that the individual is stepping into. Increasing funding to an area does not directly influence a student. Instead, the funding indirectly influences students through its contribution to developing engaging and welcoming campus environments. Specifically, investment in employees, physical spaces, and technology helps create campus conditions that support belonging.

**Figure 1**

*Culturally Engaging Campus Environments*



*Note.* Adapted from Museus (2014) Culturally Engaging Campus Environments with the addition of how institutional support impacts the model.

## **Methods**

Do student services have a stronger relationship with sense of belonging compared to other areas? If not, what areas of funding have the strongest relationship with belonging? Finally, do increases in student services expenses correlate to increases in students' sense of belonging? These were the three research questions posed at the heart of the study. A quantitative regression analysis was chosen for this study and to control for the many factors that impact a student's sense of belonging on a college campus. As this section will show, the data needed was already available through a national survey and database. Some cleaning and work were needed to get the data ready for the model.

## ***NSSE***

The NSSE survey is one of the largest and most consistent surveys on college student engagement in the United States. The NSSE survey is a long-standing tool that results in hundreds of thousands of responses when administered. It asks several questions that schools and researchers both use after every administration of the survey. For the purposes of this study, the Engagement Indicators and questions on sense of belonging were critical. NSSE asks three key questions to create a sense of belonging score for each student who responds to the study. Those questions are "To what extent do you agree or disagree with the following statements? a. I feel comfortable being myself at this institution. b. I feel valued by this institution. c. I feel like part of the community at this institution" (NSSE Website, n.d.).

NSSE uses other responses to create 10 Engagement Indicators centered around four themes: Academic Challenge, Learning with Peers, Experience with Faculty, and Campus Environments. The Campus Environments indicators are Quality of Interactions and Supportive

Environment. These two should be highly correlated with sense of belonging because research around belonging indicates that the people and environment that surround an individual impact their sense of belonging. The NSSE survey does not track how much spending is associated with each school. An additional dataset needed to be found to provide this data.

### ***IPEDS***

The Integrated Postsecondary Education Data System (IPEDS) is a series of surveys sent to every college, university, and technical school that receives federal funding for financial aid programs (IPEDS Website, n.d.). Information collected in the surveys is wide ranging, from institutional characteristics and spending to outcomes and human resources. Some categories of data are dated 1980 through present day. Importantly it has many data points on hundreds of higher education institutions regarding spending. IPEDS breaks down spending into multiple categories, seven of which were relevant for this study: Instruction, Research, Academic Support, Student Services, Institutional Support, Scholarships, and Auxiliary Enterprises. Total expenditures were also collected from this database. Accessing IPEDS is free, and data was downloaded from the website. Additional institutional characteristics that may impact belonging were also taken from IPEDS including what percent of the college was minority, women, 18-24, and Pell eligible. IPEDS also provided a simple yes/no question for the school had a football team associated with the NCAA.

### ***Data Cleaning***

NSSE provided survey data for a fee combined with IPEDS, however the IPEDS data had to be cleaned first. Any continuous IPEDS data was changed to categorical variables due to NSSE's requirement that schools could not be identified. Expenditure data was divided by the number of students attending the school to control for institution size. Categories were created

around the average response to each variable. For example, schools on average spent \$8,600 per student on instruction. Therefore, any school spending on instruction between \$7,500-9,500 was considered average with all the other schools being put into categories of Significantly Below Average (<\$5,000), Below Average (\$5,000-7,500), Average (\$7,500-9,500), Above Average (\$9,500-\$13,000), and Significantly Above Average (\$13,000+). This process was repeated for every spending variable and each of the control variables taken from IPEDS (See Appendix E). Dummy variables were then created for each respondent's gender, race, location, and first-generation status as an additional control.

### *Sample*

Certain schools had to be eliminated prior to receiving any data from NSSE for various reasons. Two-year schools were removed because they are not included in the NSSE survey and therefore had no data on belonging. Private schools did not report any spending data to IPEDS and therefore could not be included. Other schools were eliminated outright because of lack of data or lack of participation in NSSE surveys. Any school that provided \$0 for instruction were considered an outlier and eliminated. Schools were broken into various regions across the United States: New England, Mid East, Great Lakes, Plains, Southeast, Southwest, Rocky Mountains, and Far West (See Appendix C). They were further broken down by their Carnegie Classifications (Doctoral, Masters, Baccalaureate, other). These variables would be used as controls. The final dataset consisted of 232 masked schools and 66,968 student responses with IPEDS data added to each response. See Appendix A for a full list of variables and descriptive statistics.

### *Analysis*

To control for such a wide number of variables and because a goal of this study was to assess what impact spending had on belonging compared to other factors, a hierarchical linear regression was used. Linear regressions are a good way to find relationships between two variables while controlling for other variables (Field, 2018). This model used a hierarchical linear regression to understand the amount of variance explained by the dependent variable when adding in new independent variables. The model ran in three blocks: a control block, a block with the funding variables, and a block with the NSSE engagement indicators. Each block had an adjusted  $R^2$  score associated with it to determine how much of the variance can be explained by the funding variables alone. Additional analysis of simple correlations was conducted to help explain findings from the regression. Regression models and correlations allow researchers to look for patterns in the data and test hypotheses (Field, 2018). The expense variables categories were run as both a dummy variable and a categorical variable to search for any thresholds; however, the results remained the same regardless of how the variables were built. The model was then run with only two blocks by combining the control variables and the expense variables into a single block. This additional test found no significant differences from the original three block model.

### **Findings**

The hierarchical regression analysis showed that the relationship between spending and belonging were a mix of positive and negative coefficients even though they were mostly insignificant. Overall, spending seems to have little relationship to the variance of belonging. All the independent variables explained roughly 40% of the variance, however adding the expenditure variables only added 0.1% to the adjusted  $R^2$  (Table 1). Additionally, the control

variables contributed only slightly to the overall variance. A full list of descriptive statistics can be found in Appendix A and B. The following tables will lay out all the findings including the model summary in Table 1 and then provide additional tables with correlations between spending and various variables. While spending has little relationship with belonging in this model, the correlations surrounding spending provide for much discussion and future research.



