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## Taking care of what matters: How student involvement and characteristics relate to senior student sense of belonging

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Taking care of what matters: How student involvement and characteristics relate to senior  
student sense of belonging

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in Educational Leadership  
in the Department of Counseling, Higher Education Leadership,  
Educational Psychology, and Foundations

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2023

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Student sense of belonging has been a topic of discussion for decades; however, senior student sense of belonging has not been looked at as closely as other groups of students. As seniors transition out of college, institutions must consider that these students become the alumni who contribute through alumni donations and share their experiences with future generations of students.

Looking at data from a single very high research college campus in a rural state, the study explored variables that relate to senior student sense of belonging. Using Ahn and Davis's (2020a) 4 domains of student sense of belonging, variables were included that fit into the categories of academic engagement, social engagement, surroundings, and personal space, along with other student characteristics. The study uses student information attained through university data and responses to NSSE survey items to explore what items impacted students' response to feeling a sense of belonging based on 3 NSSE survey items related to sense of belonging that were introduced in the 2020 version of the survey. Data from three linear regressions showed the significance of 16 independent variables using a stepwise approach. Data showed that there were 2 variables that were significant in all 3 models: students reporting that they would choose the

same institution again and students' overall evaluation of their experiences. The data showed a wholistic picture of what relates to senior student sense of belonging cannot be determined using the variables in this study. The authors suggest that a qualitative approach would be needed to learn more about how the variables in this study and additional variables impact sense of belonging for senior students.

## DEDICATION

To Jordan,

You have been my rock, my constant source of support, and my greatest cheerleader throughout this crazy journey. Your belief in me, your patience, and your encouragement have been the driving forces behind my pursuit of this degree. Your sacrifices and selflessness have paved the way for me to reach this milestone, and I dedicate this dissertation to you with heartfelt gratitude. This achievement is as much yours as it is mine. Thank you for being with me every step of the way.

To Korabell and Kendall,

You two are the sun and stars that have illuminated my path even in the darkest moments of this endeavor. Your smiles and endless hugs have given me the strength to persevere, even when the challenges seemed insurmountable. You endured countless hours of virtual classes and gave up your weekends for me to spend time doing schoolwork. I hope that you both find a love for education like I have, and I hope that you know that you can achieve all your dreams.

It is with immense pride and gratitude that I dedicate this dissertation to you, my family. Your love has fueled my aspirations, your sacrifices have fueled my determination, and this achievement reflects the bond that we share. May this dedication serve as a small token of my immense appreciation for all that you are and all the love and support you have given me.

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## CHAPTER I

### INTRODUCTION

The decision to go to college is a choice with life-long implications that society places on teenagers and young adults. After the decision is made to go to college, students must then learn how to adapt and succeed at their institution if they want to be eligible to continue enrolling each semester. In general, college is a time when students learn more about who they are and begin to plan out their careers. This means that institutions play a large part in helping students find their place in society and shaping how they interact with others as they come into adulthood. This also means that the experience that students have on an institution's campus impacts the student's decision to continue working towards a degree at that institution.

For students to choose to stay at an institution, they must have some basic needs met, one of which is a sense of community, or a sense of belonging. To ensure that students have this need met, institutions have created offices and devoted money and energy into creating an environment that supports student interests and can cater to the needs of their students. However, the needs of students are often diverse and need individualized approaches which can be hard for an institution to achieve when considering the number of students that are on college campuses.

Goodenow (1993) described the idea that adolescents have social and emotional needs that impacted their development and their experiences. Expanding upon Goodenow's (1993) investigation into belongingness in adolescent students, Zumbrunn et al. (2014) applied this theory of belongingness to college students. Their study concluded that once students get to

college, there remains a need for them to fit into their environment for them to succeed academically. This need to fit into an environment suggests that without a biological need for belonging being met, students cannot achieve higher levels of self-actualization (Maslow, 1943). For many students, this act of finding belongingness begins with engaging in activities on their institution's campus.

### **Sense of Belonging**

Sense of belonging has been defined in various ways by scholars, but the core of each definition is feeling of acceptance into a group. Hurtado and Carter (1997) defined sense of belonging as the psychological feeling of connectedness to a group, whether that is cultural, professional, or social in nature, while Strayhorn (2012) defined it as when a student feels valued, accepted, respected, and as though they matter in their environment. These scholars focused on being an accepted part of the group, however, Tinto's (2012) definition took sense of belonging a step further to describe it coming from support as well as being a part of a community. Tinto (2012) described sense of belonging as "a generalized sense of membership that stems from student perception of their involvement in a variety of settings and the support they experience from those around them" (p. 66). These various definitions all show that belongingness is not something that a person can feel without engaging in their campus community. However, there are institutional factors that can impact students' willingness or ability to engage in their campus environment.

### **Engagement**

In 1984, Astin began to document that the idea that involvement was a crucial part of the college student experience. He, however, noted that the discussion lacked cohesiveness in the

language that was being used; this led to the development of the theory of student involvement. Astin (1984) defined involvement as “the amount of physical and psychological energy that the student devotes to the academic experience” (p. 518). Although often conflated together, student involvement is not necessarily the same thing as student engagement. Student engagement is defined as “a psychological process, specifically, the attention, interest, investment, and effort students expend in the work of learning” (Marks, 2000, p. 154–155). The difference between student engagement and student involvement based on these definitions is the student’s level of interest, which is noted in the definition of engagement and not in the definition of involvement. Engaging in a process means that that the student is more actively involved instead of merely participating. This means that the student is able to take some ownership in how they participate; for example, they might take a leadership role, devote thought into how the experience they are engaging in can apply to outside activities or lifelong goals, or something in between.

There is a well-documented correlation between student engagement and belongingness (Kahu, 2013). When students are more engaged in activities, it gives them the opportunity to meet more people and connect with differing parts of their campus environment. Gillen-O’Neel (2021) studied the daily fluctuation in the feeling of belongingness amongst college students and found that when students reported a higher level of engagement, either socially or behaviorally, they reported a higher sense of belonging on that same day. This suggests that engagement is not something that can be checked off as simple participation because it requires ongoing dedication and commitment of time and energy. It also shows the need for institutions to be cognizant of the fact that belongingness fluctuates and that there needs to be consistent projects, activities, and/or spaces for students to engage in. This is not to say that all engagement must stem from university

sponsored activities, however, if an institution is looking to enhance belongingness through student involvement, there needs to be some kind of facilitation of these activities.

Engagement has been documented as the most crucial factor in student sense of belonging (Ahn & Davis, 2020a). In 2020, the National Survey of Student Engagement (NSSE) included a new set of questions related to belongingness on a college campus. Based on 271,421 responses from first year students and seniors from 521 bachelor's degree granting colleges and universities, the Center for Postsecondary Research (n.d.b) identified engagement indicators associated with sense of belonging amongst students. They found that perceived gains and supportive environment were the two engagement indicators that had the most impact on a student's sense of belonging (Center for Postsecondary Research, n.d.b). What this shows is that students feel the most sense of belonging in an environment in which they feel supported; in feeling supported they feel as though they can achieve their goals at Mississippi State University and can ask for assistance when it is needed. It also shows that students who had higher perceived gains had more of a sense of belonging. This means that the more that a student feels that they are getting from their experience that they can apply outside of the institution, the more they feel as though they belong.

### **Transitions**

Although there are numerous transitions that students face while in college, the transition to college in the first year and the transition out of college are two of the most challenging because they encompass so many changes. Louie (2007) argued that what scholars know about transition to college has significant gaps, particularly when considering the impact on minoritized groups, sex, and immigrant students.

Senior students who are transitioning out of college often feel overwhelmed by the number of changes happening in their life. Sanford (1967) discusses that students have a particularly high level of instability in their final semester before graduation. Building off Sanford (1967), Lane (2016) took a more in depth look at this instability and found that three areas of transition are particularly hard for senior students: career, change and loss, and support. These areas highlight opportunities for institutions to offer support with the transition out of college. While many institutions offer career services centers, it is equally important to teach students to cope with the change and loss of their college network. Even if their network remains to some extent, the transition out of college changes the dynamic of those relationships in that community network. What these authors highlight is that sense of belonging does not need to be dismissed when students get to senior year, but rather enhanced in new ways that show connection to the institution, faculty, and their peers. If alumni have good experiences, they are more likely to share that experience with others, creating a pipeline of students who choose that institution. However, for a student to become an alumnus who shares these positive experiences, the student must successfully complete their degree and being satisfied with their experience at the institution. The needs that the students have change from when they transition to campus to when they transition out of college, but institutions still need to provide support for students in both situations.

### **Statement of Purpose**

The purpose of this study is to help identify variables that relate to students' sense of belonging in their senior year. This study aims to determine what variables contribute to sense of belonging for students on a very high research college campus in a rural state. Very high research institutions focus extensive energy into research across different fields, and faculty



members who want to earn tenure often have to participate in research to be promoted. However, that could lead to less time for faculty to engage with their students, therefore having a potential impact on sense of belonging. This study also considers that Mississippi State University is situated in a rural community, which means there are potentially fewer ways for the student to feel a connection to the community if they are not previously familiar with the area or have engagement opportunities outside of the classroom. This study seeks to find sources that relate to sense of belonging so that institutions, particularly those with a high focus on research in a rural environment, can understand what factors are associated with student sense of belonging and ultimately cultivate a stronger sense of belonging amongst its students.

### **Research Questions**

For the purposes of this study, the NSSE will be used to assess student sense of belonging and student characteristics. The research questions were: (1) Do seniors feel a sense of belonging when transitioning out of Mississippi State University? And (2) What is the extent to which student experiences and student characteristics relate to senior year sense of belonging? The importance of looking at senior students is because they have reached the point of transitioning out of college, and their level of belonging has potential implications for the life-long success of the student as a whole person. Senior students are also the ones who can share their college experiences with future generations of students, having a lasting impact on the institution.

### **Theoretical Framework**

In 2020, Ahn and Davis argued that there are four domains of student' sense of belonging to a university: academic engagement, social engagement, surroundings, and personal space. What Ahn and Davis (2020a) found was that significant energy is devoted to academic and

social engagements at universities, but that surroundings and personal space often receive less attention. For this study, academic engagement was described as the university, curriculum, and the education that the student was receiving, while social engagement was referred to participation, friends, community feeling and support, and socializing. Surroundings were described as the student's living space, meaning their physical shelter as well as the geographical and cultural location, while personal space referred to identity, life satisfaction and attitudes, as well personal interests. Student sense of belonging cannot be linked to one of these dimensions alone and might vary due to individual student needs and backgrounds (Ahn & Davis, 2020a); for example, some students might be able to adjust to a lower level of satisfaction within their surroundings if they have a more aligned personal space that allows them to explore their personal interests more freely.

