A MIXED METHODS EXPLORATORY ANALYSIS OF
SENSE OF BELONGING AMONG
FIRST-YEAR UNDERGRADUATE STUDENTS AT A
HIGHLY SELECTIVE RESIDENTIAL INSTITUTION OF HIGHER EDUCATION

AN ABSTRACT

SUBMITTED ON THE 19TH DAY OF JULY 2021 TO
THE DEPARTMENT OF SOCIOLOGY IN
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TULANE UNIVERSITY OF THE DEGREE OF
THE DOCTOR OF PHILOSOPHY

BY

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Abstract

In response to extant literature on college students’ sense of belonging that analyzes the concept as a relatively siloed phenomenon, this study offers a mixed methods exploratory analysis of college students’ sense of belonging that examines multiple domains of college life simultaneously.

Quantitative results reveal that students fall within three classes of sense of belonging – Low, Medium, High – and that sense of belonging to a campus organization is least impactful on the classes whereas sense of belonging to a friend group is most impactful. Key factors impact a students’ probability of being in a particular class of sense of belonging: Students from racial and ethnic minority backgrounds as well as non-Honors students are most likely to experience a low sense of belonging, and students from relatively high socioeconomic statuses are least likely to experience a low sense of belonging.

Qualitative results analyze students’ definitions of sense of belonging and unpack aspects of the quantitative results. First, students’ definitions reveal four categories of sense of belonging: Self-Centrics, Co-Creators, Seekers, and Conformists. Second, campus organizations offer a framework by which students meet friends, and the importance of this structure goes largely unnoticed by students. On the contrary, students highlight the importance of sense of belonging to a friend group as instrumental to developing sense of belonging in other domains. Third, the theme of exclusion operates as a foil to the similarity that informs interviewees’ sense of belonging. Exclusion refers to perceptions that one is an insider or outsider, and a key component of exclusion is the degree to which
students have agency in their experiences of exclusion. Fourth, Gateways of Belonging and Conduits of Belonging offer a means by which students strengthen sense of belonging in various domains. Gateways of Belonging refer to frameworks that bring together students around shared experience or purpose. Conduits of Belonging refer to specific roles that people fill in such a way that they model what sense of belonging can look like in a specific domain.

Keywords: College students’ sense of belonging; mixed methods; latent class analysis; semi-structured interviews; Gateways of Belonging; Conduits of Belonging
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Chapter One: Introduction

STATEMENT OF THE PROBLEM

College students’ sense of belonging has always been understood in relational terms, as students develop a sense of belonging to something. Even so, the dependent variable of what one belongs to has evolved considerably over time. Early scholarship focused on students’ belonging to the university community as the unit of analysis without much differentiation between various domains within the university (Hoffman et al. 2002; Hurtado and Carter 1997). Other, more recent scholarship has continued an exploration of sense of belonging to the university specifically (Shook and Clay 2012) but has also focused on the contextual nature of sense of belonging as students might report belonging to some aspects of their university experience but not others. For instance, Freeman and colleagues reported that belonging occurs at the campus level as well as the classroom level (Freeman, Anderman, and Jensen 2007), while other research highlights the ways in which residence halls might impact students’ sense of belonging (Johnson et al. 2007).

Cumulatively, this literature suggests that students experience a sense of belonging to various domains that they encounter during the undergraduate years.

Over time, scholarship has increasingly addressed the many categories of who belongs. Examples include scholarship that addresses the unique educational experiences of international students (Terrazas-Carrillo et al. 2017), first-generation students (Gibbons, Rhinehart, and Hardin 2016; Stebleton, Soria, and
Huesman 2014), and students that identify as racial and ethnic minorities (Gummadam, Pittman, and Ioffe 2016; Mallett et al. 2011; Meeuwisse, Severiens, and Born 2010). Cumulatively, this literature acknowledges that certain groups of students might experience a sense of belonging differently than their peers.

As such, the scholarly community now knows more about who belongs to what, thus offering an increasingly accurate reflection of both student and institutional diversity that takes seriously the intersectionality of students and the multiple domains in which belonging occurs. These multiple domains include the university overall, the academic classroom setting, one’s residence hall, campus organizations, and friend groups. Even so, existing scholarship does not explore these domains simultaneously, instead focusing on one or perhaps two domains of belonging at a time. Even though scholars acknowledge that students develop sense of belonging to various domains within the university, an implication of this extant scholarship is that college students’ sense of belonging is collectively framed as a series of siloed experiences.

The problem with this way of analyzing sense of belonging is that it does not reflect the fact that students experience these multiple domains simultaneously and in relationship to one another. Indeed, college students navigate multiple aspects of their universities daily, and research that fails to account for that reality lacks important insight into the lived experiences of college students. Important questions arise when it is acknowledged that college students might develop a sense of belonging or not to multiple contexts simultaneously. For instance, to what extent are the processes by which students develop sense of belonging consistent across
domains? Are all domains equally important for fostering a sense of belonging? How do students experience sense of belonging in these domains?

The problem is exacerbated by the fact that, nationally, 31.5% of first-year undergraduate students do not persist to the second year of enrollment (American College Testing Program 2016). The exact percentage varies by institutional type and ranges from 43.6% (at two-year public institutions) to 18.5% (at four-year PhD-granting private institutions). In short, the first year of undergraduate enrollment is a key period of transition for students, who ultimately persist (or not) for a variety of reasons (Mattern et al. 2015). If the scholarly community can learn more about how first-year students develop a sense of belonging on campus through experiencing multiple domains simultaneously and in relationship to one another, then they can use that information to inform policy aimed at enhancing sense of belonging and thus increasing undergraduate persistence rates.

Considering this problem and for the purposes of this research study, I define sense of belonging to be college students' perceived value as co-contributors to various campus domains. Additionally, the development of sense of belonging is impacted by background characteristics, campus experiences, and institutional factors. Furthermore, a high sense of belonging results in positive outcomes as defined by students themselves. This definition is my own, synthesizing key aspects of the phenomenon as discussed in the academic literature (Chapter Two).

PURPOSE OF THE STUDY
It is the purpose of this research study to shed light on how and why college students report a sense of belonging across various domains of the undergraduate experience, particularly during the first year of enrollment. This purpose is particularly important in light of at least two factors. First, by exploring five domains of sense of belonging simultaneously, this research study adds important texture to the current scholarly landscape that tends to focus on one or two domains of the college experience. This enables the study to address more specific questions related to sense of belonging, such as how does the full breadth of the college experience come to bear on the formation of sense of belonging? What is important and what is not?

Second, in taking a more multifaceted approach to the concept of college students’ sense of belonging, this research study lays an important theoretical foundation for how the concept might manifest in new domains such as those brought on by the COVID-19 pandemic. Since today's college students navigate multiple aspects of their universities daily (even remotely) and much of the existing research on college students’ sense of belonging focuses on one or two domains of sense of belonging, then existing research would benefit from added theoretical flexibility that addresses novel ways of belonging such as those imposed by our current times and the reality of remote learning. If common inter-domain patterns emerge in the data, then subsequent scholarship might apply those insights to emergent domains within the university context, thus enhancing student success outcomes.
RESEARCH QUESTIONS

This study is guided by the following research questions:

1. What are some important factors (e.g., activities, experiences, people) that facilitate the development or impediment of sense of belonging?
2. How do students describe their experiences of sense of belonging?

I address these research questions with a mixed methods approach that utilizes quantitative analysis of survey data alongside qualitative analysis of semi-structured interview data, both of which are outlined in subsequent portions of this study (Chapter Three). Whereas the survey data deploys an empirically tested instrument to provide insights into the relationships between various domains of sense of belonging, the interview data allows for students to discuss the processes by which those relationships develop and uncover emergent themes related to sense of belonging. In this way, a mixed methods approach is particularly appropriate for these research questions because it allows for a full conceptual exploration of how and why students develop a sense of belonging as a function of perceptions regarding multiple and overlapping aspects of the university experience.

Quantitative Aspect: Hypotheses

The quantitative aspect of this research study allows for the formal testing of the following hypotheses:

- H1: Relative to other domains of sense of belonging, identification with the friend group domain will correlate with higher levels of sense of belonging.
• H2: Students who identify as “man” will report higher levels of sense of belonging than students with other gender identities.

• H3: Students from racial and ethnic minority backgrounds will report lower levels of sense of belonging than white students.

• H4: Students who report coming from lower socioeconomic status backgrounds than their peers will report lower levels of sense of belonging than their peers.

• H5: Students who are in the Honors Program will report lower levels of sense of belonging than their non-Honors peers.

Qualitative Aspect: Thematic Analysis

The qualitative aspect of this research study calls for a thematic analysis, in which data analysis is guided by research questions and themes are systematically cultivated from data (Braun and Clarke 2006; Guest, MacQueen, and Namey 2012). Thematic analysis shares important components with grounded theory (Adams 2007; Charmaz 2017; Timonen, Foley, and Conlon 2018) such as an “emphasis on supporting claims with data” (Guest et al. 2012:11) in a way that is systematic, flexible, and inductive. Thematic analysis differs from a grounded theory approach in that it does not require adherence to a “pre-existing theoretical framework” (Braun and Clarke 2006:81) but instead focuses on the particular analysis that is most conducive to specific research questions.

This approach serves a dual purpose. First, it allows students to elaborate on preliminary quantitative analysis, thus uncovering the processes by which sense of
belonging develops in a way that addresses and perhaps extends the main topics put forth by the hypotheses. Second, it allows students to describe their experiences of sense of belonging, thus uncovering new domains, processes, or factors that facilitate the development or impediment of sense of belonging.
Chapter Two: Literature Review

THEORETICAL FRAME

A core tenet of ecological systems theory is that individuals influence and are influenced by various spheres with which they identify to varying degrees. As a pioneer of this work, Bronfenbrenner (1979) outlined five systems that an individual occupies: microsystem, mesosystem, exosystem, macrosystem, and chronosystem. Individuals exist in these systems as if in concentric circles. The microsystem refers to immediate settings such as school or work whereas the mesosystem refers to the interactions between these settings. Next, the exosystem represents settings that indirectly impact the individual such as a significant other’s job. And the macrosystem contains what Strayhorn (2015:33) summarizes as “the individual’s interactions with cultural norms, beliefs, values, and expectations such as gender socialization or political culture.” Overall, these function as nested systems in that individuals exist in relationship with each system even as each system exists in relationship to the others. Over time, as systems increase or decrease in relational relevancy, a fifth system develops: the chronosystem. The chronosystem is akin to a life story of sorts, marked by events such as births, deaths, marriages, and the like.

When applied to the experiences of undergraduate college students and the formation of sense of belonging, ecological systems theory offers a structured yet flexible way of thinking about how students navigate their time as undergraduates that is particularly appropriate for a mixed methods approach. Ecological systems
theory provides structure to an analysis of college students’ sense of belonging through its nested framework for articulating the relationships between individuals and various spheres of potential belonging. This nested framework maintains a primary focus on the sense of belonging of students while also taking into account the role of systems on the development of that sense of belonging. This structure aids the mixed methods approach of this study in that it legitimizes the use of an instrument that measures sense of belonging in discrete domains while also allowing for an analysis of the relationship of those domains.

Ecological systems theory provides flexibility to an analysis of college students’ sense of belonging by suggesting that students perceive themselves to be at the center of these domains of belonging. That is, the domain-esque interactions that influence students are unique to the individual. As such, ecological systems theory does not presuppose that individual students develop or experience sense of belonging in a uniform way. One student’s microsystem might be another student’s exosystem. This flexibility aids the mixed methods approach of this study in that it legitimizes the narratives of students as important on their own terms and allows for the possibility that new domain relationships might emerge.

In sum, ecological systems theory provides a framework for exploring this study’s research questions that is conceptually structured enough to guide data collection and analysis while also being conceptually nimble enough to allow for a thematic analysis. This research study draws on this framework to inform the ways in which undergraduate college students exist in microsystems and exosystems (i.e., friend groups, the residence hall, campus organizations, and academic classrooms)
as well as the macrosystem of the university throughout the course of the first year of enrollment (chronosystem).

Additionally, concepts associated with ecological systems theory resonate with theoretical work relevant to higher education. Perhaps most foundational to higher education scholarship is a theoretical link between ecological systems theory and Durkheim’s work on suicide (Spaulding, Simpson, and Durkheim 2010). One of Durkheim’s key takeaways is that social forces exert influences on human behavior, and he unpacks this premise by examining suicide rates in several European countries and categorizing them according to levels (high or low) of social regulation and moral regulation (Spaulding et al. 2010). Subsequent scholars of higher education have applied Durkheim’s theory of suicide to analyses of why students drop out of a college or university (Braxton et al. 2014; Spady 1971; Tinto 1975, 1993). Common to all these models is that undergraduate students engage in formal and informal aspects of the academic and social life of a university, and that failure to do so often results in adverse student outcomes (often operationalized as failure to reenroll in a subsequent semester). Ecological systems theory reminds us that these aspects are fundamentally intertwined and, furthermore, that these aspects do not impact students in a uniform manner. As such, the college student experience is best understood as a function of students’ interactions with various aspects of their environment, which in turn interact with each other.

Two key takeaways arise from this review. First, college students develop a sense of belonging or not as a result of participating in discrete domains that might interact with each other. Second, various domains within a university have the
capacity to influence how students’ sense of belonging develops (or not) in that respective domain.

In light of these takeaways, it is helpful to revisit my definition of sense of belonging, as it both extends from this theoretical frame and functions as an organizing tool for subsequent portions of this chapter. Again, I define sense of belonging to be college students’ perceived value as co-contributors to various campus domains. Additionally, the development of sense of belonging is impacted by background characteristics, campus experiences, and institutional factors. Furthermore, a high sense of belonging results in positive outcomes as defined by students themselves.

This definition extends from the theoretical frame by acknowledging that college students develop a sense of belonging or not as a result of participating in discrete domains that might interact with each other. Additionally, various domains within a university have the capacity to influence how students’ sense of belonging develops (or not) in that respective domain. Considering this, the definition includes verbiage related to students’ perceptions (i.e., “perceived value”, “positive outcomes as defined by students themselves”), relationality (i.e., “co-contributors”, “is impacted by”), multiple domains (i.e., “various campus domains”, “campus experiences”), and factors impacting sense of belonging (i.e., “background characteristics, campus experiences, and institutional factors”).

This definition functions as an organizing tool for subsequent portions of this chapter. Subsequent portions to be addressed include a review of sense of belonging in each of the five domains explored in this study, an examination of key factors
impacting sense of belonging that span one or more of the five domains, and a summary of positive outcomes of sense of belonging.

COLLEGE STUDENTS’ SENSE OF BELONGING

Sense of Belonging and the Classroom Setting

In a study of first-semester undergraduate students at a southeastern public university, researchers found that faculty encouragement of student participation and interaction are positive correlates with sense of belonging (Freeman et al. 2007). This evidence is further corroborated by findings which show that first-year students experience higher levels of belonging when professors are compassionate and take the time to interact individually with students (Hoffman et al. 2002). Additionally, a positive correlation existed between students’ perceptions of instructors as supportive and high sense of belonging in a classroom setting (Zumbrunn et al. 2014). However, each of these studies pull from samples of predominantly white students.

Among a more diverse sample of students across multiple years of undergraduate enrollment, perceived faculty support/comfort and perceived classroom comfort are both statistically significant indicators of positive sense of belonging (Tovar and Simon 2010). However, data further suggest that this manifests differently among ethnic minority versus ethnic majority students: a

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1 This subsection incorporates empirical articles that pull samples from a variety of student populations. While sense of belonging is important for all students, in this subsection I highlight and synthesize the existing literature around the experiences of first-year undergraduate students. Studies that include a sample of these students are noted explicitly.
study of 523 first-year students from four different universities indicates that formal relationships with professors and classmates is a positive correlate with sense of belonging among ethnic minority students, whereas informal relationships with classmates is a positive correlate with sense of belonging among ethnic majority students (Meeuwisse et al. 2010). Additionally, Latinx students across multiple years of an engineering program at a four-year university in Texas report that positive sense of belonging is related to interactions with faculty members and academic advisors, whereas negative sense of belonging occurs due to size and rigor of classes (Allen, Thompson, and Collins 2020).

*Sense of Belonging and the Residence Hall*

Students attend multiple classes, might engage with various campus organizations, interact with numerous friend groups, and have a sense of what “the university” means to them in a variety of ways, but they live in one residence hall. As such, the residence hall and its constitutive parts – roommate(s), resident advisor(s), staff, and perhaps even faculty – have the potential to impact much of student life.

This is especially true when students reside in living-learning communities, which are typically described as themed housing according to students’ shared interests such as participation in an Honors Program or engagement with community service. Research shows that students who engage in a seminar for first-year students and also reside in a living-learning community are significantly more likely to return for their sophomore year of study and ultimately graduate in a
timely manner, relative to their peers (Cambridge-Williams et al. 2013). While this specific study does not directly report findings related to sense of belonging, it points to the fact that students’ living arrangements are important for successful outcomes.

Other research on residence halls does incorporate sense of belonging. At a predominantly white institution in an urban setting, minority students with randomly assigned interracial roommates report higher levels of belonging and higher GPAs after the first year of enrollment than minority students with same-race roommates, even as majority students with minority roommates report no impact on belonging (Shook and Clay 2012). In a study involving almost 3,000 first-year students from 34 universities across 24 states, research shows that first-year students who perceive that their residence hall peers are tolerant and supportive report higher levels of belonging, regardless of racial or ethnic background (Johnson et al. 2007).

**Sense of Belonging and Friend Groups**

The role of students’ friend groups is perhaps the most difficult to parse out from other domains of sense of belonging because students make friends in their classes, in their residence halls, through participation in campus organizations, and throughout the university in any other variety of means. In short, the potential exists for students to make friends almost anywhere. Perhaps for this reason, the friend group has repeatedly been shown as most formational to student growth during the undergraduate years (Chambliss and Takacs 2014; McCabe 2016;
Pascarella and Terenzini 2005). Overall, research shows that peer interactions aid in students’ reports of personal and social growth at all levels of undergraduate study (Strayhorn 2008). However, despite these general findings, an examination of friendship group influence on intellectual self-confidence and educational aspirations (over the first three years of undergraduate enrollment) reveals that participation in racially diverse friendship groups increases confidence and aspirations for minority students but not for white students, suggesting that race plays an influential role in friend group formation (Antonio 2004).

The importance of friend groups during the first year of undergraduate enrollment is especially important. For instance, among first year university students, friendship quality correlates positively with ease of transition to the university setting, and this is especially true for students who live on campus (versus those who commute) (Buote et al. 2007). Buote et al. utilize a mixed methods approach that deploys both survey and interview data, the latter of which sheds light on the process of friend group formation (2007). The authors find that identification with a friend group instills a sense of belonging for first-year university students by connecting them with others on campus and providing an outlet for the stresses of college life. Buote et al. (2007:684) uncover an important component of developing sense of belonging through a friend group in that participation in one friend group often leads to connections with new, discrete

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2 In this article, Strayhorn operationalizes “peer interactions” in part as “sought out a friend to help you with a personal problem” (2008:6). While acknowledging that peers and friends are different constructs, I have only included references to “peers” in this section if they include a component related explicitly to friendship.
friend groups. In this way, friend groups might be transitional in nature, especially during the first year of enrollment, meaning that a student might initially participate in one primary friend group but shift to another primary friend group as a result of connections made in the initial friend group. Additionally, in a cross-sectional study completed at two times during the first year of undergraduate enrollment, there exists a positive relationship between quality of friendships and sense of belonging to the university overall (Pittman and Richmond 2008). However, both of these variables are independently associated with psychological adjustment to college, thus illustrating that “friendship quality and perceptions of belonging are distinct constructs” (Pittman and Richmond 2008:356). This finding that sense of belonging to the university and friendship quality are distinct constructs suggests that sense of belonging to a friend group merits analysis in its own right, as outlined in this study.

**Sense of Belonging and Campus Organizations**

The positive correlation between students’ co-curricular involvement and academic and social outcomes is well documented (Asher and Weeks 2012; Astin 1975; Bergen-Cico and Viscomi 2012; Fincher 2015). Research shows that any formal involvement with a club, campus organization, activity, or leadership role enhances student reports of sense of belonging (Asher and Weeks 2012), even if that formal involvement is in community service off-campus (Soria, Troisi, and Stebleton 2012). Of note, students who self-initiate involvement in community service, apart from the university, do not report an enhanced sense of belonging
(Soria et al. 2012). The connection between involvement with campus organizations and sense of belonging hinges on findings showing that this sort of involvement leads students to feel as if they matter, they can count on people, they have people to count on them, and they identify with values of other students and the institution (Asher and Weeks 2012).

As it relates to sense of belonging, participation in campus organizations is especially important for all students, regardless of racial and ethnic background and across all years of undergraduate enrollment. For instance, on campus involvement is the most powerful pathway to a deeper sense of belonging across Asian, Black, Latino, and White students (Fincher 2015). Additionally, higher sense of belonging correlates with more involvement in campus organizations among third-year Latino students at a predominantly Hispanic-serving institution (Hurtado and Carter 1997).

*Sense of Belonging to the University*

Sense of belonging to one's university, broadly speaking, is perhaps the most commonly studied aspect of college students' sense of belonging. In the first study that employs a nationally representative sample of first-year college students at two- and four-year institutions, researchers used a one-question belonging measure on a five-point Likert scale: “I feel that I am a part of [SCHOOL]” (Gopalan and Brady 2019). They found that underrepresented minority students and first-generation students at four-year institutions report a lower sense of belonging than their peers, but that these same student populations at two-year institutions report a higher
sense of belonging relative to their peers; additionally, at four-year institutions, increases in sense of belonging correlate with other positive outcomes such as persistence to years two and three as well as use of campus services and self-reported mental health in year three (Gopalan and Brady 2019).

Studies that involve more targeted samples provide more texture to these findings. For instance, at predominantly white institutions, research shows that an intervention designed to increase sense of belonging to the university among first-year undergraduate students has the intended effect for white students but not black students (Hausmann, Schofield, and Woods 2007). Likewise, a strong sense of belonging to the university is particularly important for first-year students of color even at other types of institutions such as ones that predominantly serve Hispanic students (Maestas, Vaquera, and Zehr 2007). Furthermore, black students tend to report a lower sense of belonging to their university than Asian American, Latinx, and Multiracial students at predominantly white institutions, perhaps because they have more experiences with racial microaggression (Lewis et al. 2019).

The factors impacting sense of belonging to the university highlight the ways in which sense of belonging to each domain impacts the other, which is in line with the ecological systems theory approach. For instance, Slaten et al. employ a form of qualitative interviewing among 11 undergraduate students (across all four years of enrollment) to unpack the factors impacting “university belongingness” (2014). All respondents report four main themes that impact their sense of belonging to the university: (1) “valued group involvement”, (2) “meaningful personal relationships”, (3) “environmental factors”, and (4) “intrapersonal factors” (Slaten et al. 2014:3).
These four main themes contain examples of engaging with campus organizations such as a fraternity or sorority, developing friends in on-campus environments such as the residence hall, and maintaining relationships with faculty in the classroom, thus suggesting that sense of belonging to the university is constitutive of sense of belonging in other domains as outlined in this study.

And yet, sense of belonging to the university is certainly unique in its own right and is also constitutive of key factors. Students’ perceptions of a negative racial campus climate correlate with lower levels of belonging for students in the first two years of undergraduate enrollment, especially at predominantly white institutions (Locks et al. 2008). And perceptions of negative racial campus climate stem in large part from discrepancies between a university’s stated values related to diversity and the lived experiences of marginalized students (Linley 2018). Hurtado and Carter find that Latino students’ negative perceptions of a hostile racial campus climate impact belonging even in the third year of study, both at that time and as students reflect on their previous years at their institution (1997). A limitation of these sorts of studies is that marginalized students are often aggregated into one group, thus failing to account for possible differences between first-generation students or students from various racial and ethnic backgrounds. Even so, the scant literature that does focus on perceptions of campus climate among specific groups of marginalized students (i.e. Filipino American students) also finds that campus racial climate is a direct influence on sense of belonging (see, for example, Maramba and Museus 2013).
Key Factors Related to Sense of Belonging

As outlined below, the literature on college students’ sense of belonging suggests that there are key factors related to whether and how college students experience belonging. What follows is a review of several key factors, chosen strategically for a variety of reasons that I justify in each respective subsection.

Gender identity.

While gender identity functions as a control variable for the quantitative portion of this study, its inclusion is also justified on a theoretical level, as gender correlates with positive outcomes such as persistence: collegiate women have higher persistence rates than their male peers (Buchmann and DiPrete 2006). This is particularly compelling in light of the gradual shift over the past sixty years in patterns of how men and women complete college. In 1960, a full 65% of college graduates were men (Buchmann, DiPrete, and McDaniel 2008). Yet by 1982, women and men earned bachelor’s degrees at the same rate (Buchmann et al. 2008; Jacobs 1996). Ever since, the rate of women completing college degrees has been increasing to the point that by 2005 a full 58% of college graduates were women (Buchmann et al. 2008). In short, women are enrolling in college in greater numbers than men and are also more likely to persist than men.

The effects of gender on sense of belonging appear to be context dependent and often related to students’ intersectionality. Researchers studying the experiences of black women in science, technology, engineering, and math (STEM) fields show that their participants report low sense of belonging in their majors due
to experiencing microaggressions within STEM contexts (Dortch and Patel 2017).

Conversely, when women studying mathematics engaged in an intervention designed to reduce stereotype threat in that setting, they reported an increased sense of belonging to that academic domain (Good, Rattan, and Dweck 2012).

However, when a sample is pulled from first-year students enrolled in introductory sections of courses from multiple departments, gender is not correlated with sense of belonging in a class setting (Freeman et al. 2007). This suggests that the effects of gender are context dependent and develop over time, as students from various gender identities develop sense of belonging as a function of positive experiences in various domains.