**Table 1**  
*Hierarchical Linear Regression Results (N = 66,986)*

Variables	Model 1			Model 2			Model 3		
	B	SE	t	B	SE	t	B	SE	t
Constant	42.45	1.08	39.36***	40.72	1.21	33.54***	8.39	0.98	8.53***
Institution size	-0.18	0.14	-1.32	-0.24	0.15	-0.01	-0.18	0.12	-0.01
% 18-24	-0.05	0.07	-0.65	-0.06	0.08	-0.01	-0.03	0.06	0.00
% Minority	-0.01	0.09	-0.05	0.07	0.10	0.01	0.18	0.07	0.02
% Women	0.21	0.09	2.33*	0.30	0.09	0.02	0.21	0.07	0.02
Pell Eligible	-0.21	0.09	-2.41*	-0.21	0.09	-0.02	-0.24	0.07	-0.03
Football Team	0.26	0.19	1.41	0.06	0.19	0.00	0.13	0.15	0.01
Doctoral	-2.08	0.80	-2.62**	-2.07	0.83	-0.08	-0.94	0.65	-0.04
Master's	-1.49	0.75	-1.99*	-1.29	0.77	-0.05	-0.41	0.60	-0.02
Baccalaureate	-0.40	0.80	-0.50	-0.18	0.81	0.00	0.13	0.63	0.00
NE	0.20	0.40	0.51	1.06	0.46	0.02	1.23	0.36	0.03
ME	-1.84	0.33	-5.56***	-0.89	0.39	-0.02	0.25	0.31	0.01
GL	-0.15	0.34	-0.44	1.08	0.40	0.03	0.97	0.31	0.03
PL	0.63	0.44	1.43	1.59	0.50	0.03	1.41	0.39	0.03
SE	1.40	0.31	4.45***	1.64	0.35	0.06	0.55	0.27	0.02
SW	0.19	0.33	0.58	0.59	0.39	0.01	0.59	0.30	0.01
RM	-0.84	0.62	-1.34	0.51	0.71	0.01	0.78	0.55	0.01
Gender	1.50	0.14	10.50***	1.49	0.14	0.05	0.76	0.11	0.03
Race	0.24	0.16	1.55	0.29	0.16	0.01	0.45	0.12	0.02
First Gen	0.43	0.14	3.04**	0.43	0.14	0.02	0.42	0.11	0.02
Total Expense				0.08	0.18	0.01	0.01	0.14	0.00
Instruction				-0.14	0.12	-0.01	-0.11	0.09	-0.01
Research				0.05	0.12	0.01	0.17	0.09	0.02
Academic Support				0.00	0.12	0.00	-0.08	0.09	-0.01
Student Services				-0.19	0.09	-0.02	-0.17	0.07	-0.01
Institutional Sup				-0.13	0.10	-0.01	-0.08	0.08	-0.01
Scholarships				0.36	0.09	0.03	0.31	0.07	0.02
Aux Enterprises				0.60	0.14	0.04	0.15	0.107	0.01
HOL							0.04	0.005	0.04
RIL							-0.01	0.006	-0.01
QR							0.00	0.004	0.00
LS							0.03	0.005	0.03
CL							0.05	0.004	0.05
DDO							0.00	0.004	0.00
SFI							0.03	0.004	0.03

ETP					
QI	0.103	0.110	0.09	0.01	17.53***
SE	0.011	0.012	0.33	0.01	64.08***
R	0.010	0.011	0.31	0.01	68.01***
R <sup>2</sup>	0.011	0.001	0.629		
Adj. R <sup>2</sup>			0.396		
Delta R <sup>2</sup>			0.384		
Model	F(19, 37731) = 21.39, p = <.001	F(27, 37723) = 17.12, p = <.001	F(37, 37713) = 668.90, p = .00		

\*p < 0.05 \*\*p < 0.01 \*\*\*p < 0.001

Institutional Support, Aux Enterprises = Auxiliary Enterprises, NE = New England, ME = Mid East, GL = Great Lakes, PL = Plains, SE = Southeast, SW = Southwest, RM = Rocky Mountains, FW = Far West, Gender = Woman Student, Race = White Student, First Gen = Not a First Generation Status Student, % 18-24 = % of Undergrad Enrollment 18-24, % Minority = % of Enrollment made up of non-white students, % Women = % of Enrollment made up of women, HOL = Higher-Order Learning, RIL = Reflective and Integrative Learning, QR = Quantitative Reasoning, LS = Learning Strategies, CL = Collaborative Learning, DDO = Discussions with Diverse Others, SFI = Student-Faculty Interaction, ETP = Effective Teaching Practices, QI = Quality of Interactions, SE = Supportive Environment

The main findings from this study are laid out in Table 1 and it shows three spending coefficients were significant at the .05 level. Spending on instruction, academic support, student services, and institutional support had a negative relationship with belonging while spending in the areas of research, scholarships, auxiliary services, and overall spending all had positive relationships. Spending on scholarships had the largest positive association with belonging while spending on student services had the largest negative association.

The control variables in this model followed predictable patterns. Women, white students, and non-first-generation students all had higher predicted sense of belonging scores than their counterparts. The more Pell eligible students at an institution resulted in lower belonging at that school while the more women and minority students resulted in higher belonging. Being a part of a sports conference was correlated with a higher sense of belonging while being at a larger institution was associated with decreased belonging. Finally, being a part of a Doctoral university was negatively associated with sense of belonging compared to being at a baccalaureate college. Most of these findings were significant except for Institution Size. This study also included region control variables and where an institution is located does impact a student's sense of belonging. The regions with the highest levels of belonging were New England and the Plains with the Great Lakes coming in third (Table 1). The Mid East and Southern regions had the smallest impact on belonging. The Far West was left out of the model as these were all dummy variables. See Appendix C for a full breakdown of states by region.

The variables that explain most of the variance in this model were the 10 Engagement Indicators of NSSE. Many of these variables had small but positive impacts on belonging and were significant at the .01 level (Table 1). Only one of the Engagement Indicators was negatively

associated with belonging and was not significant at the .05 level. The strongest Indicators were Quality of Interactions and Supportive Environment.

The regression model findings are supported by analyzing the correlations between variables. Belonging was mostly negatively and weakly correlated with spending; this suggests that as spending increased at a college, belonging appeared to decrease (Table 2). The exception to this again comes from Scholarships and Auxiliary Enterprises, which were both positively associated with belonging even if the association was a weak one.

