ADAPTATION IN COLLEGE FRESHMEN: SURVEYING PHYSIOLOGICAL, SAFETY AND SECURITY, AND BELONGING NEEDS

by

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A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

Capella University

October 2019

Abstract

Maslow's hierarchy of needs establishes a sequential structure for the attainment of psychological needs that provide motivation leading to personality development. During a life transition from the relative stability of the home life to residential college living, three prepotent needs may suffer because of a reversion to prior Maslowian needs. Prior research does not identify the ways that this model cohesively explains varying levels of adaptation when it seems like a reasonable, longstanding explanation. The Needs Satisfaction Inventory (NSI) measured the level of need satisfaction using the Maslowian definitions while the Student Adaptation to College Questionnaire-Modified (SACQ) measured the level of adaptation to college. Using these two instruments, this dissertation serves to determine the role of three prepotent needs—physiological, safety, and belonging—on adaptation when they are threatened. A nonexperimental quantitative survey questionnaire gathered responses on the two instruments from a nationwide volunteer sample of Qualtrics-paneled respondents. A hierarchical multiple regression was used to predict adaptation based on the sequential entry of the three lowest Maslowian needs. The results indicated that there was a significant negative prediction model at each stage in which a new Maslowian was entered. A secondary hierarchical multiple regression was run using only the three Maslowian stages to determine the predictive nature of physiological and safety need attainment on the outcome belonging. There was a significant positive predictive model, which supports the internal structure of the hierarchy of needs as measured by the NSI. The negative prediction in the primary model leads to questions about the instruments, methodology, sample, and/or current societal trends, which will require further research to unravel.

Dedication

I wish to express my gratitude to God through His Son, Jesus Christ, for providing me with a clear mind and settled heart through this entire process. My wife, Leslie, who could only have been ordained for me in my life, has been incredibly engaged in this process with me as well. She has put up with me going on and on about everything even when she did not care that much. Despite assertions that I started my doctoral journey only to stifle my envy that she had attained her doctoral degree just months before, I was actually inspired to do so out of admiration for her rather than envy…no matter what she says. I also wish to acknowledge those who have offered fervent support in my doctoral journey, Bill, Cea, John, Nancy, Regina to name a few. Their excitement feeds the desire to achieve. There are numerous people who have not known the depth of their contribution to my journey, but they are the ones who heard "no" from me when I was occupied with scholarly endeavors. Their patience and understanding quells guilt for withdrawing and going after this season in my life. Last, I want to dedicate these last quarters of my doctoral career to Finnian who, at the time of this writing, is a couple weeks old. His impending birth was cause for burrowing in and completing this project so that when he arrived, he was all I needed to think about. He deserves to have parents who, while well-educated, are ever present and ever attentive.

Acknowledgments

I wish to acknowledge David Sarnoff for his mentorship through this dissertation. Beginning in Track 1, he was interested in my work as is relates to ties to Maslow, who was an instructor to his father. His conversations with me about the humanistic influences in the way society functions never ceased to produce fodder for my research. We also enjoyed talking about what statistics *really* mean. Speaking of statistics, I also wish to acknowledge Barry Trunk who walked me through developing my research questions and talked with me about developing my models. Collectively, Barry and David deserve praise for the jam sessions at the Dissertation Research Tracks. I consider them significant contributors to my sanity when my brain was mush after long days of developing my DRP. Thanks also to my committee who have been very supportive of me even from the first interaction being bombarded by my presentation of the DRP. Their patience and feedback were incredibly helpful when piecing together my work. Last, I would like to acknowledge Capella University for the clear, challenging instruction. I cannot imagine a better place to complete my degree.

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CHAPTER 1. INTRODUCTION

This chapter will provide a justification for the exploration of the adherence to Maslow's (1943) hierarchy of needs when predicting adaptation to college among first-year freshmen. In general, a well-established model proposed by Maslow has been dismantled and certain aspects favored to the exclusion of necessary components. A great deal of research has focused on the way that college freshmen develop belonging when making a transition, but other more primary predictors, like safety and physiological needs, are neglected (Bowman, 2010; Mattanah, Ayers, Brooks, Quimby, & McNary, 2010). In other cases, these primary predictors are isolated from their theorized counterparts (Pritchard, Jordan, & Wilcox, 2015). Thus, the problem statement becomes apparent. There is a gap that represents the lack of using the sequential structure of Maslow's hierarchy of needs to identify possible predictors of a lack of adaptation to college that are more substantial than belonging itself. Once the problem has been identified, a regression model can answer several research questions about the predictive quality of the hierarchy of needs—delimited to the first three stages. Two instruments, the Needs Satisfaction Inventory (Lester, 2000) and the Student Adaptation to College Questionnaire (LaBrie, Ehret, Hummer, & Prenovost, 2012b) will provide the data that will identify both the level of need attainment at each Maslowian stage and the level of adaptation to college for the participants in the online survey questionnaire. Several theoretical and methodological assumptions will provide a framework for discussing the results and placing parameters on the limits of generalization. Having demonstrated the merit of the study in Chapter 1, a literature review, description of the methods, results, and a discussion will follow to encapsulate the reach of this study.