*Racial and ethnic background.*

In a study of almost 3,000 first-year students, researchers found that racial and ethnic minority students experience lower levels of belonging as compared to their white peers, and this is especially true at predominantly white institutions (Johnson et al. 2007). This is likely due, at least in part, to the fact that an increase in experiences with racial microaggressions results in a decrease in sense of belonging among students from underrepresented racial and ethnic backgrounds, and even more so for black students as compared to their underrepresented minority peers (Lewis et al. 2019). Additionally, Murphy and Zirkel (2015) reveal that belonging – both anticipated and experienced – is important for all students in an academic setting; even so, they show that belonging is lower for students from underrepresented racial and ethnic groups as compared to their white peers, and
these lower levels of belonging correlate with poorer academic outcomes. Other research shows that a targeted intervention designed to normalize collegiate hardships serves to increase belonging and academic outcomes for minority students (Walton et al. 2017; Walton and Cohen 2007).

Socioeconomic status.

Regarding SES and social class, the fact that students from working class families experience college differently than students from higher SES backgrounds is well documented in the scholarly literature (Goldrick-Rab 2006, 2016; Jury et al. 2017; Ostrove and Long 2007; Walpole 2003). Cumulatively, this literature suggests that students from relatively lower SES or working-class families often experience lower levels of belonging than their peers from higher SES families. For instance, in a selective liberal arts college setting, students’ class background was a statistically significant signifier of belonging; this claim held true both for objective measures of class (i.e., family income, parental education level) and subjective measures of class (i.e., self-reports) (Ostrove and Long 2007). Furthermore, the degree to which students develop a sense of belonging, as self-reported in college, continues to frame the way that students positively or negatively remember their college experiences for years, as exemplified by a retrospective study of women who attended a private institution (Ostrove 2003).

If students develop sense of belonging as a result of being co-contributors to various campus domains, then it should be noted that students from low SES backgrounds often do not have time to invest in various campus domains because
they have other constraints on their time. For instance, a longitudinal study of over 4,800 students at 209 four-year colleges and universities highlights this indirect relationship between SES and belonging (Walpole 2003). While Walpole (2003) does not explicitly explore sense of belonging as a construct, her analysis shows that students from relatively low SES backgrounds worked more and had less time to study than their higher SES peers which, in turn, also means that they were not as involved on campus and reported lower GPAs. The impact of this discrepancy in collegiate experiences between lower versus higher SES continues after graduation; her study draws on data gathered nine years after commencement and shows that low SES students still did not have the same social and economic capital as their high SES peers, even though they had relatively higher levels of capital than their low SES peers who did not attend college.

*Honors status.*

Research suggests that Honors students experience sense of belonging differently than their non-Honors peers, though there are moderating variables to consider. For instance, Honors students who reside in living learning communities or on residence hall floors designated as Honors report a higher sense of belonging than Honors students and non-Honors students who reside on non-Honors floors (Wawrzynski, Madden, and Jensen 2012), suggesting that some degree of affiliation with other Honors students in a residence hall setting contributes to an increased sense of belonging. This resonates with other research showing that students who engage with caring and supportive university contexts are more likely to develop a
strong sense of belonging (O’Keeffe 2013), especially when those contexts are living learning communities comprised of first-year students (Hoffman et al. 2002).

In sum, the inclusion of Honors as a variable of interest is less about the actual status of a student being Honors and more indicative of student access to key opportunities correlated with an increased sense of belonging such as participation in living learning communities, enrollment in exclusive courses, exposure to like-minded peers, and interactions with faculty.

**Institutional factors**

Strayhorn defines college students’ sense of belonging as “students’ perceived social support on campus, a feeling or sensation of connectedness, the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the group (e.g., campus community) or others on campus (e.g., faculty, peers)” (2012:3). According to Strayhorn (2012:18–23), seven core elements of sense of belonging consistently emerge in the literature:

1. Sense of belonging is a basic human need.
2. Sense of belonging is a fundamental motive, sufficient to drive human behavior.
3. Sense of belonging takes on heightened importance in certain contexts, at certain times, and among certain populations.
4. Sense of belonging is related to and a consequence of mattering.
5. Social identities intersect and affect college students’ sense of belonging.
6. Sense of belonging engenders other positive outcomes.
7. Sense of belonging must be satisfied on a continual basis and likely changes as circumstances, conditions, and contexts change.

Implicit in Strayhorn’s (2012) seven core elements is that sense of belonging is a reciprocal experience, meaning that although students’ perceptions are key, it is also true that those perceptions are grounded in some sort of experience with a group or
others on campus. However, Strayhorn only briefly addresses “what college student educators and their employing institutions can do (i.e., engagement) to encourage students’ involvement in programs and services designed to produce desired outcomes” like sense of belonging (2012:119–20). Instead, Strayhorn continually frames the phenomenon of college students’ sense of belonging as contingent on the degree to which students are involved on campus.

Strayhorn (2012) is not alone in this regard. While some studies highlight the characteristics of faculty and staff that might engender sense of belonging (see, for instance, Freeman et al. 2007; Maestas et al. 2007), many studies on the topic seek to understand sense of belonging from students’ perspectives without addressing how those perspectives are shaped by the university and its constitutive parts. The focus on students’ perspectives is a necessary, but incomplete, step in understanding how other university settings might enhance the development of sense of belonging, as it glosses over discussion of the role of universities in providing spaces for the development of sense of belonging.

A notable exception is the work of Chambliss and Takacs (2014), in which the authors offer ideas for improving student outcomes amidst fiscal limitations. Their research – at a private, highly selective\(^3\), liberal arts institution – shows that who one meets and when is of utmost importance to enhancing student outcomes. Drawing on 11 years’ worth of data, the authors come up with 12 key

\(^3\) Highly selective refers to the percentage of students accepted by a higher education institution. There are five commonly used levels that denote institutional selectivity: Open, Liberal, Traditional, Selective, and Highly Selective (American College Testing Program 2016). Highly selective is the most exclusive category, referring to schools that accept the top 10% of high school graduates. The university from which the sample for this dissertation is drawn is a highly selective institution.
recommendations – seven for administrators and five for students – to help undergraduates connect socially, emotionally, and academically. However, their study focuses more generally on how college students experience the undergraduate years and less specifically on sense of belonging.

Overall, the literature on college students’ sense of belonging tends to emphasize what students do and not what institutions do. O’Keeffe highlights this issue when he reviews literature that suggests students fail to develop sense of belonging or maintain enrollment through some inability to fulfill the “college student role” (2013:612). Responding to this literature, O’Keeffe places the onus for sense of belonging development squarely with universities, calling them to think strategically about how best to create “a welcoming environment, where care, warmth and acceptance are promoted” (2013:612).

O’Keeffe’s (2013) assessment is not new, even if it is not mainstream. For instance, in a critique of the longstanding model of college student retention originally introduced by Tinto in 1975, Tierney argues that Tinto’s work fails to consider key issues related to his use of the term “ritual” (as understood in the field of anthropology) and “integration” (as understood by sociologist Durkheim) (1992).

In short, Tierney points out that Tinto conceptualizes rituals as voluntary cross-cultural phenomena when, in reality, they are mandatory and culture-specific. Too, regarding integration, Tinto deploys anthropological terms in an individualist way in his emphasis on the integration of individuals over the formation of groups. Ultimately, Tierney points out that Tinto’s role as an insider – studying the very
institutions of which he is a part – functions as a blinder that he does not acknowledge.

At the core of Tierney’s critique of Tinto is the assumption that “a uniform set of values and attitudes remain in an institution and that it is the individual’s task to adapt to the system” (1992:607). In this way, Tierney argues that Tinto maintains a perspective that favors his own dominant cultural frame and invariably forces dominated cultures to integrate into a campus climate, thus “leaving invisible cultural hierarchies intact” (1992:611). In the spirit of O’Keeffe’s (2013) and Tierney’s (1992) critiques, in this section I focus on the institutional factors that impact sense of belonging, acknowledging the role of universities in creating environments conducive to sense of belonging development.

In this vein, it is worth noting that students experience the classroom setting, campus organizations, and residence hall life as a function of how institutions set up those domains. Universities can hire faculty and staff who are more likely to encourage students’ sense of belonging (Freeman et al. 2007; Maestas et al. 2007). Universities can create mechanisms to encourage students’ formal involvement with clubs, campus organizations, activities, and leadership roles to enhance opportunities for sense of belonging development (Asher and Weeks 2012). And universities might design residence hall programming around a living-learning community model in order to set students up for success (Cambridge-Williams et al. 2013).

Additionally, many institutions design summer bridge programs to acclimate students to the campus environment and resources (Kodama et al. 2016; Strayhorn
2011; Wachen, Pretlow, and Dixon 2016). Others create learning communities for first-year students to intersect opportunities for engagement with academic and social life (Baker and Pomerantz 2000; Hlyva and Schuh 2003) or expose first-year students to mentoring resources alongside other students and staff/faculty (Holt and Fifer 2016; Yomtov et al. 2017). These strategies function as connectors, placing students in relationship with other people on campus and with other facets of the university environment.

Despite these initiatives, institutions themselves merit a closer analysis. Similar to Acker’s (1990) analysis of organizational structure as inherently gendered, institutions of higher education might be seen as inherently raced and classed. In thorough analyses of black students’ experiences at historically black colleges and universities as well as predominantly white institutions, research shows that black students’ success in college is a function not only of background characteristics but also university policies and procedures, relationships with faculty and friends, and racial climate on campus (Allen 1992; Allen and Epps 1991). The authors argue that predominantly white institutions are not by nature conducive to the needs of black undergraduate students.

This finding resonates with scholarship that examines the experiences of students from racial and ethnic minority backgrounds who act as university representatives at predominantly white institutions vis-à-vis their roles as orientation leaders, tour guides, etc. (Linley 2018). In short, Linley reveals that this student subpopulation experiences regular occurrences of “microassaults, microinsults, and microinvalidations” (2018:29) despite holding positions of
relative prestige in the university. The racialized context of higher education impacts hiring practices as well, noted in a recent study that advocates for the use of applying behavioral design to the faculty hiring process (O’Meara, Culpepper, and Templeton 2020). In this study, the authors point out the racial and gender biases that are implicit in all stages of the faculty hiring process, ultimately offering tips and recommendations to bring these biases to light and correct them.

In sum, institutions of higher education can enact policies and procedures that facilitate student development of sense of belonging. This might include initiatives that increase staff and faculty diversity through hiring practices, empower students to get involved on campus, establish programming in residence halls and living learning communities to provide students with opportunities to meet others on campus, and provide students access to mentoring resources. Each initiative should also be constantly assessed for whether and how it serves the needs of students for whom it is intended.

Positive Outcomes of Sense of Belonging

Sense of belonging is especially relevant in a higher education context as it correlates with a variety of positive outcomes across various dimensions. A strong sense of belonging correlates with physical and mental health: Minority students who undergo an intervention (during the first-year of enrollment) designed to increase feelings of social-belonging report stronger health and wellbeing and go to the doctor less than their peers in a control group, even three years after that intervention took place (Walton and Cohen 2011). Sense of belonging correlates
with motivation overall (Baumeister and Leary 1995) as well as specifically in classroom settings (Freeman et al. 2007; Goodenow and Grady 1993).

Additionally, sense of belonging correlates with academic performance: An intervention that normalized adversity results in black students’ increased GPAs and halved the minority achievement gap. Furthermore, this change occurred “outside conscious awareness” in that respondents could only vaguely recall the details of the intervention in which they participated years earlier (Walton and Cohen 2011:1450). Correspondingly, lack of belonging impedes academic performance (Walton and Cohen 2007).

Ultimately, sense of belonging impacts how students feel about their undergraduate enrollment overall. For instance, a strong sense of belonging correlates with intentions to persist to the second year of undergraduate enrollment (Hausmann et al. 2007) as well as actual persistence (Braxton 2000; Tinto 1993). Strayhorn notes that these feelings of belonging are reciprocal in nature, meaning that “students’ academic and social involvement influences their sense of belonging on campus and vice versa...by interacting frequently (and in positive ways) with others on campus, students establish meaningful relationships...[that] enhance commitments, connections, and, consequently, retention” (Strayhorn 2012:9).

In Sum: Synthesizing Around the First-Year Experience

This review of the academic literature on college students’ sense of belonging indicates that students develop a sense of belonging as a function of engaging with various domains on campus such as the classroom, the residence hall, friend groups,
campus organizations, and with the university overall. Regardless of which domain takes primacy at a particular moment, the literature reviewed in this chapter suggests that students develop relationships within and across domains, even as key factors impact the development of sense of belonging and its outcomes.

Throughout this chapter, I have paid particular attention to studies that analyze the first-year undergraduate student experience. That is because the formation of sense of belonging is particularly important for first-year students, who by definition are in a period of transition. Since first-year students are in a period of transition and because sense of belonging refers to students’ perceptions as co-contributors to various campus domains, then the period in which one is introduced to a domain has longer term implications. In short, first impressions matter.

The emphasis on the first year of undergraduate enrollment is also justified due to the positive outcomes associated with sense of belonging, noted in the previous subsection. Students who possess a strong sense of belonging experience better mental and physical health (Walton and Cohen 2011), increased motivation (Baumeister and Leary 1995; Freeman et al. 2007; Goodenow and Grade 1993), and higher academic performance (Walton and Cohen 2011). These students are more likely to intend to persist (Hausmann et al. 2007) as well as actually persist (Braxton 2000; Tinto 1993) to the second year of undergraduate enrollment.

Ultimately, first-year undergraduate students experience multiple domains of sense of belonging simultaneously and in relationship to one another from the moment they set foot on campus. Correspondingly, research shows that sense of
belonging develops and changes over time depending on context, even as the need
to belong is consistent (Strayhorn 2012:23). Thus, by understanding more fully the
initial experiences and development of sense of belonging for first-year students,
the higher education community might gain insights into student success across all
years of undergraduate enrollment and during other times of student transition.

Considering this literature review, I revisit the definition of sense of
belonging employed throughout this study: Sense of belonging refers to college
students’ perceived value as co-contributors to various campus domains.
Additionally, the development of sense of belonging is impacted by background
class characteristics, campus experiences, and institutional factors. Furthermore, a high
sense of belonging results in positive outcomes as defined by students themselves.

This definition benefits from its connection with ecological systems theory,
which provides a structured yet flexible lens through which to view college
students’ sense of belonging because it both maintains a primary view on the
undergraduate experience while also taking seriously the role of institutions in
developing sense of belonging.

THE CURRENT STUDY

The current study utilizes the theoretical frames, concepts, and empirical
evidence in this chapter to shed light on *how* first-year college students might report
a sense of belonging across various domains of the collegiate experience. The
evidence highlighted throughout showcases the unique contributions to sense of
belonging formation through interactions in the classroom, the residence hall, among
friend groups, within campus organizations, and with the university. However, few (if any) studies exist that examine multiple domains of belonging simultaneously. Thus, this study fills an important gap in the literature by examining students’ reports of sense of belonging to and within multiple domains simultaneously. This examination allows for a fuller understanding of the relationships between domains of sense of belonging, students’ characteristics, and students’ perceptions of the many facets of the collegiate experience, as outlined in the research questions.

Furthermore, in addition to the student perspective on sense of belonging, I offer a perspective rarely found within the literature on sense of belonging among college students, which makes explicit the role of institutions in creating environments conducive to sense of belonging development. These two perspectives – the student perspective as well as the role of the university – guide my approach to data analysis.
Chapter Three: Methodology

INTRODUCTION

The broad issues under analysis are whether and how first-time, first-year college students report a sense of belonging to discrete domains of the university setting, and whether and how those differences are related to students’ self-reported attributes and experiences. I employed a mixed methods approach to an exploration of these issues, which provides important complexity to the current academic landscape in that each of the two methodologies helps with the interpretative burden of the other.

For instance, the quantitative portion of this project provides preliminary insights into the organization of different domains in which sense of belonging develops, and whether certain student characteristics might correlate with that organization. However, this portion of the methodology lacks texture regarding the process of how sense of belonging develops (e.g., where, with whom, why). The qualitative portion of this methodology adds this texture in the form of students’ stories, and the relatively small sample size of the interview pool becomes less of an analytical impediment when paired with the larger sample size that informs the quantitative data.

This chapter on methodology extends these introductory paragraphs by revisiting the research questions in light of the methodology, outlining procedures and rationale for data gathering and data analysis of both quantitative and
qualitative measures, respectively, and concluding with a breakdown of how the data were ultimately analyzed with a mixed methods mindset.

RESEARCH QUESTIONS

The two research questions can each be addressed using both quantitative and qualitative methodologies, respectively. Quantitatively, the research questions ask whether constructs of sense of belonging are comprised of distinct subtypes of first-time, first-year college students, and whether any of these distinct subtypes (if present) are meaningfully associated with demographic characteristics. In other words, are there classes of college students who experience sense of belonging differently than their peers? Following the example of Porcu and Giambona (2017), is there a latent class structure that adequately represents the heterogeneity in sense of belonging among college students? And relatedly, are some of the observed covariates predictive of individuals’ membership in each class?

Qualitatively, the research questions address how first-time, first-year college students report a sense of belonging to and within discrete domains of their university setting, and how differences and similarities in sense of belonging relate to students’ self-reported attributes and experiences. In other words, might certain domains of belonging (either individually or in combination) be more significant for certain populations of students such as underrepresented students in STEM fields, religious conservatives attending liberal institutions, Honors students from low SES backgrounds at private highly selective institutions, or student athletes?
When explored via both quantitative and qualitative methodologies, these research questions allow for a more complete conceptual exploration of how and why first-year students develop a sense of belonging as a function of perceptions regarding academic courses, residence halls, friend groups, campus organizations, and the broader university. In service of this exploration, the remaining sections of this chapter unpack the data gathering methods and analytical protocols of the quantitative and qualitative methodologies, respectively, and then review the recursive nature of how both methodologies occurred in real time.

**DATA GATHERING METHODS 1.0 – QUANTITATIVE**

*Setting and Sample*

The setting for this study is a highly selective, private university that offers a variety of undergraduate degrees across five different schools as well as numerous graduate and professional degrees. The university is located in the southern United States and enrolls approximately 7,200 undergraduate students, divided roughly equally across student classification (first-year, sophomore, junior, senior). All first- and second-year undergraduate students are required to live on campus.¹ For the remainder of this paper, this university will be referred to as SBU (Sense of Belonging University) in order to maintain the confidentiality of the research participants.

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¹ The information in this paragraph comes from the university’s Office of Undergraduate Admission website.
The sample pulls from the population of undergraduate students entering SBU as first-year students in the fall 2019 semester, referred to as the fall 2019 cohort. All 1,821 first-year undergraduate students were invited to participate, 1,099 (60.35%) of which are females and 722 (39.65%) are males. Respondents were asked to confirm that they were at least 18 years of age and enrolled full-time as first-year undergraduate students.

The sample was originally composed of 335 survey respondents, which equates to 18.40% of the fall 2019 cohort. In the process of reviewing and cleaning the raw data, I removed respondents from the final data set if they were not first-time, full-time, degree-seeking undergraduate students aged 18 or older (though respondents were asked to confirm this, the survey contained questions that also provided this information). Likewise, partial survey responses were reviewed on a case-by-case basis and removed from the data set when no answers were recorded for questions related to Bollen and Hoyle’s (1990) Perceived Cohesion Scale (noted in the next section on instrumentation and measures). As a result of this process, the sample size was reduced from 335 to 291, which equates to 15.98% of the fall 2019 cohort.

Table 3.1 compares the population to the analytic sample on several key demographic characteristics. Here, it is noteworthy that the cohort report comes from official university records whereas the survey data is self-reported by student respondents. Official university records only report two options for gender identity

\[2\] This information comes from the university’s official enrollment records, obtained through the undergraduate college.
– female and male – whereas survey respondents had a variety of options to self-select. Additionally, there are also some slight differences in response options for racial and ethnic background, noted in the table. Overall, the survey data contains a higher percentage of female-identifying respondents than the cohort data and, correspondingly, a lower percentage of male-identifying respondents. Regarding race and ethnicity, the cohort data and the survey data report similar percentages of white respondents (69.52% versus 69.76%, respectively) and black respondents (5.05% versus 4.81%, respectively).

Instrumentation and Measures

The first set of surveys in the Appendix section are updated copies of the surveys that inform Braxton and colleagues’ *Rethinking College Student Retention* in which the authors propose two distinct theoretical models of college student retention, one for residential institutions and one for commuter institutions (Braxton et al. 2014). The full surveys are part of a larger initiative within the university’s undergraduate college to gather data on students’ collegiate experiences. The full surveys are included as an appendix for reference, though the specific questions that inform this dissertation are bolded and italicized (e.g., *I feel like I belong to a friend group on campus*).

The second set of survey-related material in the Appendix section reflects the specific subset of questions that were updated. Below, I have summarized these notable updates, focusing on the edits that pertain to this study. The full breakdown
of edits, not all of which pertain to this research study, can be found in the Appendix section under the title “Updated Survey Questions.”

For the purposes of this study, two notable updates to the survey merit attention. First, I enhanced response options related to racial background and gender identity. The original data was gathered in the early 2000s. Since that time, scholarship related to self-identification has begun to reflect more appropriately the diversity of students' lived experiences.

Second, I added questions that relate to the domain specificity of sense of belonging. These questions were adapted from Bollen and Hoyle’s (1990) Perceived Cohesion Scale. Their original indicators of belonging are as follows:

- I feel like I belong to ________.
- I feel that I am a member of the ________ community.
- I see myself as part of the ________ community.

I added various dimensions to these original indicators, corresponding to the dimensions of sense of belonging that were discussed in Chapter Two. Theoretically and empirically derived domains of belonging include:

- Classroom (e.g., “at least one particular class”)
- Residence hall (e.g., “my residence hall”)
- Friend group (e.g., “a friend group on campus”)
- Campus organization (e.g., “a campus organization”)
- The university (e.g., “SBU”)

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3 The university is anonymized throughout this research study. The actual survey instrument lists the students’ university affiliation.
This was a strategic decision, as relevant literature on college students’ sense of belonging typically discusses one domain of belonging, thus failing to consider the fact that students participate in multiple domains simultaneously. By asking students five sets of identical questions related to five different domains of belonging, I constructed a dataset that reflects how students experience these varying domains simultaneously.

I selected Bollen and Hoyle’s (1990) Perceived Cohesion Scale after a thorough review of other possible scales of belonging. One alternative was the College Belongingness Questionnaire (Asher and Weeks 2013). I was initially drawn to the simplicity and straightforwardness of the College Belongingness Questionnaire and its authors are well known in their fields. However, the College Belongingness Questionnaire does not have a long history of empirical validation. The authors presented it as a conference poster in 2012 and later deployed it in a study on belonging and loneliness at Duke University (Asher and Weeks 2012). However, Bollen and Hoyle’s (1990) Perceived Cohesion Scale captures two dimensions of cohesion: sense of belonging and feelings of morale.4 Their original study pulls from two samples: one sample of college students and one sample of residents from a mid-sized city.

Since the 1990 study in which it was introduced, the Perceived Cohesion Scale and its two dimensions have been tested in a variety of contexts. One example

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4 Conceptually, sense of belonging and feelings of morale are two dimensions of a broader perception of cohesion, defined as “an individual’s sense of belonging to a particular group and his or her feelings of morale associated with membership in the group” (Bollen and Hoyle, 1990:482). Findings indicate that the two dimensions are highly correlated.
is Hurtado and Carter’s (1997) analysis that unpacks sense of belonging among Latino college students. Their work on college students’ sense of belonging is foundational in the field, and their work serves as a precedent for using aspects of the Perceived Cohesion Scale in a higher education context.

The Perceived Cohesion Scale is a six-item survey and responses are recorded on Likert scales ranging from 0 to 10 (“strongly disagree” to “neutral” to “strongly agree”). Three questions address sense of belonging; three questions address feelings of morale. I include the questions related to sense of belonging in this study. Like the College Belongingness Questionnaire, the Perceived Cohesion Scale is simple and straightforward and does not suffer from issues related to what Asher and Weeks note as “diverse and confounding item content that overlaps with the hypothesized causes of each type of experience” (2013:284); since belonging is such a perspectival phenomenon, survey questions that pertain to belonging must be phrased in a straightforward way so that item content does not contain possible causes of belonging. The questions related to the sense of belonging dimension of the Perceived Cohesion Scale are straightforward in a way that allows for students to apply their perceived notions of belonging to specific domains.

Self-reported survey measures include reports of perceived belonging to classroom, residence hall, friend group, student organization, and university as a whole (noted above); student racial background; gender identity; and components that inform the construction of a variable denoting socioeconomic status (SES).

Regarding the operationalization of racial background, self-selection options included the following:
• African American/Black
• American Indian/Alaska Native
• Asian American/Asian
• Caucasian/White
• Mexican American/Chicano
• Native Hawaiian/Pacific Islander
• Puerto Rican
• Other Latino
• Other _______
• Prefer not to say

These specific options were included in the survey because they match the core of the variables in official university enrollment reports, with the exceptions that the survey includes more options for racial backgrounds related to Hispanic and an option for "other" along with space for respondents to record an individualized entry. As noted in Table 3.1, 69.76% (N=203) of respondents reported that they identify as white. Because of this high percentage and relative low percentage of other racial and ethnic backgrounds, other racial and ethnic backgrounds were combined into a new variable called "REM" (Racial and Ethnic Minority). This recoding allowed for a comparison two groups, white and REM, each with a large enough sample size to allow for statistical analyses.

Regarding the operationalization of gender identity, self-selection options included the following:

• Man
• Woman
• Non-binary
• Transgender
• Prefer not to say

Within these options, respondents could select as many or as few of the self-select options as desired. Table 3.1 contains a breakdown of responses. Due to the
relatively small number of respondents (N=9) who selected options besides solely “Man” or “Woman”, this variable was recoded to include only “Man” and “Woman”, with all other responses recoded as “Other.”

Regarding the operationalization of socioeconomic status (SES), survey respondents provided information related to parental income, parental educational level, and perceived financial concern. Parental income options were coded as 1 if respondents reported parental income as between $0 and $124,999; 2 if respondents reported parental income as between $125,000 and $249,999; 3 if respondents reported parental income as greater than or equal to $250,000; and NA if respondents did not report anything. The cutoff points for this recoding generally reflect the bottom, middle, and top tertiles of reported data.