### **Significance of the Study**

This study takes an in-depth look at student characteristics and how they play into sense of belonging for senior students. The emphasis on senior students is a key contribution of this study, as few articles focus on college students after their first two years on campus. Students who have a higher sense of belonging are often more energized, more likely to engage in assignments and course materials, and are more likely to choose to continue choose the same school environment (Bowen, 2021). Students being more engaged and finding a sense of belonging on campus leads to students having a better perception of their college career, which can impact lifelong relationships with the institution in terms of annual giving, employer relationships, and future generations of students by means of legacy students (Cuseco, 1998). As more students choose to forego college, it is imperative that the students who do attend an

institution find a sense of belonging and are able to succeed academically (U.S. Department of Education, n.d.).

## CHAPTER II

### LITERATURE REVIEW

#### **Sense of Belonging**

In 1975, Tinto began the conversation surrounding student attrition and determined that students dropped out of college due to social and academic issues. Tinto (1975) suggested that if students are both socially and academically integrated, then they are more likely to persist and matriculate to graduation. Academic integration is when a student is doing well in their academic courses, considers their classes to be relevant and practical for future use, and is satisfied with their major (Tinto, 1975). Social integration is the student's comfort with their campus environment and acceptance by their peers through finding common interests (Braxton, 2000). In 1993, Tinto developed a model of student departure, which outlined three reasons that students leave college: academic challenges, inability to resolve their educational or occupational goals, or failure to be incorporated into the intellectual and social life of an institution (Tinto, 1993). What these models highlight is that students must be integrated into the campus community to matriculate through to graduation, which was Tinto's idea of student success.

Baumeister and Leary (1995) produced some of the first research specifically looking at sense of belonging in relation to college students. Baumeister and Leary (1995) described the belongingness hypothesis which argued that belongingness was an innate part of evolution and that the lack of belonging could lead to adverse reactions. This need for a social environment is fundamental because "interacting with groups provides a greater opportunity for survival through

protection, reproduction, shared resources, and eventually affection” (Baumeister & Leary, 1995 as cited in Slaten, Ferguson, Allen, Brodrick, & Waters, 2016, p. 8). Lacking belonging in society can contribute to psychological distress as well as physical health issues (Baumeister & Leary, 1995). Defining college student belonging helped shape what previous authors had already described in terms of student engagement and student success, and also allowed for research to expand the reasons for students finding belonging and a more wholistic view student success.

In more recent years, scholars dug further into how student sense of belonging should be defined. Hurtado and Carter’s (1997) inclusion of the psychological feeling of connectedness to a group through cultural, professional, or social aspects in their definition of sense of belonging helped shape the four domains of belonging that Ahn and Davis (2020a) discussed. Ahn and Davis (2020a) argued that there are four domains to student sense of belonging, the academic and social engagement that most scholars include, but also personal space and surroundings that scholars tend to overlook. Surroundings is where the cultural aspect of belonging ties into student sense of belonging because a student must feel comfortable in their living space and in their campus community to fully have a sense of belonging in a campus community. Although these definitions continue to evolve, it is important to remember that as students matriculate through their college careers, their needs evolve.

### **First Year Students**

The transition to college has been described as a metamorphosis where students' lives change drastically without a way for them to be fully prepared before the transition happens (Strauss, 2021). Students are often living on their own for the first time and are away from families for the first time. Students also find themselves away from friend groups that they had

during their high-school years. These factors can make the transition to college even harder for students. To combat this, institutions have implemented policies to help alleviate some of these stressors. Institutions often require first year students to live in on-campus residence halls.

Dumford et al. (2019) found that first year students who live off campus report a lower sense of belonging and institutional acceptance than their peers who live on campus. Living on campus allows students to have a better chance of getting to know students on campus and join student organizations to get involved on campus.

Student organizations are a crucial component to students finding their sense of belonging on a university campus. This is where students get a chance to meet other students with similar interests, beliefs, or identities as them. These intentionally designed spaces often offer support and comfort for these students because they feel as though they can express their true selves (Sonu & Deckman, 2021). Institutions typically do not limit the participation and groups to those who hold particular identities, but students do often self-select into these groups.

However, institutions must also help students learn to balance their time because college may be one of the first times in their lives that students have full control over their own schedules. As Quinn et al. (2012) described, people have a limited amount of energy that they can devote to tasks daily, and first year students are not exempt from that. This shows the need for institutions to be intentional about creating conditions that support student overall well-being to foster student success (Kuh et al., 2010). Institutions must also help students learn to balance their social engagements along with their academic courses. This leads to institutions having to create departments and programming to help students find ways to ensure that they are building their social network as well as studying for their classes. Sometimes this is done through academic advising, but often there are other offices that support particular groups of students

because the needs of particular groups vary greatly. While these groups support students at all academic levels, first year students are their primary focus because it is crucial that the students learn these skills early on to help them matriculate through each semester.

### **Senior Students**

Although many people assume that once a student is a senior, they will matriculate through to graduation because of the time and energy devoted to their degree, that is not always the case. As students reach their senior year, they are faced with adjusting to what life after college will look like. Senior students are often considering whether graduate school or a career should be their next life step. They are also considering where they should live, meaning they could potentially be leaving their family's home environment to find work or to attend school. Senior students are often focusing on networking to make the needed connections for their next step instead of focusing on institutional involvement. Dozier et al. (2020) found that seniors had a significantly lower satisfaction than freshmen or sophomores when asked about topics such as involvement opportunities on campus, social life on campus, ability to make friends, and sense of community on campus. This lower satisfaction could be due to senior students' shift to focus on involvement in professional organizations and networking.

Senior students are also at a point in their educational career where they are typically learning about topics that they are interested in studying long term. Miller et al. (2019) analyzed the NSSE results and found that senior students had higher feelings of institutional acceptance when they had more student-faculty interactions, felt that effective teaching practices were utilized, and were able to participate in research projects with faculty members. This shows that senior students recognize the need for professional growth and support from faculty members and highlights the importance of institutions concentrating efforts to meet the needs of senior

students. Seniors find a sense of belonging when they feel as though they are being supported in their life-long goals. This leads to the idea of holistic student success.

Institutions have a vested interest in senior students having a good experience because these students are the ones who become supportive alumni. Gaier (2005) discusses how undergraduate students who are more satisfied with their academic experience are more likely to be involved in their alma mater and give back financially to the institution. Along with financial contributions, students who matriculate through to graduation also become unofficial recruiters for the institution. Williams et al. (2010) discuss how important alumni are for institutions in terms of recruiting incoming students. If alumni have good experiences at an institution, then they are more likely to share that experience with others, therefore creating a pipeline of students who choose that institution. This is all dependent, however, on the student successfully completing their degree and being satisfied with their experience at the institution.

### **Institutional Commitment**

The 1990 Student Right-to-Know-Act and the Higher Education Act amended in 2008 require that institutions report on institutional productivity, which includes reporting on their six-year graduation rate (Mary, n.d). Although colleges and universities want to see students to matriculate through to graduation, there are no colleges with a one-hundred percent graduation rate. Harvard University has the highest six-year graduation rate in the United States with a 97.7% graduation rate (Schritter, 2023).

Graduation rates are one of many factors that can impact the rankings of colleges and universities through various institutional surveys, such as U.S. News and World Reports. While there are controversies surrounding these surveys due to complaints about how rankings are calculated, many institutions are continuing to participate in the college ranking process (Yang et



al., 2023). Part of the reason that institutions continue to participate is because rankings can increase the perception of prestige. While prestige is not the end-goal of many institutions, prestige can help institutions with their recruitment efforts, which leads to more students entering into the institution.

Another element to the institutional commitment to getting students through to graduation is creating alumni. When students matriculate through to graduation, they become alumni of an institution, which can give them a sense of connection to that institution throughout their lives. Many institutions have alumni relation offices to help maintain a connection with the students who graduated from their college or university. These connections are important for the institution in many ways, but two key ones are relationships with future students and alumni giving. Hoyt (2004) found that one of the reasons that alumni decide to give to an institution is because of their continued involvement in the institution. This involvement can be done through a multitude of ways including attendance to sporting events, mentorship of students, or being recognized for their work after graduating the institution. Hoyt (2004) also found that alumni who felt that they had a good experience at the institution were also more likely to give. This annual giving helps to fund scholarships and projects that enhance the current student experience at the institution, which leads back to the student commitment that institutions are committed to having.

### **Student Commitment**

Without students, there would be no reason for colleges and universities to exist. While the institutional commitment is important, the institutional commitment is a driving force behind the institution's commitment to its students. Higher education institutions in the United States began opening in 1936 with the founding of Harvard University. While theology, classical

language, and math courses were offered, many students enrolled at these early institutions to gain leadership skills (Thelin, 2019). At that point in history, many students did not graduate, but they did go on to run companies, become politician, and contribute to society in other ways. Today, students enter college thinking about their careers after they graduate. Graduating college has been linked to people having higher earning potential in their life-long careers (Tamborini et al., 2015). Along with higher earning potential, there is also an increased job security that is associated with having earned a college degree (Bibi et al., 2016). This increase in pay and job security are two of the factors that also lead to graduates having a higher life satisfaction (Jiang, 2022). These factors are important for institutions to not only keep in mind when helping students on their education journey, but also important for them to share with students when they become discouraged and consider stopping out. These are all factors that can help students continue on their journeys through to graduation if they have the self-efficacy to continue. Students need the institution to support them in their journeys if the institution wants the student to succeed.

## **Student Success**

Student success is a topic at the forefront of many institutional conversations, particularly as there are fewer traditional age college students in the population. As this “enrollment cliff” looms, institutions will need to find a way to retain the students who are enrolling and help them achieve college success. In the fall of 2021, The National Student Clearinghouse Research Center reported an 8% drop in undergraduate students since fall of 2019. This shows that nationwide fewer traditionally aged college students are choosing to enroll in college. Along with fewer students enrolling, the National Center for Education Statistics (NCES) reported that the overall graduation rate for first-time, full-time undergraduate students at a four-year

institution who enrolled in fall 2014 was 64%. This shows that even the students who do enroll in college have a 36% chance of not matriculating through to graduation. These numbers indicate that institutions must not only increase efforts to enroll students, but to also find ways to help students matriculate through to graduation. Building on the work of theorists such as Tinto, Astin, Goodenow, and Hurtado and Carter, Ahn and Davis (2020a) identified four domains that impact student belonging including academic engagement, social engagement, surroundings, and personal space. Ahn and Davis (2020a) argue that institutions cannot focus on two of these areas alone, typically academic and social engagement, but must focus on each area to cultivate a sense of belonging amongst all students.