**Table 2**

*Spending Correlations with Sense of Belonging*

	Sense Of Belonging
Auxiliary Enterprises	.025**
Scholarships	.018**
Research	-.006
Total Expenses	-.008
Academic Support	-.015**
Instruction	-.019**
Institutional Support	-.023**
Student Services	-.025**

\* $p < .05$ , two-tailed. \*\* $p < .01$ , two-tailed.

The Engagement Indicators were all positively correlated with belonging and significant, however the strongest correlations with belonging are Quality of Interactions and Supportive Environments. (Table 3). This helps to explain the regression model’s finding of these Engagement Indicators explaining most of the variance in the model. Student-Faculty Interactions was lower than Effective Teaching Practices, something that will be discussed later.

**Table 3***Engagement Indicator Correlations with Sense of Belonging*

	Sense Of Belonging
Supportive Environment	.530**
Quality of Interactions	.500**
Effective Teaching Practices	.390**
Higher-Order Learning	.302**
Learning Strategies	.283**
Reflective and Integrative Learning	.259**
Student-Faculty Interaction	.254**
Quantitative Reasoning	.213**
Collaborative Learning	.194**
Discussions with Diverse Others	.192**

\* $p < .05$ , two-tailed. \*\* $p < .01$ , two-tailed.

Continuing to break down the findings focusing on spending leads to correlations between overall spending and certain areas. It would be expected to find strong, positive correlations between total expenses per student and spending in the various categories. However, two outliers existed. Spending per student on Scholarships was negatively associated with Total Expenses, and Student Services spending was significantly weaker than any of the other categories. Instruction was highly correlated with total expenses for example at .805. Student Services was only correlated at .203. This implies that as overall spending increases, things such as instruction, research, and academic support receive the bulk of the extra funding while scholarships and student services receive smaller amounts. Table 4 provides the full results of this analysis.

**Table 4**  
*Spending Correlations with Spending*

	Total Expenses	Instruction	Research	Academic Support	Student Services	Inst. Support	Scholarships	Auxiliary Enterprises
Total Expenses	-							
Instruction	.805**	-						
Research	.706**	.495**	-					
Academic Support	.784**	.675**	.609**	-				
Student Services	.203**	.310**	-.093**	.143**	-			
Inst. Support	.584**	.616**	.247**	.501**	.288**	-		
Scholarships	-.079**	-.195**	-.110**	-.183**	-.168**	-.067**	-	
Auxiliary Enterprises	.618**	.518**	.426**	.476**	.010*	.279**	-.138**	-

\*p < .05, two-tailed. \*\*p < .01, two-tailed.

School size and spending have correlations that were worth specifically addressing (Table 5). It was assumed that larger schools have more money to spend, and this study controlled for that factor by including spending variables divided by the total number of students. Therefore, each spending variable is considered per capita rather than raw totals of spending. Overall, as an institution's size increases, so does spending. However, there were two categories where this trend did not hold: Student Services and Institutional Support. Here, these two categories decreased in spending per student when an institution's size increased. Student Services had a correlation of  $-.302$ , much larger than expected even though it was still relatively weak.

**Table 5**

*Spending Correlations with Institution Size*

	Institution Size
Research	.428**
Academic Support	.176**
Total Spending	.135**
Scholarships	.110**
Auxiliary Enterprises	.092**
Instruction	.039**
Institutional Support	-.131**
Student Services	-.302**

\* $p < .05$ , two-tailed. \*\* $p < .01$ , two-tailed.

Because of these findings an additional correlation analysis was conducted on region and spending to look for any trends that may explain this finding. Broadly, there were no real trends found to explain Table 5's findings, however certain regions appear to spend more on various services than other regions. Those findings are in Table 6.

**Table 6**

*Region Correlations with Spending*

	Total	Inst	Res	Acad	Stu	Inst	Scho	Aux
NE	.191**	.265**	.105**	.181**	.315**	.240**	-.136**	.272**
ME	.133**	.252**	-.144**	.061**	.175**	.363**	-.132**	.056**
GL	-.072**	.020**	-.053**	.063**	.224**	-0.003	-.269**	-.154**
PL	.052**	.094**	.088**	.144**	.122**	-.059**	-.200**	.053**
SE	.068**	-.029**	.185**	-.029**	-.432**	-.019**	.154**	.178**
SW	-.172**	-.315**	.068**	-.112**	-.135**	-.268**	.027**	-.207**
RM	.043**	.031**	.069**	.030**	-.016**	.150**	-.106**	.018**
FW	-.160**	-.176**	-.285**	-.214**	.011**	-.224**	.425**	-.174**

\*p < .05, two-tailed. \*\*p < .01, two-tailed.

Total = Total expenses, Inst = Instruction, Res = Research, Acad = Academic Support, Stu = Student Services, Inst = Institutional Support, Scho = Scholarships, Aux = Auxiliary Enterprises  
 NE = New England, ME = Mid East, GL = Great Lakes, PL = Plains, SE = Southeast, SW = Southwest, RM = Rocky Mountains, FW = Far West

**Discussion**

The findings above provide a mix of results for this study. The main research questions were answered; however, the answers lead to more questions. Spending in Student Services appears to have little relationship with belonging, but the results also suggest that something more is happening with spending in Student Services. This section will discuss the various findings in relation to other research and identify some potential future research projects.

How colleges spend their funding has effectively no relationship with a student’s sense of belonging based on the model in this study. However, that does not mean there was nothing learned. In Pike et al. (2006), the researchers found a negative correlation between spending in student services and most of NSSE’s Engagement Indicators – including Supportive Campus Environment which asked questions related to sense of belonging. Today’s Engagement



Indicators are not identical to the ones from 16 years ago, however the current study's finding of a negative relationship between student services spending and sense of belonging may indicate a pattern. Certainly, it is curious that two studies looking at college spending have found negative relationships between student services spending and belonging variables. However, given the lack of research in this area, much more study is required to make definite claims. The results from this study show that sense of belonging is not associated with spending levels of any particular unit or division within a college. Simply increasing a budget will likely not cause belonging to increase, regardless of the student population. Instead, it is likely the actions (or lack of) that institutions take that have a relationship with belonging. These actions may have costs spread over multiple units and so it is challenging to track. For example, a high impact practice as defined by NSSE and tracked through Engagement Indicators is institutions giving their students opportunities to be socially involved (NSSE, n.d.). Dozens of units across a large college campus provide these opportunities.