Parental educational level options were coded as 1 if respondents reported that a parent attended grammar school or less, attended some high school, was a high school graduate, or attended some college; 2 if respondents reported that a parent earned a college degree, attended a postsecondary school other than college, or attended some graduate school; 3 if respondents reported that a parent earned a graduate degree; and NA if respondents did not report anything.

Financial concern options were coded as 1 if respondents reported having “major” financial concern, noted as “not sure I will have enough funds to complete college”; 2 if respondents reported having “some” financial concern, noted as “but I probably will have enough funds”; 3 if respondents reported having no financial concern, noted as “I am confident that I will have sufficient funds”; and NA if respondents did not report anything.
These integers were averaged, and missing values were excluded from analysis. By coding missing values as “NA” and not “0”, I confirmed that final SES scores were not artificially lowered by missing data (i.e., inclusion of “0” as part of the average) but were instead a reflection of available data only. As such, this recoding procedure resulted in a final SES score that did not penalize students from one parent households. Final SES scores ranged from 1.00 – 3.00, with a mean of 2.32 and a median of 2.50. Lower scores correlate with lower calculated SES; higher scores correlate with higher calculated SES.

One key benefit of this survey is the potential for pairing with other datasets on campus using students’ unique identifiers, which was done to gather information on student affiliation with the Honors Program. Regarding the operationalization of Honors, this information exists in official university records simply as a Yes or No, denoted specifically in the student’s entry term. This information was coded such that 1 refers to non-Honors and 2 refers to Honors.

With these operationalizations in mind, the independent variables are as follows: (1) self-reported racial background, (2) self-reported gender identity, (3) self-reported socioeconomic status, and (4) university designation as Honors. These four independent variables are all focal variables. The dependent variable is (1) sense of belonging, framed as a construct of sense of belonging to (1a) classroom, (1b) residence hall, (1c) friend group, (1d) student organization, and (1e) university as a whole. These variables are summarized in Table 3.2.

Data Collection Procedures
I collected quantitative data in accordance with the university’s IRB guidelines and with the approval of the university’s IRB office. The quantitative data is composed of a one-time survey dissemination to the population of undergraduate students entering the university as first-year students in the fall 2019 semester, noted in the previous section. Survey dissemination occurred in fall 2019 as part of a broader Collegiate Experiences Survey within the undergraduate college. Data collection proceeded as noted in the following paragraphs.

In mid-October 2019, I obtained a report of all first-year undergraduate students enrolling at SBU. This report contained basic demographic information, including email addresses. The students on this list, noted as the fall 2019 cohort, comprise the sample. The sample was emailed the message noted in the Appendix “Survey Questions”, along with a link to the survey to complete online. Two weeks after the initial email was sent, a second email was sent to non-respondents requesting their voluntary participation. One week after the second email was sent, a third email was sent to non-respondents requesting their voluntary participation.

To ensure respondents’ privacy, I collected survey data via a password-protected and university-sponsored account in Qualtrics. The survey did not ask for students’ names or email addresses directly, though students were invited to supply their email addresses if they wanted to enter a raffle for prizes offered through the undergraduate college. The dataset was maintained in a password-protected file.

DATA ANALYSIS 1.0 – QUANTITATIVE DATA
I inputted the raw data set into the statistical computing environment R (R Core Team 2019) to perform subsequent quantitative analyses. First, I performed preliminary analysis to compare the sample of survey respondents to the full population of the fall 2019 cohort using analytic functions available in the downloadable “foreign package” within the R environment (R Core Team 2020). Specifically, a one-sample test of proportions was performed on each of the variables – racial and ethnic background, gender, and Honors status – comparing the sample to the population. Variables on SES and sense of belonging were not included in this preliminary analysis since data on these variables only exists in the survey data and not on official university enrollment reports. Results are included in the subsequent chapter.

The next step involved running basic descriptive statistics on all variables within the sample that would be included in subsequent analysis, again using the foreign package (R Core Team 2020). This includes, for instance, frequencies, measures of central tendency, measures of variability, as well as applicable graphics. The goal of this portion of the data analysis was to understand more fully whether any outliers or aberrant data points existed that might impact subsequent analyses. Chapter Four contains a review of these results.

The preceding preliminary quantitative analysis functions as a precursor to latent class regression modeling, which was used to discern whether and how an organizing principle exists for students’ reports of belonging as well as to determine the impact of covariates on the probabilities of sense of belonging class membership. Latent class analysis is a “statistical procedure for identifying class
membership probabilities among statistical units...using the responses provided to some chosen set of observed variables” (Porcu and Giambona 2017:130). Latent class analysis has been shown to be particularly useful when the variable or variables under study cannot be observed directly (Porcu and Giambona 2017), such as sense of belonging. Similar to how the foreign package within the R environment was utilized for preliminary analysis (R Core Team 2020), the poLCA package was downloaded into the R environment to allow for latent class regression modeling (Linzer and Lewis 2011).

In this study, “class membership” corresponds to organizing principles, known as classes, of how students respond to questions related to sense of belonging in various domains. In this way, latent class analysis allows for observed variables (e.g., student responses) to be organized according to any number of classes, and the classes may then be compared across various convergence diagnostics and in light of theoretical underpinnings to determine the class model of best fit. The end result informs the research questions by outlining whether and how students experience a sense of belonging in the classroom, campus organizations, a friend group, the residence hall, and the university overall according to various groupings. This is an inherently inductive approach, in line with the theoretically-driven exploratory nature of the research questions.

Furthermore, the inclusion of covariates into the latent class analysis allowed me to explore more fully the texture of latent class membership by examining the influence of four key demographics on class membership: racial background, gender identity, socioeconomic status, and Honors status. The addition of covariates was
conducted via the “one-step” approach that is native to poLCA (Linzer and Lewis 2013). In this approach, the covariate coefficients are estimated at the same time as the larger latent class model. This “one-step” approach is not perfect; critics cite (1) the computational intensity of running excessively large models as well as (2) the fact that various iterations of the model, for example when covariates are added or removed, in effect might produce different latent classes that lead to different interpretations of those classes (Bakk and Kuha 2018). Regarding the former, given the relatively straightforward nature of the data set for this study, there are no issues of computational intensity. Regarding the latter, I chose to run models in two ways, first without any covariates and second with all covariates. Doing so confirmed the same number of latent classes in each type of model computation.

Additionally, herein lies another strength of the mixed methods approach: These

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5 It is worth noting that other scholarship endorses various ways of running latent class regression models. Some scholars use a “three-step” approach in which (1) a standalone model is selected (without covariates), (2) latent class predicted values are attached to the units of analysis, and (3) a structural model is estimated using those latent class predicted values. Research shows that the “three-step” approach produces serious estimation errors in moving between steps 1-3 as the measurement model is separated out from the structural model (Bolck, Croon, and Hagenaars 2004). To combat this error, researchers apply a formula to the “three-step” approach that reduces the discrepancy between the manifest variables and the “true latent variables” versus the manifest variables and the “predicted latent variables” (Bolck et al. 2004:13). In effect, the “three-step” approach includes running a model, producing results with errors, and then back solving to ameliorate those errors. It is beyond the scope of this research study to engage in this sort of circular analysis.

Recent scholarship has advocated for a “two-step” approach (Bakk and Kuha 2018). This approach involves running a basic latent class model with no covariates (step one) and then holding constant the parameters of the measurement model and the latent variables from the first step while the structural model is estimated (step two). This approach effectively eliminates the need to adjust for bias as outlined in the “three-step” approach but is still “typically only slightly less efficient than the one-step estimates” (Bakk and Kuha 2018:873). The real benefit of the “two-step” approach is more theoretical in nature, namely that it defines the data prior to analyzing the data, which the authors note is an assumption that undergirds any basic research design but has somehow been overlooked in latent class analysis (Bakk and Kuha 2018:889). While the “two-step” approach is promising, the relatively newness of this approach and corresponding lack of empirical work in this arena result in diminishing returns should this method be applied in this study. For these reasons, as well as the proven utility of the “one-step” approach already noted, the “one-step” approach provides an adequate theoretical and empirical basis on which to analyze latent class regression models for the purposes of this study.
quantitative findings are analyzed in conjunction with qualitative data in a way that would allow for the possibility of more or fewer classes of belonging to emerge in the qualitative data analysis. Thus, the mixed methods exploratory nature of the research design means that the results of the latent class regression model are a key part but not the only key part of this study's findings, thereby alleviating sole interpretive burden from the quantitative findings.

*Phase One – Latent Class Analysis without Covariates*

Latent class analysis proceeded in R (R Core Team 2019), in which I used the poLCA package (Linzer and Lewis 2011). In accordance with best practices for latent class analysis, I began by recoding manifest variables as integer values starting at one when necessary (Linzer and Lewis 2011). Practically speaking, this involved recoding of responses to the five dimensions’ indicators of belonging.

Recoding proceeded as follows. Survey respondents indicated their perceptions of belonging to each dimension according to three indicators\(^6\), each of which was reported on a Likert scale ranging from 0-10. The Likert scale score for each dimension was then averaged across the three indicators to produce one single score related to that dimension of sense of belonging. Then, I determined the 25\(^{th}\) and 75\(^{th}\) percentile cutoffs for each set of scores related to each dimension of belonging. Scores at or below the 25\(^{th}\) percentile were recoded in each respective

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\(^6\) The indicators of belonging (Bollen and Hoyle 1990) are as follows:
- I feel like I belong to _______.
- I feel that I am a member of the _______ community.
- I see myself as part of the _______ community.
dimension as a 1, scores above the 25th percentile but below the 75th percentile were coded as a 2, and scores at or above the 75th percentile were coded as a 3. I chose these percentile breaks strategically to reflect the full range of the middle 50% of responses and the diversity of responses overall.\(^7\) A summary of this coding is outlined in Table 3.3.

In phase one, I ran five models, each of which proposed a corresponding number of organizational groupings (or latent classes) for a total of five classes. Two key components merit attention here. First, latent class analysis is fundamentally a “missing data” statistical procedure because the probability of class membership is, in effect, missing data. As such, how it deals with imputations – the practice of filling in missing items – is key. To address missing data, the poLCA package in R (Linzer and Lewis 2011) employs maximum likelihood estimates via the expectation-maximization (EM) algorithm (Dempster, Laird, and Rubin 1977; Schafer and Graham 2002). The “expectation” step involves calculating class membership probabilities, starting with arbitrary values. Then follows the “maximization” step which eventually produces convergence, the second of two key components that merit special attention, meaning that the statistical model under review has the highest probability of including the observed data. Here, the EM algorithm updates the model’s parameter estimates by maximizing the log-likelihood function given the posterior probabilities of class membership, which refers to the likelihood of a given response falling into a respective class. These two steps repeat iteratively until

\(^7\) For instance, when the scores were divided into tertiles (instead of quartiles), less variation existed among the three tertiles across domains.
diagnostic convergence results in the log-likelihood maxing out and ceasing to increase by any meaningful capacity in subsequent iterations (i.e., when the first derivative of the log-likelihood equals zero). The final result showcases two key findings: (1) the likelihood of reporting sense of belonging within a particular domain as a condition of being in a particular class\(^8\) and (2) the relative percentage of the total sample in each respective class\(^9\). Each of these two key findings has been refined over the course of numerous iterations.

The shape of a distribution might have multiple peaks, or maxima, and the goal of utilizing the EM algorithm is to find the highest peak in the data set. Because this iterative process initiates with arbitrary values, a common risk associated with utilizing the EM algorithm is finding a local maxima instead of a global maxima (Linzer and Lewis 2011). That is, the shape of the distribution might have multiple peaks, only one of which is found if the model is run too few times or if the arbitrary start values happen to be closer to a local maxima than the global maxima. I mitigated this issue in three ways. First, I estimated each model five times with five different starting values for the estimation algorithm. This substantially increases the probability of achieving the global rather than a local maxima. Second, I updated the maximum number of iterations of the estimation logarithm from 1,000 to 10,000. This increases the probability that convergence will occur before this number of iterations is performed. Third, I confirmed that the Akaike information criterion (AIC) and Bayesian information criterion (BIC) were identical across

\(^8\) This is referred to as the conditional item response probability.

\(^9\) This is referred to as the posterior probability of class membership.
multiple iterations of the model. The AIC and BIC are discrete numbers that are the product of mathematical formulas that gauge model quality, and subsequent calculations of the AIC and BIC that produce identical results imply that the model has found a global maxima. In short, this process confirms whether each model is both an accurate and precise reflection of how the dataset is organized into groupings of sense of belonging.

Upon completion of model estimation for each of the five models, I then reviewed each model to select the one of best fit. I began with the first model and compared the AIC and BIC for each model. When the AIC and BIC are compared across several models, it is considered best practice to select the model with the lowest reported AIC and BIC (Linzer and Lewis 2011). Ultimately, a three-class model was determined to be the model of best fit, meaning that the dataset most closely fits a model with three organizational (or latent) groupings. This decision and its interpretation are unpacked in the subsequent chapter on relevant findings.

Phase Two – Latent Class Analysis with Covariates

After the three-class model was shown to be the latent class model of best fit without covariates, phase two involved the building of a latent class regression model to determine whether certain respondent characteristics were correlated with identification to discrete classes of sense of belonging. Once again, I ran five models, each of which contained the corresponding number of classes, to confirm whether the best fit model with covariates also contained three classes. The decision to run five models with covariates after running five models without covariates
served as a gauge on the robustness of my results; if both model estimations point to three classes of sense of belonging then the results are more likely to be robust. Doing so also constitutes a hybrid version of the “one-step” approach that seeks to provide some consistency in the articulation of classes of sense of belonging, which is especially important in light of criticisms of the “one-step” approach which say that various iterations of the model might produce different latent classes that lead to different interpretations of those classes (Bakk and Kuha 2018).

The covariates include racial background, gender identity, SES, and Honors. The addition of covariates allowed for an analysis of how certain demographic characteristics impact likelihood of identification with specific classes of sense of belonging. The results of the inclusion of covariates into the three-class model are addressed in Chapter Four.

Analysis proceeded identically to phase one, with the exception being that the R code was updated to include the covariates mentioned above. Latent class regression modeling proceeded in R (R Core Team 2019), in which I used the poLCA package (Linzer and Lewis 2011). In phase two, I ran five models with all covariates, each of which contained the corresponding number of classes for a total of five classes. Again, I addressed missing data by employing the maximum likelihood estimates via the EM algorithm (Dempster et al. 1977; Schafer and Graham 2002). Similar to phase one, in order to increase the likelihood of finding the global maxima instead of a local maxima, I (1) estimated each model five times with five different starting values for the estimation algorithm, (2) updated the maximum number of iterations of the estimation logarithm from 1,000 to 10,000, and (3) confirmed that
the Akaike information criterion (AIC) and Bayesian information criterion (BIC) were identical across multiple iterations of the model.

Upon completion of model estimation for each of the five models with covariates, I then reviewed each model to select the one of best fit. I began with the first model and compared the AIC and BIC for each model. In identical fashion to phase one, when the AIC and BIC are compared across several models, it is considered best practice to select the model with the lowest reported AIC and BIC (Linzer and Lewis 2011). Ultimately, a three-class model was determined to be the model of best fit, thus affirming the robustness of the results. This decision and subsequent findings, including model output, are unpacked in the subsequent chapter on relevant findings.

DATA GATHERING METHODS 2.0 – QUALITATIVE

Whereas quantitative data collection occurred via survey dissemination during the fall 2019 semester, qualitative data collection took the form of semi-structured interviews that were conducted via Zoom after the university moved to remote learning due to the COVID-19 pandemic in the spring 2020 semester. As such, qualitative data gathering occurred after and in partial response to the quantitative portion. For instance, as analyzed in Chapter Four, quantitative data analysis uncovered the importance of sense of belonging to a friend group among the sample. In response to that finding, the qualitative portion of the methodology allowed for a fuller exploration of why and how the friend group might be important to students’ sense of belonging.
Sample and Setting

The sample for this qualitative phase was pulled from the same fall 2019 cohort that received surveys, with two exceptions. I conducted 32 semi-structured interviews that ranged from approximately 45 to 75 minutes each, 30 of which were with members of the fall 2019 cohort and two of which were with sophomores. Of the two sophomores, one had transferred away from SBU after her first year of enrollment and one had stayed at SBU after his first year of enrollment. The goal of including these two sophomore students was to gain further conceptual clarity on the relationship between college students’ sense of belonging and persistence from first year to second year of enrollment.

Recruitment and Data Collection

I collected qualitative data in accordance with the university’s IRB guidelines and with the approval of the university’s IRB office. Recruitment began by obtaining and compiling pre-existing enrollment reports from SBU’s Office of Retention & Student Success for academic years 2018-2019 and 2019-2020. Then, data for the 2018-2019 academic year was sorted by students who maintained enrollment at the university to the second year of study and those who did not, with the intent of interviewing an equal number of second-year undergraduates in each category. This was an empirically driven decision, as sense of belonging has been shown to impact persistence to the second year of enrollment (Hoffman et al. 2002; Maestas et al. 2007; Strayhorn 2012). Data for the 2019-2020 academic year was not sorted in
this way, as students were still in their first year of enrollment. Five students were randomly selected several times a week from each list and emailed an individualized version of the outreach email noted in the Appendix as “Qualitative Phase Outreach Email.” This email was sent to their university email address as well as personal email address. Non-responsive students were contacted via phone one week after initial outreach. The script used for this phone call is included in the Appendix as “Qualitative Phase Phone Script.” Two days after the phone call, non-responsive students were contacted (for the last time) via email by resending the initial outreach email.

When students responded affirmatively to one of the forms of outreach, Zoom meetings were set up at a time conducive to the respondent’s schedule. Prior to the interview, students were sent a copy of the pre-interview survey, attached to the Appendix as “Qualitative Phase Pre-Interview Survey”, and asked to fill out the survey prior to the start of the interview. Interviews were conducted in a semi-structured format, using the “Qualitative Phase Interview Guide” as a template. The guide is attached in the Appendix and discussed more fully in the following subsection. All interviews were conducted via Zoom, and all interviews were recorded with students’ consent.

For students who entered the university in the 2018-2019 academic year, outreach was performed until I conducted one interview each with a non-returning and a returning student. For students who entered the university in the 2019-2020 academic year, outreach was performed until approximately one month prior to the start of the 2020-2021 academic year, as students were effectively no longer first-
year students as they actively were preparing for fall 2020. Cumulatively, 210
students were contacted between April 9, 2020 and July 10, 2020 according to the
protocol noted in this subsection. Of those 210 students, ten were sophomores and
200 were first-year students. Eight interviewees were male, 24 were female. One
interviewee identified as Indian, one as Black, five as Hispanic, two as multi-racial,
two as Asian (and international students), and 21 as White. Additionally, three
interviewees were student athletes and 15 entered the university as Honors
students. Two interviewees were not enrolled in the fall 2020 semester as of
October 1, 2020: one student who entered the university in fall 2018 and one
student who entered the university in fall 2019. Table 3.4 contains a breakdown of
these interviewee demographics, which are discussed more fully in Chapter Four.

Interview Protocol

The interview protocol was semi-structured in that it contained a
preliminary set of questions and topics that served as a conversational guide but
was not necessarily delivered formally nor in a particular order. This was a strategic
decision given the exploratory nature of this research study: the interview protocol
needed some structure since it was intended to gather complimentary data to that
gathered via quantitative methodology, yet the interview protocol also needed to
maintain flexibility to allow for students to discuss freely their experiences of sense
of belonging. Initial interview questions were developed during the research
proposal process and, given their broad nature and applicability to the research
questions, did not need to be updated based on preliminary quantitative analysis.
Even as each domain of sense of belonging was addressed in almost every interview, follow up questions were used strategically to gather more specific data related to preliminary quantitative analysis and/or areas of the interviewee’s emphasis. Examples of follow up questions are included at the end of the “Qualitative Phase Interview Guide” in the Appendix.

The university moved to online instruction exclusively prior to the start of qualitative data collection. In response to this move, the interview protocol was updated to include the following question: “I’d like to revisit your original definition of ‘belonging.’ You mentioned [X,Y,Z]. How does that definition apply or not to your current situation now that SBU has moved to online teaching?” This question invited students to reflect on the impact of COVID-19 on the ways that they experienced belonging during the academic year. This question was asked in the latter portions of the interview, after students had articulated what sense of belonging means to them.

**Ethical Considerations**

Two main ethical considerations merit attention. First, students’ privacy is of utmost importance. Identifying characteristics within the survey data (namely, university-issued student identification numbers and email addresses) were kept in a password protected folder. Additionally, once all data was gathered, identifying information was removed from the dataset. Regarding the qualitative data, students’ names were changed to pseudonyms, and those pseudonyms were used throughout the transcription and analysis portions of the study. The only locations that housed
students’ identifying information were the email outreaches and the original recording, both of which have been kept behind password protected accounts. Thus, the risk to students is minimal.

Second, as the researcher, I strove to be keenly aware of my positionality in reference to interviewees and possible interviewees. I kept in the forefront of my mind a point well-articulated by Adler and Adler (2001) that all respondents are reluctant in some capacity and for a variety of reasons. As a result of this insight, I started each interview by reminding respondents not only of the voluntary nature of the interview as a whole but also of the voluntary nature of individual topics within the interview. I routinely employed introductory phrases such as, “If you are comfortable sharing, then I would be curious to hear more about X.”

Even with this deferential perspective in mind, the power dynamics of the researcher/participant relationship often favor the researcher, especially so since I present via Zoom as a white male. Yet I attempted to approach interviews as what Cotterill (1992:593) notes are “fluid encounters” in which power dynamics might shift periodically. This occurred in two distinct ways. First, I sought to normalize whatever feelings of sense of belonging might exist for respondents by acknowledging that students experience college differently in relation to a variety of factors and noting at times that my research interests stem from personal experiences with sense of belonging during my first year of undergraduate study. The goal of this normalization was to reduce social desirability bias on the part of respondents (e.g., reporting an answer that they think is more socially acceptable than how they might feel). Even so, it is difficult to know the extent to which
respondents might feel pressure to respond in particular ways. As such, second, I adopted an inquisitive stance by seeking to understand students’ unique experiences and not assuming that I knew exactly what respondents were feeling or experiencing either during their first year of enrollment or during the interview itself. In seeking to understand students’ unique experiences, I often asked for multiple examples in an attempt to (1) gather richer details and (2) continually encourage respondents to describe exactly how they feel.

DATA ANALYSIS 2.0 – QUALITATIVE

After an interview was conducted, an interview memo was written within 24 hours of interview completion to reflect on emerging themes and overall interview experience. Specifically, each memo contains four parts. First, I began each memo with a summary of the date and time of the interview along with general comments and reactions to my perceptions of the conversation. Second, I recorded my initial reactions to the interview data’s relationship with preliminary quantitative analysis. Third, I recorded my initial reactions to any emergent themes present in the specific interview that are also present in prior interviews. Fourth, I recorded any new concepts from the interview that might merit further exploration in subsequent interviews.

Then, interviews were transcribed. After transcription, interview data was open coded to identify key passages and concepts vis-à-vis thematic analysis, in which data analysis is guided by research questions and themes are systematically
cultivated from data (Braun and Clarke 2006; Guest, MacQueen, and Namey 2012).

Specifically, I began the open coding process with 13 anticipated themes:

1. Why enroll at SBU specifically?
2. Sense of belonging definition
3. First exemplar of sense of belonging
4. Sense of belonging – Academic
5. Sense of belonging – Academic – COVID
6. Sense of belonging – Campus Org
7. Sense of belonging – Campus Org – COVID
8. Sense of belonging – Friend Group
10. Sense of belonging – Residence Hall
12. Sense of belonging – SBU

Throughout this process, axial coding was developed to designate more descriptive and focused categories according to what Maxwell (2013:107) notes as “organizational”, “substantive”, and “theoretical.” Organizational categories refer to the topics being addressed, such as particular domains of belonging like classroom setting or residence hall. Substantive categories are more descriptive in nature, such as “classroom as uninviting” or “residence hall as inclusive.” These first two categories are based on interviewees’ perceptions of their experiences, whereas the third category, theoretical, is broader in nature and reflects the researcher’s interpretation of what is happening. An example of a theoretical category might be “engagement” or “estrangement” (Gieryn 2000).

Whereas each transcript was open coded to identify key passages and concepts, beginning with the 13 anticipated themes, the process of axial coding focused on the themes that emerged from the preliminary quantitative analysis (see 10 I.e., How was the respondents’ sense of belonging in that domain impacted by the COVID-19 pandemic?)
Chapter Four). This thematic analysis of the qualitative data began with a focus on (1) students’ definitions of sense of belonging and the formation of sense of belonging in (2) campus organization and (3) friend groups, particularly as they related to racial and ethnic background, SES, and Honors status.

After a group of four interviews were analyzed via open coding and axial coding as noted above, another memo was written to reflect on the development of themes, emergent concepts, and categories. As a result of this process, codes were added, edited, condensed, and clarified on a continual basis. Overall, I developed 57 distinct codes in the qualitative data. Relevant findings from the qualitative data analysis are noted in the subsequent chapter.

MIXED METHODS DATA ANALYSIS

Even though the quantitative data collection and preliminary analyses preceded the qualitative data collection and preliminary analyses, both sets of data were ultimately analyzed in what Pearce cites as “abduction [sic], the complementary and constant dialectic between inductive and deductive theoretical development rather than a reliance on one or the other” (Pearce 2012:832–33). Pearce breaks down what she perceives as a false dichotomy between quantitative and qualitative methodology, instead choosing to focus on a “pragmatic approach” that allows the researcher to employ various methods in service of addressing all facets of a research question (Pearce 2012). The goal here is not necessarily to advocate for mixed methodology, per se, but to shift the focus from using a particular methodology to asking how a research question might best be analyzed.
The research questions posed here call for a mixed methods research design, in part because they both deploy inductive approaches that complement and inform each other. First, while the literature review section of this study recognizes that students experience a sense of belonging or not within different domains of the higher education system, it also highlights the fact that previous discrete research studies rarely examine the phenomenon in a way that addresses more than one or two domains at a time. Addressing this gap in the literature, I am able to explore and examine what organizing principle(s) might exist for sense of belonging as well as whether certain student characteristics might predict the extent to which sense of belonging is developed. Empirical and theoretical literature guides this inductive approach.