### **Academic Engagement**

College is where students come to further their academic education and choose a major or majors on which to focus their learning. While some students come to college to take courses on particular topics of interest, most students come to college to earn a degree. Ahn and Davis (2020a) describe academic engagement as including the university, lecture, curriculum, and education purpose. This means that all aspects of academic learning are included in academic engagement. At a very high research institution, engagement in research would also be considered academic engagement, as it involves students learning how to appropriately engage in research and how to conduct proper studies. This research activity is often paired with their classroom experiences. Another aspect of academic engagement would be studying and preparing materials for courses because that contributes to successful completion of courses, ultimately leading to graduation.

In most institutions, a senior student is described as having earned seventy-five percent of the hours needed to graduate. This calculation helps define senior students better than the amount of time they have spent in college because students can earn credit hours at varying rates. For example, students can earn college credit while in high school so they could be an entering first-time student with enough credit hours to be labeled a sophomore or higher. A student could also have been enrolled in an institution for four years but still be considered a sophomore, for example, due to not completing enough hours to reach the threshold of junior or senior. Other factors can also impact the amount of time a student has been enrolled as well, such as taking time to complete co-ops or internships that count towards the degree being earned, but do not necessarily count towards the credit hours needed to move up in classification. Students have the ability to participate in internships, co-ops, research, or other activities that can assist them with their long-term goals, beyond their academic careers. Setting these goals is important because it gives the student a guide to help them matriculate to graduation, even if that doesn't happen within a four-year timeframe.

### **Self-efficacy and Overall GPA**

Self-efficacy is defined as an individual's belief in their capacity to achieve their specific goals (Bandura, 1977). Students who feel comfortable and accepted in class have a better sense of self-efficacy and therefore tend to achieve higher academic grades (Zumbrunn et al., 2014). When students have lower grades, they tend to have lower perception of institutional acceptance (Miller et al., 2019). Self-efficacy comes from within a person, but that does not mean that others cannot impact their self-efficacy. For example, an institution that has a culture of growth-mindset and sharing their belief in the student's ability to succeed has a positive impact on the student's self-efficacy. Self-efficacy is described as believing that one can truly succeed in their work and

therefore is more likely to result in higher grade point averages (Rhew et al., 2018). When students feel as though they have the ability to succeed, they are more likely to, which enhances their sense of belonging on the campus. When students do not feel as though they can succeed, they feel as though they do not belong which can lead to students deciding to drop out. While low grade point averages (GPAs) can be seen as a student issue alone, there are ways for institutions to intervene. For example, institutions could develop learning communities where students take courses together and have opportunities for social engagement amongst like-minded students (Lenning et al., 2013).

### **Senior Student Academic Engagement**

By the time students reach their senior year, their academic schedule often looks different than it did earlier in their academic career. By this point, students should be taking upper-division courses in their major, which go in depth into the topics that they are choosing to learn more about and require students to think critically about the concepts. This can be both exciting and stressful for students. Senior students often report having “senioritis”, which is characterized by actions such as skipping class, decreased motivation, or investing little energy into coursework (Young-Jones et al., 2021). Sizer (2002) attributes this senioritis back to the stress of transitioning out of college and into the next phase of life. Students often feel both happy about graduation and scared of what comes after graduation at the same time. Students can feel very vulnerable about the unknown, while also feeling entitled to their degree because they have already put so much effort and energy into earning it in the previous years (Sizer, 2002). These factors mean that senior students are having a much different academic experience than their peers who are earlier in their college careers. This could lead to differences in the perception that senior students have regarding their academic experiences in college.

## **Social Engagement**

There is an abundance of literature that shows what institutions can do to help students succeed in college. Ahn and Davis (2020a) describe social engagement as including participation, friends, socializing, communication, and community feeling. Tinto (1993) argued that the student need for an inclusive social and educational community was equally important as a quality education in terms of retaining students on a college campus. This means that lack of social involvement can keep a student from retaining as much as an unpleasant experience in the classroom. As O’Keefe (2013) pointed out, “Feeling rejected and not being able to develop a sense of belonging within higher education is a key cause of student attrition” (p. 612). To help institutions understand more about how they can engage students socially and educationally, Kuh (2008) compiled a list of high impact practices, which are experiences that can have a high positive impact on a student’s college career. Many of the ideas that Kuh (2008) presented involved student interactions with both faculty and staff at the institution. Both Tinto (1993) and Kuh (2008) presented ideas that could easily be incorporated into the way institutions operate. Andrews (2018) investigated this by comparing students who went to college immediately after high school graduation versus those who delayed attending college. What he found was that students who followed the traditional route of college immediately after graduation were more involved in these high impact practices and also more likely to matriculate through to graduation; he argued that involvement was one of the key differences in these two populations and explained some of the differences in their graduation rates (Andrews, 2018). In a 2022 study, Boyd, Liu, and Horissian found that creating a bond with others was a more predictive factor in student retention than more traditional factors such as grade point averages. As researchers continue to study the topic of social involvement amongst students, it is becoming increasingly

clear that this area plays a larger role in students matriculating through college to graduation than previously thought. Although social and academic engagement are different, there are times when the two types of engagement come together. For example, while studying with other students is academic in nature, there is a social aspect of it that is also present because the students must feel comfortable interacting with their peers to form study groups. Dika (2008) found that senior students reported the most frequent interactions with their peers when working on school assignments than their peers at other stages in their college degree. This indicates that by senior year, students are recognizing that the academic and social contexts are blending and that the bonds they have in the social arena can be utilized to further their academics. A piece to this connection, however, is finding other students who have similar interests so that the students can form those bonds.

### **Student Organizations**

Student organizations are a crucial component to students finding their sense of belonging on a university campus. This is where students get a chance to meet other students with similar interests, beliefs, or identities as them. These intentionally designed spaces often offer support and comfort for students because they feel as though they can express their true selves (Sonu & Deckman, 2021). Institutions typically do not limit the participation and groups to those who identify as holding particular identities, but students do often self-select into these groups. Sonu and Deckman (2021) did a qualitative study to look at students who were not a part of dominant identity groups at an institution to see how their experience was in student organizations. What they found was that the students who were outside of the dominant demographic of the group did feel welcome and there was a sense of community in many student organizations. Sonu and Deckman (2021) also found that all students benefitted from hearing the

shared experiences of the other members of the organization. This finding is important because it shows that institutions must take these things into consideration when allowing groups to be formed; the environment must be respectful to all students but there should not be limitations on who can participate. From a policy standpoint, this also goes back to non-discrimination because institutions cannot keep students from participating in a group based on the perceived identities of that student. This study shows the merit in allowing students to participate in all groups to have a better understanding and more inclusive campus community (Pinedo et al., 2021). Having a more inclusive campus community fosters a greater sense of belonging as students spend their time there (Williams, 2022). Students spend significant time on campus throughout their college careers, so having an environment that is open and supportive can help the students feel as though they have found their place.

### **Senior Student Social Engagement**

By the time that students have reached their senior year, they have likely already found their peer groups and do not devote as much time and energy into making friends as their peers do. Senior social interactions shift from simply making friends to have good experiences to recognizing the need for professional networks. Faculty, advisors, and mentors all become crucial for seniors because interactions shift from coursework alone to long-term goal achievement (Young-Jones et al., 2021). When considering peers, senior students also tend to affiliate with students who share similar academic motivations as they have, leading to better academic performance for all peers in that social setting (Altermatt & Pomerantz, 2003). This is not to say that senior students do not engage in traditional student social engagements, but rather that senior students also consider the long-term impact of their social engagements and what those connections can mean for their future endeavors. Senior students have a level of pressure to



make connections that will help them find career opportunities that students do not need to consider as strongly before their senior year.

### **Surroundings**

Ahn and Davis (2020a) describe surroundings as a student's living space and cultural or geographic location. This means domain of belonging shows the need for students to feel as though they belong in the physical space and environment that they are a part of. For example, a student from outside the south might have trouble feeling as though they belong at a Southeastern Conference school if they have little knowledge about that type of environment. The culture of the campus community can enhance or diminish the feeling of belonging on campus.

### **Person-Environment Fit**

For students to have a sense of belonging, they must feel as though they can relate to others in their campus community (McMillan & Chavis, 1986). One way that theorists have found this sense of community coming into play is through person-environment fit, which can be described as identifying particular environments that are most compatible with a person's personal characteristics and identities (Kristof, 1996). Environment in this context means all environments from social to physical, indicating that there are numerous elements that make an environment a good fit for a person. The basic need for a student to fit into the environment is the most foundational of all needs, their physical space (Maslow, 1943). The space must provide not only shelter, but also a feeling of stability as well as being welcomed in the space. While most institutions can offer stability in housing, through the offering of residence halls, they cannot force a sense of belonging in that space upon students. Institutions have attempted to

encourage this feeling of belonging through implementation of things like residential advisors being present in resident halls, programming to allow students to meet other students, and through other small but intentional acts to help students feel as though their form of shelter is more than just a biological need being met (Pasco et al., 2012; Soria & Taylor, Jr, 2016; Warner & Noftsinger, 1994) . Outside of the basic shelter, the institution as a whole is part of the student's environment in which they need to find belonging. This is where institutions have developed student affinity groups and student organizations to help students find their fit socially (Soria & Taylor, Jr, 2016). Also, by creating majors and putting students into cohorts, institutions have attempted to help students find their fit academically. By creating interactions through social and academic contexts, institutions are doing what they can to allow students who are similar in interest or in background to find each other and create a sense of community, which in turn increases their sense of belonging on campus (Soria & Taylor, Jr, 2016).

### **Senior Student Surroundings**

Student living arrangements can vary depending on the institution that they attend and the policies that those institutions have in place. Many institutions require first-year students to live on campus in residence halls through their first semester or first year. Some institutions even go as far as creating learning communities for students so that their residence halls foster more holistic learning experiences (Love, 2012). Senior students, however, often do not have the same requirement to live in a residence hall. This allows for them to choose their physical surrounding. Students might choose to live on campus, in an apartment, rent a house, or live with friends or family in a nearby location (La Roche et al., 2010). With the expansion of online courses, some students even choose to live further away from the school they are attending. This means that the institution has less influence on the surroundings these students have. As institutions consider

senior student sense of belonging, this is an area that is mostly outside of their control due to the limited space that most institutions have to be able to devote to residential living spaces.