### ***Employees and Belonging***

NSSE's Engagement Indicators accounted for the bulk of the variance within this model. Quality of Interactions and Supportive Environment provided large positive effects on belonging relative to the other Indicators. This finding is supported by prior research on belonging that suggests peer and faculty interactions have a "profound effect on students' sense of belonging" (Johnson et al., 2007, p. 527). Research continues to show that a student's environment needs to be supportive for students to thrive and belong (Combs, 1982; Goodenow & Grady, 1993; Strayhorn, 2015; Strayhorn, 2019) – a finding that this study would support. One take away from this study may be that it matters more who a college hires than how many people a college hires. Bigger budgets usually mean more employees since people are the greatest expense in a college

budget. The lack of relationship between spending and belonging suggests that quality interactions between employees and students may have a greater impact than simply more interactions. Somewhat contradictory, the correlations between belonging and Student-Faculty Interaction were relatively weak compared to other Engagement Indicators such as Effective Teaching Practices. This may imply that a student talking to a faculty member about career plans has less of an impact on belonging compared to quality teaching. Faculty are oftentimes the only employees a student will interact with if they are not living on campus. Therefore, their interactions with students are incredibly valuable and need to go well for students to have a high sense of belonging. The differences in correlations in Table 3 warrant a future study. Specifically, it would be worth analyzing how the different groups within the Quality of Interactions score impact belonging (students, academic advisors, faculty, student services staff, and other administrative staff and offices).

### *Spending Correlations*

The findings in correlations between student services funding and various other variables warrants additional research in the future. Projects such as lazy rivers have been cited as driving up the cost of education (Stripling, 2017). However, based on findings here it would appear that classroom instruction, research, and academic support are the largest drivers of college overall expenses and expenses on student services are the least correlated with overall spending. The larger a school is, the smaller the student service budget per student and the larger every other category of spending per student. This could be because larger universities are typically research institutions and spend more of their resources on research compared to small liberal art colleges that focus entirely on the student. Regardless, these correlations deserve a closer look in the future, because it could be that student services units are underfunded relative to other units at

institutions. Is spending in the areas of research and instruction increasing at a rate higher than spending in student services? If that is the case, should more emphasis be placed on instructors to be responsible for a student's sense of belonging as budgets for student services stay level? Student services is traditionally the area considered responsible for a student's sense of belonging.

### ***Student Finances***

The relationship between a student's financial wellbeing and belonging is becoming better defined as research into this area grows (Soria & Stebleton, 2013). A direct link between scholarships and belonging is not well established, however studies do show there are positive relationships between the two (Museus & Saelua, 2017). The main findings of this dissertation showed a positive relationship between spending on scholarships and belonging. First generation students had lower sense of belonging compared to non-first-generation students. First generation students tend to be low SES students (Pascarella et al., 2004). Finally, the larger the percentage of students at an institution who are Pell eligible, the lower the belonging score for the student. These findings all point to the importance of financial aid on college campuses at a time when federal aid is falling for students. Average tuition has increased 32% nationally over the past 10 years while average Federal loans have regressed 5% and the average Pell award increased by only 18% (IPEDS, n.d.). More troubling is the fact that 32% of college students received Pell in 2021 compared to 40% in 2011 (IPEDS, n.d.). If financial stability really is a driving factor of belonging as this dissertation suggested, then colleges should expect to see decreased belonging if they do not fill the increasing need of financial support for their students. Providing scholarships is certainly a way to do that and these findings suggest that scholarships have a positive relationship with belonging. However, spending on scholarships was negatively

correlated with overall spending. As budgets increase, spending on scholarships decreases suggesting that schools who have larger budgets spend less of it on scholarships and more on other areas. This correlation was very weak, and it is possible that there is some unknown variable that would explain the relationship.

### *Limitations*

Data for this study came from 2020 just before the COVID-19 outbreak hit the United States. Given the timeline for the data collection of this study, simply repeating it with data from today would likely yield different results. Looking at data over multiple years may also be a future area of study. A quick review of NSSE's engagement indicators showed that the 2020 results were similar to previous years, however the 2021 results all dropped dramatically - likely due to COVID-19. Overall, NSSE's engagement indicators have been trending down over the past 10 years (McCormick et al., 2021).

NSSE provides a great dataset for researchers to look at engagement practices, however its questions specific to belonging (and therefore the belonging score given to students) may not be the right ones. Allen et al. (2021) explored several topics around belonging, one of which was the "strength of a person's need to belong." Everyone has a need to belong, but some individuals need it more or less than others. NSSE's questions assume that all students need to feel a sense of belonging. This may be a correct assumption, but two students who say they agree to the question "I feel like part of the community at this institution" may need to belong differently, or they may be looking for different things to feel that belonging. One may really need to strongly agree to feel like they belong while another student may not even need to agree to the question at all to truly feel like they belong there. Analyzing belonging as a state rather than a trait shows that events and stressors occurring throughout the day impact a person's sense of belonging (Ma,

2003; Sedgwick & Rougeau, 2010; Walton & Cohen, 2011). A student's responses to NSSE's questions may vary greatly depending on what else was taking place at an institution or even in an individual's life at that moment. "Most belonging measures are unidimensional, subjective, and static, representing a snapshot of a person's perception at the time of administration" (Allen et al., 2021, p. 90).

There were several issues with the data itself which were less than ideal for this dissertation. NSSE required all identifiers be masked and as part of that requirement all continuous variables were changed to ordinal. This resulted in somewhat arbitrary categories being created for continuous data. NSSE also required any category to have five or more institutions in it which impacted how categories were created. NSSE's data was only available for undergraduate students and left out any graduate students even though IPEDS data on spending was inclusive of all students (graduate or undergraduate). Many campus services are used by both graduates and undergraduates such as housing. A campus could have a large population of graduate students living in residence halls and as a result a high campus housing budget, but those students were not included in the sample. The sample was forced to exclude private institutions because IPEDS did not have spending data from private institutions. IPEDS also cannot guarantee that all schools report similar units into the same category of spending. For example, one institution may consider their student union to be an auxiliary service because it generates all its own income, while another may consider it to be part of student services because it is funded by campus operating budgets. Finally, NSSE surveys only freshmen and seniors which provides an adequate snapshot of a campus population, but it is not a wholistic picture of the campus climate.