Second, the literature review section of this study also highlights how sense of belonging is a perspectival phenomenon, meaning that it develops at the intersection of students’ various identities as they relate to the environment and therefore cannot necessarily be assumed to develop in a predictable manner at the individual level. Thus, I am able to ask how students describe their experiences of belonging and the important factors that facilitate the development or impediment of sense of belonging in a way that might both challenge and affirm quantitative analyses.

Practically speaking, the truest way to describe mixed methods data analysis in this project is that it progressed in tandem. I collected the quantitative data in fall 2019 and began the process of quantitative data analysis in spring 2020 while I was also beginning qualitative data collection. The majority of quantitative data was
analyzed by the end of summer 2020, after all qualitative data had been collected and preliminarily analyzed. Since preliminary qualitative data analysis occurred simultaneously alongside quantitative data analysis, I was consistently able to leverage each set of findings to confirm, challenge, and enrich the other.

This type of analysis echoes Creswell and Plano Clark’s assertion that preliminary analysis of quantitative data gathered via surveys has the potential to inform follow up qualitative semi-structured interviews (2017). This work is presented throughout Chapter Four and discussed in Chapter Five.
Chapter Four: Findings

QUANTITATIVE RESULTS

Preliminary Analysis

Preliminary analysis included three one-sample Z tests of proportions, basic descriptive statistics and graphics for all variables included in the study, and two rounds of latent class analysis, one without covariates and one with the covariates gender identity, racial and ethnic background, socioeconomic status, and Honors status. I address each of these steps in turn below.

One-sample Z tests of proportions.

First, I performed a one-sample Z test of proportions on each of the variables – racial and ethnic background, gender, and Honors status – in order to compare the sample to the population. Table 4.1 summarizes these findings. Out of a total of 291 survey respondents, 88 were designated as having a racial and ethnic minority background, 231 identified as women, and 114 reported that they were Honors students. Corresponding proportions relative to all survey respondents are 0.30, 0.80, and 0.40, respectively.

The null hypothesis for one-sample Z tests of proportions is that the proportion of the sample is not statistically different than the proportion of the population whereas the research hypothesis is that the two values are meaningfully different. The one-sample Z test of proportions for racial and ethnic background (REM) produces a p-value of 0.93, which is not statistically significant at any
standard threshold, meaning that I fail to reject the null hypothesis. Thus, the sample is not statistically significantly different from the population; there is a similar proportion of students from racial and ethnic minority backgrounds in the sample as is in the entire first-year cohort.

The one-sample Z test of proportions for gender identity (woman) produces a p-value of less than 0.001, which is statistically significant at any standard threshold, meaning that I reject the null hypothesis. Thus, the sample is statistically significant different from the population; there is a dissimilar proportion of students who identify as women in the sample as compared to the entire first-year cohort. When considering that 80% of the sample self-identifies as women, a more substantial claim is that students who identify as women are overrepresented in the sample, relative to the population.

The one-sample Z test of proportions for Honors status (yes) produces a p-value of less than 0.001, which is statistically significant at any standard threshold, meaning that I reject the null hypothesis. Thus, the sample is statistically significant different from the population; there is a dissimilar proportion of students who are in the Honors Program in the sample as compared to the entire first-year cohort. When considering that 40% of the sample self-identifies as Honors, a more substantial claim is that students who identify as Honors are overrepresented in the sample, relative to the population.

*Descriptive statistics and graphics.*
Second, I ran basic descriptive statistics on all variables within the sample that would be included in subsequent analyses. Table 4.2 summarizes these findings. The goal of running these basic descriptive statistics was to understand more fully whether any outliers or aberrant data points existed that might impact subsequent analyses. In service of that goal, I offer the following highlights.

Self-reports of sense of belonging cover the full range of response options on the Likert scale, ranging from zero to 10. Additionally, the mean of each domain of sense of belonging is slightly lower than the corresponding median, revealing that the distribution of the data is skewed to the left. Practically speaking, this means that the 50% of the sample that reports values below the median typically reports a wider range of lower values than the 50% of the sample that reports values above the median. Thus, students who report low sense of belonging are more likely to experience the phenomenon across a wider range of scores, whereas students who report a higher sense of belonging are more likely to report very high levels of sense of belonging. Since the median for each domain of sense of belonging is seven or higher on the 10-point Likert scale, the top 50% of scores tend to cluster on the higher end of the Likert scale.

Figure 4.1 illustrates this finding visually. A review of this data representation illustrates that a score of 10 is the modal category for each domain of sense of belonging. Additionally, the highest frequency of zero scores, indicating no sense of belonging, fall in the Campus Organization and Friend Categories, respectively.
Regarding the independent variables, which are included as covariates in latent class analysis, Table 4.2 highlights white as the modal racial and ethnic background at 88 (n=291), woman as the modal gender identity at 231 (n=291), high as the modal socioeconomic status at 147 (n=291), and non-honors as the modal Honors status at 176 (n=290). Of importance here is that the modal socioeconomic status is high, meaning that a substantial portion of respondents (50.52%) fall in a relatively high socioeconomic status relative to their peers. This finding is further amplified by the mean (2.43) and median (3.00) of the SES data, which shows that the data distribution is skewed left. This means that the sample is predominantly composed of students who report being of higher socioeconomic status.

*Latent class analysis round one: Without covariates.*

Third, I performed latent class analysis in two rounds, one without covariates and one with covariates of racial and ethnic background, gender identity, socioeconomic status, and Honors status. In the round of latent class analysis without covariates, I selected a 3-class model based on a review of the Bayesian information criterion (BIC) and Akaike information criterion (AIC), as discussed in the previous chapter. Table 4.3 provides a summary of model results that aided in the 3-class model selection. The table illustrates that the BIC reaches a minimum in the 3-class model before increasing again in the 4-class model. The AIC reaches its minimum in the 4-class model, though the difference in AIC between the 3- and 4-class models is insignificant. Since the BIC and AIC should be evaluated together
(Linzer and Lewis 2011) and the difference in AIC between the 3- and 4-class models is negligible, the 3-class model makes empirical sense given these findings.

Table 4.4 highlights the conditional item response probabilities by outcome variable for each class. Using the first domain – sense of belonging Academic Class – as an example, the table shows that respondents who fit in Class 1 have a 0.61 probability of reporting low sense of belonging to an academic class, 0.26 probability of reporting medium sense of belonging to an academic class, and 0.14 probability of reporting high sense of belonging to an academic class.

Regarding Class 1, membership corresponds with a high probability of low sense of belonging. Respondents in Class 1 are more likely to report low levels of belonging across each domain relative to medium or high levels of belonging. This is most pronounced in the friend group, as membership in Class 1 corresponds to a 90% chance that the respondent will report a low sense of belonging to a friend group. The second greatest probability of reporting low sense of belonging in Class 1 is to the university overall (89%), followed by residence hall (75%), campus organization (57%), and academic class (61%). Interestingly, in addition to respondents in Class 1 having the highest probability of reporting low levels of sense of belonging, they also experience decreasing class membership probabilities across medium and then high levels of sense of belonging, respectively. This trend is so strong, in fact, that no one in Class 1 is likely to report high levels of sense of belonging to a friend group or the university overall, noted by probabilities of 0.00 in each of these domains.
Regarding Class 2, membership corresponds with a high probability of students reporting a medium level of sense of belonging in each domain, coupled with relatively equal probabilities of low and high sense of belonging. For instance, a member of Class 2 has a 66% chance of reporting a medium level of sense of belonging to a friend group as well as a 16% chance of low sense of belonging and 18% chance of high sense of belonging to a friend group. This notion of higher probability of medium sense of belonging and less but relatively equal probabilities of low and high sense of belonging is generally the norm, but sense of belonging to Campus Organizations provides an exception to this rule. Here, membership in Class 2 brings with it a probability of 0.42 that the respondent will report medium sense of belonging to a campus organization and a probability of 0.39 that the respondent will report low sense of belonging to a campus organization.

Regarding Class 3, membership corresponds with a high probability of students reporting a high level of sense of belonging in each domain. The results here are more probabilistically consistent than in Class 1 and Class 2. For instance, the lowest probability of high sense of belonging in Class 3 is 0.60 (sense of belonging to Campus Organization) and the highest probability of high sense of belonging in Class 3 is 0.71 (sense of belonging to university overall). Thus, membership in Class 3 corresponds with a relatively high probability of experiencing increased levels of sense of belonging in each domain. Similar to the pattern of experiencing decreasing probabilistic membership across increased levels of sense of belonging in Class 1, the same is true for Class 3 but in reverse: In addition to respondents in Class 3 having the highest probability of reporting high
levels of sense of belonging, they also experience decreasing class membership probabilities across medium and then low levels of sense of belonging, respectively. Once again, however, sense of belonging to a Campus Organization proves to be an exception to this rule. Students in Class 3 have a 60% chance of reporting high levels of sense of belonging to a campus organization and roughly similar chances (22% and 19%) of reporting medium and low levels of sense of belonging to a campus organization, respectively.

Based on the patterns of class membership probabilities across each of these domains of sense of belonging, I labeled each of the three classes as follows:

- Class 1 – Low Belonging
- Class 2 – Medium Belonging
- Class 3 – High Belonging

I made this decision because, at a broad level, the highest probability of sense of belonging level in each of the respective classes corresponds to its name. Regardless of sense of belonging domain, membership in Class 1 (Low Belonging) corresponds to a higher probability of reporting low levels of sense of belonging as compared to medium or high levels of sense of belonging; this is similarly true of membership in Class 2 (Medium Belonging) and Class 3 (High Belonging). Though I made this decision based on general characteristics of the three classes, the previous discussion highlights important details of class membership probabilities such as (1) the consistent increasing or decreasing probabilities of sense of belonging level within Low Belonging and High Belonging, (2) the extremely low probability of reporting high sense of belonging in any domain given membership in Low
Belonging, and (3) the relative equal probabilities of sense of belonging level related to campus organization.

Based on these findings, the qualitative interview data has the potential to add important texture to a variety of results. For example, in addition to the three suggestions in the preceding paragraph, students’ reports of friend group sense of belonging also merit further analysis. The probabilities associated with low, medium, and high sense of belonging in each of three respective classes are higher in the friend group than for any other domain, with the exception of the probability associated with high sense of belonging to the university in High Belonging (though even that is a negligible difference). Additionally, Table 4.5 highlights the predicted class membership probabilities for the 3-class model. This table shows that Low Belonging contains a predicted proportion of 0.17 of the population, Medium Belonging has a predicted proportion of 0.56, and High Belonging has a predicted proportion of 0.27. That means that 17% of the sample reported low levels of sense of belonging and upwards of 55% of the sample reported medium levels of belonging. In short, there is much room for improvement regarding the enhancement of students’ sense of belonging.

*Latent class analysis round two: With covariates.*

As discussed in Chapter Three: Methodology, the purpose of performing two rounds of latent class analysis – one without covariates and one with covariates – serves two purposes. First, it allows for confirmation of whether each iteration of LCA produces a consistent model of best fit. Second, it allows for the inclusion of
covariates to determine whether certain student characteristics impact class affiliation.

Table 4.6 provides a summary of model results used for model selection with covariates. The BIC reaches its minimum value in the 3-class model whereas the AIC reaches its minimum value in the 4-class model. However, the BIC and AIC are numerically closer together in the 3-class model as compared to the 4-class model. In consideration of this as well as the fact that the BIC is often a more suitable criteria for basic latent class models (Linzer and Lewis 2011) such as this one, the 3-class model again makes sense, given the data. Thus, findings suggest that LCA without covariates as well as LCA with covariates both produce a 3-class model, which affirms the robustness of the results.

Table 4.7 highlights the conditional item response probabilities by outcome variable for each class in the LCA with covariates. Regarding Class 1, similar to LCA without covariates, membership corresponds with a high probability of low sense of belonging. Respondents in Class 1 are more likely to report low levels of belonging across each domain relative to medium or high levels of belonging. Whereas this trend was most pronounced in sense of belonging to the friend group for LCA without covariates, here the trend is most pronounced in sense of belonging to the university overall, as membership in Class 1 corresponds to a 90% chance that the respondent will report a low sense of belonging to the university overall. The second greatest probability of reporting low sense of belonging in Class 1 is to the friend group (85%), followed by residence hall (76%), academic class (58%), and campus organization (56%). Similarly to LCA without covariates, in addition to
respondents in Class 1 having the highest probability of reporting low levels of sense of belonging, they also experience decreasing class membership probabilities across medium and then high levels of sense of belonging, respectively. This trend is so strong, in fact, that no one in Class 1 is likely to report high levels of sense of belonging to a friend group or the university overall, noted by probabilities of 0.00 in each of these domains.

Regarding Class 2, LCA with covariates produces results that are consistent with the results from LCA without covariates. Again, Class 2 membership corresponds with a high probability of students reporting a medium level of sense of belonging in each domain, coupled with relatively equal probabilities of low and high sense of belonging. For instance, a member of Class 2 has a 65% chance of reporting a medium level of sense of belonging to a friend group as well as a 17% chance of low sense of belonging to a friend group and 18% chance of high sense of belonging to a friend group. This notion of higher probability of medium sense of belonging and less but relatively equal probabilities of low and high sense of belonging is generally the norm, but sense of belonging to Campus Organizations provides an exception to this rule. Here, membership in Class 2 brings with it a probability of 0.43 that the respondent will report medium sense of belonging to a campus organization and a probability of 0.39 that the respondent will report low sense of belonging to a campus organization.

Regarding Class 3, LCA with covariates once again produces consistent results as LCA without covariates. Class 3 membership corresponds with a high probability of students reporting a high level of sense of belonging in each domain.
The results here are more probabilistically consistent than in Class 1 and Class 2. For instance, the lowest probability of high sense of belonging in Class 3 is still 0.60 (sense of belonging to Campus Organization) and the highest probability of high sense of belonging in Class 3 is now 0.69 (sense of belonging to friend group and sense of belonging to residence hall). This illustrates that membership in Class 3 corresponds with a relatively high probability of experiencing increased levels of sense of belonging in each domain. Similar to the pattern of experiencing decreasing probabilistic membership across increased levels of sense of belonging in Class 1, the same is true for Class 3 but in reverse: In addition to respondents in Class 3 having the highest probability of reporting high levels of sense of belonging, they also experience decreasing class membership probabilities across medium and then low levels of sense of belonging, respectively. Once again, however, sense of belonging to a Campus Organization proves to be an exception to this rule. Students in Class 3 have a 60% chance of reporting high levels of sense of belonging to a campus organization and roughly similar chances (19% and 21%) of reporting medium and low levels of sense of belonging to a campus organization, respectively.

Based on the patterns of class membership probabilities across each of these sense of belonging domains in LCA with covariates, the previously ascribed labels are still relevant:

- Class 1 – Low Belonging
- Class 2 – Medium Belonging
- Class 3 – High Belonging
This affirmation of the 3-class model in LCA with covariates reinforces the robustness of results thus far and also affirms the utility of follow up qualitative analysis, as previously discussed. Subsequent references to distinct classes will refer to them as Low Belonging, Medium Belonging, and High Belonging, respectively.

Additionally, Table 4.8 highlights the predicted class membership probabilities for the 3-class model with covariates. This table shows that Low Belonging contains a predicted proportion of 0.19 of the population (compared to 0.17 of the population in LCA without covariates), Medium Belonging has a predicted proportion of 0.52 (compared to 0.56 in LCA without covariates), and High Belonging has a predicted proportion of 0.29 (compared to 0.27 in LCA without covariates). That means that 19% of the sample reported low levels of sense of belonging and over 50% of the sample reported medium levels of belonging. In short, these findings affirm that there is much room for improvement regarding the enhancement of students’ sense of belonging.

Table 4.9 outlines the impact of covariates on the 3-class model. In narrative form, Table 4.9 states that, relative to those in Low Belonging, those in Medium Belonging have a 2.70 change in the log-likelihood of class membership. As noted in the table, racial and ethnic background (p<0.01) and Honors (p<0.05) are the only two statistically significant covariates when analyzing Medium Belonging membership relative to Low Belonging membership. Figure 4.2 displays this information graphically. Regarding the predicted probabilities for class membership across race, students from racial and ethnic minority (REM) backgrounds have a 0.6
probability of being in the Low Belonging class, versus their white peers who have approximately a 0.35 probability of being in the Low Belonging class. In fact, race does not appear to be a significant factor for white students in determining the predicted probability for membership in Low Belonging and Medium Belonging. This finding about the racial implications of class membership probabilities for Low Belonging versus Medium Belonging is especially relevant since the racial makeup of the sample of survey respondents was found to be representative of the population of all first-year undergraduates at the university.

Regarding the predicted probabilities for class membership across Honors status, Figure 4.2 shows that non-Honors students have almost a 0.60 probability of being in the Low Belonging class, versus their Honors peers who have closer to a 0.40 probability of being in the Low Belonging class. Honors status is a significant factor in class membership probability across Low Belonging and Medium Belonging.

Furthermore, Table 4.9 also states that, relative to those in Low Belonging, those in High Belonging have a negative 1.02 change in the log-likelihood of class membership. As noted in the table, socioeconomic status (p<0.05) is the only statistically significant covariate when analyzing High Belonging membership relative to Low Belonging membership. Figure 4.2 displays this information graphically. Regarding the predicted probabilities for class membership across SES, respondents from high SES backgrounds were least likely to be members of Low Belonging (approximately 0.15 probability), whereas students from low SES
backgrounds were the most likely to be members of Low Belonging (approximately 0.30 probability).

In sum, LCA with covariates reveals that students from racial and ethnic minority backgrounds are more likely to be members of the Low Belonging class. The same is true of non-Honors students as well. These two findings hold true when comparing membership probability of High Belonging to Low Belonging, though those results are not statistically significant at any standard threshold. Additionally, students who report high SES levels are least likely to be members of Low Belonging relative to their peers from low SES and medium SES backgrounds.

Research Questions

In light of this preliminary quantitative analysis, I now revisit the research questions and hypotheses with the goal of summarizing key findings as stated throughout the preceding sections.

First, what are some important factors (e.g., activities, experiences, people) that facilitate the development or impediment of sense of belonging? According to the sample, college students’ sense of belonging is best described as a 3-class model representing Low Belonging, Medium Belonging, and High Belonging. While this structure holds generally true across all five domains of sense of belonging, an application of latent class analysis reveals that the domains of Friend Group and Campus Organization are important factors in terms of their corresponding class membership probabilities. Students’ reports of sense of belonging within the Friend Group domain (e.g., low, medium, high) are reflective of broader class membership
(e.g., Low, Medium, High) to a greater extent than students’ reports of sense of belonging in other domains. In this way, the Friend Group might be characterized as a gateway of sorts, a lens through which sense of belonging to other domains is filtered.

The Campus Organization domain is a site of probabilistically lower sense of belonging, in that the probability membership of a respondent falling in each respective class is lowest in the Campus Organization domain relative to the other four domains. For instance, regarding the class Medium Belonging, the probability of reporting a medium level of belonging to the Campus Organization domain is 0.42, which is significantly lower than the probability of reporting a medium level of belonging to the Academic Class domain (0.50), the Residence Hall domain (0.65), the university overall (0.64), or the Friend Group domain (0.66). This finding suggests that students’ reports of sense of belonging to campus organizations are less correlative of class membership relative to sense of belonging in other domains.

According to the sample, three covariates are important factors that significantly impact the probability of class membership. Specifically, students from racial and ethnic minority backgrounds as well as non-Honors students are most likely to experience a low sense of belonging, and students from relatively high socioeconomic statuses are least likely to experience a low sense of belonging.

Second, how do students describe their experiences of sense of belonging? Here, it is worth emphasizing that almost 20% of the sample reports Low Belonging, over 50% of the sample reports Medium Belonging, and upwards of 25% of the sample reports High Belonging. In light of what is known about the positive
outcomes associated with a strong sense of belonging as well as the responsibility of institutions to foster environments that are conducive to the development of sense of belonging (see Chapter Two), the fact that almost three out of every four respondents experience a low or medium sense of belonging means that much can be done in the way of enhancing college students’ sense of belonging. Survey data as collected in this study does not address students’ descriptions of their experiences of sense of belonging, per se, but this finding related to the probabilities of Low, Medium, and High Belonging provide a foundation from which to address students’ stories in the interview data.

Quantitative testing of the hypotheses is as follows:

- H1: Relative to other domains of sense of belonging, identification with the friend group domain will correlate with higher levels of sense of belonging.
  - Analysis of survey data supports this hypothesis.
- H2: Students who identify as “man” will report higher levels of sense of belonging than students with other gender identities.
  - Analysis of survey data does not support this hypothesis.
- H3: Students from racial and ethnic minority backgrounds will report lower levels of sense of belonging than white students.
  - Analysis of survey data supports this hypothesis.
- H4: Students who report coming from lower socioeconomic status backgrounds than their peers will report lower levels of sense of belonging than their peers.
• Analysis of survey data supports this hypothesis. Data analysis reveals that students with relatively lower socioeconomic status backgrounds than their peers are more likely to report lower levels of sense of belonging.

• H5: Students who are in the Honors Program will report lower levels of sense of belonging than their non-Honors peers.

• Analysis of survey data does not support this hypothesis.

QUALITATIVE RESULTS

Qualitative analysis included writing initial memos after completing an interview, transcribing interviews, open coding all qualitative data to identify important blocks of text and themes, and writing subsequent memos (Chapter Three). First, I present results from coding students’ definitions and exemplars of belonging that include four categories of sense of belonging type. Then, in line with the mixed methods design, the remainder of this qualitative analysis section explores the four designations as they relate to themes that emerged from the preliminary quantitative analysis: sense of belonging in (1) campus organizations and (2) friend groups, particularly pertaining to students’ racial and ethnic background, SES, and Honors status.

Preliminary Analysis

In their own words: Students’ definitions of sense of belonging.
An analysis of students’ definitions and exemplars of sense of belonging reveals four categories of sense of belonging type: Self-Centrics, Co-Creators, Seekers, and Conformists. I arrived at these four categories by highlighting key words in each students’ definition, clarifying the person(s) and/or group(s) being addressed within that definition, noting now students describe the person(s) and/or group(s), and interpreting based on theoretical insights. The subsequent paragraphs outline the details of these four categories, and Table 4.10 summarizes these findings.

Of the 32 interview participants, 15 are categorized as sense of belonging Self-Centrics. Self-Centric is the most common categorization of sense of belonging within the sample. For Self-Centrics, sense of belonging is framed as an experience that enhances an individual’s feeling of what it means to belong; as the name implies, the self is the center of one’s belonging experiences. Xena’s\(^1\) definition of sense of belonging encapsulates this category:

\[
\text{I would say [that sense of belonging is] mostly feeling like things are there for you because there are so many opportunities presented and so many clubs and so many things that you can do. Mostly just feeling like those are things that are intended for you to do and that that is not for some other group of people. That was the biggest thing, recognizing that things that are advertised to \[SBU\] students, that’s me. I’m one of those people and if I mention that, then I can do that.}
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Students like Xena – Self-Centrics – tend to achieve a sense of belonging when they feel accepted and as if they have access to SBU resources.

Within the Self-Centric categorization, acceptance and access are based on similarity with others. Of the 15 Self-Centrics in the sample, nine explicitly

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\(^1\) Students have been given pseudonyms throughout this study.
mentioned that they felt a sense of belonging when they felt accepted by people similar to them in some capacity. Examples of this range across degree of closeness. For instance, Grace reported feeling a tacit acceptance when she met other in-state students in classes, even though she rarely engaged with these peers outside of class. Grace’s case stands in stark contrast to Katherine’s exemplar of sense of belonging, which occurred when she found out who her “family” was in her sorority. She stated, “I’ve never met somebody [referring to her “Big” in the sorority] that is literally my exact replica, just two years older...psychologically entwined.” Other examples of similarity are based on common goals, beliefs, and personality.

When describing sense of belonging, eight of the 15 Self-Centrics in the sample spoke often of involvement with groups on campus that connect them with others who are similar to them in some capacity. Of these eight, three explicitly mentioned friends and five explicitly mentioned campus organizations such as club sports or Greek life as being sites of sense of belonging based on similarity. For instance, Jordan rushed a sorority and ultimately connected with others in her rush class “based on personality”, and this experience was her first exemplar of sense of belonging.

Of the 32 interview participants, nine respondents are categorized as sense of belonging Co-Creators. Co-Creator is the second most common categorization of sense of belonging in the sample. Whereas Self-Centrics define belonging largely as a function of individual feeling grounded in similarity, Co-Creators predominantly describe sense of belonging as an experience of mutuality. Isabel’s definition of sense of belonging encapsulates this category:
I feel like it's more of an internal feeling like I don't really think you can really put words to it, but I guess feeling like supported by others and feeling you have a place and a role. And people can depend on you as well as depending on other people. And like sharing similar interests with others, but also at the same time being exposed to new people, new...with different backgrounds and you grew up in a different way.

Other examples of defining sense of belonging in reciprocal terms include using phrases such as (italics added for emphasis):

- “You're able to interact with your professors” (Jessy)
- “Able to be vulnerable” (Leslie)
- “You participate and enjoy being around this group of people or professors or whoever it is” (Tricia)
- “Having a relationship with...people” (Tina)
- “I'm like learning from it or building from it in some way, but I'm also bringing something to it and helping the community and the other people build or grow or learn” (Maddie)

Isabel's definition of sense of belonging and the subsequent five bullet points reflect the definitions of six of the nine Co-Creators. By comparison, Beth – characterized as a Self-Centric – included the following phrase when discussing her first exemplar of belonging: “You can just be in the space without having to sort of pay to be in it or something, where you don’t feel like you have to give something in return, you can just exist neutrally.” This stands in stark contrast to the way that Co-Creators define sense of belonging as a mutual experience.