### **Personal Space**

Although the term personal space is often used in casual conversation to describe the space within a proximity of a person, that is not what Ahn and Davis (2020a) meant by personal space. The term personal space is used to describe a person's life satisfaction, attitudes, and personal interests (Ahn & Davis, p. 626). This can include a student's personal identity and their satisfaction or dissatisfaction with their college life experiences. When talking with students, Ahn and Davis (2020a) found that approximately half of the students they talked with brought up aspects defined as personal space when asked to write down what comes to mind when thinking about sense of belonging. While the aspects of personal space can be hard to track due to the ability for satisfaction and dissatisfaction can be in flux. This means that it can be hard to discern if one particular thing is making someone dissatisfied, therefore impacting their perception of the overall experience. However, there are areas that can contribute to positive personal space experiences, including validation.

### **Validation**

Rendón (1994) defines validation as “an enabling, confirming, and supportive process initiated by in- and out-of-class agents that foster academic and interpersonal development” (p. 44). Specifically, validation happens when a person at an institution takes an interest in the student and takes initiative to reach out to them and make them feel as though they are a part of the institution (Hurtado et al., 2010). Ellis et al. (2019) found that when advisors used microaffirmations, such as encouragement or validation in an everyday context, students had a

more positive perspective of their interactions on campus. This shows that when someone, whether faculty or staff, takes an interest in a student, it helps to foster their growth as a person. This idea is tied heavily back to self-efficacy because once a student knows that others believe in them, they have more confidence in their own abilities to succeed and do well. Ellis et al.'s (2019) article also indicated that these do not have to be grandiose initiatives or time intensive bonds; rather, they can be simple affirmations to help students feel as though they are a part of the campus community. This validation has been shown to have a positive impact on students' sense of belonging as well as their academic performance.

### **Senior Student Personal Space**

Students who are entering college often have expectations for what they want from their college experience. Social media and broadcast media portray college in a multitude of ways, but often times that portrayal is sensationalized in one way or another. Sensationalism often leads to inaccurate depictions of what to expect when a student enters a new setting, which can have a significant impact on a person (Reisenwitz & Whipple, 1999). However, by senior year, students have adapted to their college environment in its true form. Their preconceived notions about what college would have been replaced by the realities of what their institution has to offer. Students who have matriculated through to senior year, however, still need validation from their faculty, advisors, and mentors but the validation shifts from focusing on encouraging the student to do well in school to ensuring the student has the self-efficacy to believe they will do well after they transition into their next chapter of life (Young-Jones et al., 2021). This is also a time when students are making their final memories at the institution which can shape their perception of their time there, leading to their overall perception of their college experience. Although the personal space of senior students is different from those of earlier year college students,

institutions must remain committed to senior students' personal space because it is what has a life-long impact on student perceptions.

### **Additional Considerations**

Combined with the institution and educational experiences, there is also the question of how student life outside of academics and on-campus engagement plays a part in their retention and graduation rates. This broader picture of how a student's family, culture, and upbringing can play a crucial part in student success and belonging on a campus was what De Sisto et al. (2022) described as the informal context. Kuh and Love (2000) discussed how a person's culture and background impact their retention in college; for example, students with minoritized identities often have different needs than non-minority students. Rendón (2006) shared a similar sentiment and discussed that underserved student populations often rely on different support systems than majority students. Even as early as 1993, Goodnow was already documenting the needs of Hispanic students differing from those of white students. What Goodnow (1993) observed was that Hispanic students were more successful academically when within a more communal environment rather than an individualistic one. What each of these examples show is that students have diverse needs based on many distinct characteristics. Each of these articles shows that student needs are not able to be addressed in a one size fits all way, but that institutions need to be aware of the individualized ways in which students need support to excel academically and ultimately remain on their campuses.

### **First-Generation Students**

Stebbleton et al. (2014) found significant differences between student sense of belonging for first-generation students compared to continuing generation students. To investigate why this

might be true, Gillen-O'Neel (2021) looked at how students felt in terms of belongingness on a day-to-day basis compared to a longer-term sense of belonging. When looking at daily fluctuation of belongingness, first generation students were more sensitive to day-to-day fluctuations in their sense of belonging than non-first-generation students (Gillen-O'Neel, 2021). Similarly, Stage (1989) found that students whose parents went to college were more likely to feel integrated into their institution than first generation students. Students whose parents did not attend college were more likely to feel as though they did not belong to their institution and be less likely to persist through to graduation (Stage, 1989). This can be a barrier that is hard for institutions to help students overcome because it relates back directly to their family environment. The institution cannot change whether a student's parents went to college, but institutions can offer support for parents so that they can in turn support their students better. Institutions often have offices or departments of family or parent services that are there to assist families with their questions about college for their students. Because these families might not understand the inner workings of the institution, these offices are designated to supporting the families and being a resource for when they need help. These offices also help ensure that the family feels as though they are integrated into the campus as much as other families are by offering events and programming so that they do not feel as though they are outsiders. These offices also provide programming and resources to ensure that that first-generation students are able to connect with other first-generation students, faculty, and staff members who identify as first-generation students. This helps with students seeing representation across campus of others who are like them and provides access to people who have been in their shoes before.

While not all first-generation students are commuters, Soria and Roberts (2020) found that first generation students were more likely than continuing generation students to commute

due to lower incomes and differences in family ties. Students who commute to campus while living at home with their parents or guardians are more likely to consider leaving their institution than students who are living on campus or with friends in close proximity to their institution (Ahn & Davis, 2020a). The student's living situation could be related to their socio-economic background and students do not have the ability to pay for housing when staying in their home is a more cost-effective option. Even if the student recognizes that they are missing out on connections made on campus, the student might not have the capacity to overcome that challenge due to familial obligations and struggles.

### **Minoritized Student Identities**

Students who are in minoritized groups are less likely to participate in social functions and activities and therefore report being more dissatisfied with their social life (Ahn & Davis, 2020b). Students who do not hold majority identities may feel as though they do not fit into their surroundings and struggle to find their place on campus. This can lead to feelings of isolation, which in turn leads to the student being more likely to withdraw or stop attending an institution. Although programming is often targeted at these groups, not all students who identify with these populations choose to participate. Affinity groups have been shown to improve students' sense of belonging on campus, however, participation cannot be mandated and students who would most benefit from these services are not reached by the services (Drysdale et al., 2022).

### **Barriers to Fostering Sense of Belonging**

The iron triangle of higher education has three sides, access, quality, and cost (Ryan et al., 2021). These are all equally important components to the experience at an institution. While each of these components influence belongingness to a degree, whether it is from having the

services or support that students need or an affordable cost of attendance, these are much larger than a single issue that could be easily addressed. However, some of these components impact all students more than others; for example, a student who comes from a well-off family and has scholarships to cover their tuition and fees will likely not worry about the cost as much as a student who comes from a lower socioeconomic background and does not have scholarships or financial aid. The idea of quality is one that has particularly large implications for all students. In recent years, there has been a push for many institutions to create sections of their courses with more available seats. This means that the faculty to student ratio in those courses is often high and that the faculty member does not have the opportunity to engage with their students in an individualized manner (Monks & Schmidt, 2011). Because of high numbers of students in courses, faculty often alter their courses in ways that are not as conducive to student learning (Monks & Smidt, 2011). This means that students do not feel as though they are getting the same quality of education in larger classes that they get in smaller classes, even if the same materials are covered in diverse ways. While this would suggest that institutions should offer more sections of smaller courses, Monks and Smidt (2011) caution against this as well because class size is not the only factor in this equation. Institutions must consider the student load, or number of students a faculty member is teaching, because overloading a faculty member could have the same implications as larger class sizes. The solution to this problem is hiring more faculty instead of overloading the existing faculty, which creates long-term institutional problems such as lower educational satisfaction amongst students (Schabram & Heng, 2021).

### **Ties to This Study**

Ahn and Davis (2020a) described the four domains of student' sense of belonging to a university being academic engagement, social engagement, surroundings, and personal space,



which covers almost every aspect of a student's life. Students must feel as though they are represented in the university campus, supported by peers, faculty, staff, and family, have the space to be who they truly are, and have an environment that fosters their individual well-being. These domains remain the same for first year and senior students, but the needs within them change over time due to the life changes that come with the progression of enrolling in college to graduating from college. The support and representation for first year students might be what helps them continue through to their sophomore year, however the support and representation for senior students might lead to confidence to have life-long success after graduation due to seeing people who represent their same identities being successful at their institution. Institutions must pay close attention to meeting student needs in each of these four domains because if students do not feel as though they are having these needs met, they are less likely to continue enrolling at that institution. If students do not continue to enroll, then they do not matriculate through to graduation, which not only hurts the student in terms of career possibilities and the monetary gains that go along with that, but also the institution in terms of long-term alumni engagement in the form of annual giving and word of mouth support and recruitment. Institutions must ensure that they provide the needed campus support for students to attain a degree because students have the ability to transfer their credits to other institutions if they do not feel as though they are getting what they need from a particular institution. If students do not graduate because they do not feel a sense of belonging and support, then the institution not only has a lower graduation rate, they also potentially lose a lifelong member of their campus community.

## CHAPTER III

### RESEARCH DESIGN

Scholars have looked at student sense of belonging from various lenses throughout the past decades. The ongoing challenge is determining what comprises sense of belonging and what factors contribute to that feeling. While students' feelings of belonging can change in short amounts of time, there are variables that researchers consistently point to as having a positive impact on sense of belonging, such as participation in co-curricular activities (Ahn & Davis, 2020a; Kuh, 2008; Sonu & Deckman, 2021). This purpose of this study is to determine what factors contribute to senior student sense of belonging at a research institution in a rural state using Ahn and Davis's (2020a) four domains of student sense of belonging: academic engagement, social engagement, surroundings, and personal space.

The following sections describe in detail the methods that were used for determining the extent to which student characteristics relate to sense of belonging in senior students. Specifically, this study will answer the following research questions: (1) Do seniors feel a sense of belonging when transitioning out of Mississippi State University? And (2) What is the extent to which student experiences and student characteristics relate to senior year sense of belonging? This section includes: (a) data source, including participants in the study; (b) timeframe of data collection; (c) dependent variables; (d) independent variables; (e) data analysis; and (f) limitations.