### **Directions for Future Research**

The results of this study provided many areas for future research; however, four topics stand out more than others. First, the NSSE Engagement Indicators correlation results opened new questions about why Faculty-Student Interaction was lower than Effective Teaching Practices. Are the questions being asked in the Faculty-Student Interaction the right ones or do students see ineffective teachers as someone who does not care about them? Other research suggests that the faculty-student relationship should be correlated with a sense of belonging (Hoffman et al., 2003). Second, NSSE's Quality of Interactions Engagement Indicator is a composite score comprised of questions asking about a student respondent's quality of interactions with other students, academic advisors, faculty, student services staff, and other administrative staff and offices. Breaking down each question by analyzing its relationship with belonging would provide a good indication as to where college should invest training or new funds for new people. Does a school need to focus on faculty training or staff training to improve belonging? Both are important, but limited time, personnel, and resources make prioritization important. Third, there are many things that may influence how scholarships and belonging interact. For example, if a group of students receive an academic scholarship that has with it some obligations (meeting with the dean for lunch, getting together as a group to do a service project, etc), then is it the money or the activity that has a relationship with belonging? This question should be investigated as more and more students struggle financially while in college. Finally, spending on student services was not strongly correlated with overall spending. Other areas were strongly correlated with overall spending, so why not student services? This question deserves attention since increasingly student services is being asked to a large role in retaining students.

**Possibilities for Practice**

Institution staff, faculty, and administrators can take away several points from this dissertation's conclusion. First, leaders should disaggregate data when looking at campus survey results. Most institutions already do this for gender, race, and various other factors, but this recommendation is to specifically disaggregate the data by Pell eligibility. The findings from this research suggest that Pell students and non-Pell students do not have the same college experiences and it is important to include that narrative when analyzing data. Second, bring a group of practitioners together and present the finding that more spending in student services (and other areas) have a negative relationship with belonging. Ask the group why they think that is the case and listen to the results. Likely, there will be a number of ideas that come forward and some will be ones that can be acted on. Creating belonging is difficult and takes a campus wide approach to accomplish, therefore solutions need to span beyond only one unit. Third, ask students how their scholarships impact their lives, then dig deeper with questions to see if it is simply having the extra money that is the biggest impact or if the process in which the student received the funds (meeting and talking to an advisor who directed them to the scholarships) mattered. If the process matters, make sure to match the process with the student population that is being impacted by the scholarship. Finally, be intentional with programs and services designed to impact belonging. The negative relationships between belonging and spending indicate that it is better to be specific and thoughtful with targeted funding increases than simply increasing overall budgets. A campus wide approach to creating an environment for students to feel like they belong is needed. Siloing work around creating sense of belonging to only one or two units will not make much of an impact.

**Conclusion**

Sense of belonging matters a great deal on a college campus. Finding ways to ensure that students are supported and are thriving is in every college's best interests. Students who feel like they belong at a school are more likely to persist to graduation. Schools continue to face tough decisions when it comes to budgets and this study was intended to provide a starting point for college administrators looking to impact a student's sense of belonging with new funding. However, the results of the study suggest that simply adding more funding in one area will have little impact on a student's sense of belonging. Instead, efforts should be made to create a supportive campus environment and provide quality interactions between the students and various college employees. More attempts to analyze sense of belonging from an economist rather than only a behaviorist perspective will continue to provide new insights into college students' sense of belonging.



## Chapter 5: Contribution to Practice

Part of this dissertation process is connecting the scholarly work with practical application of the data. This chapter is a presentation created to show campus leaders the results of this dissertation and begin a conversation on the relationship between belonging and spending. A particular committee at the University of Missouri was envisioned as the intended audience for this presentation. A core team consisting of faculty, Institutional Research, Student Affairs, Academic Affairs, and more review Mizzou's NSSE data to discuss take-aways. This group is ideal to receive this presentation because they have a solid understanding of NSSE and have discussed belonging in the past. While the data and findings were on a national level, this group would have access to Mizzou's campus data and be able to narrow in on the overall findings of the study.



# Funding Belonging

Results from a national study on the relationship between sense of belonging and college expenditures



## Why this study?

Three reasons:

- Belonging matters
- My professional work
  - Justifying my programs over another areas is a challenge
  - Looking for a way to compare areas
- Limited amount of research analysing belonging and spending



## Belonging is Critical for Students

Sense of belonging...

- Is a basic human desire (Baumeister & Leary, 1995)
- Leads to higher rates of graduation (Morrow & Ackermann, 2012)
- Makes students more likely to return the following year (Hausmann et al., 2007)
- Is critical to learning (Kernahan et al., 2014)
- Has a strong relationship with performance (Baumeister et al., 2002) and motivation to achieve (Walton et al., 2011)
- Leads to thriving (Strayhorn, 2019)
- Has different impacts on students from different races and genders (Hurtado & Carter, 1997)
- Is linked with retention (Tinto, 2012)

The lack of belonging leads to

- students dropping out of school (Fine, 1991)
- higher rates of substance use (Goff & Goddard, 1999)



## Research Questions

1. Does student services have a stronger relationship with sense of belonging compared to other areas?
2. If not, what areas of funding have the strongest relationship with belonging?
3. Do increases in student services expenses correlate with increases in sense of belonging?



## Funding Belonging

National studies have been inconclusive when attempting to connect belonging with funding sources. (Goers, 2023)

My research showed little relationship between expenses and belonging on a national level. (Goers, 2023)

My research did find belonging was negatively correlated with some areas of a college and positively correlated with others. (Goers, 2023)

## Main Findings

COEFFICIENT	STANDARDIZED B
Total expenses per student	0.001
Expenses per student in Instruction	-0.01
Expenses per student in Research	0.021
Expenses per student in Academic Support	-0.006
Expenses per student in Student Services	-0.014*
Expenses per student in Institutional Support	-0.007
Expenses per student in Scholarships	0.024**
Expenses per student in Auxiliary Enterprises	0.008

\* $p < .05$ . \*\* $p < .01$ .

## Belonging and Expenses Correlations

EXPENSES PER STUDENT CATEGORY	SENSE OF BELONGING
Total Expenses	-.008
Instruction	-.019**
Research	-.006
Academic Support	-.015**
Student Services	-.025**
Institutional Support	-.023**
Scholarships	.018**
Auxiliary Enterprises	.025**

\* $p < .05$ , two-tailed. \*\* $p < .01$ , two-tailed.