Background of the Problem

Abiding by a well-known theoretical model, as proposed by Maslow (1943) in an early work on the hierarchy of needs, would serve as a reasonable method to conduct research in topics related to motivational needs. Maslow proposed a structural model that relied on attainment of psychological needs at each step. The most basic needs, physiological needs, are needed to sustain basic life forces like hunger, thirst, biological homeostasis, and other non-negotiable aspects of human life. Once these needs were attained, then more sophisticated but less necessary needs are addressed. Next, safety security needs are related to a general sense of psychological security including safety of self, the environment, and resources. Third, Maslow proposed a sense of belonging and love that requires trust and affiliation with others. Fourth, the individual is motivated to develop a strong sense of self, which Maslow labeled an esteem need. Last, self-actualization is a psychological state that is marked by the ability to accept one's worldview and interact with the world in a way that reinforces decisions, is free from bias and prejudice, and aligns with one's personal life journey in a positive way. The first four tiers of the hierarchy—physiological needs, safety needs, belonging needs, and esteem needs—are termed *deficiency needs* (D-needs) because they are deficits to functioning (Maslow, 1943). Maslow's self-actualization is not a D-need, rather it is a pinnacle that is met through attainment of the deficiency needs as well through integration of life experiences.

Maslow's hierarchy of needs provides the basis for exploring the adaptation of college students to the college environment. Many studies have integrated various aspects of Maslow's hierarchy of needs into their studies of adaptation or adaptation in college students. For example, Wann, Hackathorn, and Sherman (2017) found a link between a sense of belonging and life meaning among college students when studying the link between social ties and well-being

in college. Ostrove and Long (2007) also found that social class, a security need that is driven by a familial sense of safety, impacts belonging in the undergraduate transition. Jayakumar, Sudhir, and Mariamma (2016) were able link higher-order esteem need deficiencies to poor coping and distress in college students. Even physiological needs are threatened by a lower level of health linked to poor social health (Schwitzer, 2009). Within several studies, one could put together the pieces that would form a comprehensive examination of Maslow's hierarchy of needs.

While there is an interest in the Maslowian model, it will be used to predict the outcome of how students are adapting or adjusting to college in their first year. Freeman, Anderman, and Jensen (2007); Feldt, Graham, and Dew (2011); Beyers and Goossens (2002) to name a few have used adaptation as a construct to measure how well students make the transition to college. There is generally a functional outcome in these studies that measure successful management of academic, social, and emotional changes in their lives. Along with Maslowian need attainment, adaptation to college will serve as the two constructs in this dissertation. Maslow's model has been in place for many decades, and adaptation has been an oft-cited aspect of research among college freshmen. These two combined constructs can serve as a foundation to test the sequential predictive quality of Maslow's hierarchy of needs on adaptation among college freshmen.

In this dissertation, the three lowest D-needs were examined in order to determine if there is structural integrity of the hierarchy of needs when considering the level of adaptation of college freshmen. This purposeful delimitation aligns with the majority of the reviewed research and with my preferences. This study aimed to determine the predictive quality of the sequence of the hierarchy of needs on adaptation to college. That is, is there a true order to the long-standing model proposed by Maslow (1943)? Broadly, there was an analysis of the need attainment of the

participants according to the Need Satisfaction Inventory (Lester, 2000) and the Student Adaptation to College Questionnaire (LaBrie et al., 2012b).

The existing research generally does not make use of Maslow's theory of need attainment that supports underlying factors of belonging. The concepts belonging and adaptation are isolated from their underlying theoretical factors (Maslow, 1943), physiological and safety needs, in a great deal of literature. Hagerty (1999) analyzed data from a database that measured Quality of Life from 1960-1996. He was able to piece together predictors that fit Maslow's model and found a confirmatory trajectory. However, it was not the intent of the proprietors of the database to directly measure these predictors. Even in current research, the prominent aspect of the literature review is that when a lack of belonging is apparent, there is no overt attempt to suggest factors related to more potent needs like safety and physiological needs (Brown, Arnold, Fletcher, & Martyn, 2017). Another example is safety needs, which are evident in articles that focus on sociological aspects of campus security issues like violence and victimization (Pritchard, Jordan, & Wilcox, 2015). However, the attention to safety concerns related to how they inform belonging are not present. At the same time, physiological needs are not explicitly mentioned in the reviewed articles despite attempts to obtain support for this topic. Brown et al. (2017) state that threats to elementary Maslowian needs can create adaptation issues, but physiological need attainment is an often-overlooked aspect of the transition to college. Adaptation in its various forms are prominent in studies of college transitions (Stringer, Kerpelman, & Skorikov, 2012; Walker & Raval, 2017). However, the direct link between adaptation and the notion of moving to a completely new environment causing reversions to safety and physiological needs is absent. It is known that belonging is a factor of adaptation, but

it is not known what the mediating effects of lower physiological and safety needs are on belonging.

Statement of the Problem

The research literature on belonging as a predictor of adaptation to college indicates that we know lower adaptation relates to lower levels of belonging (Layous, Eden, Garcia, Purdie-Vaughns, Cook, & Cohen, 2017), and that even mild threats to current levels of belonging can undermine adaptation (Pettijohn, Ahmed, & Pettijohn II, 2012). However, current research does not address how threats to earlier Maslowian stages like safety and physiological needs can undermine belonging, a key to adaptation according to the Student Adaptation to College Questionnaire (LaBrie, et al., 2012b). That is, the sense of belonging may be weaker among those making a transition to college from a hometown because safety and physiological needs are threatened or at least challenged. While some authors, Museus and Sauela (2017) for example, present a case for the need to engage students on campus to help increase their belonging from even a cultural stance, little has been mentioned about the factors of adaptation related to safety or physiological needs. The overwhelming focus has been on belonging as an isolated factor with regard to how a student may adjust based on belonging alone. The problem statement in this dissertation is not that belonging is lacking among those who are struggling to adapt; that is well-studied. Rather, is there a sequential prediction of adaptation when combining physiological, safety, and belonging needs as sequential predictors according to Maslow's hierarchy of needs?