Like Self-Centrics, Co-Creators reference involvement with groups on campus as instrumental in facilitating a sense of belonging. Similarly to Self-Centrics, two Co-Creators talked explicitly of friend groups and four Co-Creators talked explicitly of campus organizations such as club sports or Greek life. The key difference, noted above, is that Co-Creators framed their experiences with these groups in reciprocal terms.
Another key difference in the data between Self-Centrics and Co-Creators involves a third domain of sense of belonging: academics. When asked to provide an exemplar of sense of belonging that captures the essence of their respective definitions, three Co-Creators discussed experiences within an academic setting. Characteristics of these exemplars include when “classes are meaningful” (Jessy), participating in a class with a professor (Tricia), and having a “connection to the...purpose of a class” (Tina). In comparison, not a single Self-Centric discussed academics in their respective definitions of sense of belonging or initial exemplars.

Of the 32 interview participants, five respondents are categorized as sense of belonging Seekers. The key distinction between Seekers and other types of sense of belonging is not necessarily what they say but how they say it: Seekers refer to sense of belonging in aspirational terms as something that has yet to be achieved. Mona’s definition of sense of belonging encapsulates this category:

I guess [sense of belonging is] just like feeling comfortable on campus. I would like to have a group of friends that I feel genuinely close to and being more involved on campus. Being not just a part of organizations, but being genuinely engaged with them.

After listening to her definition of sense of belonging, I followed up with Mona to ask if she intentionally used the phrase “would like to” in reference to a group of friends with whom she might belong. She confirmed her choice of phrase and went on to describe herself as a “tag along” to a “tight-knit group”, even acknowledging that one of the group members is her best friend at SBU though the inverse is not true.

Mona’s case highlights how lack of friendships correlates with students being in the Seeker category. Of the remaining four Seekers in the sample, three define sense of belonging in terms of hoping to make friends:
• I just want to foster [in the sophomore year] the same like sort of mutual trust and things like that with another group of people [besides my high school friends] (Dustin)
• I’m working on that [making friends at work] ...I guess (Eleonore)
• You’ve got a place to go and do that [activity], and people to go and do that [activity] with, I’d say that’s belonging (Edson)

Otherwise, Seekers often employ the same kind of language used by Self-Centrics and Co-Creators (e.g., collaborative, comfort, familiarity), suggesting that Seekers ultimately might evolve into one of those two categories.

Of the 32 interview participants, three respondents are categorized as sense of belonging Conformists. The primary goal of the Conformist is to fit in with their peers. Two of the three Conformists in the sample use negated language to describe sense of belonging (italics added for emphasis):

• I think just overall feeling like I’m not an outsider and that there’s a sense of community where like if you saw me in the group, I wouldn’t stick out as not being part of it. (Betty)
• I just feel a sense of belonging is when I’m walking around campus, I just feel like I’m amongst peers. I don’t feel I’m an outsider. (Beverley)

The other Conformist in the sample, Eric, defines sense of belonging as people “having friends that they fit in with, that they love hanging out with, that they just match up with.” The notion of “fitting in” and “matching up” with others implies that Conformists view others as the center of one’s belonging experiences. In this way, Conformists differ from Self-Centrics, for whom the self is the center of one’s belonging experiences.

Furthermore, when offering their definitions of sense of belonging, the Conformists in the sample reference the following: “group”, “acquaintances”, “people”, “friends”, “campus”, and “peers.” Unlike the other categories of sense of
belonging, there is no mention of campus organizations or academics as they relate to respondents’ definitions of sense of belonging, suggesting that conformity in these domains is less salient for the respondents.

In sum, the four categories of sense of belonging type – Self-Centrics, Co-Creators, Seekers, Conformists – classify how students describe and experience sense of belonging. Table 4.11 provides a summary of each category, quantity, predominant frame, and key attributes.

Then, in line with the mixed methods design, the remainder of this qualitative analysis section explores the four designations as they relate to themes that emerged from the preliminary quantitative analysis: sense of belonging in (1) campus organizations and (2) friend groups, particularly pertaining to students’ Honors status, racial and ethnic background, and SES.

Role of campus organizations in sense of belonging development.

As discovered in the preliminary quantitative analysis, the Campus Organization domain is a site of probabilistically lower sense of belonging, in that the probability membership of a respondent falling in each respective class is lowest in the Campus Organization domain relative to the other four domains. This finding suggests that students’ reports of sense of belonging to campus organizations are less correlative of class membership relative to sense of belonging in other domains. In light of the quantitative analysis that revealed sense of belonging to campus organizations as a relatively poor indicator of being in the Low, Medium, or High group of sense of belonging, and in line with the mixed methods research design of
this study, I focused a portion of qualitative analysis on a fuller exploration of the role of campus organizations. Key findings are discussed below.

First, there exists a discrepancy between how interviewees defined sense of belonging versus how they described sense of belonging. Eight respondents explicitly mentioned “friend” or “friends” in their definitions of sense of belonging, and another 19 respondents explicitly mentioned “person” or “people” in a way that insinuates friendship (e.g., “closer knit group of people”). In sum, 27 respondents provided definitions of sense of belonging that initially sound as if they relate to friend groups. Upon further probing, however, students’ follow up descriptions often revolved around affiliation with a campus organization. For instance, after students provided their own definitions of sense of belonging using phrases such as “innate sense of comfort with…the people you surround yourself with” (Sarah), I asked respondents to provide an exemplar that describes their definition of the concept. Of the 34 exemplars that students provided, 17 primarily involved students’ experiences with others in a campus organization, eight involved students’ friend groups, five occurred in an academic setting, three related to the university overall, and one occurred in a residence hall.

Furthermore, when asked specifically about how their respective definitions of sense of belonging might manifest in a campus organization, 17 of the 32 respondents expounded upon specific campus organizations in addition to whatever exemplars they initially provided. Within these discussions, there exists an aspirational component to campus organizations in that students often expressed a

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2 Two students provided two exemplars apiece.
desire to be more involved in campus organizations at various points. For instance, four students mentioned that they heard during their college application process about a campus organization that allows students to train service dogs. They recalled a desire to join this organization even before matriculating to the university, even if they did not join this organization during the first year of enrollment.

And in reflecting on the first year of enrollment and anticipating the sophomore year, seven students expressed a desire to be more involved in subsequent semesters because they felt as if they lacked that involvement during the first year of enrollment. Dustin provided a prime example of this mentality. Dustin is a commuter student who felt as if he was just beginning to join campus organizations in a personally meaningful way when the university transitioned to remote learning due to the COVID-19 pandemic. When discussing enrollment plans for his sophomore year, he stated, “Sometimes it might not feel like I belong there [at the university]. But I definitely want to cultivate those same, the same feelings that everyone else has...that I feel like everyone else has, and join a bunch of clubs and things like that and get involved.” For Dustin, he perceived that his peers belong on campus as a function of their involvement in campus organizations and he sought to emulate that in order to achieve a sense of belonging for himself. Dustin falls in the Seeker category, and he sees involvement in campus organizations as a way to find sense of belonging.

Indeed, campus organizations played a central role in students’ exemplars of sense of belonging in that they can provide an organizing structure to help students
meet potential friends with similar interests. Tricia’s experience with a variety of campus organizations illustrates this pivotal role that campus organizations might perform: “I go to a bunch of Hillel programs and met a bunch of people through Hillel. I think once I started seeing people from Hillel and cycling and [teaching swim lessons] all around campus and I would be walking to class and see a few people I know, I think that’s when I started to realize that I like [SBU] and it was the place for me.” Tricia was able to articulate the importance of campus organizations in providing a framework for her sense of belonging development, inasmuch as that framework allowed her to recognize friends from those campus organizations all throughout campus.

If quantitative analysis highlighted the relative unimportance of belonging to a campus organization relative to other domains, then why does sense of belonging to a campus organization appear more instrumental in the qualitative analysis? I posit that campus organizations provide an important initial framework through which students develop a sense of belonging to people with whom they share some kind of similarity. For instance, note that 27 of 32 definitions of sense of belonging frame the concept as friend- or people-oriented but that half of the respondents, when asked to reflect on how their sense of belonging definitions might relate to campus organizations specifically, were able to provide clear examples of campus organizations in which they felt a sense of belonging. For instance, Stacy discussed her involvement with an improv group on campus that provided a framework for her connection to others:

My friend group is [the improv group], and they were the first people that I was at a party with that wasn’t a crowded party. It was just the 15 of us in a
Prior to the above quote, Stacy defined sense of belonging in terms of being in familiar surroundings where people affirm her identity. She described the party as a place where she was surrounded by people that she knew. Furthermore, her affiliation with the improv group provides her with an identity that is familiar to others on campus: “even though I hadn’t been in a show yet...[students walking by an improv group table] are familiar with what I do here, and we’ve established that like what I’m doing here is cool and other people like it.” Ultimately, Stacy’s involvement in the improv group framed her sense of belonging on campus.

In sum, students’ reports of sense of belonging related to campus organizations shows that campus organizations play a central but often understated role in helping students develop a sense of belonging.

*Role of friend group in sense of belonging development.*

As discovered in the preliminary quantitative analysis, students’ reports of sense of belonging within the Friend Group domain (e.g., low, medium, high) is reflective of broader class membership (e.g., Low, Medium, High) to a greater extent than students’ reports of sense of belonging in other domains. In light of the quantitative analysis that revealed sense of belonging to a friend group is a relatively strong indicator of class membership (Low, Medium, High), I focused a portion of the qualitative analysis on a fuller exploration of the role of friend groups.
Within this theme, I analyzed individual student’s definitions of sense of belonging alongside their descriptions of friend group experiences. Key findings are discussed below.

First, identification with a friend group is important to students in each sense of belonging category – Self-Centric, Co-Creator, Seeker, and Conformist – and hinges on some degree of similarity with that friend group. For instance, Betty (a Conformist and one of two sophomores in the sample) defined sense of belonging as “feeling like I’m not an outsider” and “having people who it doesn’t feel weird to like be able to rely on them or just like have a conversation with them.” Betty, who transferred from SBU after her first year, reported feelings of belonging to a friend group that she developed in a Chemistry lab in that she “made friends with the people around us and I did enjoy going to that class...it didn’t feel like I was being overwhelmed by people different than me.” Her classmates were not “different” than her, and the informal nature of the lab course allowed her to feel at ease (i.e., not “weird”) around her classmates.

Other examples of friendship built on similarity include Tina, a Co-Creator who described sense of belonging in part as a “personal connection”, and she felt this most closely with a friend who had “gone through similar emotional stuff to me.” Likewise, Ekani, a Self-Centric, reported struggles with belonging to a friend group during her first semester related to “issues because we just were different people.” After joining a sorority and meeting other people through mutual friends in the early parts of her second semester, she “found people that I was more alike.” In
sum, similarity with a friend group correlates with increased sense of belonging to that friend group.

Second, established friend groups function as gateways through which students continue to deepen or broaden sense of belonging in other domains. Jessy provides a prime example of this. She is categorized as a Co-Creator who defined sense of belonging as feeling like “part of the campus” when “your classes are meaningful to you” and you can “interact with your professors.” Additionally, it “obviously has to do with having good friends and stuff” but it’s also “not just having like a group of friends.” Later in the interview, Jessy noted that “my belonging on campus spurred from like I guess confidence in the classroom, but you feel confident in the classroom when you feel like you belong on the campus and that comes from having friends.” In a similar vein, Grace (a Self-Centric) discussed a friend who encouraged her to try new things on campus such as a gymnastics club. Grace acknowledged that she would not have joined that organization without the prompting of her friend, who essentially forced her to attend a first meeting of the organization. Both Jessy’s and Grace’s sense of belonging within the friend group domain enhanced their respective abilities to feel a sense of belonging in other domains.

This finding is illustrated by the prevalence of a code capturing “SB – Overlap.” I designated text with this code whenever students were discussing more than one domain of sense of belonging as it related to their specific definition of the concept. When this occurred, I designated that portion of text with the codes “SB – Overlap” and any other “SB – [DOMAIN]” code that was relevant. The code “SB –
Friend Group” appears 63 times in the data when paired with “SB – Overlap”, which is almost 1.5 times more than the second most common code paired with “SB – Overlap.” This illustrates that students’ experiences of sense of belonging within the friend group domain are closely related to sense of belonging in other domains, and the examples of students like Jessy and Grace describe in fuller detail how established friend groups might function as gateways through which students continue to deepen or broaden sense of belonging in other domains.

Third, students who report a low sense of belonging to a friend group do so predominantly because they feel like an outsider in some capacity. Naomi, a Self-Centric first year student who decided to transfer from SBU to another institution for her sophomore year, reported a low sense of belonging to a friend group, largely as a function of feeling as if everyone around her already knew everyone else:

A lot of kids at [SBU] know each other going in, they draw like from Chicago, New York, Florida, there’s so many kids from those areas, and a lot of people knew each other from summer camp or just live in the same place...I really didn’t know anyone so I didn’t have connections that could introduce me to other people...It was just harder to break into certain groups because they all already knew each other.

Naomi defined sense of belonging as “finding people that you can relate with”, and it was difficult for her to find people with whom she could relate because she felt as if they had already formed friendship groups without her.

Likewise, Ekani, a Self-Centric student of self-reported Indian descent, experienced a similar phenomenon. She was excited to attend with her roommate an event hosted by a campus organization composed predominantly of Indian students, yet discovered that “no one really talked to me” because “they all live in the Honors dorm...they were a group in the beginning.” This resulted in a feeling of
awkwardness that she designated as an exemplar of low sense of belonging to friends in the early part of her first year of enrollment.

Mona, a Seeker, provides another example of low sense of belonging to a friend group, characterized by feeling as if she was an outsider without connections to a friend group. Mona contracted mononucleosis during her first semester, which she believed caused her to miss out on important opportunities to make connections with people that might have helped her gain access to Greek life. She reported having missed out on engaging in campus activities for the majority of the fall semester, which in turn caused her to miss out on creating and fostering a sense of belonging to a friend group. When I asked her for an example of what this felt like, she shared a narrative about becoming overly intoxicated at a bar near campus and having to walk back to her dorm by herself because no one that she was with wanted to leave the bar. Instead, Mona found her way back to her dorm alone, where she ultimately called emergency medical services for herself after realizing that she likely had alcohol poisoning. Her most salient memory of this entire experience – despite her description of blacking out from drinking too much – was how lonely she felt without any friends to help her. These three brief examples – Naomi, Ekani, and Mona – exemplify the ramifications of what it is like to have a low sense of belonging to a friend group: loneliness, discomfort, and isolation.

Experiences of sense of belonging pertaining to Honors students, students from racial and ethnic minority backgrounds, and socioeconomic status.
As previously noted, quantitative analysis revealed that students who designate as Honors or who are from racial and ethnic minority backgrounds often experience a lower sense of belonging than their non-Honors peers or their majority peers, respectively. Additionally, quantitative analysis also revealed that students who report a relatively higher socioeconomic status are more likely to report a higher sense of belonging than their peers. Initial qualitative analysis sought to designate these three factors as discrete units. However, upon closer examination, one common theme undergirded these three factors, even as its manifestation might differ based on circumstances. That theme is exclusion.

I coded data as related to the theme of exclusion when students discussed aspects of their college experiences that included some sort of insider versus outsider mentality that was fixed in some capacity. A key component of exclusion is the degree to which students had control over or agency in their respective experiences of exclusion.

Exclusion relates to the experiences of Honors versus non-Honors students in that Honors students could choose to have access to certain resources to which non-Honors do not have access. This includes the ability to live in an Honors-only residence hall. Respondents mentioned that the Honors-only residence hall is nicer and has larger rooms than the other residence halls that house first-year students. Some students, like Jessy (a Co-Creator), maintained a primary friend group in this Honors-only residence hall and experienced it as an overall positive experience. She reported that the majority of her friends were also in the Honors-only residence hall, either on her hall or on an adjoining hall, and that she would often host these
friends in her room for study sessions and parties (and, occasionally, study session parties).

Yet other students experienced this access as a negative phenomenon. For instance, Naomi (a Self-Centric), the first-year student who had decided to transfer from SBU, resided in the Honors-only dorm but found the exclusion to be an insular experience that kept her from making friends in what she perceived to be the more social residence halls on campus. In fact, Naomi’s perception was that the Honors-only residence was not a place where students socialized but instead was full of students who kept mostly to themselves and studied. For Naomi, the fact that she lived in an Honors-only residence hall kept her from fully participating in the social life of the rest of campus.

Exclusion relates to the experiences of students from racial and ethnic minority backgrounds often as a more institutionally imposed feature of the student experience. In this way, exclusion as it relates to students from racial and ethnic minority backgrounds was not a chosen feature of the college experience as it was for Honors students. For instance, Lucy, a Self-Centric student who identifies as black, perceived that she was placed on her specific residence hall alongside other students from minoritized backgrounds so that prospective students would be led to believe that SBU was more of a diverse institution than it actually is. Lucy observed several times that her wing of the residence hall appeared to cluster students from racial and ethnic minority backgrounds and also was the location that campus tour guides walked through to show prospective students a glimpse of life in residence halls. She reported that her side of the residence hall housed minority
students whereas the rooms on the other side of the lobby housed all white students. She stated that her roommate selection was random but that she and her suitemates realized “pretty soon that all the people of color and gay people were over there [on her side of the residence hall].” This exclusion was a hallmark of her experience, yet she did not choose it. Even so, for Lucy and her friends, “the feeling that you’re not alone in whatever you’re experiencing gives you that sense of belonging.” In this way, her experience of exclusion, even if out of her control, provided her with a sense of belonging to her friends who were experiencing the same thing even as she did not report a strong sense of belonging to the university overall as a result of institutionally-imposed exclusion.

Students from racial and ethnic minority backgrounds could navigate and manipulate this institutionally imposed aspect of exclusivity to suit their own developmental needs. Eleonore, a Seeker of self-reported Hispanic heritage who also identifies as a lesbian, openly discussed not feeling as if she was developing a sense of belonging in her classroom settings or in her residence hall because she could not always choose how to engage in these spaces. For Eleonore, she could choose which campus organizations to join or which peers with whom to develop friendships such that she was able to curate her college experiences in order to maximize her potential for developing a sense of belonging, despite feeling as if she had less in common with what she dubbed to be the “average” SBU student.

Exclusion relates to experiences regarding socioeconomic status in that socioeconomic status functions as a determining factor for the kinds of experiences that students can engage with at the university. For instance, Xena (a Self-Centric)
notes that “[SBU] has the reputation of being a big party school and also a very privileged school. Then you have this honors program that you say these are the nerdiest kids we could find and most of them are here because they got a great merit scholarship.” This is certainly the experience of fellow Self-Centric Lucas, who chose to attend SBU over other, more selective institutions because the university provided him with a large merit scholarship. He ultimately withdrew from regular participation in the party culture of the student body because it became a financial burden to do so with the frequency that he perceived other students engaging. This notion that many students who lived in the Honors residence hall might have similar experiences to Lucas was further elaborated upon by Xena. She noted, “There were a lot of people who were there [in the Honors residence hall] because it was a cheaper option for them...You could tell that there were definitely different vibes of people who would get food delivered once a week or several times a week to their dorms and stuff like that...how people spend money was really noticeable.” For example, participation in Greek life is one of the more noticeable ways that socioeconomic status is on display at SBU. Xena attended a Greek function with a friend, and that friend’s sorority sister hosted a party at her off-campus house “that was easily over a million dollars that her parents had paid for. It had a grand piano in it.” This entire experience made Xena so uncomfortable that she left the event early and went back to her residence hall instead of going out with friends that evening.

Yet even though the Greek system provided students with an often-clear image of wealth on display, the reality is that many students felt this tension with the student body more generally. For instance, when discussing how he met his
primary ground group, first year student (and Self-Centric) Ned reported feeling uncomfortable around what he dubbed to be “superficial” peers, who “all had shirts and shoes on, like their outfits alone that day were blowing most people’s out of the water. That just too much for me.” In sum, students’ socioeconomic status is on full display at SBU in such a way that some students feel restricted from engaging with others, thus dictating the ways that students engage socially.

*Synthesis of preliminary analysis.*

The qualitative findings portion of this chapter began with an analysis of students’ definitions of sense of belonging, which highlighted the important but oft-overlooked role of campus organizations in providing structure for students to develop sense of belonging. Then the role of campus organizations and friend groups was addressed more directly, in response to quantitative analysis that highlighted the unique ways that they relate to sense of belonging. Qualitative analysis then shifted to the unique experiences of students themselves, examining the various roles of exclusion as it relates to students designated as Honors, from racial and ethnic minority backgrounds, and from various socioeconomic status backgrounds.

When viewed cumulatively, the preliminary qualitative analysis points towards two emergent concepts that merit further consideration. These two emergent concepts stem from key connections between the categories of sense of belonging, the campus organization domain, and the friend group domain. Key connections are as follows. The three dominant sense of belonging categories – Self-
Centric, Co-Creator, and Seeker – share fundamentally related attributes of similarity, mutuality, and aspiration. For instance, Self-Centrics experience sense of belonging in terms of similarity with others. Likewise, Co-Creators experience sense of belonging in terms of mutuality. Furthermore, both Self-Centrics and Co-Creators engage with campus organizations in a way that is aspirational, meaning that students hope to be more involved in campus organizations with which they identify in some capacity. This is similar to how Seekers speak of their aspirations to experience a sense of belonging. Yet whereas Seekers are primarily concerned with sense of belonging in the friend group domain, Self-Centrics and Co-Creators report a sense of belonging in the domains of the friend group, campus organizations, and (particularly for Co-Creators) academics.

In light of these key connections, and as discussed throughout the preliminary qualitative analysis, campus organizations operate as an organizing structure and initial framework for students to meet potential friends and develop sense of belonging via the fundamentally related attributes of similarity, mutuality, and aspiration. Furthermore, as friend groups develop, they in turn create opportunities for students to broaden and deepen sense of belonging in other domains. By extension, I offer the following two emergent concepts that shed light on the process by which campus organizations operate and friend groups develop. Those two emergent concepts are Gateways of Belonging and Conduits of Belonging.
First, Gateways of Belonging\(^3\) refer to organizing structures or groups that function as springboards from which students develop a deeper or broader sense of belonging. Gateways of Belonging refer to groups with which students identify that, by virtue of group identification, function as entry points to other domains of sense of belonging. The most common Gateway of Belonging among this sample is the campus organization, even as students’ own definitions of sense of belonging rarely mention their importance. Even so, Gateways of Belonging might exist within each of the five domains addressed in this study. As a function of identifying with a Gateway of Belonging, students connect with individuals similar to them in some capacity and thereby develop friendships. As friendships are established, students gain exposure to possibilities for developing a sense of belonging in other domains across the university. Ultimately, data suggest that one’s sense of belonging to a friend group correlates with a sense of belonging to other domains; respondents were less likely to report sense of belonging to other domains without also reporting sense of belonging to a friend group. Gateways of Belonging are based largely on characteristics of similarity. For instance, students develop friendships with others based on shared characteristics developed prior to college matriculation, proximity of living arrangement, or shared affiliation as a student athlete or organization member.

Examples of Gateways of Belonging within the domain of Campus Organizations include faith groups, volunteer groups such as Best Buddies, club

\(^{3}\) Note that a Gateway is not one-way. By that, I mean that friend groups might form as a result of gathering students from one’s residence hall, a campus org, and the classroom. Yet, once the friend group is formed, it becomes the gateway through which sense of belonging is amplified in the other domains.
sports, marching band, campus leadership programs, fraternities and sororities, and pre-professional societies. When referring to these organizations, students use language related to similarity to describe their initial attraction to the group. Interviewees describe similarity in terms of shared goals, values, and worldviews. Additionally, one quarter of the interviewees expressed interested in specific organizations as a result of interests that they held prior to matriculating at SBU, suggesting that participation in campus organizations at SBU is initially an exercise of continuing something familiar within the new context of the first year of undergraduate enrollment.

Residence halls, the academic setting, a friend group, and the university more broadly can function as Gateways of Belonging as well. In these scenarios, students still use language related to similarity to describe their initial belonging in these spaces, though similarity is often linked to one’s socioeconomic status, racial and ethnic background, or Honors status. For instance, when discussing participation in a friend group, seven students discussed the physical appearance of their peers, specifically referencing the way that they dressed or looked. Here, the theme of exclusion was particularly applicable, as students referred specifically to perceptions that one is an insider in a group or context. Examples include statements such as “my friend group is mostly composed of the people who are on my hallway, which are mostly people of color.” Or, when recounting perceptions of unbelonging, students noted things like, “[at SBU], it seemed like everyone was like dressed up like they were about to walk the runway.” These perceptions of being an insider or an outsider in a particular context impact whether students report a
sense of belonging in that particular domain, which in turn impacts whether the domain can operate as a Gateway of Belonging.

Too, it is important that Gateways of Belonging overlap with other domains of sense of belonging. For instance, 28 of 32 interviewees reported developing a sense of belonging in one domain as a direct result of having a sense of belonging in another domain. Examples include an interviewee’s roommate applying to a leadership program and encouraging the interviewee to apply, or of an interviewee’s teammate being part of a study group that becomes an integral part of an interviewee’s academic experience, etc. This evidence supports the implication that Gateways of Belonging often ultimately lead to the development of sense of belonging in other domains, which complements the application of ecological systems theory to the student experience. Just as students participate in various campus domains simultaneously, ecological systems theory posits that students’ spheres of involvement function as nested systems in that individuals exist in relationship with each system even as each system exists in relationship to the others.

Second, 27 students described people within the SBU community who exemplified what it means for them to belong. Interviewees discussed people who have had more experience in various domains at SBU with whom they interact in a proactive and relational manner. I categorized these people as Conduits of Belonging. They are rarely described as friends and, when they are described as friends, they refer specifically to older students.
More specifically, Conduits of Belonging refer to specific people with whom respondents identify and, by virtue of this identification, students report an enhanced sense of belonging. With the academic domain, for students of racial and ethnic minority backgrounds, Conduits of Belonging might be professors of similar racial and ethnic background who affirm their students’ places within the university community. This was the case for Lucy, a black student, who found it “comforting” to have a black professor. More generally, professors who are Conduits of Belonging go out of their way to encourage specific students and validate their role as scholars by offering to do things like collaborate on research or write letters of recommendation. Such was the case for Mona, a multiracial student who felt affirmed by a professor who reached out proactively with an offer to write letters of recommendation for her based on her work in his class.