## Do scholarships increase belonging?

Findings show Scholarships are positively correlated with belonging

- Small correlation, but only one of two spending categories that is positive

Federal Aid is falling

- Average tuition has increased 32% nationally over the past 10 years
- Average Federal loans have regressed 5% nationally over the past 10 years
- 32% of college students received Pell in 2021 vs 40% in 2011

Schools who provide more scholarships could be seen as supporting students more than schools who do not.



## Auxiliary Services

Findings show Auxiliary Services are positively correlated with belonging

- Small correlation, but one of two spending categories that is positive

What are Auxiliaries?

- IPEDS defines as “self-supporting activities”. (residence halls, food services, student health services, intercollegiate athletics, college unions, bookstores)

Athletics and residence halls in particular have been shown to impact belonging and social interaction ( Mangold et al., 2002; Sung et al., 2015; Johnson et al., 2007)

## Scholarships and Auxiliaries

The link between various auxiliaries and belonging is well established in literature.

- These areas do not typically cost a university any money because they are self sufficient
- In fact, these areas usually net money
- And they impact belonging in a positive way

The direct link between scholarships and belonging is less well researched, studies do show there are positive relationships between the two (Museus & Saelua, 2017).

- Aid is a critical for many students
- More research needed in this area

## Spending Correlations

Spending per student	Total Expenses	Instruction	Research	Acad Support	Student Services	Inst Support	Scholarships
Instruction	.805**						
Research	.706**	.495**					
Acad Support	.784**	.675**	.609**				
Student Services	.203**	.310**	-.093**	.143**			
Inst Support	.584**	.616**	.247**	.501**	.288**		
Scholarships	-.079**	-.195**	-.110**	-.183**	-.168**	-.067**	
Aux Enterprises	.618**	.518**	.426**	.476**	.010*	.279**	-.138**

\*p < .05, two-tailed. \*\*p < .01, two-tailed.

## Spending Correlations

Scholarships are negatively correlated with all other types of spending.

- Given their correlation with belonging, could money be better spent by simply giving it to students rather than providing services?

Student Services are funded less at larger institutions and have the smallest correlation with overall spending.

- As overall spending goes up, Student Services goes up at a lower rate compared to other units

## Engagement Indicators and Belonging Correlations

ENGAGEMENT INDICATOR	SENSE OF BELONGING
Supportive Environment	.530**
Quality of Interactions	.500**
Effective Teaching Practices	.390**
Higher-Order Learning	.302**
Learning Strategies	.283**
Reflective and Integrative Learning	.259**
Student-Faculty Interaction	.254**
Quantitative Reasoning	.213**
* $p < .05$ , two-tailed. ** $p < .01$ , two-tailed.	



## Engagement Indicators and Belonging

Strong correlation between Supportive Environments and Quality of Interactions with belonging

- This is expected because of how the Supportive Environment indicator is constructed by NSSE
  - Many of the questions asked on the survey for this indicator have proven relationships with belonging
  - Ex: attending events and opinion on if the school supports well-being
- From my experience, this also is expected for Quality of Interactions
  - Services are delivered by people
  - How those people interact with you will reflect on the organization



## Engagement Indicators and Belonging

Student-Faculty Interaction being the least correlated with belonging was surprising

- Faculty-Student relationship is linked with belonging (Hoffman et al., 2003)

Perhaps students care more about how well a faculty member teaches compared to how much they get to know a student?

- John C. Maxwell: "Students don't care what you know until they know that you care"
- If a faculty member does not teach well, maybe students take that as not caring about them

NSSE's Student-Faculty questions on the survey could also be the wrong ones as it relates to belonging.





## Engagement Indicators and Belonging

### Student-Faculty Interaction

*During the current school year, how often have you:*

- Talked about career plans with a faculty member
- Worked with a faculty member on activities other than coursework (committees, student groups, etc.)
- Discussed course topics, ideas, or concepts with a faculty member outside of class
- Discussed your academic performance with a faculty member

### Effective Teaching Practices


*During the current school year, to what extent have your instructors done the following:*

- Clearly explained course goals and requirements
- Taught course sessions in an organized way
- Used examples or illustrations to explain difficult points
- Provided feedback on a draft or work in progress
- Provided prompt and detailed feedback on tests or completed assignments



## Research Results

1. Does student services have a stronger relationship with sense of belonging compared to other areas?
  - No
2. If not, what areas of funding have the strongest relationship with belonging?
  - Scholarships and Auxiliary Services
3. Do increases in student services expenses correlate with increases in sense of belonging?
  - No



## Bottom Line - Why do these findings matter?

### Cynics: Money

Higher belonging leads to better semester to semester retention (Tinto, 2012; Fine, 1991)

More students in classes means more money for institutions

Investing in the right areas to impact belonging brings the best ROI

### Optimists: Learning

Higher belonging leads to more learning (Combs, 1982; Routt, 1996; Kernahan et al., 2014)

Students cannot learn until they feel like they belong

Investing in the right areas to impact belonging creates better learning environments



## Recommendations

Student finances have an impact on belonging. More Pell students means lower belonging

- Talk to your Pell students to make sure they are having the same experiences as your non-Pell
- Disaggregate your data not only by race, but also by Pell eligibility

Focus on Quality

- Quality faculty interactions matter a lot
- Adding more staff may not impact belonging, but having high quality staff likely will

### **Chapter 6: Scholarly Practitioner Reflection**

The dissertation process has taught me a lot about how to build and write studies, but it has also helped me as I continue to grow as an educational leader. I started the doctoral program at the University of Missouri back in 2019. I was in middle management in the Student Affairs division of Mizzou at that time. My role was centered around providing programs and experiences for our students that made them feel like they belonged at Mizzou while also giving them a chance to practice real world experiences. This role led directly to my dissertation topic focusing on sense of belonging. Four years later I left the University of Missouri and found myself an administrator at a community college in enrollment management. This was a career change for me and took me away from many of the programs that are designed to directly impact belonging. However, my passion for creating a sense of belonging for students has not changed and this dissertation has been useful in several ways.