Purpose of the Study

The overall goal of the proposed study is to establish a sequential link to lower Maslowian (1943) D-needs—physiological, safety, and belonging needs—as predictors in

adaptation to college. This would establish a theoretical basis for belonging being affected by prior needs rather than a root cause. The research questions would address the problem statement by addressing the gap in literature. The gap points to a lack of integration of prior levels of need attainment. The lack of belonging is prominently featured during a transition period from a relatively stable home life to residential college life where these needs may be threatened (Sharma, 2012). In many articles, threats to belonging are seen as the beginning of the problem of adaptation in college students. Thus, the implications in these studies are how to establish belonging in students. If one is to adhere to Maslowian theory, then it seems apparent that attention to prior levels would help to explain a lack of belonging. Winston, Maher, and Easvaradoss (2017) examine the interdependence of the hierarchy of needs to point this out. To attend to belonging alone, as many studies do, would perform a disservice to the theory's structure by ignoring the role of need attainment and loss. The proposed study would strengthen the case for relying on theoretical imperatives that suggest that threats to more potent needs result in struggles in less potent ones (Maslow, 1943).

Significance of the Study

This study has the potential to provide a more comprehensive answer to poor adaptation in freshmen students making the transition to college. As outlined in the problem statement, the current understanding of adaptation focuses on the role belonging need attainment plays with little or isolated attention to much else. This research focused on the integrity of Maslow's hierarchy of needs which includes the sequential acquisition of 4 deficiency needs and a growth need. Physiological, safety, belonging, and esteem needs are deficiency needs, and self-actualization is the growth need (Maslow, 1943). The contribution to the field of psychology is based on the need for improvement in functioning at the motivational level with respect to the

Maslow's perspective on personality development. With respect to the general psychology specialization, it is an important task to help determine how to best resource individuals for the imminent task of change, especially to college. The use of humanism, especially Maslow's development of the hierarchy of needs (1943), supports the ongoing process of developing the subfield of personality development within the general psychology specialization. The hierarchy of needs (Maslow, 1943) supposes that there is a sequential progression of need attainment from the most necessary needs like water, food, and air to the more psychologically necessary needs like love, belonging, esteem and self-actualization. Thus, studying the impact of prepotent needs on current belonging incorporates the important task of maintaining one's motivation when there is suboptimal psychological functioning.

Research Questions

The following questions seek to identify if there is a sequential progression of needs according to the NSI (Lester, 2000) in the attainment of adaptation according to the SACQ (LaBrie et al., 2012b). If belonging is seen as a gateway of adaptation, then the effects of physiological and safety needs need to be explored with belonging. Each need was sequentially entered to determine the overall change at each prepotent need entry. This determined if the sequential nature of need attainment is merited. If so, then the R coefficient will reflect significant change. There would also be a lack of an association, or collinearity, between any need and adaptation if any of the needs are lacking. For example, according to theory, belonging would not be a better predicter of adaptation if physiological needs are lacking. This would violate the sequential nature of need attainment according to Maslow (1943).

RQ_1: Is there an overall statistically significant model for predicting student adaptation with the sequential entry of physiological, safety/survival, and belonging need attainment?

RQ_2: Does physiological need attainment predict adaptation alone?

RQ_3: Does adding safety/survival need attainment to the hierarchical model statistically significantly increase the predictive capability on adaptation?

RQ_4: Does adding belonging need attainment to the hierarchical model statistically significantly increase the predictive capability of adaptation?

RQ_5: Is there an overall statistically significant model for predicting belonging need attainment with the sequential entry of physiological and safety need attainment?

The first four research questions tested the overall hierarchical regression to determine the significance of the model. Research question 1 tests the entire hierarchical model to determine if the sequential combination of all predictors significantly predicts adaptation scores. If there is a significant overall model, then there is support for the role of prepotent needs. Research Question 2 begins the test of the predictive quality of the prepotent needs in the hierarchy. Research Question 2 tests the predictive quality of physiological need attainment alone on adaptation. Research Question 3 adds safety need attainment to the model to determine the significance of the change in the predictive quality. A positive change in predictive quality is an expected result, but more important is the strength of the beta value. Research Question 4 adds belonging need attainment to the model to determine the significance of the change in the predictive quality. Once again, a positive change is the expected result, but the strength of the predictor is noted by the beta value.

Research Question 5 tested belonging as an outcome of the predictive quality of physiological and safety need attainment. This research question tests the idea that physiological and safety needs predict belonging. While the first four research questions may lead to a conclusion about the role of prepotent needs predicting adaptation, this research question directly

addressed the supposed relationship between three Maslowian needs. If there is not a significant predicative quality among the two prepotents on the outcome belonging, then the prior research could be justified in isolating belonging from other possible roots of poor adaptation.

In all the research questions set up a statistical test of a hierarchy that supposes sequential attainment. The hierarchical regression test using a change in R specifically addresses the mechanics of the hierarchy of needs. Exploring each block of variables according to the research questions can demonstrate the roles of prepotent needs in the current sample of college freshmen.

Definition of Terms

Adaptation

The Student Adaptation to College Questionnaire (SACQ) (Labrie et al., 2012b) will comprise the scale of adaptation. Adaptation will serve as an outcome variable for all regression analyses. Adaptation is a mean of positive adaptation factors and negative adaptation factors—reverse coded in analysis—that relate to various aspects of on-campus adaptation. While the original version of the SACQ attempted to load each question on a factor, the modified version does not, which serves the current study quite well.