## Data Source

The NSSE was designed as a benchmarking tool that institutional leaders could use to gauge the effectiveness of their programs by comparing first-year and senior students separately to those at comparison institutions (National Survey of Student Engagement, 2013). To ensure that the NSSE survey was informing institutional leaders of the correct information, NSSE went through extensive analyses to ensure their engagement indicators were valid and reliable. Engagement Indicators are major scales created by NSSE that are grouped within one of four overarching themes of the survey. Each of the ten Engagement Indicators include various questions related to a specific topic that allow for institutions to dive into their data and create actionable plans to enhance the areas of assessment (*NSSE's conceptual framework*, 2013).

Exploratory and confirmatory factor analysis were done on the NSSE engagement indicators to support claims that the intended data were reported in the NSSE results. Researchers split all NSSE 2013 data into two groups, one to run exploratory factor analysis including 32,374 first year students and 46,259 senior students. The confirmatory factor analysis included a population of randomly selected participants with separate models being used for all first-year students, all seniors, online first year students, and online seniors (Miller et al., n.d.). To assess model fit, NSSE used a goodness of fit index (GFI) of .85 or higher, a comparative fit index (CFI) of .90 or higher, a root mean square error of approximation (RMSEA) of .06 or lower, and a p-value for test to close fit (PCLOSE) of .05 or higher (Miller et al., n.d.). NSSE used standardized regression weights to determine the strength of factor loading with values under .40 considered unacceptably low and factors of .80 or higher indicating multicollinearity (Miller et al., n.d.). Although the 2020 sense of belonging items were not included in these factor analyses, given the extensive research done by NSSE, it is reasonable to believe that their

development and inclusion in the NSSE survey were theoretically and empirically grounded (Center for Postsecondary Research Indiana University School of Education, n.d.a).

### **NSSE Participants**

NSSE is administered to first year and senior students on each participating college campus. The rationale for these two populations is that “first year students are laying the foundation for future success and seniors have had the most exposure to an institution, and therefore, are best positioned to reflect on it” (*NSSE's conceptual framework*, 2013). This study will treat the first-year respondents and the senior respondents as separate populations to show the percentage of student who agree or strongly agree with dependent variable questions and compare the results to against each other. Only senior student responses will be used to see which independent variables relate to senior student sense of belonging.

This study will use all data collected from students at Mississippi State University during the 2021 and 2022 NSSE assessment cycles. Mississippi State University deploys the NSSE during the spring semester to all eligible first year and senior students. The survey is deployed via emails from NSSE and is also housed in the student’s myState portal where they can access their Canvas courses and complete activities such as registering for courses. NSSE is promoted by multiple offices on the Mississippi State University campus, including but not limited to the Office of Institutional Research and Effectiveness, Housing and Residential Life, Health Promotion and Wellness, and through faculty encouragement in classrooms. The Office of Institutional Research and Effectiveness does gift card drawings for students who complete the NSSE. The gift card drawings are approved by the NSSE IRB process to ensure that students are not coerced into taking the survey.

## Mississippi State University

Mississippi State University is a land grant institution with a mission to serve the populous of the state of Mississippi. In Fall 2022, Mississippi State University enrolled 22,649 students, of which 18,305 were undergraduate students (Office of Institutional Research & Effectiveness, 2022). Students from all 82 counties in Mississippi were represented, making up 58.28% of the undergraduate population and 63.85% of the total student population.

Table 1

### *NSSE Respondent Profile*

<b>Student Characteristics</b>	<b>NSSE Respondents (%)</b>	<b>Mississippi State University Population Fall 2022 (%)</b>
<b>Sex</b>		
Male	32	48
Female	67	52
<b>Race/Ethnicity</b>		
African American/ Black	10	16
American Indian/ Alaska Native	1	<1
Asian	7	3
Native Hawaiian/ other Pacific Islander	<1	<1
Caucasian/ White	58	72
Hispanic/ Latino	17	4
Multiracial/ multiethnic	4	2
Foreign/ nonresident alien	3	4
<b>Enrollment Status</b>		
Full-time	88	83
Not full-time	12	17

*Note.* The data for NSSE are from NSSE Overview, 2022 and the Office of Institutional Research & Effectiveness, 2022.

### **Timeframe of Data Collection**

In 2020, NSSE introduced the three-question data set about student sense of belonging. During the 2020 data collection cycle for NSSE, the Covid-19 pandemic occurred resulting in students who were receiving on-campus instruction moving to virtual instruction. This disruption

in the data collection is an anomaly that could impact the way that students responded to the questions about sense of belonging, particularly if they took the survey after the move to virtual learning. Due to that anomaly, data for this study include data from 2020 and 2022 when Mississippi State University administered the NSSE survey under more stable learning conditions.

### **Dependent Variables**

The dependent variable for both research questions is Sense of Belonging, which is measured using the NSSE. Beginning in 2020, NSSE added three survey items to measure sense of belonging. These questions relate to feeling as though the student can be themselves, feeling valued, and feeling like part of the community. The scale for response ranges from strongly disagree to strongly agree. Specifically, the questions asked:

To what extent do you agree or disagree with the following statements?

- a. I feel comfortable being myself at this institution. (sbmyself)
- b. I feel valued by this institution. (sbvalued)
- c. I feel like part of the community at this institution. (sbcommunity)

(NSSE, 2020)

Table 2

*NSSE Survey Items*

Item question	Item code	Answer
I feel comfortable being myself at this institution.	Sbmyself	Strongly Disagree, Disagree, Agree, Strongly Agree
I feel valued by this institution.	Sbvalued	Strongly Disagree, Disagree, Agree, Strongly Agree
I feel like part of the community at this institution.	Sbcommunity	Strongly Disagree, Disagree, Agree, Strongly Agree

**Independent Variables**

The independent variables in this model are based off Ahn and Davis’s (2020a) four dimensions of student belonging: academic engagement, social engagement, personal space, and surroundings. In this model, academic engagement included the variable percent of credit hour earned gathered from institutional data along with three items from the NSSE. The three questions included from NSSE for the academic domain include: how often have you worked with other students on course projects or materials, how often have you prepared for exams by discussing or working through course material with other students and have you or do you plan to work with a faculty member on a research project. The independent variables Pell eligible, first-generation, legacy, sex, and minority status are student characteristics being evaluated in this study to assess whether these characteristics relate to senior student sense of belonging.

Finding the relationship of these variables on student sense of belonging as defined by the NSSE questions can help identify which students within an institution might need additional intervention to enhance student sense of belonging.

Table 3

*Independent Variables*

Variable	Data Collection	Responses
Percent of credit hours earned	Institutional data through the Office of Institutional Research and Effectiveness (OIRE)	<60, 60-69, 70-79, 80-89, 90-99, 100
Work with other students	NSSE question: How often have you worked with other students on course projects or materials? [clproject]	Very often=4, Often=3, Sometimes=2, Never=1
Study with other students	NSSE question: How often have you prepared for exams by discussing or working through course material with other students? [clstudy]	Very often=4, Often=3, Sometimes=2, Never=1
Research with faculty	NSSE question: Have you or do you plan to work with a faculty member on a research project? [research]	Done or in progress=4, Plan to do=3, Do not plan to do=2, Have not decided=1
Greek affiliation	Institutional data through OIRE	Yes, no
Participation in organizations	NSSE question: About how many hours do you spend in a typical 7-day week doing the following? Participating in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc.) [tmcocurr]	0, 1-5, 6-10, 11-15, 16-20, 21-25, 26-30, More than 30 (Hours per week)
Student employment	NSSE questions: About how many hours do you spend in a typical 7-day week doing the following? Working for pay on campus [tmworkon] Working for pay off campus [tmworkoff]	0, 1-5, 6-10, 11-15, 16-20, 21-25, 26-30, More than 30 (Hours per week)
Residency Experience	Institutional data through OIRE NSSE question: How would you evaluate your entire educational experience at this institution?	In-state, out of state Response options: Excellent=4, Good=3, Fair=2, Poor=1
Same Institution	NSSE question: If you could start over again, would you go to the same institution you are attending now?	Definitely yes=4, Probably yes=3, Probably no=2, Definitely no=1
Pell eligibility	Institutional data through OIRE	Yes, no
First-generation status	Institutional data through OIRE	Yes, no



Table 3 (Continued)

Variable	Data Collection	Responses
Legacy status	Institutional data through OIRE	Yes, no
Sex	Institutional data through OIRE	male, female
Student minority status	Institutional data through OIRE	Yes, no

### **Analytical Approach**

Three linear regression models were run to gather data on the three NSSE questions related to sense of belonging in senior students. These regressions included the sense of belonging item as the dependent variable and the following independent variables: percent of credit hours earned, worked with other students on course projects or materials, prepared for exams by discussing or working through course materials with other students, plan to or have worked with faculty on a research project, Greek affiliation, participation in student organizations, employment on campus, employment off campus, residency within the state or outside of the state, evaluation of campus experience, choice to pick the same institution if given the chance, Pell eligibility, first-generation status, legacy status, sex, and minority status using a stepwise approach. Using a stepwise approach, each group of variables was added to the model one step at a time. Each step aligned with the four groups of variables that Ahn and Davis (2020a) listed as the four domains of student sense of belonging as well as student characteristics. The steps for each of the models were: academic engagement, social engagement, personal space, surroundings, and student characteristics.

Results were interpreted by first looking at the p-value associated with the output for each model. This will indicate the probability of there being a relationship among the variables included in the study listed above. A p-value of  $<.05$  shows that that the model is statistically significant and is unlikely due to chance. Each independent variable was evaluated to see if the p-value is statistically significant as well as if it is positively or negatively related to student

sense of belonging. A standardized regression coefficient (beta) was used to evaluate the magnitude of the effect of individual variables. The table below shows the hypothesized relationship direction for each variable, based on the existing literature.

Table 4

*Hypothesized Relationship Direction*

Variable	Hypothesized relationship direction
Percent of credit hours earned	positive
Work with other students	positive
Study with other students	positive
Research with faculty	positive
Greek affiliation	positive
Participation in organizations	positive
Student employment	positive
Residency	positive
Experience	positive
Same Institution	positive
Pell eligibility	negative
First-generation status	negative
Legacy status	positive
Sex	positive
Student minority status	negative

The R squared was used to show the effect size of the model as a whole and determine how much variance in student sense of belonging is explained by the independent variables included in the model.