First, I have a much greater appreciation for how administration on college campuses lack key information and yet are still expected to make decisions. I have constantly been looking for more studies and data related to sense of belonging and how campus policies, funding, and offices impact belonging throughout the dissertation process. Very few studies directly addressed these connections and yet these are the studies needed for college administrators when they are attempting to address sense of belonging. As I moved into my current role as a college administrator, I have found that there is never enough or the exact information needed to have a good picture of issues. Instead, I am forced to use research tangentially related to the issue at hand and local data. This dissertation has shown me that it is very likely research related to my problems is not going to be available to me as a campus leader.

The process of digging through study after study to create my literature review section taught me much more about sense of belonging than anything I learned in previous schooling. Much of the research on belonging prior to this dissertation had only ever referenced in various articles and I never read the original work. That changed when I had to go to the source to find more supporting documentation for the literature review. It had been a long time since I had read Astin, for example. His IEO model was something I remember reading when I first started in higher education and referenced from time to time, but reading how it was used to develop additional research was fascinating both from a scholar perspective but also from a leader. We have moved far beyond his simplistic view of the college campus. This better understanding of the core concepts around belonging has given me more confidence talking about belonging with leaders at my college and with peers. I find myself citing more research when I review policy proposals which is interesting considering my current job has less to do regarding belonging than my previous one.

### **Scholarly Influence**

My biggest takeaway from this dissertation is that the scholar process is long. This was referenced in the courses leading up to beginning the dissertation, but reading how one study referenced another, which referenced one before it, which referenced one before it was fascinating in a way I had not realized previously. I remember looking at various studies that all had to do with belonging and its impact on minority students. One study introduced an idea, another dove into that idea deeper but in a specific student population, then another took it in a slightly different direction, finally another one took it in another direction. Somewhere in there a consensus was built that race is connected to belonging, but because of certain institutional impacts. It was years between these studies and each one slowly built on the other. I knew that

the scholarly process was a slow one, but I never appreciated just how slow the build towards knowledge really is.

I still have several research questions that I want answered relating to the connection between individual college units and belonging. However, I now know that two factors really restrict researchers: data limitations and big jumps in assumptions. First, there is an amazing amount of data out there for researchers but surprisingly little of that data seems to be useful. I had access to IPEDS and NSSE data. Questions were asked in an unhelpful way and some data points were collected while others were not. I was limited in how I could set up my study as a result. Second, I wanted to ask big questions and get big answers, but that required glossing over some assumptions. For example, I want to know if putting more money in a recreation center has a positive relationship on belonging. But that assumes that recreation centers have any correlation with belonging and if they do, is it because of the staff and their relationships with students or the facilities? There were too many factors left unexplained to just jump to the big question I wanted to ask.

Another area that this dissertation has changed my perspective on this is related to how I process information. I am an analytical thinker at baseline as I want to see numbers and data to inform my decisions. I thought going in this dissertation would reinforce my preference to see pure numbers. I certainly continue to find interest in reviewing data, but the results of the study have made me better appreciate qualitative data. I think that because the findings of my study were so small, they do not feel like they have a “story” behind them. I want to know the “why” which a quantitative approach does not really give you. I enjoyed learning about mixed method studies in our methods class, and I think I will use that approach in the future if I continue to do research. Numbers are certainly easier for me, and I find regressions easy to understand. I am

now at the end of this process, and I feel as though I have more questions than answers. But I suppose that is where all research starts, and I am looking forward to discovering more questions in my pursuit of answers.

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## Appendix A

### Descriptive Statistics

**Table A1**

*Descriptive Statistics for All Variables*

	N	Min	Max	Mean	Std. Deviation
Sense of Belonging Score	52349	0	60	41.2548	13.18106
Higher-Order Learning	56885	0	60	38.98	13.426
Reflective and Integrative Learning	60987	0	60	36.61	12.344
Quantitative Reasoning	54983	0	60	29.15	15.837
Learning Strategies	54178	0	60	38.43	14.208
Collaborative Learning	64788	0	60	33.37	14.351
Discussions with Diverse Others	54495	0	60	40.05	15.629
Student-Faculty Interaction	58707	0	60	22.61	15.499
Effective Teaching Practices	56793	0	60	38.73	13.485
Quality of Interactions	50507	0	60	42.54	11.989
Supportive Environment	52643	0	60	33.96	13.951
Institution size	66968	1	5	4.48	0.8
Regions	66968	1	8	4.73	2.056
Institution-reported: Sex	66968	0	9	0.35	0.503
Institution-reported: Race or ethnicity	61116	1	10	5.23	1.874
% of undergrad between age 18-24	60515	1	5	3.84	1.25
% of non-white students	66968	1	5	2.95	1.564
% of women	66968	1	5	2.75	0.915
% of Pell Eligible students	66968	1	5	2.84	1.41
NCAA/NAIA membership for football	66968	0	1	0.63	0.482
Total expenses per student	66968	1	5	2.75	1.11
Expenses per student in Instruction	66968	1	5	2.93	1.2
Expenses per student in Research	66968	0	5	2.41	1.523
Expenses per student in Academic Support	66968	1	5	2.98	1.057
Expenses per student in Student Services	66968	1	5	2.63	1.143
Expenses per student in Institutional Support	66968	1	5	2.53	1.034
Expenses per student in Scholarships	66968	1	5	3.06	0.999
Expenses per student in Auxiliary Enterprises	66968	0	4	1.41	0.713
First-Generation Status	51634	0	1	0.47	0.499
Collapsed Carnegie classifications	66968	1	4	1.52	0.614
Valid N (listwise)	37751				

**Appendix B**

## Frequencies

**Table B1***Control Variable Frequencies*

	Frequency	Valid %
<b>First-generation Status</b>		
Not first-generation	27292	52.9
First-generation	24342	47.1
<b>Race</b>		
American Indian or Alaska Native	466	0.8
Asian	4963	8.1
Black or African American	6489	10.6
Hispanic or Latina/o	11452	18.7
Native Hawaiian or Other Pacific Islander	281	0.5
White	31449	51.5
Other	4	0
Foreign or Nonresident	1954	3.2
Two or more races/ethnicities	2473	4
Unknown	1585	2.6
<b>Gender</b>		
Female	43770	65.4
Male	23170	34.6
<b>Region</b>		
New England	4350	6.5
Mid-East	6759	10.1
Great Lakes	9608	14.3
Plains	5034	7.5
Southeast	20895	31.2
Southwest	7491	11.2
Rocky Mountains	1812	2.7
Far West	11019	16.5
<b>Institution Size</b>		
Very Small (fewer than 1,000)	252	0.4
Small (1,000-2,500)	1893	2.8
Medium (2,500-4,999)	5863	8.8
Large (5,000-9,999)	16630	24.8
Very Large (10,000 or more)	42330	63.2
<b>Carnegie Classification</b>		
Doctoral Universities	35931	53.7