Thus, adaptation is a single variable that is operationally defined as the mean of the scores on the 55-items in the SACQ.

- Adaptation

Maslowian Needs

The focus of this study is on the first three Maslowian (1943) needs—physiological, safety/security (collectively labeled safety), and belonging. However, to maintain the psychometric of the Needs Satisfaction Inventory (Lester, 2000), all needs and self-actualization

were used; thus, esteem needs and self-actualization will be included in the instrument but may not be an integral part of the analysis.

Physiological, safety, belonging, esteem, and self-actualization are defined according to Maslow's original definitions (1943). Lester (Lester, Hvedza, Sullivan, & Plourde, 1983; Lester,1990; Lester, 2000; Lester 2013) has been extensively using Maslow's hierarchy of needs as a way to study and measure psychological health. The Needs Satisfaction Inventory is his instrument based on decades of research on Maslow's hierarchy of needs. So, the operational definitions for the hierarchical categories are aligned to the NSI. The NSI uses 10 questions per category in order to develop an average attainment score per category. For example, there are 10 questions that ask for a self-report of the level of safety needs attained. These 10 questions constitute a safety need subscale. The face and content validity align with Maslow's original definitions. The psychometric properties, identified in Chapter 3, also support the utility of the instrument in defining the levels of need attainment. The operational definitions of physiological, safety, and belonging needs are means of their respective subscales on the NSI.

Again, while 5 subscales are indicated in the NSI, the lowest three needs are delimited for this study. The following Maslowian stages are used as predictor variables for the hierarchical regression analysis.

- Physiological Needs
- Safety Needs
- Belonging Needs

Participant Characteristics

The participants in this dissertation are characterized by their inclusion and exclusion criteria. There were no demographic criteria used in the analyses based on the humanistic notion

that shared human experiences tend to be individualized beyond demographics (Hergenhahn & Henley, 2014). Chapter 3 will expound on the characteristics, but, briefly, the inclusion and exclusion criteria that describes the participants are as follows.

The participants must

- live on campus or independently in proximity (1 mile) to campus
- be full-time students (at least 12 credits)
- be first-year freshmen
- be of a traditional college age at the time of administration (18-24)

The exclusion criteria were that the students must ***not***

- have engaged in post-secondary education anywhere else except through a dual enrollment program
- live with a relative or someone who is responsible for the participants' material wellbeing.
- have been in the military or other situation that would be considered a residential organization

Research Design

A quantitative non-experimental method using a survey questionnaire design would allow the researcher an opportunity to gather data in order to identify a hierarchical predictive model. The deductive approach to the study, moving from theory to confirmation (Trochim, 2006), is an appropriate process for quantitative research. Further, the researcher can report results in a way that they can be generalized to a general population of similar characteristics (Cozby & Bates, 2015). However, the purposive volunteer sample will limit the generalization because voluntarism is a difficult characteristic to generalize to a population (Gravetter & Forzano, 2016;

Fowler, 2014). Increasing the external validity of the study by acquiring a larger sample, as in a survey, and using existing traits of the sample rather than random assignment is more desirable to the stakeholders who would benefit from more natural results (Fowler, 2014).

This research aimed to identify the relationship between safety needs, physiological needs, belonging needs, and college adaptation. In order to explore these constructs, the I used a non-experimental design using a survey questionnaire. The purposive sample relied on existing characteristics with no attempt to assign individuals to treatment groups because there is no treatment condition (Fowler, 2014). Using a survey asked questions about each construct—physiological needs, safety needs, belonging, and adaptation—in a concise way using user-friendly versions of the scales that would fit seamlessly together. The online presentation looked like a series of questions that were blocked together. A survey also allowed the researcher to nest question concepts so that it would not be as apparent to the participant to avoid hypothesis guessing (Gravetter & Forzano, 2016).

A survey provided the data. The survey included contiguous sections from existing measures of Maslowian need attainment (Lester, 2000) and college adaptation (LaBrie et al., 2012b) Ideally, the use of an internet-based survey would provide the most streamlined method to gather the data. A regression analysis was used to explore the predictive quality of the Maslowian need attainment on adaptation (Warner, 2013). Hierarchical regression including correlation analyses at each step determined relationships among levels of belonging needs, safety needs, physiological needs, and adaptation. Demographic analyses are not theoretically warranted (Maslow, 1943) and will not be explored as a part of the regression analysis.

A large representative sample of residential college freshmen is better explored using a quantitative survey that would gather large amounts of data reflecting the feelings and attitudes

of the sample while considering variations in life experiences which could inform the study (Joye, Wolf, Smith, & Fu, 2017).

Assumptions and Limitations

Assumptions

General methodological assumptions. The method seeks to align with the humanistic theory and address the ontological, epistemological, axiological and methodological assumptions. Creswell (2012) identifies the four assumptions as factors for consideration within a framework. The design addresses the ontological assumption by amassing a collective view of reality, while differences are noted. Epistemologically, the questionnaire allows the individual to express his or own subjective realities insomuch as the scales allow freedom of expression. The quantitative methodology will hinder qualitative expression, but the non-experimental approach will eliminate the researcher's perception or other non-participant measures as the information gathering tool (Leedy & Ormrod, 2016). Axiologically, the questionnaire allows the participant to respond with respect to a personal value system in place. There is no attempt to limit the effects of historical value systems. The goal is to measure existing and current responses. A concession of the non-experimental design is the presence of individual differences that are not controlled (Cozby & Bates, 2015). The methodological assumption is that the theory will drive the context of the study. A deductive approach (Trochim, 2006) to the design will strive to confirm the theoretical aspects as they pertain to the results. The non-experimental approach will use self-reported data to analyze relationships (correlations mainly) among the data. The non-experimental approach will also allow the researcher to indicate a confirmation of the theory based upon positive. No causal inferences can be made because of the lack of control over the participant selection and other experimental conditions (Leedy & Ormrod, 2016).