Differences in significant effect, magnitude, direction, and how much of the dependent variable is explained by the model is used to assess the relationship that senior student responses have on the three dependent variables. This allows for conclusions to be drawn about whether experiences or student characteristics are more or less strongly associated with senior student sense of belonging.

## **Limitations**

The results of this study may not be generalizable to other institutions who administer the NSSE due to institutions having different populations and resources available to their students. Mississippi State University is a rural institution in a state with a high poverty and 18.8% of schools earning a D or F in the Mississippi Statewide Accountability System which established its criteria based on student achievement, individual student growth, graduation rates, and participation rates (Mississippi Department of Education, 2023). As indicated in Table 1, the population of students at Mississippi State University varied somewhat from the broader population of institutions served by NSSE.

Data for this study is also limited to two years, one of which was immediately following the Covid-19 pandemic, which could have had an impact on student responses since Mississippi State University was still operating under Covid-19 protocols which included social distancing during part of the 2020-2021 school year, which is included in this study. The impact Covid-19 had on student responses has not yet been determined since the sense of belonging questions were added into the NSSE survey in 2020.

## CHAPTER IV

### RESULTS

Chapter IV is a description and analysis of the data and the results of this study. The objective of this study was to determine what student characteristics and student experiences relate to senior student sense of belonging. The dependent variables came from the NSSE and included questions related to students feeling as though they are comfortable being themselves at their institution, they feel valued by the institutional community, and they feel like a part of the institutional community. This set of questions was added to the NSSE in 2020, so this study focused on data from the spring of 2020 and spring of 2022. The independent variables stemmed from Ahn and Davis's (2020a) model outlining the four domains of sense of belonging, which included academic engagement, social engagement, surroundings, and personal space.

#### **Descriptive Statistics**

Although this study is primarily focused on senior students, it is important to show how first-year students responded to each question related to sense of belonging compared to their senior counterparts. Table 5 shows the number of students in each population for the years 2020 and 2022 combined and what percentage of those students agreed or strongly agreed with each NSSE question that was used as the dependent variable for this study.

Table 5

*Percentage of Student Who Agree or Strongly Agree with Dependent Variable Questions.*

Item question	First Year Students		Senior Students	
	N	%	N	%
I feel comfortable being myself at this institution.	813	82.9%	1542	82.3%
I feel valued by this institution.	813	92.6%	1542	92.5%
I feel like part of the community at this institution.	812	80.8%	1544	77.5%

Data from NSSE Responses from the Office of Institutional Research and Effectiveness

The data in this table shows that first-year students and senior students responded very similarly on all of these survey items. While this data does not show the relationship between first-year responses and senior responses for individual students over time, it helps show if there are large gaps in how students responded to these survey items. Additional analyses would be needed to show if statistically significant differences occurred between those groups.

### **Analysis of Data for First Dependent Variable**

The first dependent variable in this study is the NSSE question “I feel comfortable being myself at his institution. Table 6 shows each step in the linear regression model using a stepwise approach. The table shows how each step relates back to Ahn and Davis’s (2020a) four domains of student sense of belonging as well as student characteristic variables. The data represents the standardized coefficient beta along with the significance of each variable. The related R squared is also represented at the bottom of each step of the model.

Table 6

*Data Related to Multiple Linear Regression Results for Model 1, I Feel Comfortable Being Myself at this Institution.*

Belonging domain (Ahn & Davis, 2020a)	Variable	Step 1: Academic Engagement		Step 2: Social Engagement		Step 3: Personal Space		Step 4: Surroundings		Step 5: Student Characteristics	
		$\beta$	Sig.	$\beta$	Sig.	$\beta$	Sig.	$\beta$	Sig.	$\beta$	Sig.
Academic Engagement	% Credit hours earned	-.01	.702	-.015	.562	-.016	.534	-.032	.160	-.032	.162
	Worked with other students on course projects or assignments	.109	<.001***	.109	<.001***	.109	<.001***	.080	.005**	.081	.004**
	Prepared for exams by discussing or working through course material with other students	.049	.136	.029	.380	.032	.335	.029	.321	.029	.317
	Worked with a faculty member on a research project	.015	.576	.005	.848	.002	.950	.006	.778	.004	.874
Social Engagement	Greek			.101	<.001***	.096	<.001***	.035	.154	.031	.208
	Co-curricular participation			.033	.252	.028	.335	.020	.425	.021	.409
	Work on campus			.026	.335	.026	.333	.011	.644	.008	.727
	Work off campus			.038	.165	.043	.122	.006	.793	.005	.842
Personal Space	Resident					-.047	.077	-.041	.072	-.039	.104
Surroundings	Evaluation of experience							.339	<.001***	.337	<.001***
	Pick the same institution							.214	<.001***	.216	<.001***
Student Characteristics	Pell Eligible									-.041	.093
	First Generation									.012	.645
	Legacy									.017	.485
	Sex									-.012	.609
	Minority									.027	.251
	Adjusted R <sup>2</sup>		.019		.030		.061		.284		.284

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

Table 6 shows that there were four variables that were significant over the course of the full regression. Step one of this model indicates that working with other students on course projects or assignments, but no other variables were significant at this point in the regression. In step two, working with other students on course projects or assignments was still significant and Greek participation was also significant at the  $<.001$  level. While step three introduced more variables, only the two variables that were significant in step two were significant in this step as well. In step four, working with other students on course projects or assignments dropped from being significant at the  $<.001$  level to being significant at the  $<.01$  level, and Greek participation was no longer significant. However, in step four, both variables that were introduced, evaluation of student experience and students choosing to pick the same institution if given the option were both significant at the  $<.001$  level. Table 6 indicates that there were only three variables that were significant in step five of this model. Within the domain of academic engagement, students who indicated that they worked with other students on course projects or assignments was significant. This variable had a positive impact of a .081 magnitude in this model. Within the domain of surroundings, evaluation of experience and pick the same institution were both significant at the  $<.001$  level. The variable “evaluation of experience” had a positive impact with a magnitude of .337, while the variable “choose the same institution” also had a positive impact, but with a lower magnitude of .216.

Overall, there were only four variables that were significant at any point in the model. Greek participation was significant in steps two and three of the models and had a positive impact of .101 and .096, respectively. However, in steps four and five, Greek participation was not significant. The variable “evaluation of the experience” was significant at the  $<.001$  level in steps four and five. The magnitude of the positive impact went down from .339 to .337 from step

four to step five. The variable “pick the same institution” was also significant at the  $<.001$  level in steps four and five. The magnitude of the positive impact went up for this variable from .214 to .216 from step four to step five. Finally, the variable “worked with other student on course projects or assignments” was significant with a positive throughout the entire model. The impact of working with other students on course projects or assignments went down as more steps were added into the model from .109 to .081. The significance level also decreased from the  $<.001$  level in steps one, two, and three down to  $<.01$  level in step five.

The R squared in step five indicates that this model accounts for 28.4% of variables that relating to a student’s feeling of being comfortable being themselves at this institution. Step four accounted for the largest piece of this model, indicating that surroundings were the variables that showed the strongest relation to students feeling comfortable being themselves.

### **Analysis of Data for Second Dependent Variable**

The second dependent variable in this study was “I feel valued by this institution.” Table 7 shows each step in the linear regression model using a stepwise approach. The table shows how each step relates back to Ahn and Davis’s (2020a) four domains of student sense of belonging as well as student characteristic variables. The data represents the standardized coefficient beta along with the significance of each variable. The related R squared is also represented at the bottom of each step of the model.



Table 7

*Data Related to Multiple Linear Regression Results for Model 2, I Feel Valued by this Institution.*

Belonging domain (Ahn & Davis, 2020a)	Variable	Step 1: Academic Engagement		Step 2: Social Engagement		Step 3: Personal Space		Step 4: Surroundings		Step 5: Student Characteristics	
		$\beta$	Sig.	$\beta$	Sig.	$\beta$	Sig.	$\beta$	Sig.	$\beta$	Sig.
Academic	% Credit hours earned	-.010	.694	-.012	.636	-.013	.608	-.031	.107	-.030	.126
Engagement	Worked with other students on course projects or assignments	.019	.575	.024	.456	.024	.454	-.010	.677	-.008	.731
	Prepared for exams by discussing or working through course material with other students	.086	.010**	.058	.082	.060	.070	.050	.045	.051	.041*
	Worked with a faculty member on a research project	-.006	.828	-.017	.517	-.020	.447	-.011	.577	-.013	.526
Social	Greek			.163	<.001***	.159	<.001***	.083	<.001***	.084	<.001***
Engagement	Co-curricular participation			.052	.070	.048	.096	.029	.183	.030	.164
	Work on campus			.049	.071	.049	.070	.028	.174	.025	.226
	Work off campus			.118	<.001***	.122	<.001***	.075	<.001***	.069	<.001***
Personal Space	Resident					-.040	.128	-.027	.175	-.035	.092
Surroundings	Evaluation of experience							.499	<.001***	.497	<.001***
	Pick the same institution							.201	<.001***	.199	<.001***
	Pell Eligible									-.023	.262
Student	First Generation									.040	.077
Characteristics	Legacy									.043	.044*
	Sex									-.021	.286
	Minority									.033	.109
	Adjusted R <sup>2</sup>		.007		.045		.046		.460		.462

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

Table 7 indicates that there were six variables that were significant in this model. Within the domain of academic engagement, students who indicated that they prepared for exams by discussing or working through course material with other students was significant at the  $<.001$  level. This variable had a positive impact of a .051 magnitude in this model. Within the domain of social engagement, variables for students who were affiliated with Greek organizations and students who worked off campus were significant at the  $<.05$  level. Greek affiliation had a positive impact of a .084 magnitude in this model. Work off campus had a positive impact of a .069 magnitude in this model. Within the domain of surroundings, evaluation of experience and pick the same institution were both significant at the  $<.001$  level. Evaluation of experience had a positive impact with a magnitude of .497. Choose the same institution had a positive impact with a magnitude of .199. Of the included student characteristic, legacy status was significant at the  $<.05$  level. This variable had a positive impact of a .043 magnitude in this model.

The adjusted R squared in Table 7 indicates that this model accounts for 46.2% of student's feeling of being valued by this institution. Step four accounted for the largest piece of this model, indicating that surroundings were the variables had the strongest relation to students feeling valued by the institution.