Conduits of Belonging are predominantly university representatives such as peer mentors, professors, or university staff members. For instance, in the case of Xena, an academic advisor functioned as a Conduit of Belonging to the academic domain by helping her select specific classes and courses of study based on interests that the student shared. In Xena’s case, the academic advisor was a graduate of SBU who Xena described by saying, “We have very similar personalities.” Or, in the examples of Isabel and Maddie, a case manager might connect an at-risk student to resources on campus or in the community in an effort to help that student succeed. Both students reported that their case managers made them feel as if they belonged at the university and as if the university cared about them. For the three student athletes in the sample, coaches serve as conduits of Belonging by challenging their
students to perform at peak individual level and contribute to the team. The perception that one is contributing to a team and also learning from a team is a hallmark of the Co-Creator category of sense of belonging.

In sum, Conduits of Belonging refer to specific people with whom respondents identify. These people embody what a sense of belonging could look like for respondents and, by virtue of their example, these Conduits of Belonging enable students to develop their own sense of belonging in various university settings. Conduits of Belonging are often university representatives such as peer mentors, professors, or university staff members that are in some way admired by students. In their capacity as role models, Conduits of Belonging are both similar and dissimilar to students in important ways. They must be similar enough that students identify with them, perhaps based on shared characteristics of gender or race. And also, they must be dissimilar enough so that students might aspire to imitate them.

Research Questions

In light of this preliminary qualitative analysis, I now revisit the research questions with the goal of summarizing key findings as stated throughout the preceding sections.

First, what are some important factors (e.g., activities, experiences, people) that facilitate the development or impediment of sense of belonging? The data suggest that involvement in campus organizations facilitates the development of sense of belonging by connecting students with peers who share some degree of
similarity, and that this connection results in the formation of friend groups. In turn, student affiliation with friend groups functions as a springboard of sorts that enables students to continue developing sense of belonging in other domains on campus.

The data suggest that there are certain student characteristics that facilitate the development or impediment of sense of belonging. The factors examined in this qualitative portion of the study include Honors status, racial and ethnic minority background, and socioeconomic status. Each of these factors shares a common theme of exclusion, which I unpacked as a means by which students describe their sense of belonging in the second research question. While these factors are certainly unique individually, they by no means have sole determination over the development or impediment of sense of belonging. Students discuss a variety of characteristics that determine the extent to which they report a sense of belonging at SBU. Examples of other factors include students who are student athletes, commuter students, Greek affiliates, members of the LGBTQ community, among others.

Second, how do students describe their experiences of sense of belonging? Exclusion is one hallmark of how students describe their experience of sense of belonging. Exclusion refers specifically to perceptions that one is an insider or an outsider in a group or context. A key component of exclusion is the degree to which students have control over or agency in their respective experiences of exclusion. Examples include students feeling as if they are affiliated with people who are similar to them in some capacity, whether a group of like-minded friends or in a
campus organization centered on a common purpose. Some students report being able to control or dictate this exclusion, exemplified by choosing where and how to get involved on campus. Other students report less control over this exclusion, exemplified by housing assignments or the inability to break into already established groups.

Ultimately, students’ experiences with Gateways of Belonging and Conduits of Belonging are defining features of the development of sense of belonging, regardless of which domain of belonging is under analysis. Within the interview sample, Gateways of Belonging typically refer to involvement with campus organizations and Conduits of Belonging typically relate to student factors such as Honors status, racial and ethnic minority background, and socioeconomic status. In addition to these typical connotations, a mixed methods approach in which the quantitative and qualitative findings are examined in tandem provides important insight into how Gateways of Belonging and Conduits of Belonging provide clarity to the relationship between various domains of belonging. The final chapter of this study addresses this point more fully.
Chapter Five: Discussion

DISCUSSION OF MIXED METHODS RESULTS

Summary of Quantitative Results

The quantitative results reveal how students report a sense of belonging within five domains: Academic Class, Residence Hall, Friend Group, Campus Organization, and SBU. Results highlight three classes of sense of belonging within the sample: Low, Medium, and High. Generally, students who fall in the Low, Medium, and High classes of sense of belonging are more likely to experience low, medium, or high levels of sense of belonging in each of the five domains, respectively.

However, two exceptions merited closer analysis. First, students’ reports of sense of belonging to the Campus Organization domain were least indicative (relative to other domains) of whether students classified as Low, Medium, or High. Second, students’ reports of sense of belonging to the Friend Group domain were most indicative (relative to other domains) of whether students classified as Low, Medium, or High.

In short, the quantitative results reveal that students generally fall within three classes of sense of belonging – Low, Medium, High – and that sense of belonging to a campus organization is least impactful on the three classes whereas sense of belonging to a friend group is most impactful. Furthermore, as noted in Tables 4.5 and 4.8, approximately 20% of the sample falls in the Low sense of belonging class, 50% in the Medium class, and 30% in the High class.
Additionally, the quantitative results reveal that three key factors impact a students’ probability of being in the Low, Medium, or High class of sense of belonging. Specifically, students from racial and ethnic minority backgrounds as well as non-Honors students are most likely to experience a low sense of belonging, and students from relatively high socioeconomic statuses are least likely to experience a low sense of belonging.

**Summary of Qualitative Results**

The qualitative results analyze students’ definitions of sense of belonging and unpack the two exceptions that merited closer analysis from the quantitative results: the Campus Organization domain and the Friend Group domain. First, students’ definitions of sense of belonging reveal four categories of sense of belonging type: Self-Centrics, Co-Creators, Seekers, and Conformists. Each of these categories denotes the predominant relationship between the interviewee and sense of belonging: Self-Centrics achieve sense of belonging by affirming their own identity vis-à-vis similarity with others; Co-Creators add a degree of mutuality to sense of belonging in that they articulate the ways in which they benefit from and contribute to a group; Seekers describe sense of belonging as something yet to be achieved; and Conformists achieve sense of belonging by trying to blend in and not stand out in a group.

Second, the qualitative data suggest that campus organizations offer a structure and initial framework by which students meet potential friends, and that the importance of this structure goes largely unnoticed by students. On the contrary,
students highlight the importance of sense of belonging to a friend group as instrumental to developing sense of belonging in other campus domains.

Third, the theme of exclusion operates as a foil to the similarity that informs so many of the interviewees’ reports of sense of belonging. Exclusion refers specifically to perceptions that one is an insider or an outsider in a group or context, and a key component of exclusion is the degree to which students have control over or agency in their respective experiences of exclusion. Within the sample, the theme of exclusion particularly highlights the insider versus outsider experiences of Honors and non-Honors students, students from racial and ethnic minority backgrounds, and students from lower SES backgrounds.

Fourth, ultimately, Gateways of Belonging and Conduits of Belonging offer a means by which students might deepen and broaden their own sense of belonging in various campus domains. Gateways of Belonging refer to organizing structures and frameworks that bring together students around some shared experience or purpose. In this way, Gateways of Belonging draw on the desire for similarity that connects students with one another. Conduits of Belonging refer to specific roles that people (often university representatives) fill in such a way that they model for students what sense of belonging can look like in a specific domain. In this way, Conduits of Belonging moderate the effects of exclusion by offering inclusion in various domains.

*Mixed Methods Discussion*
Cumulatively, the mixed methods research design deployed in this study produces quantitative and qualitative data and analyses that both affirm and extend extant literature on college students’ sense of belonging (Chapter Two). Whereas the quantitative analysis provides a useful snapshot of Low, Medium, and High sense of belonging in the sample, the qualitative analysis provides essential insight into the mechanisms impacting how sense of belonging develops within and across domains.

The findings of this study affirm extant literature indicating that college students develop a sense of belonging as a function of engaging with five domains on campus: the classroom, the residence hall, friend groups, campus organizations, and the university overall. The literature review (Chapter Two) suggests that students develop relationships within and across domains, even as key factors impact the development of sense of belonging and its outcomes. The quantitative results of this study affirm this by suggesting that respondents are broadly organized into Low, Medium, or High classes of sense of belonging, which mirror sense of belonging within each of the five domains. Furthermore, students’ demographics characteristics – Honors status, racial and ethnic minority background, and SES – impact the likelihood that students fall in the Low, Medium, or High classifications of sense of belonging.

The findings of this study extend extant literature on college students’ sense of belonging by examining students’ reports of sense of belonging to and within multiple domains simultaneously, which has (until this study) been largely unaddressed in the literature. As a result of addressing this gap, the findings of this
study unveil categories of sense of belonging (Self-Centrics, Co-Creators, Seekers, Conformists) and catalysts of sense of belonging (Gateways of Belonging, Conduits of Belonging).

The categories and catalysts of sense of belonging provide new conceptual language that addresses the multidimensionality of how and for whom sense of belonging develops across domains. Regarding the categories of sense of belonging, the data suggest that Self-Centrics, Co-Creators, Seekers, and Conformists all experience sense of belonging and that they do so in unique ways. Indeed, every single student in the sample reported experiencing a positive sense of belonging at some point in time during the first year of undergraduate enrollment, even if they predominantly identified as Seekers or Conformists. Even as sense of belonging fundamentally involves some type of similarity, access, or acceptance to a group, the data suggest that Self-Centrics, Co-Creators, Seekers, and Conformists each navigate these experiences differently.

Furthermore, regarding the catalysts of sense of belonging, Gateways of Belonging and Conduits of Belonging serve as mechanisms for the factors that facilitate the development or impediment of sense of belonging. Students describe their experiences of sense of belonging as a function of interactions with various Gateways of Belonging and Conduits of Belonging. Both these concepts resonate with ecological systems theory (Chapter Two) in that the data highlights how they impact the student experience across all five domains, just as ecological systems theory posits that the college student experience is best understood as a function of students’ interactions with various aspects of their environment.
Additionally, as noted in the literature review (Chapter Two), concepts associated with ecological systems theory resonate with theoretical work relevant to higher education such as Durkheim’s work on suicide (Spaulding et al. 2010). When the roles of Gateways of Belonging and Conduits of Belonging are made explicit and framed within the context of Durkheim’s work, they might be understood as mechanisms by which undergraduate students engage in formal and informal aspects of the academic and social life of a university. Subsequently, effective Gateways and Conduits might be beneficial in helping students achieve success during the undergraduate years. Ecological systems theory reminds us that Gateways of Belonging and Conduits of Belonging take on various levels of importance in specific domains for specific subgroups of students. As such, the college student experience might be understood as a function of students’ interactions with various Gateways and Conduits in their environment.

The findings of this study suggest that students can develop a stronger sense of belonging as a function of exposure to multiple potential Gateways of Belonging and Conduits of Belonging across domains. For instance, within the classroom setting, faculty encouragement of student participation and interaction are positive correlates with sense of belonging (Freeman et al. 2007), as are professors’ compassionate and individual interactions with students (Hoffman et al. 2002). The core of these findings manifests in the experiences of students like Eleonore, who connected with a professor who lived in a residence hall with her family. Eleonore spoke fondly of this professor and even teared up when discussing how this professor was moving off campus. Yet, this professor neither lived in Eleonore’s
residence hall nor taught a class that Eleonore took. Eleonore met this professor and forged a positive relationship with this professor after meeting her through programming that was co-facilitated by an academic department and Housing and Residence Life. In her role as a faculty-in-residence, this professor functioned as a Conduit of Belonging for Eleonore despite not operating in a traditional classroom setting.¹

Tricia provides another exemplar of this cross-domain exposure to Gateways of Belonging and Conduits of Belonging. She met a core group of friends during the first few weeks of participating in an Introduction to Chemistry course, after consistently sitting in the same spot and repeatedly striking up conversations with the other women around her. The nature of these initial conversations revolved around course material and forming a study group, and eventually developed into meaningful friendships as they discovered that several of them lived in nearby residence halls. Upon conclusion of the course, “it just turned into a friendship. Now, I’m living with the girls next year.”² They continue to coordinate academic schedules to support each other. Her major advisor developed as a Conduit of Belonging throughout this process by encouraging her scholarly work, and that relationship was strengthened when several of Tricia’s friends were also assigned to the same major advisor.

¹ An important question arises here, namely whether the faculty-in-residence is best characterized as a Conduit of Belonging or if the academic department and Housing and Residence Life might function as a Gateway of Belonging. In Eleonore’s case, her identification is with the faculty-in-residence and not with (nor ever was with) the program that facilitates that connection. Thus, I characterize the faculty-in-residence as a Conduit of Belonging.

² This quote resonates with Tricia’s definition of what it means to belong: “Feeling welcomed in a group of people and feeling like you have a spot in the group and you participate and enjoy being around this group.”
Other students report feeling a sense of belonging to the broader university, which then facilitates subsequent sense of belonging development in other domains. For instance, Lori, a student athlete, discussed receiving her SBU athletic apparel as a formative moment when she first felt like she really belonged at the university. This is resonant with research showing that students who receive university-issued swag ultimately report an increased sense of belonging relative to peers who do not receive university-issued swag (Hausmann et al. 2007). For Lori, her ability to wear her team’s emblem on campus felt like a “display” that marked her as “really [having] a place in that group.” She proudly carried this distinction in her residence hall, which she also felt like was “a whole community in itself.” Her self-described sense of belonging to the university legitimized her access to other domains of potential belonging on campus.

These brief examples highlight how students can develop a stronger sense of belonging as a function of exposure to multiple potential Gateways of Belonging and Conduits of Belonging across domains. That is, students’ engagement with Gateways of Belonging and Conduits of Belonging expose them to groups based on new and various types of similarity. In a sense, then, the purpose of Gateways of Belonging and Conduits of Belonging is to empower students to discover the similarities that already exist with their peers. Without Gateways of Belonging and Conduits of Belonging, sense of belonging becomes an inherently exclusive phenomenon in that students identify with one predominant group. Yet, with Gateways of Belonging and Conduits of Belonging, sense of belonging becomes an inherently inclusive
phenomenon in that students feel similar to and accepted by a variety of groups across domains.

*Other key factors related to sense of belonging.*

As previously discussed (Chapter Two), the literature on college students’ sense of belonging tends to emphasize what students do and not what institutions do (O’Keeffe 2013; Tierney 1992). At the core of this critique is the assumption that “a uniform set of values and attitudes remain in an institution and that it is the individual’s task to adapt to the system” (Tierney 1992:607). Correspondingly, it is a well-established fact that many colleges and universities are composed of infrastructures, policies, and procedures that are more conducive to white students and their families than to underrepresented students and their families (Allen 1992; Allen and Epps 1991; Lewis et al. 2019). Thus, I begin this section on other key factors related to sense of belonging with a reexamination of institutional factors, as a reminder that institutions have a responsibility to support their students. That is, the main premise here is that some subgroups of students face significant challenges to developing a sense of belonging because their institutions fail to foster domains of belonging for all students.

For instance, at a national level, students from racial and ethnic minority backgrounds and first-generation students report lower levels of sense of belonging than their white peers at four-year institutions (Goplan and Brady 2019). Likewise,
black students are more likely to experience racial microaggressions on campus relative to their underrepresented peers, and experiences with microaggressions correlate with lower sense of belonging (Lewis et al. 2019). Additionally, hiring practices in universities are often racialized endeavors, in that racial and gender biases have been shown to be implicit in all stages of the hiring process (O’Meara et al. 2020).

I cite these as examples of institutional failures because qualitative data from this study shows that underrepresented students are trying hard to develop sense of belonging and that they are not always successful. For instance, Eleonore, a female student of self-reported Colombian descent who identifies as a lesbian, believes that she is “working on trying to belong” but that her experiences with engaging in “social stuff” often fail. Likewise, Mona, a self-reported multiracial student, invests time as a “tag along” with a group of friends, though she describes the group with the phrase, “they feel like more of a tight knit group.” Her word choice of “they” reveals her perception as an outsider of this group, which she expounds upon later when she states that “I just don’t feel like I have a friend group that is super cohesive or where I really feel like I fit in or it’s my people.” Then there is Edson, a male student of Hispanic heritage who identifies as bisexual, who reveals that “self-confidence [and] self-esteem have always been a struggle for me and that’s been my main thing I’ve been working on this summer...because it is really important for belonging.” These students articulate the difficulty that underrepresented students often have with developing a sense of belonging.
The effort that many underrepresented students put into developing a sense of belonging contrasts sharply with the experiences of other students in the interview sample. When describing why he chose to enroll at SBU, Ned referenced that he walked on campus as a prospective student and that “campus was a match...that feels right.” He went on to describe his primary friend group as a Gateway of Belonging that developed out of his “side of the [residence hall] floor” where “everybody was just very friendly with each other.” Yet in the same narrative, he notes that “the foreign exchange students on our floor...they kind of just did their own thing.” Ned’s example highlights not only the sense of belonging that he felt on campus and with a friend group within his residence hall, but also how his definition of “everyone” excludes all the international students on his residence hall floor. Eric provides another example of how some students appear to seamlessly develop a sense of belonging. Eric is a walk on varsity athlete majoring in a business field who notes that he essentially only goes to class, hangs out with friends, and plays intramural basketball with a team comprised of friends from his residence hall. He has not joined any campus organizations or clubs. Even so, he describes his first-year experience at SBU as “constantly meeting new people, making new friends really anywhere you go, it was pretty awesome.” For Eric, this process of belonging began within 30 minutes of moving into his residence hall when he met a “good friend” shaving in the bathroom and struck up a conversation.

The point of these contrasts (between students who work hard to develop a sense of belonging and those for whom it occurs more seamlessly) highlights how certain domains within the institution are more conducive to the development of
sense of belonging for some students than others. Here, it is worth reemphasizing that students experience the classroom setting, campus organizations, and residence hall life as a function of how institutions set up those domains. University faculty can encourage student participation and interaction as well as express an interest in students’ development, both of which correlate with students’ increased sense of belonging (Freeman et al. 2007; Maestas et al. 2007). Universities can create mechanisms to encourage students’ formal involvement with clubs, campus organizations, activities, and leadership roles to enhance opportunities for sense of belonging development (Asher and Weeks 2012). And universities might design residence hall programming around a living-learning community model in order to set students up for success (Cambridge-Williams et al. 2013). In sum, institutions can create domains and establish roles that are more likely to function as Gateways of Belonging and Conduits of Belonging, respectively, for students.

Indeed, many institutions design summer bridge programs to acclimate students to the campus environment and resources (Kodama et al. 2016; Strayhorn 2011; Wachen, Pretlow, and Dixon 2016). Others create learning communities to intersect opportunities for engagement with academic and social life (Baker and Pomerantz 2000; Hlyva and Schuh 2003) or expose students to mentoring resources alongside other students and staff/faculty (Holt and Fifer 2016; Yomtov et al. 2017). These strategies create Gateways of Belonging and Conduits of Belonging by placing students in relationship with other people on campus and with other facets of the university environment.
The examples cited within this section draw on students’ gender identities, racial and ethnic backgrounds, and socioeconomic status backgrounds to illustrate how these key factors related to sense of belonging correlate with students’ access to and experiences with Gateways of Belonging and Conduits of Belonging, respectively. In light of the positive outcomes associated with sense of belonging (Chapter Two) – such as wellbeing and academic performance (Walton and Cohen 2011), motivation (Baumeister and Leary 1995; Freeman et al. 2007; Goodenow and Grady 1993), and persistence (Braxton 2000; Tinto 1993) – the discrepancy in experiences between groups of students has profound impacts on overall success.

By extension, then, discrete subgroups of the undergraduate population might struggle to develop a sense of belonging in one domain (or more) any time that an institution’s infrastructures, policies, and procedures are not inclusive of their specific needs. While the quantitative portion of this study focused on the specific key factors of gender identity, racial and ethnic background, socioeconomic status, and Honors status, the reality is that other factors include student athletes, commuter students, Greek affiliates, and members of the LGBTQIA+ community, among others. The qualitative portion of this study included narratives from students that identify with one or more of these communities. However, given the nature of the available quantitative data and the limited number of qualitative interviews, it was not possible to include detailed analysis of each of these subgroups. Even so, the findings of this study that frame sense of belonging as a function of exposure to Gateways of Belonging and Conduits of Belonging suggest that college students from marginalized communities are more likely to develop
sense of belonging across and within domains if they are introduced to groups of like-minded students and university representatives that affirm their identity.

IMPLICATIONS

The findings of this mixed methods study have important implications for university administrators, staff, and faculty who interact daily with students. If undergraduate students usually experience any one of the various domains in this study – classroom setting, residence hall, friend groups, campus organizations, and the university overall – as a Gateway of Belonging, then it is also possible to draw out common threads from each of these domains that might characterize it as a Gateway of Belonging. In doing so, lessons learned in one domain can translate to others, thus increasing the capacity for students to develop sense of belonging in multiple domains similarly to how they would in a primary Gateway of Belonging. University administrators, staff, and faculty could use the findings from this study to develop and implement training that identifies factors that influences whether certain domains function as Gateways of Belonging for students.

This is similarly true for students’ experiences with Conduits of Belonging. That is, if a student connects with a Conduit of Belonging within a certain domain, then common components of that relationship in a certain domain might be applied to other domains, thus increasing the impact of Conduits of Belonging as guides that facilitate students’ development of sense of belonging. The findings of this study have shown that a wide variety of university professionals can fill the role of Conduits of Belonging. The example of Ben comes to mind here. Ben is an
international student and one of two sophomores that I interviewed. When I asked Ben for an experience on campus that exemplified what it means for him to belong, he referenced the custodian in his first-year residence hall. This woman, whom he affectionately referred to as “madam”, left a strong impression on him simply by being consistently “kind” every time that he interacted with her.

Another implication of this mixed methods study is that it lays a theoretical foundation for how to understand emergent domains of higher education, such as those brought on by the current necessity of online learning. That is, the findings related to Gateways of Belonging and Conduits of Belonging can be mapped onto new domains of the college experience. Since today’s college students navigate multiple aspects of their universities on a daily basis (even remotely) and much of the existing research on college students’ sense of belonging focuses on one or two domains of sense of belonging, then this research adds theoretical and empirical flexibility that addresses novel ways of belonging. Subsequent analysis can continue to explore inter-domain patterns and apply those insights to emergent domains within the university context, thus enhancing student success outcomes.

Lastly, I revisit the working definition of sense of belonging developed in the literature review (Chapter Two) and referenced throughout this study:

Sense of belonging refers to college students’ perceived value as co-contributors to various campus domains. Additionally, the development of sense of belonging is impacted by background characteristics, campus experiences, and institutional factors. Furthermore, a high sense of belonging results in positive outcomes as defined by students themselves.

Results from this study affirm this definition, though they do so in the form of added nuance. For instance, I originally conceptualized being a “co-contributor” as akin to
the sense of belonging category “Co-Creator.” However, after analyzing the quantitative and qualitative data, the term co-contributor can just as readily apply to the ways that a Conformist contributes to group identity while also feeling a sense of belonging to that group. Likewise, being a co-contributor might be framed in any number of ways, such as buying into the vision of a campus organization committed to fighting racism or rushing a Greek organization as a means to develop friendships. In sum, this definition of sense of belonging captures the essence of the phenomenon only when students’ stories are framed within their own definitions of what it means to belong. Throughout this study, and particularly in the qualitative portion, I strove to anchor the findings in students’ own definitions of sense of belonging.

LIMITATIONS AND RECOMMENDATIONS

One limitation of this study relates to sample selection. An overarching goal of this study is to begin an exploratory analysis that clarifies the ambiguity of sense of belonging development for first-year undergraduate students within and across domains in a university setting. In doing so, I chose not to compare and contrast the unique experiences of first-generation students, students from specific racial and ethnic minority backgrounds, or students with specific gender identities. While my research here addresses these topics, the methodology related to sample selection focused more generally on tactics to increase sample size as much as possible. Subsequent research could apply these concepts and findings to specific subsamples of students in a more targeted fashion.
Another possible limitation of this study relates to the recoding of some of the variables of interest. I made a decision to recode the variables of racial and ethnic background as well as gender identity in order to maximize N within each final group. I made this decision because the quantitative analyses in this study required certain sample sizes in order to allow for certain statistical tests. Similar to the previous limitation, future research should deploy tactics to increase response rates among various student groups of interest.

Another limitation of my study is whether and how the survey analysis was influenced by having been collected in the fall semester, before students fully commit to campus organizations and while they are still very much in a period of transition. This is a particularly valid concern, especially since quantitative analysis showed that belonging to campus organizations was not a reliable indicator of one’s overall sense of belonging. However, survey data was collected relatively late in the fall semester, thus allowing for students to have acclimated to the university to some degree. Additionally, follow up qualitative analysis informed the quantitative results in a meaningful way by outlining the process by which students navigate campus organizations and other domains. Even so, future research would benefit from disseminating surveys in multiple semesters so that results might be mapped out and analyzed over time.

Finally, a major limitation of this research study involves the impact of COVID-19. I collected survey data in the fall semester prior to COVID-19’s initial surge in the U.S.A, whereas I collected interview data in the spring semester after the university had fully pivoted to online learning in response to the pandemic. I
include COVID-19 as a limitation here because the pandemic kept me from obtaining survey data in the spring semester and also prohibited me from interviewing participants in person while they were actively navigating the residential college experience. This was certainly a disruption and required modifications to the study.

Ultimately, however, the impact of COVID-19 ceased to be a limitation of the study and instead became an asset. Every university in the country was forced to alter significantly their day-to-day operations as a result of the pandemic. As a result, every university student in the country was forced to change their daily routines. I was able to introduce a question into the interview protocol that asked specifically about the impact of COVID-19 development on sense of belonging. While some of those findings have been alluded to throughout this study, the real benefit is that students generally reported having spent a lot of time reflecting on their first year of enrollment and were excited for the opportunity to process those experiences as part of this research study. For example, whereas I had initially anticipated conducting approximately 16 interviews, I ultimately conducted 32 interviews. COVID-19 resulted in an obtainment of more and richer qualitative data that will be relevant to a higher education context for the foreseeable future. As COVID-19 will continue to impact higher education for the foreseeable future, I anticipate revisiting the qualitative data that informs this study to address subsequent research questions.