Theoretical assumptions. Maslow's theory stipulates that need attainment is based on the sequential acquisition of needs (Maslow, 1943). Thus, the study is guided by the logic that when higher needs are lacking, then there is likely to be a failure or deficit at prepotent needs. These needs are more important to the person, according to Maslow (1943). Because of this, the study relies on the sequence that one attains needs according to Maslow's theory. More broadly, the Humanistic approach, in which Maslow's theory is rooted, also theorizes that each person is capable of making decisions that have bearing on one's life. Maslow's theory situation in Humanism outlines the theoretical assumptions that frame this study.

The humanistic perspective is the foundation of the current research on physiological and safety needs and their role in mediating belonging. Specifically, Maslow's hierarchy of needs is an avenue for personality growth through motivation (Hergenhahn & Henley, 2014). The humanistic perspective stresses the importance of developing in terms of the person's individuality in relationship with the environment. Winston (2016) complements that in her findings that while the way that human individuation functions is relatively predictable, the mechanics of it are not. For example, for someone to belong, it could be familial or gang related. In either case, belonging is established, but the motivations for belonging are not similar. In general, the current research is founded on the humanistic principle of self-efficacy, which Malahat and Shahabang (2017) cite as motivators in their research on the mediators of need attainment. Contemporary research on humanism shows that the idea is human potential (Henry, 2017) even still, which is the reinforcement of Maslow's foray into the third-force of psychology. This research attempts to remain true to the humanistic outlooks as they were intended by the early pioneers.

Maslow's (1943) hierarchy of needs indicates that the influential aspects of human motivation lay in the need to attain different levels of. The five primary stages of need attainment according to the theory are, in ascending order of sophistication, physiological needs, safety needs, belonging needs, esteem needs, and self-actualization (Maslow, 1943). The four lower stages are identified as deficiency needs (D-need) because they require attention in order to develop. The last, self-actualization, is an outcome of sufficient need attainment at prior levels. Some classify self-actualization as a spiritual stage as well (Litwack, 2007). The two lowest stages, physiological and safety needs, have to do with attaining nourishment, comfort, safety of the mind and body, shelter, basic necessities, and resources. (Maslow, 1943). When these D-needs are not met, then the individual may struggle to attend to more sophisticated stages. Winston et al. (2017) identified the role of threat in need attainment according to this theory and explained that if there is a threat to prior levels of safety and physiology, then current feelings of belonging and esteem can suffer. Another common qualification of the D-needs is the term *prepotent*. Prepotent needs are those that are lower on the hierarchy than another. As such, it is a relative term. That is, safety and security needs are prepotent needs of belonging. However, safety and security needs are not prepotent to physiological needs, which are lower on the hierarchy.

Additionally, developing a strong sense one's place in the world is a consideration of humanistic psychology. Duff, Rubenstein, & Prilleltensky (2016) provide an explanation of fairness in their qualitative work that supposes that the individual is seeking for a sense of stability in belonging. As Winston et al. (2017) explore the ways that one establishes needs, they find that when the place one has in the social environment, it becomes apparent that their motivation is to attain stability among more potent needs. When someone is stable in the

environment, physical or otherwise, there is an availability to thrive. Brown et al. (2017) suggest that thriving differentiates those with unfulfilled needs from those who are fulfilled. The alignment of Maslow's hierarchy of needs and humanistic psychology to the topic presents a theoretical framework for exploring adaptation and need attainment.

This Maslowian idea of need attainment is central in the proposed research when considering the ways that perceived threats to safety and physiology are in a situation where a student is attending a residential college for the first time. Not knowing where places are, struggling to manage a schedule, or not having enough money can cause attention to the lower D-needs while developing a sense of belonging may be the more reasonable task (Bowman, 2010). While the safety and physiological needs are often alleviated over time, there may be undue stress because of the effort exerted trying to manage life.

Assumptions About Measures. The two measures used in this study, SACQ (LaBrie et al. 2012b) and NSI (Lester, 2000) are reasonably straightforward, and it is worth mentioning that they both fit well in the current study. The philosophical assumptions about humanism and Maslow's theory indicates that these two measures accurately rate the constructs related to the study. For example, the NSI is modeled after Maslow's hierarchy of needs (Maslow, 1943). The addition of the SACQ (LaBrie et. al, 2012b) in the study supports a reasonable measure of the outcomes of need attainment as proposed in the topic. These two measures combine adequately to explore the assumptions of need attainment and adaptation to college. A general assumption about self-report measures is that there is a great deal of interpretation made by the participant (Fowler, 2014). At the same time, the results represent snapshots in time that may be fickle due to individual differences that cannot be controlled for as well as sampling and analysis methods (Kline, 2017). The interpretations of the results were made with this in mind.

Limitations

There are some methodological weaknesses inherent in a non-experimental study (Leedy & Ormrod, 2016). However, these may be better considered concessions rather than weaknesses. The non-experimental design, specifically the survey strategy, lacks a structure to support control for many possible intervening variables. The strategy also is not able to achieve causality. Last, the data is limited to a snapshot of what is going on at one moment, which makes the results susceptible to alternative explanations.