Master's Colleges and Universities	28026	41.8
Baccalaureate Colleges	2391	3.6
Other	620	0.9
<b>Athletic Control</b>		
NCAA/NAIA membership for football	42304	63.2

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**Table B2**

*Spending per Student Frequencies*

	Total Spending	Instruction	Research	Academic Support	Student Services	Institutional Support	Scholarships	Auxiliary Enterprises
None	0	0	2.1	0	0	0	0	0.5
Significantly Below Average	7	8.7	42.7	3	14.8	11.9	6.8	67.6
Below Average	49	36.1	10.8	39.3	39.4	47.8	18.4	25
Average	13.9	22.4	12.4	23	20.8	21.1	45.2	3.8
Above Average	22.5	19.2	20.5	26.1	18.2	14.2	21.3	3
Significantly Above Average	7.5	13.6	11.4	8.5	6.9	5	8.3	0

**Table B3***IPEDS Added Control Frequencies*

	% of undergrads between age 18-24	% of non-white students	% of women	% of Pell Eligible students
Significantly Below Average	8.5	23.9	1.9	22.6
Below Average	11.1	27	49.5	25.8
Average	3.6	6.2	23.2	11.9
Above Average	42	16.5	22.8	24.5
Significantly Above Average	34.8	26.5	2.6	15.2

## Appendix C

### IPEDS Regions

The **New England** region includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.

The **Mid East** region includes Delaware, the District of Columbia, Maryland, New Jersey, New York, and Pennsylvania.

The **Great Lakes** region includes Illinois, Indiana, Michigan, Ohio, and Wisconsin.

The **Plains** region includes Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota.

The **Southeast** region includes Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

The **Southwest** region includes Arizona, New Mexico, Oklahoma, and Texas.

The **Rocky Mountains** region includes Colorado, Idaho, Montana, Utah, and Wyoming.

The **Far West** region includes Alaska, California, Hawaii, Nevada, Oregon, and Washington.

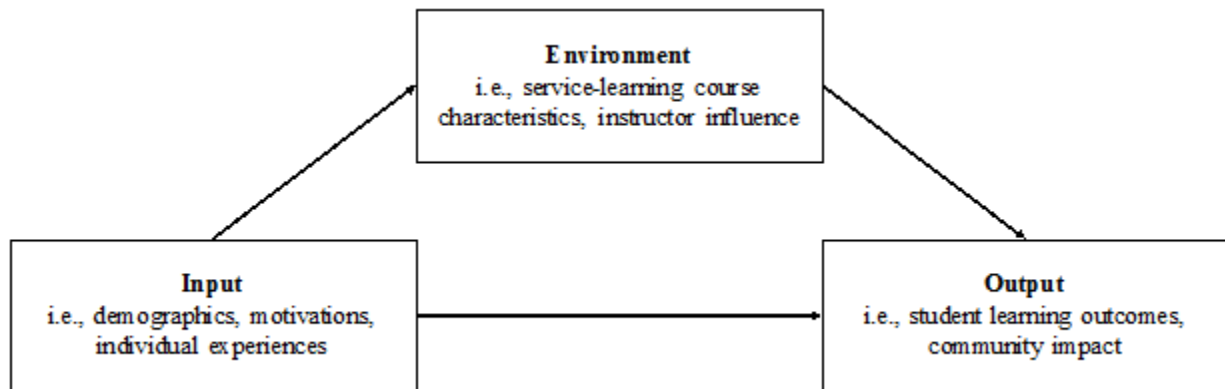
SOURCE: U.S. Department of Education, National Center for Education Statistics, IPEDS, Fall 2019, Institutional Characteristics component (provisional data).

**Appendix D**

Astin's I-E-O Model

**Figure D1**

*Astin's I-E-O Model*



*Note.* How the three features of Astin's model interact with each other.

**Appendix E**

Data Cleaning

**Table E1**

*Created Categorical Variables*

	Mean	Sig. Below Average	Below Average	Average	Above Average	Sig. Above Average
% of women	58	<39	40-57	58-60	61-69	>70
% of Non-white students	48	<25	26-44	45-50	51-75	>76
% of Students Pell Eligible	36	<25	26-34	35-37	38-50	>51
Total Expenses	27,000	<15,000	15,000-25,000	25,000-30,000	30,000-50,000	>50,000
Instruction	8,600	<5000	5,000-7,500	7,500-9,500	9,500-13,000	>1,300
Research	2,100	<600	600-1,500	1,500-3,000	3,000-8,000	>8,000
Academic Support	2,500	<1,000	1,000-2,000	2,000-3,000	3,000-5,000	>5,000
Student Ser	2,000	<1,000	1,000-1,700	1,700-2,300	2,300-3,000	>3,000
Institutional Support	3,000	<1,500	1,500-2,500	2,500-3,500	3,500-5,000	>5,000
Scholarship	1,500	<500	500-1,000	1,000-2,000	2,000-3,000	>3,000
Auxiliary Enterprises	2,900	<999	1,000-2,400	2,400-2,850	>2,850	(Too few responses to make 5 per category)

## VITA

I was born and raised in Missouri. I spent my childhood in a small city outside of St. Louis before moving to St. Louis for college. I attended the University of Missouri - St. Louis where I majored in several degrees before graduating with a B.A. in History. After graduation, I moved to Columbia, MO and attended the University of Missouri - Columbia for graduate school. There I studied for my Master of Public Affairs and worked as a Graduate Assistant in the Center for Leadership and Service. Upon graduation I was hired as the experiential education coordinator, a role I would hold for a few years before eventually leading the Office of Student Engagement as the Assistant Dean of Students. I began the EdD program in 2019 just before COVID hit and completed half of the program virtually. In 2021, I accepted a new role at Lincoln Land Community College in Illinois where I serve today as the Interim Associate Vice-President for Enrollment Services.