### **Analysis of Data for Third Dependent Variable**

The third dependent variable in this study was "I feel like part of the community at this institution." Table 8 shows each step in the linear regression model using a stepwise approach. The table shows how each step relates back to Ahn and Davis's (2020a) four domains of student sense of belonging as well as student characteristic variables. The data represent the standardized coefficient beta along with the significance of each variable. The related R squared is also represented at the bottom of each step of the model.

Table 8

*Data Related to Multiple Linear Regression Results for Model 3, I feel like part of the community at this institution.*

Belonging domain (Ahn & Davis, 2020a)	Variable	Step 1: Academic Engagement		Step 2: Social Engagement		Step 3: Personal Space		Step 4: Surroundings		Step 5: Student Characteristics	
		$\beta$	Sig.	$\beta$	Sig.	$\beta$	Sig.	$\beta$	Sig.	$\beta$	Sig.
Academic Engagement	% Credit hours earned	-.029	.270	-.036	0.165	-.037	.148	-.055	.008**	-.056	.007**
	Worked with other students on course projects or assignments	.050	.130	.048	0.137	.048	.136	.018	.473	.019	.471
	Prepared for exams by discussing or working through course material with other students	.126	<.001***	.095	0.004**	.098	.003**	.090	<.001***	.090	<.001***
	Worked with a faculty member on a research project	.032	.226	.012	0.648	.008	.766	.014	.506	.013	.536
Social Engagement	Greek			.162	<.001***	.156	<.001***	.085	<.001***	.082	<.001***
	Co-curricular participation			.065	.021*	.059	.036*	.048	.032*	.049	.030*
	Work on campus			.079	.003**	.079	.003**	.063	.003**	.062	.004**
	Work off campus			.082	.002**	.087	<.001***	.049	.022*	.047	.033*
Personal Space	Resident					-.056	.031*	-.049	.018*	-.052	.016*
Surroundings	Evaluation of experience							.418	<.001***	.420	<.001***
	Pick the same institution							.222	<.001***	.220	<.001***
Student Characteristics	Pell Eligible									-.027	.217
	First Generation									.026	.273
	Legacy									.031	.163
	Sex									.006	.771
	Minority									.007	.745
Adjusted R <sup>2</sup>											
		.026		.066		.069		.410		.410	

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

In step one of Table 8, “prepared for exams by discussing or working through course material with other students” was significant at the  $<.01$  level with a positive impact of .126.

Step two of Table 8 shows that the variable “prepared for exams by discussing or working through course material with other students” was the only variable for the first step that was significant in this second step. This variable was significant at the  $<.001$  level with a positive impact of .095. Each of the variables that were introduced in the second step were significant. Greek participation was significant at the  $<.001$  level and had a positive impact with a magnitude of .162. Work on campus and work off campus were both significant at the  $<.01$  level. Work on campus had a positive impact with a magnitude of .079 and work off campus had a positive impact with a magnitude of .082. Co-curricular participation was also significant in the second step at the  $<.05$  level with a magnitude of .065.

In step three of Table 8, the variable “prepared for exams by discussing or working through course material with other students” was again the only variable for the first step that was significant in this step. This variable was significant at the  $<.01$  level with a positive impact of .098, which was higher than it was in step 2. Each of the variables from the second step were significant. Greek participation was significant at the  $<.001$  level and had a positive impact with a magnitude of .156, which is slightly lower than in the second step. Work off campus was also significant at the  $<.001$  level with a positive impact of .087, which has a higher magnitude than it was in step two. Work on campus was both significant at the  $<.01$  level with a positive impact of .079, which was the exact same as step two. Co-curricular participation was also significant in the third step at the  $<.05$  level with a magnitude of .059, which is less than in step two. Finally, the only variable introduced in step three, resident, meaning a student from the state of Mississippi, was significant at the  $<.05$  level with a negative impact of -.056.

Step four of Table 8 saw a new variable from step 1 have significance. The variable “percent of credit hours earned” was significant at the  $<.01$  level with a negative impact of  $-.055$ . The variable “prepared for exams by discussing or working through course material with other students” was significant at the  $<.001$  level with a positive impact of  $.090$ . Each of the variables from the second step were significant. Greek participation was significant at the  $<.001$  level and had a positive impact with a magnitude of  $.085$ , which is slightly lower than in the previous step. Work on campus was significant at the  $<.01$  level with a positive impact of  $.063$ . Work off campus was significant at the  $<.05$  level with a positive impact of  $.049$ , which has a lower magnitude than in step three. Co-curricular participation was also significant in the third step at the  $<.05$  level with a magnitude of  $.048$ , which is less than in step three. The variable for resident was significant at the  $<.05$  level with a negative impact of  $-.049$ . The two variables introduced in step four, “evaluation of experience” and “pick the same institution” were both significant at the  $<.001$  level. “Evaluation of experience” had a positive impact of  $.418$ , while “evaluation of experience” had a positive impact of  $.222$ .

Table 8 indicates that there were nine variables that were significant in step five of this model, none of which were introduced in this final step. Within the domain of academic engagement, percentage of credit hours earned was significant at the  $<.01$  level and students who indicated that they prepared for exams by discussing or working through course material with other students was significant at the  $<.001$  level. Percentage of credit hours earned had a negative impact of a  $.056$  magnitude in this model. Prepared for exams by discussing or working through course material with other students had a positive impact of a  $.090$  magnitude in this model. Within the domain of social engagement all variables were significant. The variable variables for students who were affiliated with Greek organization was significant at the  $<.001$  level and had a

positive impact of a .082 magnitude in this model. Co-curricular participation was significant at the .05 level and had a positive impact of a .049 magnitude. Work on campus was significant at the <.05 level and had a positive impact of a .062 magnitude. Work off campus was significant at the <.05 level and had a positive impact of a .047 magnitude in this model. Within the domain of personal space, resident, meaning the student was from the state of Mississippi, was significant at the <.05 level and had a negative impact with a magnitude of .052. Within the domain of surroundings, evaluation of experience and pick the same institution were both significant at the <.001 level. Evaluation of experience had a positive impact with a magnitude of .420. Choose the same institution had a positive impact with a magnitude of .220.

The adjusted R squared in Table 8 indicates that this model accounts for 41.6% of variables related to students feeling like part of the community at this institution. Step four accounted for the largest piece of this model, indicating that surroundings were the variables that were related the most to students feeling valued by the institution.

## CHAPTER V

### CONCLUSIONS AND FUTURE RESEARCH

Chapter four outlined the results of three linear regression models using a stepwise approach. While all three models showed that there were variables with significance, by step five, there were only three variables that were significant related to the independent variable. In this model, senior students' sense of belonging was significantly related to whether they had worked with other students on course projects or assignments, student evaluations of their experience, and whether students would select the same institution.

In the second model related to the independent variable "I feel valued by this institution," there were five variables that were significant in step five. The variables that were related to the feeling of being valued by the institution were whether the student had prepared for exams by discussing or working through course materials with other students, participation in Greek life, work off campus, student evaluations of their experience, and whether students would select the same institution.

For the third model, "I feel like part of the community at this institution.," there were nine variables that were significant in the final step. The variables related to feeling like part of the institution included percent of credit hours earned whether the student had prepared for exams by discussing or working through course materials with other students, Greek participation, co-curricular participation, work on campus, work off campus, resident, student evaluations of their experience, and whether students would select the same institution.

In each of these three models, the variables that were introduced in the fourth step, student evaluations of their experience and whether students would select the same institution were significant at the  $<.001$  level. This indicates that the students who have had an overall positive experience at the institution and would choose to come back to the same institution if given the opportunity to start college again have found a sense of belonging on campus.

The adjusted R squared was reported for each of the tables in chapter four, showing the percentage of each dependent variable that could be accounted for by using the independent variables in the models. For the variable “I feel comfortable being myself at this institution”, the adjusted R squared indicated that only 28.4% of the feeling of being comfortable at this institution could be accounted for by the sixteen independent variables in the model. The variable “I feel valued by this institution” had an adjusted R squared of 46.2%, which was the highest of all three models. Finally, the variable “I feel like part of the community at this institution” had an adjusted R squared of 41.0%. These dependent variables were all used to gain a sense of what relates to senior student sense of belonging. While these models did show that the variables related to senior sense of belonging, they were not able to account for all reasons for sense of belonging.

The variables that were not significant in the final step of any of these models include whether the student worked with a faculty member on a research project, Pell eligibility, first generation status, legacy status, sex, and minority status.

### **Research Questions**

The purpose of this study was to determine if seniors feel a sense of belonging when transitioning out of Mississippi State University and the extent to which student experiences and student characteristics related to senior year sense of belonging. When looking at the descriptive



statistics in chapter four, it is clear that senior students do feel a sense of belonging when transitioning out of Mississippi State University. 82.3% of senior students reported that they agree or strongly agree with the statement “I feel comfortable being myself at this institution.” 77.5% of senior students reported that they agree or strongly agree with the statement “I feel valued by this institution.” Finally, 77.5% of senior students reported that they agree or strongly agree with the statement “I feel like part of the community at this institution.” While there is still room for improvement in each of these areas, the overall consensus is that a majority of students do feel a sense of belonging when transitioning out of the institution.

The research question examining student experiences and student characteristics related to senior year sense of belonging is more complex to answer. While chapter four and the discussion in this chapter give in depth detail about the statistics of this question, the answer is that these experiences and characteristics only impact between 28.4% and 46.2% of senior student sense of belonging. This means that throughout all three of the models in this study, over half of the things that relate to senior student sense of belonging is not being explained. This indicates that further investigation must be done.

## **Discussion**

This study examined the relationship between student characteristics and student experiences on senior student sense of belonging. The descriptive statistics show that a majority of students do feel a sense of belonging when accounting for the questions that were asked as part of the NSSE. The linear regression models above show that student sense of belonging, particularly when asking if a student feels comfortable being themselves, cannot be fully explained by the variables in this study. The model for students feeling comfortable at this institution only accounted for 29.2% of the reason why students responded that they were

comfortable being themselves. Although the percentage that is accounted for increased for the variables related to feeling valued by the institution and feeling like a part of the community, there is still a lot unaccounted for. Additional variables could increase amount of variance in the dependent variables explained, however, the models indicate that there are individualistic characteristics that are likely in the background of the student responses.