A primary weakness of the nonexperimental design relates to the internal validity of the design. Gravetter and Forzano (2016) suggest that the lack of control, assignment, and random sampling leaves a great deal of room for extraneous variables. In the current study, the sample is a nationwide volunteer sample of college students. There is no attempt to control for many possible variables like race, ethnicity, and gender. This limitation is also indicated by theory as Humanism strives to identify the common ways that all of humanity experiences life. However, methodologically, this makes the way that the data is gathered less compelling compared to a strict experimental design where the researcher uses careful control of differentiating characteristics.

Second, the nonexperimental design cannot indicate causation, or even approach it. Cozby and Bates (2015) suggest that nonexperimental designs a descriptive in nature and do just that, describe. There are far too many possible explanations for the researcher to consider the data causative. The relationship between the predictor and criterion variables is limited to only prediction. The survey strategy in this case balances more natural attitudes and beliefs with the numeric outcomes explicit in the instruments. While prediction can be compelling, it will not be considered causative despite what degree of power the data show.

Third, the nonexperimental design broadly is one-dimensional. The data derived is typically of snapshots in time with little ability to account for changes over time or environment (Leedy & Ormrod, 2016). If there is no control for temporal effects, then the differences between scores is difficult to limit to the variables measured. This methodological limitation, once again, is required to achieve a more natural response rather than a contrived experimental setting where expectancy effects etc. may be present. The survey mixes attaining personal attitudes at that moment with the ability to gather quantitative data.

Organization of the Remainder of the Study

The current topic of research seeks to use of a comprehensive Hierarchy of needs (Maslow, 1943) to explore the adaptation of students to their first year of college. Research has shown that threats to prepotent Maslowian needs leads to lower need attainment of higher order needs. However, it has not been shown how lacking prepotent needs affects adaptation to college. The purpose of this study is to provide support to the theory that Maslow stipulates as well as provide a possible model and explanation for poor adaptation that includes attention to prepotent needs rather than the oft-cited belonging need. A quantitative, non-experimental, survey-questionnaire will provide data that will tests both the veracity of the model and determine the predictive quality of Maslow's needs, according to the NSI (Lester, 2000), and adaptation, according to the SACQ (LaBrie et al., 2012b). Five research question will provide a framework for the statistical analyses including 4 questions that explore the hierarchical nature of the model with respect to predicting adaptation as well as one that looks at the internal structure of the model itself. With the methodology comes several assumptions of both the theory as well as the research strategy. However, these limitations are concessions that allow for

more natural data collection. Altogether, the foundation of the study justifies continuing the exploration of the topic.

In subsequent chapters, the rationale, procedures, and results of the study will become more lucid. Chapter 2 elaborates on aspects of Chapter 1 by offering a review of current literature, incorporating the theoretical foundations, synthesizing research, and providing a critique of previous methods of exploring the topic. Chapter 3 will detail the methodology outlined in this chapter. Also, Chapter 3 will elaborate on the purpose of the study; expand on the research questions, hypotheses, and research design; describe the sampling strategy; demonstrate the procedures; describe the instruments; and, outline the ethical considerations of the topic and methodology. Chapter 4 provides the results of the data analysis prefaced in Chapter 3. In Chapter 4, the data is described, and the research will address each of the hypotheses. Chapter 5 will discuss the results in a narrative including the implications, limitations, and recommendations for future research.

CHAPTER 2. LITERATURE REVIEW

Introduction

The literature available on the topic of this dissertation covers many aspects of Maslow's Hierarchy of needs and adaptation. However, the review reveals gaps that require synthesis and critical analysis of the methods of acquiring data by prior authors. Using several searching methods aided in amassing the current and foundational research that supports this dissertation. Among them, databases served as the most useful. Google Scholar and other web-based search engines were helpful to discover articles that cited relevant research on this topic. While rooting the current research in Humanism, Maslow's Hierarchy of needs (Maslow, 1943) was situated in a great deal of current research either explicitly or in its constituent parts. The review of the literature that resulted in several themes that support the primary areas of interest in this research. Chiefly, the literature review can be organized by the three prepotent Maslowian needs—physiological, safety, and belonging—as well as adaptation. While the study's focus is on college freshmen, research on the Maslowian needs pervades all areas of life, which supports the theoretical underpinnings of Humanism. At the same time some research is directly related to residential academic living, which supports the context of the current study. The findings reveal a substantial avoidance of the coherence of Maslow's Hierarch of Needs when explaining a lack of belonging and adaptation. This avoidance undermines the theoretical basis for need attainment according to Maslow (1943) and serves as the basis for the current study. While prior researchers have used many methods to arrive at their conclusions, some were more effective than others at adhering to the apparent and prominent theories that underly the use of constructs similar to Maslow's. In all, the review of the literature indicates both a gap and an opportunity to address a critical issue that permeates adaptation to college among first-year freshmen.