CONCLUSION
It has been the purpose of this research study to shed light on how and why college students report a sense of belonging to various domains of the undergraduate experience, especially during the first year of enrollment. I began this dissertation with the observation that college students’ sense of belonging has always been understood in relational terms, as students develop a sense of belonging to something. As illustrated in Chapter One and Chapter Two, the scholarly community has amassed a significant amount of empirical research about who belongs to what, thus offering an increasingly accurate reflection of both student diversity and institutional variety. Though the cumulative view of this research acknowledges that students develop sense of belonging in unique domains of their college experiences (e.g., the classroom setting, the residence hall, friend groups, campus organizations, and the university overall), extant literature on the topic does not analyze these domains simultaneously. Instead, the vast majority of research related to college students’ sense of belonging focuses on one or perhaps two domains of belonging at a time.

This research study contributes to the existing literature on college students' sense of belonging by explicitly asking first-year undergraduate students to report on their feelings of a sense of belonging within multiple domains simultaneously. Furthermore, an added contribution to the existing literature is that students' reports in this study take the form of both quantitative data and qualitative data, gathered via surveys and semi-structured interviews, respectively. This is a key contribution because it allows for a full conceptual exploration of how and why
students develop a sense of belonging as a function of perceptions regarding multiple and overlapping aspects of the university experience.

This mixed methods data set serves a three-fold purpose. First, the preliminary quantitative data analysis reveals broad trends in how students experience a sense of belonging as a function of perceptions within each domain. Second, the preliminary qualitative data analysis speaks to the processes by which the broad trends develop. When taken together, third, the resulting mixed methods analysis highlights two key concepts that are rooted in individual domains but traverse multiple domains simultaneously.

These two key concepts are Gateways of Belonging and Conduits of Belonging, which I posit are integral to understanding how and why first-year undergraduate students report a sense of belonging. Gateways of Belonging refer to organizing structures or groups that function as springboards from which students develop a deeper or broader sense of belonging. Gateways of Belonging refer to groups with which students identify that, by virtue of group identification, function as entry points to other domains of sense of belonging. A key feature of these groups is similarity, based on any number of factors such as shared worldview, common purpose, or even related background characteristics. Of course, the similarities from which students develop a sense of belonging are not always in line with a university’s espoused mission, as students might form groups that exclude others based on gender identity or racial and ethnic background. Conduits of Belonging address this issue by modeling for students what an inclusive sense of belonging might look like within the university setting. Conduits of Belonging refer to specific
people with whom respondents identify and who embody an inclusive sense of belonging. By virtue of their example, Conduits of Belonging invite students to develop their own sense of belonging in various university settings. Conduits of Belonging are often university representatives such as peer mentors, professors, or university staff members that in some way function as channels of sense of belonging for students.

In conclusion, I revisit the research questions posed in this study:

1. What are some important factors (e.g., activities, experiences, people) that facilitate the development or impediment of sense of belonging?

2. How do students describe their experiences of sense of belonging?

As a result of exploring these research questions, Gateways of Belonging and Conduits of Belonging emerged as a mechanism for the factors that facilitate the development or impediment of sense of belonging (related to the first research question). Additionally, students describe their experiences of sense of belonging as a function of interactions with various Gateways of Belonging and Conduits of Belonging (related to the second research question). Both these concepts resonate with key aspects of the theoretical frame and literature review (Chapter Two). Additionally, these concepts are an important theoretical foundation for how sense of belonging manifests in new domains such as the one brought on by the COVID-19 pandemic, as current inter-domain patterns might be applied to emergent domains within the university context. Subsequent scholarship should continue to unpack how Gateways of Belonging and Conduits of Belonging operate in traditional and
emergent domains, with the ultimate goal of creating universities in which all students perceive themselves to be co-contributors in their respective communities.
Appendices

TABLES AND FIGURES

Table 3.1 – Comparison of Entire First-Year Cohort with Survey Respondents

<table>
<thead>
<tr>
<th></th>
<th>Population</th>
<th></th>
<th>Sample</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Percent</td>
<td>N</td>
<td>Percent</td>
</tr>
<tr>
<td>Cumulative</td>
<td>1821</td>
<td>100.00</td>
<td>335</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1099</td>
<td>60.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>722</td>
<td>39.65</td>
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<td></td>
</tr>
<tr>
<td>Man</td>
<td></td>
<td>61</td>
<td>18.21</td>
<td></td>
</tr>
<tr>
<td>Man, Transgender</td>
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<td>0.30</td>
<td></td>
</tr>
<tr>
<td>Non-binary</td>
<td></td>
<td>2</td>
<td>0.60</td>
<td></td>
</tr>
<tr>
<td>Non-binary, Transgender</td>
<td></td>
<td>2</td>
<td>0.60</td>
<td></td>
</tr>
<tr>
<td>Non-binary, Woman</td>
<td></td>
<td>2</td>
<td>0.60</td>
<td></td>
</tr>
<tr>
<td>Prefer not to say</td>
<td></td>
<td>2</td>
<td>0.60</td>
<td></td>
</tr>
<tr>
<td>Transgender, Woman</td>
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<td>0.30</td>
<td></td>
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<tr>
<td>Woman</td>
<td></td>
<td>264</td>
<td>78.81</td>
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</tr>
<tr>
<td><strong>Ethnicity</strong></td>
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<td>0.11</td>
<td>1</td>
<td>0.30</td>
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<tr>
<td>Asian</td>
<td>111</td>
<td>6.10</td>
<td>54</td>
<td>16.12</td>
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<td>Black or African American</td>
<td>92</td>
<td>5.05</td>
<td>19</td>
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<tr>
<td>Hispanic</td>
<td>129</td>
<td>7.08</td>
<td>14</td>
<td>4.18</td>
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<tr>
<td>Multi-racial</td>
<td>104</td>
<td>5.71</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Not reported / Non-Citizen</td>
<td>100</td>
<td>5.49</td>
<td>11</td>
<td>3.28</td>
</tr>
<tr>
<td>Unknown</td>
<td>17</td>
<td>0.93</td>
<td>2</td>
<td>0.60</td>
</tr>
<tr>
<td>White</td>
<td>1266</td>
<td>69.52</td>
<td>234</td>
<td>69.85</td>
</tr>
<tr>
<td><strong>Honors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>1337</td>
<td>73.42</td>
<td>208</td>
<td>62.09</td>
</tr>
<tr>
<td>Y</td>
<td>484</td>
<td>26.58</td>
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<td>37.01</td>
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<td><strong>Student Athlete</strong></td>
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<td></td>
</tr>
<tr>
<td>N</td>
<td>1743</td>
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<td>329</td>
<td>98.21</td>
</tr>
<tr>
<td>Y</td>
<td>78</td>
<td>4.28</td>
<td>3</td>
<td>0.90</td>
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Table 3.2 – Summary of Independent and Dependent Variables

<table>
<thead>
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<th>Variable</th>
<th>Description</th>
<th>Value</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense of Belonging…</td>
<td>Measured via 10-point Likert scale according to three indicators:</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>1) I feel like I belong to _____.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) I feel that I am a member of the _____ community.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3) I see myself as part of the _____ community.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...Academic Class</td>
<td>Dimension/Domain of Sense of Belonging Articulated in survey as &quot;at least one particular class&quot;</td>
<td>0-10</td>
<td>-</td>
</tr>
<tr>
<td>...Residence Hall</td>
<td>Dimension/Domain of Sense of Belonging Articulated in survey as &quot;my residence hall&quot;</td>
<td>0-10</td>
<td>-</td>
</tr>
<tr>
<td>...Friend Group</td>
<td>Dimension/Domain of Sense of Belonging Articulated in survey as &quot;a friend group on campus&quot;</td>
<td>0-10</td>
<td>-</td>
</tr>
<tr>
<td>...Campus Organization</td>
<td>Dimension/Domain of Sense of Belonging Articulated in survey as &quot;a campus organization&quot;</td>
<td>0-10</td>
<td>-</td>
</tr>
<tr>
<td>...University</td>
<td>Dimension/Domain of Sense of Belonging Articulated in survey as &quot;SBU&quot;</td>
<td>0-10</td>
<td>-</td>
</tr>
<tr>
<td>Racial and Ethnic Background</td>
<td>White</td>
<td>1</td>
<td>69.76%</td>
</tr>
<tr>
<td></td>
<td>Racial and Ethnic Minority (REM)</td>
<td>2</td>
<td>30.24%</td>
</tr>
<tr>
<td>Gender Identity</td>
<td>Man</td>
<td>1</td>
<td>17.53%</td>
</tr>
<tr>
<td></td>
<td>Woman</td>
<td>2</td>
<td>79.38%</td>
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<tr>
<td></td>
<td>Other</td>
<td>3</td>
<td>3.09%</td>
</tr>
<tr>
<td>Socioeconomic Status</td>
<td>Low</td>
<td>1</td>
<td>7.22%</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>2</td>
<td>42.27%</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>3</td>
<td>50.52%</td>
</tr>
<tr>
<td>Honors Status</td>
<td>Non-honors</td>
<td>1</td>
<td>60.69%</td>
</tr>
<tr>
<td></td>
<td>Honors</td>
<td>2</td>
<td>39.31%</td>
</tr>
</tbody>
</table>
Table 3.3 – Summary of Recoding of LCA Manifest Variables According to Percentiles

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>N</th>
<th>25&lt;sup&gt;th&lt;/sup&gt; Percentile</th>
<th>75&lt;sup&gt;th&lt;/sup&gt; Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense of Belonging...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>...Academic Class</td>
<td>290</td>
<td>6.00</td>
<td>9.00</td>
</tr>
<tr>
<td>...Residence Hall</td>
<td>291</td>
<td>5.00</td>
<td>9.00</td>
</tr>
<tr>
<td>...Friend Group</td>
<td>291</td>
<td>5.33</td>
<td>10.00</td>
</tr>
<tr>
<td>...Campus Organization</td>
<td>291</td>
<td>5.00</td>
<td>9.00</td>
</tr>
<tr>
<td>...University</td>
<td>291</td>
<td>6.00</td>
<td>9.67</td>
</tr>
</tbody>
</table>

Note: 25<sup>th</sup> and 75<sup>th</sup> percentiles relative to 10-point Likert scale
Table 3.4 - Summary of Interviewee Demographics

<table>
<thead>
<tr>
<th></th>
<th>Freshmen</th>
<th>Sophomores</th>
<th>Juniors</th>
<th>Seniors</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Year Summer Study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transcript Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roommates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internship</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internship Experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International Student</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: * per university records; ** per student discussion; *** roommates; **** international student.
Table 4.1 – One-Sample Z Test of Proportions Comparing Survey Sample to First-Year Cohort

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Proportion</th>
<th>Mu</th>
<th>Z</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Racial and Ethnic Background</td>
<td>88</td>
<td>0.302</td>
<td>0.305</td>
<td>0.088</td>
<td>0.930</td>
</tr>
<tr>
<td>(REM)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender Identity</td>
<td>231</td>
<td>0.794</td>
<td>0.604</td>
<td>6.636</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>(Woman)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Honors Status</td>
<td>114</td>
<td>0.392</td>
<td>0.266</td>
<td>4.865</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>(Yes)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4.2 – Basic Descriptive Statistics for All Variables of Inquiry

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>Std. Dev.</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense of Belonging…</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>…Academic Class</td>
<td>290</td>
<td>7.436</td>
<td>7.67</td>
<td></td>
<td>2.150</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>…Residence Hall</td>
<td>291</td>
<td>6.960</td>
<td>7</td>
<td></td>
<td>2.495</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>…Friend Group</td>
<td>291</td>
<td>7.258</td>
<td>8</td>
<td></td>
<td>2.949</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>…Campus Organization</td>
<td>291</td>
<td>6.493</td>
<td>7</td>
<td></td>
<td>2.983</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>…University</td>
<td>291</td>
<td>7.517</td>
<td>8</td>
<td></td>
<td>2.303</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Independent Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Racial and Ethnic Background</td>
<td>291</td>
<td></td>
<td></td>
<td>White (88)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender Identity</td>
<td>291</td>
<td></td>
<td></td>
<td>Woman (231)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socioeconomic Status</td>
<td>291</td>
<td>2.433</td>
<td>3</td>
<td>High (147)</td>
<td>0.625</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Honors Status</td>
<td>290</td>
<td></td>
<td></td>
<td>Non-Honors (176)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: Dependent variable measured according to 10-point Likert scale; Racial and ethnic background options = White, Racial and Ethnic Minority; Gender Identity options = Man, Woman, Other; SES options = Low, Medium, High; Honors Status options = Non-Honors, Honors
Figure 4.1 – Histograms of Sense of Belonging Domains

- SB Academic Class
- SB Residence Hall
Note: Dependent variable measured according to 10-point Likert scale
### Table 4.3 – Summary of Model Results Used for Model Selection for LCA without Covariates

<table>
<thead>
<tr>
<th>Model</th>
<th>LL</th>
<th>BIC</th>
<th>AIC</th>
<th># of Parameters</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 class</td>
<td>-1566.913</td>
<td>3190.524</td>
<td>3153.825</td>
<td>10</td>
<td>232</td>
</tr>
<tr>
<td>2 class</td>
<td>-1468.736</td>
<td>3056.539</td>
<td>2979.471</td>
<td>21</td>
<td>221</td>
</tr>
<tr>
<td>3 class</td>
<td>-1434.133</td>
<td>3049.702</td>
<td>2932.270</td>
<td>32</td>
<td>210</td>
</tr>
<tr>
<td>4 class</td>
<td>-1423.012</td>
<td>3089.829</td>
<td>2932.020</td>
<td>43</td>
<td>199</td>
</tr>
<tr>
<td>5 class</td>
<td>-1415.038</td>
<td>3136.249</td>
<td>2938.080</td>
<td>54</td>
<td>188</td>
</tr>
</tbody>
</table>

**Note:** LL = log-likelihood; BIC = Bayesian information criterion; AIC = Akaike information criterion; $L^2$ = square of the likelihood; df = degrees of freedom; Table format adapted from Porcu and Giambona (2017)
Table 4.4 – Conditional Item Response (Column) Probabilities, by Outcome Variable, for Each Class (Row) for LCA without Covariates

<table>
<thead>
<tr>
<th>Sense of Belonging Academic Class</th>
<th>Probability Low</th>
<th>Probability Medium</th>
<th>Probability High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>0.6068</td>
<td>0.2555</td>
<td>0.1378</td>
</tr>
<tr>
<td>Class 2</td>
<td>0.2775</td>
<td>0.4955</td>
<td>0.2270</td>
</tr>
<tr>
<td>Class 3</td>
<td>0.0778</td>
<td>0.2723</td>
<td>0.6499</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sense of Belonging Residence Hall</th>
<th>Probability Low</th>
<th>Probability Medium</th>
<th>Probability High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>0.7511</td>
<td>0.2308</td>
<td>0.0181</td>
</tr>
<tr>
<td>Class 2</td>
<td>0.1738</td>
<td>0.6503</td>
<td>0.1759</td>
</tr>
<tr>
<td>Class 3</td>
<td>0.1047</td>
<td>0.2236</td>
<td>0.6716</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sense of Belonging Friend Group</th>
<th>Probability Low</th>
<th>Probability Medium</th>
<th>Probability High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>0.9031</td>
<td>0.0969</td>
<td>0.0000</td>
</tr>
<tr>
<td>Class 2</td>
<td>0.1642</td>
<td>0.6567</td>
<td>0.1791</td>
</tr>
<tr>
<td>Class 3</td>
<td>0.0549</td>
<td>0.2454</td>
<td>0.6997</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sense of Belonging Campus Organization</th>
<th>Probability Low</th>
<th>Probability Medium</th>
<th>Probability High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>0.5747</td>
<td>0.3364</td>
<td>0.0888</td>
</tr>
<tr>
<td>Class 2</td>
<td>0.3906</td>
<td>0.4211</td>
<td>0.1882</td>
</tr>
<tr>
<td>Class 3</td>
<td>0.1867</td>
<td>0.2164</td>
<td>0.5968</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sense of Belonging SBU</th>
<th>Probability Low</th>
<th>Probability Medium</th>
<th>Probability High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>0.8884</td>
<td>0.1116</td>
<td>0.0000</td>
</tr>
<tr>
<td>Class 2</td>
<td>0.2582</td>
<td>0.6385</td>
<td>0.1033</td>
</tr>
<tr>
<td>Class 3</td>
<td>0.0259</td>
<td>0.2686</td>
<td>0.7056</td>
</tr>
</tbody>
</table>
Table 4.5 – Predicted Class Memberships for 3 Class Model for LCA without Covariates

<table>
<thead>
<tr>
<th>Class</th>
<th>Belonging</th>
<th>Predicted Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1: Low Belonging</td>
<td></td>
<td>0.1724</td>
</tr>
<tr>
<td>Class 2: Medium Belonging</td>
<td></td>
<td>0.5552</td>
</tr>
<tr>
<td>Class 3: High Belonging</td>
<td></td>
<td>0.2724</td>
</tr>
</tbody>
</table>
Table 4.6 – Summary of Model Results Used for Model Selection for LCA with Covariates

<table>
<thead>
<tr>
<th>Model</th>
<th>LL</th>
<th>BIC</th>
<th>AIC</th>
<th># of Parameters</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 class</td>
<td>-1561.583</td>
<td>3179.830</td>
<td>3143.166</td>
<td>10</td>
<td>232</td>
</tr>
<tr>
<td>2 class</td>
<td>-1457.908</td>
<td>3057.476</td>
<td>2965.815</td>
<td>25</td>
<td>217</td>
</tr>
<tr>
<td>3 class</td>
<td>-1413.478</td>
<td>3053.612</td>
<td>2906.955</td>
<td>40</td>
<td>202</td>
</tr>
<tr>
<td>4 class</td>
<td>-1393.371</td>
<td>3098.396</td>
<td>2896.743</td>
<td>55</td>
<td>187</td>
</tr>
<tr>
<td>5 class</td>
<td>-1531.868</td>
<td>3460.390</td>
<td>3203.740</td>
<td>70</td>
<td>172</td>
</tr>
</tbody>
</table>

**Note:** LL = log-likelihood; BIC = Bayesian information criterion; AIC = Akaike information criterion; L^2 = square of the likelihood; df = degrees of freedom; Table format adapted from Porcu and Giambona (2017)
Table 4.7 – Conditional Item Response (Column) Probabilities, by Outcome Variable, for Each Class (Row) for LCA with Covariates

<table>
<thead>
<tr>
<th>Sense of Belonging</th>
<th>Academic Class</th>
<th>Probability Low</th>
<th>Probability Medium</th>
<th>Probability High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td></td>
<td>0.5781</td>
<td>0.2657</td>
<td>0.1562</td>
</tr>
<tr>
<td>Class 2</td>
<td></td>
<td>0.2909</td>
<td>0.4938</td>
<td>0.2153</td>
</tr>
<tr>
<td>Class 3</td>
<td></td>
<td>0.0719</td>
<td>0.2757</td>
<td>0.6524</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sense of Belonging</th>
<th>Residence Hall</th>
<th>Probability Low</th>
<th>Probability Medium</th>
<th>Probability High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td></td>
<td>0.7610</td>
<td>0.2164</td>
<td>0.0226</td>
</tr>
<tr>
<td>Class 2</td>
<td></td>
<td>0.1670</td>
<td>0.6740</td>
<td>0.1591</td>
</tr>
<tr>
<td>Class 3</td>
<td></td>
<td>0.0974</td>
<td>0.2122</td>
<td>0.6905</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sense of Belonging</th>
<th>Friend Group</th>
<th>Probability Low</th>
<th>Probability Medium</th>
<th>Probability High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td></td>
<td>0.8471</td>
<td>0.1529</td>
<td>0.0000</td>
</tr>
<tr>
<td>Class 2</td>
<td></td>
<td>0.1679</td>
<td>0.6525</td>
<td>0.1796</td>
</tr>
<tr>
<td>Class 3</td>
<td></td>
<td>0.0551</td>
<td>0.2520</td>
<td>0.6929</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sense of Belonging</th>
<th>Campus Organization</th>
<th>Probability Low</th>
<th>Probability Medium</th>
<th>Probability High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td></td>
<td>0.5617</td>
<td>0.3383</td>
<td>0.0999</td>
</tr>
<tr>
<td>Class 2</td>
<td></td>
<td>0.3893</td>
<td>0.4314</td>
<td>0.1793</td>
</tr>
<tr>
<td>Class 3</td>
<td></td>
<td>0.1898</td>
<td>0.2108</td>
<td>0.5994</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sense of Belonging</th>
<th>SBU</th>
<th>Probability Low</th>
<th>Probability Medium</th>
<th>Probability High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td></td>
<td>0.8990</td>
<td>0.1010</td>
<td>0.0000</td>
</tr>
<tr>
<td>Class 2</td>
<td></td>
<td>0.2261</td>
<td>0.6514</td>
<td>0.1225</td>
</tr>
<tr>
<td>Class 3</td>
<td></td>
<td>0.0518</td>
<td>0.2851</td>
<td>0.6631</td>
</tr>
</tbody>
</table>
Table 4.8 – Predicted Class Memberships for 3 Class Model for LCA with Covariates

<table>
<thead>
<tr>
<th></th>
<th>Predicted Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Belonging</td>
<td>0.1869</td>
</tr>
<tr>
<td>Medium Belonging</td>
<td>0.5190</td>
</tr>
<tr>
<td>High Belonging</td>
<td>0.2941</td>
</tr>
</tbody>
</table>
Table 4.9 – Impact of Covariates on 3 Class Model

<table>
<thead>
<tr>
<th>Class 2 Relative to Class 1</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>2.70</td>
<td>(1.48)</td>
</tr>
<tr>
<td>Gender Identity</td>
<td>-0.03</td>
<td>(0.49)</td>
</tr>
<tr>
<td>Racial and Ethnic Background</td>
<td>-1.55**</td>
<td>(0.47)</td>
</tr>
<tr>
<td>Socioeconomic Status</td>
<td>0.03</td>
<td>(0.37)</td>
</tr>
<tr>
<td>Honors</td>
<td>-0.84*</td>
<td>(0.42)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class 3 Relative to Class 1</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-1.02</td>
<td>(1.61)</td>
</tr>
<tr>
<td>Gender Identity</td>
<td>-0.26</td>
<td>(0.51)</td>
</tr>
<tr>
<td>Racial and Ethnic Background</td>
<td>-0.46</td>
<td>(0.46)</td>
</tr>
<tr>
<td>Socioeconomic Status</td>
<td>1.05*</td>
<td>(0.41)</td>
</tr>
<tr>
<td>Honors</td>
<td>-0.24</td>
<td>(0.44)</td>
</tr>
</tbody>
</table>

**Note:** p<0.05, **p<0.01, ***p<0.001; Racial and ethnic background options = White (1), Racial and Ethnic Minority (2); Gender Identity options = Man (1), Woman (2), Other (3); SES options = Low (1), Medium (2), High (3); Honors Status options = Non-Honors (1), Honors (2)
Figure 4.2 – Predicted Probabilities for Each Class Across Covariates

**Predicted Probabilities for Class Across Gender**

- Man (dotted line)
- Woman (dashed line)
- Other (solid line)

Class (1 = Low Belonging; 2 = Medium Belonging; 3 = High Belonging)
Predicted Probabilities for Class Across Race

Class (1 = Low Belonging; 2 = Medium Belonging; 3 = High Belonging)
Predicted Probabilities for Class Across SES

Class (1 = Low Belonging; 2 = Medium Belonging; 3 = High Belonging)
Predicted Probabilities for Class Across Honors Status

Class (1 = Low Belonging; 2 = Medium Belonging; 3 = High Belonging)
<table>
<thead>
<tr>
<th>Category</th>
<th>Quantity</th>
<th>Person(s) and/or Group(s)</th>
<th>Description</th>
<th>Interpretation</th>
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<tr>
<td>Environment</td>
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<td>Membership in a group</td>
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<td>Fitting in</td>
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<td>Space</td>
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<td>Inclusion by others</td>
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<td>Different intricate groups</td>
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<td>Support</td>
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<th>Description</th>
<th>Interpretation</th>
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<td>Acceptance</td>
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<td>Closer knit group of people</td>
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<td>Being invited</td>
<td>Access</td>
<td>Access</td>
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<td>Comfort</td>
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<td>Group</td>
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<td>High school friends</td>
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<td>People</td>
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<td>Mutual trust</td>
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<tr>
<td>Place</td>
<td>3</td>
<td>Safety</td>
<td>Wanting to be there</td>
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<table>
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<th>Quantity</th>
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<td>Amongst peers</td>
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<td>Friends</td>
<td></td>
<td>Don't feel like an outsider</td>
<td></td>
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<tr>
<td>Group</td>
<td></td>
<td>Familiarity</td>
<td></td>
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<td>Peers</td>
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<td>Fitting in</td>
<td></td>
<td></td>
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<td>People</td>
<td></td>
<td>Matching up</td>
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<td>Place</td>
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<td>Not an outsider</td>
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**Table 4.10 – Summary of Students’ Definitions of Sense of Belonging**
### Table 4.11 – Summary of Sense of Belonging Types

<table>
<thead>
<tr>
<th>Category</th>
<th>Quantity</th>
<th>Sense of Belonging Framed Via</th>
<th>Key Attributes</th>
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<tr>
<td>Self-Centric</td>
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<td>Self</td>
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<td>Friend group</td>
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<td>Campus organization</td>
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<tr>
<td>Co-Creator</td>
<td>9</td>
<td>Self and Other</td>
<td>Mutuality</td>
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<td></td>
<td></td>
<td></td>
<td>Friend group</td>
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<tr>
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<td></td>
<td></td>
<td>Campus organization</td>
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<td></td>
<td></td>
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<td>Academics</td>
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<tr>
<td>Seeker</td>
<td>5</td>
<td>None</td>
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<tr>
<td>Conformist</td>
<td>3</td>
<td>Other</td>
<td>Fitting in</td>
</tr>
<tr>
<td></td>
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<td>Peers</td>
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</table>
FULL SURVEY QUESTIONS

FIRST SEMESTER COLLEGIATE EXPERIENCES SURVEY

November 2019

Dear Student,

You have been chosen to participate in a longitudinal survey project on college students’ experiences. Your unique input will be an invaluable contribution to the ongoing work of shaping our university to meet the ever-changing needs of its students. I hope that you will opt in for this opportunity. The study is coordinated by X University’s Office of Retention & Student Success. You must be at least 18 years old to participate in the study.