Ahn and Davis (2020a) discuss the importance of engagement in student sense of belonging. However, that did not come through in all models in this study. When discussing whether a student felt comfortable being themselves at this institution, the only engagement that was tested in this model that showed significance was working with other students on projects or assignments. When considering whether the student felt valued by the institution, only prepared for exams by discussing working through course material with other students, Greek affiliation, and work off campus was significant. When evaluating what relates to making a student feel like a part of the campus community, all areas within the social engagement model were significant, but only prepared for exams by discussing or working through course material with other students was significant for academic engagement. Although additional variables could provide more context to these models, student engagement does not seem to be the key factor for belonging in students. Surroundings, which included evaluation of student experience and the choice to come to the same institution were much related more to senior student sense of belonging than academic or social engagement.

In the descriptive statistics, biggest difference in student responses from first-year to senior year was in the variable related to feeling like part of the campus community. This could stem from program initiatives targeted at first-year students to help them get involved on campus. Less programming is targeted at senior year students because there is often a thought

that if the students are not a part of the community by this point, it is likely because the student does not want to be a part of the community. While this could be the case, further investigation into this could show that senior students do need programming that helps them feel like part of the community.

### **Student Satisfaction**

In a time of instant gratification, it can be difficult for people to devote significant time to doing things unless they find them fulfilling and worthwhile (Senior et al., 2017). Students need to find fulfillment in their lives otherwise they might turn away from the non-fulfilling activities, such as coursework. Data in each of the linear regression models in this study showed that student evaluation of their experience had a significant relationship to their sense of belonging for each dependent variable. This indicates that students who have a positive campus experience are finding some level of fulfillment, otherwise they would not report a positive evaluation of their experience. With more than 75% of senior students responding positively to each of the dependent variables related to sense of belonging in this study, it seems as though Mississippi State University has done well with ensuring that senior students have found fulfillment in their time on campus and that they feel a sense of belonging.

Along with students' evaluation of their experiences, students were also asked if they would pick the same institution again if given the opportunity. This question allows students to reflect on their experience and the education that they have received. Students have the ability to factor in different things into their answer such as their living arrangements, friend groups, and things as trivial as parking, or a combination of any other factors. In senior students this question related to whether they would pick the same institution again significantly relates to their response to sense of belonging. If a student has a negative experience, they are less likely to say

that they would choose the same institution again, even if that experience is one that they overcame or if the experience happened early in their experience at the institution (Schreiner & Nelson, 2013). For students to report that they would pick the same institution again, it is important that institutions continuously evaluate the education and experiences that they are providing to students.

### **Student Characteristics**

While students are overall satisfied with their college experiences, it is helpful to be able to narrow down which populations are not finding as high of a sense of belonging and are not as satisfied on campus. The variable I feel valued by this institution had a 46.2% variance, the highest variance of any of the models in this study, showing that this aspect of belonging was the most explained by the variables in these models. Comparatively, the model for I feel comfortable being myself at this institution only had a variance of 28.4 %. The variance for feeling of comfortable being myself shows that additional work is needed to understand why students do or do not feel comfortable being themselves at this institution. Programming is done for students who hold various identities and characteristics, but more work might be needed to allow for students to be themselves on campus. Qualitative data would need to be used to assess why students do or do not feel as though they can be themselves.

Mississippi residency was a variable that showed a negative relationship in step five of all three linear models, although it was only statistically significant in the model for “I feel like part of the community at this institution”. This is an interesting finding since Mississippi State University is in Mississippi. There could be many reasons for this finding, however, it would need further investigation to pinpoint the cause. One possible explanation is that students who make the choice to come to Mississippi do so for a reason, whether that is them looking for a

more rural environment or because they have some connection to the state that draws them to Mississippi. Students from outside of Mississippi would have to pay out-of-state fees unless those were covered by scholarships, which further says that they made an intentional choice to come to Mississippi State University. Mississippi resident students could have chosen to come to Mississippi State University because it is local, the tuition is more affordable, or because of familial pressures to attend the institution. Another possible explanation could be that Mississippi students do not feel like a part of the community at this institution because the university does not foster the same intimate connections that many small towns create. There are 20,000 or more students who attend Mississippi State University, when this is combined with the faculty and staff population, this can be overwhelming for students who grew up in small towns and had small graduating classes where everyone knew each other and their families. Additional research could be done in how high school size relates to college student sense of belonging.

Student characteristics such as Pell Eligibility, first generation status, legacy status, sex, and minority status were included in each model during the final step of the regression. Of these five variables over the three regressions, only one showed any significance. For the dependent variable I feel valued by this institution, legacy status was statistically significant at the .05 level, but no other student characteristics were. This lack of statistical significance of the student characteristics indicates that maybe student characteristics do not matter as much by the time students have reached senior status. Bowman and Felix (2017) argue that student identity centrality was positively related to students committing to their education and matriculating through to graduation and that this identity was more significant than precollege attributes. This identity could be impacting the results of the student characteristics in this study because students see themselves as a college student first before their other characteristics. Another

reason that these variables might not have been significant is because they were all added during the fifth step of the model. It is possible that Mississippi Residency, which was added during the third step, impacted these variables added later in the regression model.

The variable for minority status was not significant in any of the models in this study. This could be because this study dichotomized race and put all racially minoritized groups together. Further research could be done by disaggregating minority groups to see if there are significant differences amongst different populations of students. It is possible that once a student reaches senior status, that their racial identity does not relate to their sense of belonging, however, this seems to contradict many authors who have studies specific minority groups and their sense of belonging.

### **Interactions with Faculty**

Throughout the models, the variable for a student working with a faculty member on a research project was not significant at any point. At a very high research institution, this lack of significance is surprising, particularly for senior students. Astin (1993), suggested that the more contact students and faculty have in and outside of the classroom, the greater satisfaction a student has with their institution. Kuh and Hu (2001) discovered that students tended to have the least interactions with faculty through research projects. This could explain why the variable was not significant in any model, because fewer students had that type of interaction with faculty. To get a better sense of how interactions with faculty relate to senior student sense of belonging, researchers could consider utilizing data from student advisors or by asking questions related to the interactions that students have with their faculty members.

It is also interesting that in the model for “I feel valued by this institution”, working with a faculty member on a research project was negative. Although not significant, this negative

association should be further explored to understand if this is an anomaly at Mississippi State University, or if undergraduate research can lead to a lower sense of community in general. The limited scope of the question used for this variable in this study is a limitation to understanding how faculty play a part in senior student sense of belonging. The role of faculty is a huge part of student education and should not be discounted from playing a part in their sense of belonging.

### **Campus Community**

Mississippi State University alumni association has utilized the word “Family” as part of their branding (Office of Public Affairs, n.d.). This shows that Mississippi State University has a commitment to a sense of community amongst its alumni. Within the model for feeling like part of the campus community, there were multiple variables that had a significant relationship, the most significant variables of any of the models. Variables related to interacting with others, such as participation in Greek life, working on and off campus, participation in co-curricular activities, and preparing for exams by discussing or working through course materials with other students were all significant. All of these variables are related to students finding a place of belonging through work or through participation in curricular or co-curricular activities, which would contribute to feeling like a part of the community. Being a resident of the state of Mississippi was also significant, which would make sense because the student is from the state-wide community that encompasses the institution. Student evaluation of their experience and decision to choose the same institution again if given the chance were also significant. This is likely because students who do not feel as though they are a part of the community would not choose the same institution or rate their experience highly.

Interestingly, the percentage of credit hours earned was significant in this model. This could indicate that students who feel as though they are able to succeed academically feel like they

belong in the campus community more so than students who struggle academically. As discussed in the literature review, students who feel comfortable and accepted in class have a better sense of self-efficacy and therefore tend to achieve higher academic grades (Zumbrunn et al., 2014). Higher academic grades result in fewer course attempts for students, therefore creating a cycle of doing well in courses and feeling more belonging on campus.

Student employment was another surprising data point in this study. It is curious that in the model “I feel valued by this institution,” student work off campus was significantly related to feeling valued but work on campus was not. Exploring this further would allow for potential policy changes at the institution if there is a reason that students who are working for Mississippi State University are not feeling valued by the institution. More data could be collected as to where the students work on campus and what their responsibilities include to see if there are needed changes to how the institution approaches student workers. Comparing this finding with other institutions could also be insightful to see if these results are unique to Mississippi State University or if it is pervasive amongst college campuses.

Although this model shows that there are several significant variables, it still does not explain why students do or do not feel like part of the campus community. If institutions want to increase sense of belonging for students, they must find out why students feel as though they do or do not belong. Institutions need for senior students to feel like they belong on campus if they want these students to turn into alumni who support Mississippi State University over time.

### **Recommendations for Future Research**

Although this study looked at numerous variables related to student characteristics, further research could be done to include more variables, such as student major. While it was beyond the scope of this study, it might be worth investigating whether students from different



academic departments or from different academic majors have differences in their responses. It is possible that variables such as “worked with a faculty member on a research project” would be significant for a student in an engineering major, while it might not for a student who studies humanities. Delving further into these different departments and majors might highlight what makes students in different areas feel a sense of belonging so that those areas could focus on and enhance efforts in those areas.

Along with including more variables, it would also be advantageous to expand on this study by incorporating data from other institutions. This study looked at only Mississippi State University, but adding additional institutions into the study could highlight whether the findings of this study are unique to Mississippi State University or if there are changes happening with students that make variables that were significant in the past have less of a relationship associated with student sense of belonging. A study incorporating more institutions could also highlight if there are potential issues with the overall framework since this study is focused only on senior students. It is possible that the belonging framework that Ahn and Davis (2020a) created is more applicable to students transitioning into college instead of those who are transitioning out of college.

### **Qualitative Study**

The data throughout this study indicates that senior student sense of belonging cannot be explained by using academic engagement, social engagement, personal space, surroundings, and student characteristics alone. To assess sense of belonging, a more individualized approach needs to be taken due to the differences in lived experiences of students. To understand sense of belonging better, talking with students about their experiences and why they feel the way they feel would likely yield a more robust study, however, that study would not be able to be

extrapolated upon due to the individualized nature of the content. A student's feelings about their experiences and their sense of belonging can only be assessed at the time of the assessment, meaning it would be hard for them to fully explain why they felt as though they felt as though they had a sense of belonging or not at a previous time.

For future research, a qualitative study that focused on particular students, such as Greek participants or students within a particular major or college at an institution would allow for administrators overseeing those areas to determine the level of belongingness that students in those areas feel. This type of study could be done using multiple groupings of students or multiple campuses; however, a study of this magnitude would take significant time and energy and would still only be applicable to the participants who were included. A qualitative study of this nature would not be able to provide information about sense of belonging for all college students on all campuses, however, it would provide guidance on the types of questions that other institutions could ask if they wanted to assess the same topics with their students.

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