Methods of Searching

Databases

When seeking sources for the literature review, an abundance of methods provided a trail of evidence that supported the current topic. Database searches dominated collecting articles and references to the literature used to compile the literature review. PsycINFO and PsycARTICLES account for the majority of the articles collected with EBSCOhost a close second. While ProQuest Central was a good source of recent materials, it was quickly found that there were redundancies between ProQuest and PsycINFO and PsycARTICLES. The redundancies led to a search that generally excluded ProQuest. PsycTESTS provided a great deal of exposure to the instruments that could explore the current research topic. While some instruments were not available in full-text, the instruments of interest in this study, SACQ and NSI, were available. However, it was necessary to purchase a manual for the SACQ because scoring and question order were not available in the instrument or accompanying literature. Sage Research Methods provided references to methodological standards, assumptions, and comparative analyses. Last, Google Scholar provided many starting points for general searching of the topic. While many articles were not available in full-text, the abstracts provided enough information to pursue certain articles in databases listed above, which had access to full-text. A more valuable contribution, Google Scholar is able to provide a search of articles that cited other articles. A "cited by" search effectively indicates which articles are used in more recent research. In doing so, the is a better chance that a researcher can find more relevant studies to the topic. In all, the databases used to search articles were successful in providing current and foundational research related to the topic.

Search Terms

The search terms for this dissertation were varied. Insomuch as there are subtopics in the research, there are search terms for each subtopic in addition to the main topic. For example, Walker and Raval (2017) produced research that was related to the general topic, Maslow's Hierarch of Needs and college freshmen, as well as several subtopics. So, this article appeared in searches using the terms *rural, belonging, affiliation, psychological sense of community, community, college, adjustment,* and *security*. Because of the inextricable nature of belonging and adjustment according to Maslow (1943), this was the case for many other search terms. *Needs, physiological, safety, survival,* and *belonging* in multiple combinations provided resources that used the same model that the current research is using. When seeking foundational literature on Humanism and Maslow's Hierarchy of needs, using names for search terms was most helpful. *Rogers* and *Maslow* were the two most prominent search terms for Humanism theory and accompanying models, like Maslow's. In few cases, *phenomenology* revealed humanistic principles that supported the theoretical basis for the study. Related to *phenomenology*, searches for *subjective* or *symbolism* led to several instances where Humanistic-rooted perception supported the notion that one's experience is responsible for the level of need attainment. Most of the collected research revolved around the above search terms. In some cases, a reference search of related articles led to other terms. For example, Pittman and Richmod (2007) use the term *affiliation,* which is synonymous with *belonging*. A search of *affiliation* stirred up a new branch of literature. Similarly, *college, school,* and *university* have been used rather interchangeably in literature despite occasional technical differences. However, for the current research, the differences between them are usually negligible is present at all.

Theoretical Orientation for the Study

Brown et al. (2017) provide an explanation of Maslow's contributions to humanism that indicates that thriving includes growth and a desire for self-improvement. This aligns with the humanistic outlook in that the individual efforts are required as a point of growth (Hergenhahn & Henley, 2014). However, Maslow suggests that while one is responsible for growth, there are some environmental factors, like family and social relationships, that can inhibit growth. The conduit for growth is need (Malahat & Shahabang, 2017). Maslow (1943) cites the attainment of basic needs and a growth need—all described later—as the sources of growth as well as stunted development. What is particularly interesting about humanism in general is the attempt to develop a universal perspective on human development. That is, the theory can explain a wide array of personality manifestations regardless of the individual. Baumeister (2016) posits in his attempt of a unified personality theory that while humankind has motivations, a hierarchy is not necessarily implied because of the way that each experiences life in the environment. So, while not necessarily in alignment with Maslow, this supports the humanistic perspective in that there is a desire for a universally appropriate theory to explain human motivation. Despite that, there is at least a superficial appeal to the development of the hierarchy of needs in the context of humanism. For example, it would be difficult to defend the hierarchy that suggests that food and water is less important than self-esteem, or that feeling unsafe in the home is less threatening than not having friends. What the humanistic approach does is present a way to identify a set of explanations that satisfies the human experience with development of personality traits based on a relationship with the environment and self (Brown et al., 2017).

Masolw's reaction to the third wave of psychology, of which humanism was a prominent part, was to establish a set of needs that one would attain throughout the lifespan (Winston,

2016). Maslow proposed a theory that suggested a sequential attainment of needs in order to achieve a pinnacle stage, self-actualization. While there is noted criticism of this theory especially with consideration to the phasic and sequential nature, there is still a humanistic alignment (Winston, 2016). Even alternative applications of Maslow's theory suggest a personalized way of navigating the stages, aligning with humanism (Nain, 2013). However, the integrity of the humanistic notion of individual experience is noted in the applications of the hierarchy. D'Souza & Gurin (2017) developed a model of archetypes, to borrow from another theorist, based on the attainment of the stages in Maslow's hierarchy of needs. However, the individual experience is considered when recalling that Maslow himself notes reversions, incomplete attainment, and cyclical experiences are possible, if not inevitable, in the growth process (1943). This means that need attainment is not always straightforward. At the same time, this is not a concession that Maslow's model is not viable. What is means is that each person will develop a sense of need attainment based on the individual experience. For example, if someone is displaced from his or her home because of a natural disaster, a reversion to safety needs is reasonable. This does not mean that Maslow's hierarchy is invalid, rather is celebrates the notion that human experiences are varied and flexible. The outward humanistic quality is how one chooses to go through the experience in order to continue growth (Henry, 2017). It is reasonable to expect reversions periodically. The needs that one reverts to are termed *deficiency needs* by Maslow (1943), meaning that they are attained when they are at a deficient level. The interdependence of the needs is evident in small scale situations, as in becoming hungry after not eating for a few hours. So, the sequential nature of need attainment is not as strict as some critics would suggest, but when needs are lacking, prepotent needs may be reasonable points of exploration.