In the survey, you will be asked questions related to your experiences at X University this semester, and a second survey will be distributed in your second semester of enrollment. Information gathered during the course of the study will be kept in the strictest professional confidence. Your survey will ask for your university-issued student identification number, which will provide the research team with a means for linking all of the information gathered throughout the study. After this info has been linked, your identification number will be removed from the data file to protect the anonymity of the study participants. Your participation in this study is completely voluntary, and you may withdraw without any negative

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1 The university’s name is anonymized in this research study. The actual survey reflects the university where the participants enroll.
consequences by choosing not to turn in the survey. You will receive a follow-up reminder, to which you may also choose to not respond.

By completing this survey, you indicate your informed consent to participate and you can be assured of confidentiality. If you have any questions regarding this study, please contact the Principal Investigator, Bert Ellison, directly at relliso2@tulane.edu or 828-719-7504.

The survey should take approximately 16 minutes to complete but, since this is a busy time of the semester, the research team wants to make it worth your while. So please note that, upon completion of this survey, you will be eligible to win one (1) of four (4) $50 VISA gift cards, one (1) of two (2) $100 VISA gift cards, or free Insomnia Cookies for you and your fellow residence hall floor members. Drawings for these prizes will occur after the survey window closes and winners will be notified via their [university] email addresses.

Thank you in advance for contributing to this important project. I appreciate your help. Your responses, together with those of other students who respond, will be used to help X University improve the college student experience.

Sincerely,

Dean X
X College
X University
First Semester Collegiate Experiences Survey

This questionnaire seeks to learn about your perceptions of the experiences you have encountered at your college or university this semester. Please be candid in your responses. We appreciate your help. The survey should only take 15 minutes to respond. THANK YOU.

What is your university-issued student identification number (9 digits) as displayed on your student identification card?

1) I feel like I belong to at least one particular class.
   0 1 2 3 4 5 6 7 8 9 10
   Strongly disagree Neutral Strongly agree
   I feel that I am a member of at least one particular class community.
   0 1 2 3 4 5 6 7 8 9 10
   Strongly disagree Neutral Strongly agree
   I see myself as part of at least one particular class community.
   0 1 2 3 4 5 6 7 8 9 10
   Strongly disagree Neutral Strongly agree

2) I feel like I belong to my residence hall.
   0 1 2 3 4 5 6 7 8 9 10
   Strongly disagree Neutral Strongly agree
   I feel that I am a member of my residence hall community.
   0 1 2 3 4 5 6 7 8 9 10
   Strongly disagree Neutral Strongly agree
   I see myself as part of my residence hall community.
   0 1 2 3 4 5 6 7 8 9 10
   Strongly disagree Neutral Strongly agree

3) I feel like I belong to a friend group on campus.
   0 1 2 3 4 5 6 7 8 9 10
   Strongly disagree Neutral Strongly agree

2 Bolded and italicized questions pertain directly to the research questions and hypotheses of this study, and include sense of belonging, race/ethnicity, gender, and socioeconomic status. Of particular note is the lack of a question regarding designation as a student athlete. Results from the survey were merged with student athlete data to introduce this variable.
I feel that I am a member of a friend group community on campus.

0  1  2  3  4  5  6  7  8  9  10
Strongly disagree Neutral Strongly agree

I see myself as part of a friend group community on campus.

0  1  2  3  4  5  6  7  8  9  10
Strongly disagree Neutral Strongly agree

4) I feel like I belong to a campus organization.

0  1  2  3  4  5  6  7  8  9  10
Strongly disagree Neutral Strongly agree

I feel that I am a member of a campus organization community.

0  1  2  3  4  5  6  7  8  9  10
Strongly disagree Neutral Strongly agree

I see myself as part of a campus organization community.

0  1  2  3  4  5  6  7  8  9  10
Strongly disagree Neutral Strongly agree

5) I feel like I belong at X University.

0  1  2  3  4  5  6  7  8  9  10
Strongly disagree Neutral Strongly agree

I feel that I am a member of the X University community.

0  1  2  3  4  5  6  7  8  9  10
Strongly disagree Neutral Strongly agree

I see myself as part of the X University community.

0  1  2  3  4  5  6  7  8  9  10
Strongly disagree Neutral Strongly agree

A. Please share some information about you. Please check the appropriate box to each question below.

A1. Do you identify as (mark all that apply):
___ African American/Black
___ American Indian/Alaska Native
___ Asian American/Asian
___ Caucasian/White
___ Mexican American/Chicano
___ Native Hawaiian/Pacific Islander
___ Puerto Rican
___ Other
___ Prefer not to say

A2. Do you identify as (mark all that apply):
___ Female
___ Male
__ Non-binary
__ Transgender
__ Other: ________
__ Prefer not to say

A3. What is your current enrollment status?
__ Full time student
__ Part time student

A4. Have you attended college before enrolling in this institution?
__ Yes, but only while I also attended high school
__ Yes, other
__ No

A5. How many semesters have you completed at this institution?
__ none yet
__ 1
__ 2
__ More than 2

A7. Your current age?
__ 17 or younger
__ 18-19
__ 20-21
__ 22-23
__ 24 or older

A8. Are you currently married?
__ Yes
__ No

A9. Where do you currently reside?
__ On campus, in a residence hall
__ Fraternity or sorority house
__ Other on campus housing
__ Off campus with family
__ Off campus without family

A10. What was your average grade in high school?
__ A or A+
__ A-
__ B+
__ B
__ B-
__ C+
__ C
__ C-
__ D+
__ D or lower
A11. How many miles is this college/university from your permanent home?
___ 5 or less
___ 6 to 10
___ 11 to 50
___ 51 to 100
___ 101 to 500
___ Over 500

A12. What is your best estimate of your parents’ total income last year?
Consider income from all sources before taxes
___ Less than $15,000
___ $15,000 to $24,999
___ $25,000 to $29,999
___ $30,000 to $59,999
___ $60,000 to $74,999
___ $75,000 to $99,999
___ $100,000 to $124,999
___ $125,000 to $149,999
___ $150,000 to $174,999
___ $175,000 to $200,000
___ $200,000 to $249,999
___ $250,000 to $499,999
___ $500,000 or higher

A14. Is this college your:
___ First choice?
___ Second choice?
___ Third choice?
___ Fourth choice or more?

A15. Please circle your parents’ highest level of education (P1 = Parent 1; P2 = Parent 2):
Grammar school or less F M
Some high school F M
High school graduate F M
Postsecondary school other than college F M
Some college F M
College degree F M
Some graduate school F M
Graduate degree F M
Unsure F M

A16. What percentage of your FIRST YEAR’S EDUCATIONAL EXPENSE (ROOM, BOARD, TUITION AND FEES) is met by the following sources: (The total must add up to 100%)  
___ Parents, other relatives or friends
___ Spouse
___ Savings
___ Pell Grant
___ Supplemental Educational Opportunity Grant
___ State Scholarship or Grant
___ Other private grant
___ Other Government Aid (ROTC, BIA, GI/military benefits, etc.)
___ Stafford Loan (GSL)
___ Perkins Loan
___ Other Loan
___ College Loan
A19. Do you have any concern about your ability to finance your college education?
___ None (I am confident that I will have sufficient funds)
___ Some (but I probably will have enough funds)
___ Major (not sure I will have enough funds to complete college)

B. During your last year in high school, how frequently did you engage in the following activities? Use the following response scale:

Never—1  Seldom—2  Occasionally—3  Frequently—4  Very frequently—5

B1. Took private art lessons
1 2 3 4 5

B2. Took private music lessons
1 2 3 4 5

B3. Participated in band or orchestra
1 2 3 4 5

B4. Participated in chorus or choir
1 2 3 4 5

B5. Participated in dance at school
1 2 3 4 5

B6. Participated in drama club
1 2 3 4 5

B7. Participated in a school play or musical
1 2 3 4 5

B8. Visited art museums
1 2 3 4 5

B9. Visited history museums
1 2 3 4 5

B10. Attended a symphony concert
1 2 3 4 5

B11. Took a dance class outside of school
1 2 3 4 5

B12. Studied a foreign language outside regular school
1 2 3 4 5

B13. Borrowed books from the public library
1 2 3 4 5

B14. Read for pleasure outside of school
1 2 3 4 5

B15. Participated in a youth religious club/group
1 2 3 4 5

B16. Read or meditated on sacred or religious writings
1 2 3 4 5
B17. Traveled abroad

B18. Attended a ballet performance

B19. Attended an opera performance

B20. Discussed religion or spirituality

B21. Attended a religious service

B22. Spent time in prayer or meditation

B23. Performed volunteer work

C. Following is a list of statements characterizing various aspects of the academic and social life in the residence halls at your college or university. Please indicate the level of your agreement or disagreement with each statement, as it applies to your experiences. If you do not live in a campus residence hall, please skip to Section D.

**Strongly Disagree—1**    **Disagree—2**    **Agree—3**    **Strongly Agree—4**

C1. I think my residence hall floor is a good place to live.

C2. People on my residence hall floor do not share the same values.

C3. My neighbors and I want the same thing for our residence hall floor.

C4. I can recognize all of the people who live on my residence hall floor.

C5. I feel at home on my residence hall floor.

C6. Very few of my neighbors on my residence hall floor know me.

C7. I care about what my neighbors on my residence hall floor think about my actions.

C8. I have no influence over what my residence hall floor is like.

C9. If there is a problem on my residence hall floor, people who live there can get it solved.
C10. It is very important for me to live on my particular residence hall floor.

1 2 3 4

C11. People on my residence hall floor generally don’t get along with each other.

1 2 3 4

C12. I am confident that my resident advisor/assistant (RA) knows my name.

1 2 3 4

C13. My resident advisor/assistant (RA) encourages academic success.

1 2 3 4

C14. My neighbors on my residence hall floor encourage academic success.

1 2 3 4

C15. I can study in my room.

1 2 3 4

C16. I can study in my residence hall somewhere besides my room.

1 2 3 4

C17. I would consider talking with my resident advisor/assistant (RA) about an academic difficulty I have.

1 2 3 4

C18. I would consider talking with my resident advisor/assistant (RA) about a social problem I have.

1 2 3 4

C19. I would consider talking with another student (other than the RA) on my floor about an academic difficulty I have.

1 2 3 4

C20. I would consider talking with another student (who is not the RA) on my floor about a social problem I have.

1 2 3 4

C21. Residence hall programs offer opportunities to interact with faculty members.

1 2 3 4

D. During this fall semester, indicate how often you have engaged in the following activities:

Never—1 Occasionally—2 Often—3 Very Often—4

D1. Discussed course content with other students outside of class...

1 2 3 4

D2. Been a guest in a professor’s home...

1 2 3 4

D3. Met with faculty during their office hours...

1 2 3 4
D4. Attended campus movies, plays, concerts, and/or recitals... 1 2 3 4
D5. Studied with other students... 1 2 3 4
D6. Participated in social activities with members of the Greek system... 1 2 3 4
D7. Gone out on a date with another student... 1 2 3 4
D8. Drank beer, wine, or liquor... 1 2 3 4
D9. Missed a class or appointment because I overslept... 1 2 3 4
D10. Discussed religion/spirituality with another student... 1 2 3 4
D11. Discussed religion/spirituality with a professor... 1 2 3 4
D12. Participated in an on-campus student religious club/group... 1 2 3 4
D13. Participated in an off-campus student religious club/group... 1 2 3 4
D14. Spent time in prayer or meditation... 1 2 3 4
D15. Attended a religious service... 1 2 3 4
D16. Read or meditated on sacred or religious writings... 1 2 3 4
D17. Had lunch or dinner with a faculty member... 1 2 3 4
D18. Talked with classmates out of class... 1 2 3 4
D19. Socialized with friends... 1 2 3 4
D20. Talked with faculty outside of class... 1 2 3 4
D21. Socialized with faculty... 1 2 3 4

E. Please give us your level of agreement regarding each of the following statements:

**Strongly Disagree — 1   Disagree—2   Agree—3   Strongly Agree—4**

E1. I am satisfied with the opportunities at my college for religious/spiritual development. 1 2 3 4

E2. Developing a meaningful philosophy of life is very important to me.
E3. In general, I like the way students treat each other here. 1 2 3 4

E4. In my view, students here leave campus for weekends just about the right amount. 1 2 3 4

E5. There are students on campus that I would like to know better. 1 2 3 4

E6. There are groups of students here that I would like to get involved with. 1 2 3 4

E7. I see several ways that I can make connections with other students on campus. 1 2 3 4

E8. I recognize many students I see on campus. 1 2 3 4

E9. I’m confident that there are students on campus with whom I share important values. 1 2 3 4

E10. In general, students here seem to deal with conflicts constructively. 1 2 3 4

E11. In general, students here encourage academic success. 1 2 3 4

E12. Academic advising is a strong component of the academic environment here. 1 2 3 4

E13. Freshmen Orientation adequately prepared me for success in the academic environment. 1 2 3 4

E14. Freshmen Orientation adequately prepared me for success in the social environment. 1 2 3 4

F. QUESTIONS ABOUT YOUR EXPERIENCES WITH OTHER STUDENTS IN YOUR CLASS:

Listed below are some student-in-class behaviors, some of which might be thought acceptable and others of which might be considered inappropriate. How often have you personally observed these behaviors in any of your classes during this Fall semester?

Never—1 Rarely—2 Occasionally—3 Frequently—4

F1. A student routinely arrives late for class... 1 2 3 4

F2. A student regularly leaves before the class has been excused... 1 2 3 4
F3. A student asks confrontational and argumentative questions in class...
   1  2  3  4
F4. A student makes sarcastic comments or disapproving groans to the teacher...
   1  2  3  4
F5. A student talks loudly to another student while someone else is speaking in class...
   1  2  3  4
F6. A student repeatedly interrupts others during class discussions
   1  2  3  4
F7. A student receives cell phone calls or pages during class...
   1  2  3  4
F8. A student routinely reads a newspaper or magazine during class...
   1  2  3  4
F9. A student sleeps during class...
   1  2  3  4
F10. A student comes to class obviously intoxicated...
    1  2  3  4
F11. A student comes to class obviously high on drugs...
    1  2  3  4

G. We are interested in how people respond when they confront difficult or stressful events in their lives. There are a lot of ways to try and deal with stress. The following questions ask you to indicate what YOU generally feel, when you experience stressful events. Obviously, different events bring out somewhat different responses, but think about what you usually do when you are under a lot of stress.

Then respond to each of the following items using the response choices listed below. Choose your answers thoughtfully and make your answers as true FOR YOU as you can. Please answer every item. There are no “right” or “wrong” answers, so choose the most accurate answer for YOU—not what you think most people would say or do. Indicate what YOU usually do when you experience a stressful event.

I usually don't do this at all—1
I usually do this a little bit—2
I usually do this a medium amount—3
I usually do this a lot—4

G1. I try to grow as a person as a result of the experience.
   1  2  3  4
G2. I say to myself, “this isn't real.”
   1  2  3  4
G3. I admit to myself that I can't deal with it, and quit trying. 1 2 3 4
G4. I get used to the idea that it happened. 1 2 3 4
G5. I make a plan of action. 1 2 3 4
G6. I accept that this has happened and can't be changed. 1 2 3 4
G7. I just give up trying to reach my goal. 1 2 3 4
G8. I take additional action and try to get rid of the problem. 1 2 3 4
G9. I refuse to believe that it has happened. 1 2 3 4
G10. I try to see it in a different light, to make it seem more positive. 1 2 3 4
G11. I try to come up with a strategy about what to do. 1 2 3 4
G12. I give up the attempt to get what I want. 1 2 3 4
G13. I look for something good in what is happening. 1 2 3 4
G14. I pretend that it really hasn't happened. 1 2 3 4
G15. I accept the reality of the fact that it happened. 1 2 3 4
G16. I take direct action to get around the problem. 1 2 3 4
G17. I reduce the amount of effort I'm putting into solving the problem. 1 2 3 4
G18. I learn to live with it. 1 2 3 4
G19. I act as though it hasn't even happened. 1 2 3 4
G20. I learn something from the experience. 1 2 3 4

H. Are there any comments about the survey that you would like us to know? Please write them here.
Thank you again for your time to complete this survey. You will be asked to fill out the final survey during the Spring semester. We ask that you please participate in the next important phase of the study. Best wishes for a successful end of the semester!
UPDATED SURVEY QUESTIONS

A. Removal of questions related to religious identity
   a. Rationale: The initial scholarship was sponsored in part by the Methodist Church and thus included some questions pertaining to religious identity, even though these questions were not specifically relevant to the theoretical model.

B. Enhancement of options related to racial background and gender identity
   a. Rationale: The original data was gathered in the early 2000s. Since that time, scholarship related to self-identification has begun to reflect more appropriately the diversity of students’ lived experiences.

C. Update of language related to “Parent 1 / Parent 2” and “Father / Mother” to be “Guardian 1 / Guardian 2”
   a. Rationale: Similar to the enhancement of response options related to racial background and gender identity, these updates reflect normative changes in language related to family structure over the past few decades.

D. Addition of questions related to first-year seminar course involvement at the university
   a. Rationale: The broader study (of which this dissertation is a part) is being conducted in conjunction with the Office of Retention & Student Success (ORSS), which houses some programmatic elements of the university’s first-year seminar courses. These questions are not
directly related to the goals of the study but are important to the overall vision of the ORSS.

E. Addition of questions related to domain specificity of belonging

a. Indicators of belonging (adapted from Bollen and Hoyle 1990)

i. I feel like I belong to _______.

ii. I feel that I am a member of the _______ community.

iii. I see myself as part of the _______ community.

b. Dimensions

i. Various domains of belonging to include:
   1. Classroom (e.g., “at least one particular class”)
   2. Residence hall (e.g., “my residence hall”)
   3. Friend group (e.g., “a friend group on campus”)
   4. Campus organization (e.g., “a campus organization”)
   5. The university (e.g., “sense of belongingU”)\(^3\)

c. Rationale: Relevant literature on college students’ sense of belonging typically discusses one domain of belonging, thus failing to take into account the fact that students participate in multiple domains simultaneously. By asking students five sets of identical questions related to five different domains of belonging, I constructed a dataset that reflects how students experience these varying domains simultaneously. I selected Bollen and Hoyle’s (Bollen and Hoyle 1990)

\(^3\) The university is anonymized throughout this research study. The actual survey instrument lists the students’ university affiliation.
Perceived Cohesion Scale (PCS) after a thorough review of other possible scales of belonging. One alternative was the College Belongingness Questionnaire (CBQ) (Asher and Weeks 2013). I was initially drawn to the simplicity and straightforwardness of the CBQ and its authors are well known in their fields. However, the CBQ does not have a long history of empirical validation. The authors presented it as a conference poster in 2012 and later deployed it in a study on belonging and loneliness at Duke University. However, Bollen and Hoyle’s (1990) PCS captures two dimensions of cohesion: sense of belonging and feelings of morale.\(^1\) Their original study pulls from two samples: one sample of college students and one sample of residents from a mid-sized city. Since their 1990 study, the Perceived Cohesion Scale and its two dimensions have been tested in a variety of contexts. One example is Hurtado and Carter’s (Hurtado and Carter 1997a) study that unpacks sense of belonging among Latino college students. Their work on college students’ sense of belonging is foundational in the field; their work serves as a precedent for using aspects of the PCS in a higher education context. The PCS is a six-item survey and responses are recorded on Likert scales ranging from 0 to 10 (“strongly disagree” to “neutral” to “strongly agree”). Three questions

\(^1\) Conceptually, sense of belonging and feelings of morale are two dimensions of a broader perception of cohesion, defined as “an individual’s sense of belonging to a particular group and his or her feelings of morale associated with membership in the group (Bollen and Hoyle, 1990:482). Findings indicate that the two dimensions are highly correlated.
address sense of belonging; three questions address feelings of morale. I include the questions related to sense of belonging in this study. Like the CBQ, the PCS is simple and straightforward and does not suffer from issues related to what Asher and Weeks note as “diverse and confounding item content that overlaps with the hypothesized causes of each type of experience” (Asher and Weeks 2013:284). In other words, since belonging is such a perspectival phenomenon, survey questions that pertain to belonging must be phrased in a straightforward way so that item content does not contain possible causes of belonging. The questions related to the sense of belonging dimension of the Perceived Cohesion Scale are straightforward in a way that allows for students to apply their perceived notions of belonging to specific domains.
QUALITATIVE PHASE OUTREACH EMAIL

Dear NAME,

I hope this note finds you doing well. My name is Bert Ellison and I am a doctoral student at Tulane University. I am writing to invite you to participate in a research study on college students’ sense of belonging. Your unique input will be an invaluable contribution to my dissertation project, which focuses on the experiences of belonging for students during the first year of undergraduate education.

Participation in this study will involve an interview between the two of us that will last approximately one hour. If you are interested in this opportunity then please email me back (relliso2@tulane.edu) or call/text me at (828) 719-7504 to set up our meeting.

Participation in this study is completely voluntary; you are under no obligation to participate. Even so, in the spirit of improving the undergraduate experience for future students, I hope that you will consider chatting with me.

Thank you for your thoughtful consideration.

Best wishes,

Bert

_____

Bert Ellison, MDiv
PhD Student
Sociology - City, Culture, and Community
Tulane University
QUALITATIVE PHASE PHONE SCRIPT

- Good morning/afternoon, NAME.
- My name is Bert Ellison. I'm a PhD student at Tulane, and I am calling to follow up on an email that I sent a few weeks ago to your [university email] account regarding maybe participating in my dissertation project.
- That study is an exploration of college students’ sense of belonging, and I'd really appreciate hearing your insights as a [SBU] student.
- Participation would involve an interview between the two of us via Zoom that would last about one hour.
- If you’re interested then please call or text me at 828-719-7504 or email me at relliso2@tulane.edu. That’s r-e-l-l-i-s-o-“the number 2”-at-tulane-dot-e-d-u.
- Participation is completely voluntary, of course, and you are under no obligation to participate.
- Even so, I hope that you’ll consider chatting with me.
- Again, my phone number is 828-719-7504 and my email address is relliso2@tulane.edu.
- Take care,
### QUALITATIVE PHASE PRE-INTERVIEW SURVEY

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<td>I feel like I belong to my residence hall.</td>
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<td>I feel that I am a member of my residence hall community.</td>
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<td>I see myself as part of my residence hall community.</td>
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<td>I feel like I belong to a friend group on campus.</td>
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<td>I feel that I am a member of a friend group community on campus.</td>
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<td>I see myself as part of a friend group community on campus.</td>
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<td>I feel like I belong to a campus organization.</td>
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<td>I feel that I am a member of a campus organization community.</td>
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<td>I see myself as part of a campus organization community.</td>
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<td>I feel like I belong at [SBU].</td>
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<td>I feel that I am a member of the [SBU] community.</td>
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I see myself as part of the [SBU] community.
INTERVIEW PROTOCOL

Begin with the following statement (verbatim):

“…” (include consent and a full description of the research purpose and personnel, procedures, risk and benefits, and the reiteration that research is voluntary)

The following questions represent a preliminary anticipation of conversation topics:

• We’re here today to talk about your experiences of belonging – or not – during your first year of college.

• Tell me a little bit about yourself.
  
  o Year in school, major, hobbies, living arrangement, campus involvement, perceptions of New Orleans, etc.

• Why did you choose to enroll at [SBU]?

• What does “belonging” mean to you?
  
  o What does it mean “to belong” at [SBU]?
    
    ▪ In the classroom?
    ▪ In your residence hall?
    ▪ To a campus organization?
    ▪ To New Orleans?
  
  o Give a specific example of a time when you felt like you did or didn’t belong?
  
  o How do you experience this sense of belonging in different places such as:
    
    ▪ [SBU] overall,
    ▪ The classroom,
• Your residence hall (or apartment),
• A campus organization, or
• New Orleans?

• Do you think that definition applies to your peers? Why or why not? What might your peers say about belonging?

• What is your current enrollment status? Are you happy with your current enrollment decision? Why or why not?

• Tell me about a typical day during your first year of college. What happens at the places you go? With whom are you interacting?

• What is your favorite place to hang out on campus? Why?

• Are there places that you actively seek out, even if they’re out of the way? What and why?

• What is your least favorite place to hang out on campus? Why?

• Are there places that you actively avoid? What are those places and why do you actively avoid them?

• I’d like to revisit your original definition of “belonging.” You mentioned [X,Y,Z]. How does that definition apply or not to your current situation now that [SBU] has moved to online teaching?

• What else is on your mind?

• Any questions that were surprising or that you’d like to revisit?

• Is there anything else that you were expecting me to ask?

• Example follow up questions to use as needed:
  ○ Tell me more about that.
Why do you think that is?

I don’t understand what you mean by X. Would you elaborate?

Could you walk me through the last time that happened?

Is there a specific incident in mind that exemplifies that?

Could you tell me about a time that displays that at its clearest?

What were you thinking at that moment?
References


Fincher, Justin. 2015. “Powerful Pathways across Race: Sense of Belonging in Discriminatory Collegiate Environments.” ProQuest, Ann Arbor MI.


R Core Team. 2020. Foreign: Read Data Stored by “Minitab”, “S”, “SAS”, “SPSS”, “Stata”, “Systat”, “Weka”, “DBase”, ...


Biography

Bert Ellison was born in Boone, North Carolina and spent much of his childhood in Nigeria, West Africa before completing high school back in his hometown. He graduated from The University of North Carolina at Chapel Hill with a Bachelor of Science degree in Psychology and a minor in Business Administration in May 2008. He earned a Master of Divinity degree from The Divinity School at Duke University in May 2012, where he also held a variety of higher education roles in an undergraduate Dean of Students office, housing and residence life, and graduate student affairs. In the summer of 2012, Bert took a role in the Office of Admissions at the University of New Orleans before transitioning to the Office of Academic & Career Advising at Tulane University in New Orleans, LA in spring 2013. Bert stayed in this role for several years prior to starting his doctoral studies full time in the fall of 2016. In the spring of 2021, Bert took a position as an Academic Counselor & Pre-Engineering / STEM Advisor in the Office of Academic Advising at Wake Forest University. There he works with students, faculty, and staff to co-create spaces of belonging.