Review of the Literature

Abraham Maslow made tremendous contributions to the ongoing development of the third force of psychology when he developed his hierarchy of needs as a way to explain personality development as well as motivation (Hergenhahn & Henley, 2014). The alignment with the humanistic approach, which supports the endeavor of unique, individual development, promotes growth through the lifespan as well as attainment of certain milestones in psychological growth (Maslow, 1943). His hierarchy of needs is often cited in introductory textbooks in psychology study as well as personality texts, however, the explicit structure of the hierarchy and its components are not always adhered to (Taormina & Gao, 2012). This violates a major consideration of the hierarchy of needs that each need is sequentially dependent on the attainment of the prior needs (Maslow, 1943). Because of this flagrant violation of the structure, there have been situations where using Maslowian phases independently and separately from the model has passed for sound use of a unified theory (Brown et al., 2017). While some strive to maintain the unity of the model, it is apparent that there needs to be more attention to using the model in its intended form in order to preserve the hierarchy of needs.

The purpose of this literature review is to provide a context of the hierarchy of needs and its usefulness in addressing the role that belonging, specifically, has in the development of adjustment in college students making a transition from high school to college. First, the nature of the hierarchy of needs in its entirety will provide a basis for identifying probable reasons why belonging is lacking among college students in transition to their first year. The theoretical and mechanical structure of the hierarchy of needs is explored to support the longevity and universality of the model. Second, the three most basic needs will be identified and contextualized for use in this research. While the model will not be used in its entirety for this

dissertation, the research will focus on the interdependence of these three lowest stages of the hierarchy to align with the topic of adjusting to residential college life. Maslowian physiological, safety, and belonging needs (Maslow, 1943) are the three needs of concern in this study. The scope of the research does not allow for a comprehensive analysis of every stage and their implications. The third section of the literature review will integrate the construct of adaptation to college and incorporate the three Maslowian needs of focus in the research. The prior literature's exploration of a lack of belonging as a root cause of poor adaption to college will be discussed in terms of the negligence of possible explanations that are based on prepotent needs. The bulk of the research surrounds belonging as a single aspect to address despite the theoretical support for prior concerns, like physiological and safety need deficits, as explanatory conditions. The evidence provided in the literature review will provide a context of the hierarchy of needs, a description of the three stages of interest, and an integration of the three focal stages and their collective roles in adaptation to residential college living.

Sequential Nature of Need Attainment

In order to understand the context of the sequence of a hierarchy, prepotency is a primary term to understand in working with a model such as Maslow's. In early work by Maslow (1943) a key feature of the hierarchy is the foundational idea that each need has a relative potency, or strength. For a need to have more potency, or to be more potent, means that is it has more importance for the person's psychological growth. Thus, the most important needs to attain are physiological. These life forces are necessary for survival. Hunger, thirst, and biological homeostasis are the most potent needs according to the model. Without these an organism is not able to survive. Security needs are the next most potent needs according to Maslow (1943). Security includes safety of the environment, resources, and the body. While security is an

important aspect of life, it is not as necessary for survival as the physiological. Therefore, physiological needs are prepotent to security needs. When the term prepotent, or its variations, is used, it is meant to identify a relative position to a less important need. While Maslow's initial use of prepotency in his work on human motivation (Maslow, 1943) led to its widespread use, taxonomic structures have leveraged prepotency to arrange goal-directed behavior. Austin and Vancouver (1996) cited prepotency as a main characteristic of a taxonomy-based approach to how psychological goals are met. Interestingly, they also speak to the interrelatedness of goals in that there can be more than one goal at a time. This assertion matches the sentiment of interdependence that the hierarchy of needs suggests (Maslow, 1943). Knowing what prepotency means in a hierarchy, the sequential nature of Maslow's hierarchy is made clearer.

Because prepotency is a necessary aspect of the model, it is important to identify more precisely the ways that prepotent needs lead to attainment of less potent needs. The mechanics will provide a context for what happens when challenges to the hierarchy are presented. Physiological needs are the most important needs and self-actualization is the least important (Maslow, 1943). For example, if one were to be in poor health (a physiological need), then the pursuit of cleaning one's home (a safety need) is not as urgent. So, safety needs are prepotent needs to esteem needs because a more fundamental need to feeling good about oneself is that he or she is safe (Maslow, 1969). Similarly, if one lacks financial resources (a security need), then seeking working to earn more money would supersede developing friendships (a belonging need). Sequentially, prepotent need attainment dictates the attainment of less potent needs. While Maslow theorized this sequence, others have conducted research to support it. Taormina and Gao (2012) found that there were mean differences between those who have and have not attained each step. At the same time, they identified correlations among all the 5 stages of that

once again supported the sequential nature of the hierarchy. A sequence based on prepotent needs is also evident in a study by Winston et al. (2017) where the idea of threats is explored as a function of need attainment. When a threat to a prepotent need is present, there is a preoccupation with that need until it is fulfilled, or at least adequately addressed. Their factor analysis of the hierarchy of needs assessment indicated that there was a sequential preoccupation. Harrigan and Commons (2015) found that the tangible and observable behaviors people engage in align with their striving to attain any given level of need satisfaction, thus supporting the need to attain prepotent needs. They provided a reconstruction of Maslow's model into more specific behavioral manifestations of need. In their model, needs are related to the tasks and achievements. For example, where Maslow indicated that belonging includes finding affiliation or other general ways of fitting in, Harrigan and Commons (2015) provide an example of attaching oneself to another in order to reinforce exploration of the environment. They suggest that while one works through their modified stages of Maslow's hierarchy, the secondary reinforcers needed to achieve the next phase are increasingly complex. That is, it is natural to seek safety, but to seek self-esteem is done through secondary means like receiving feedback on one's behavior, making relationship transactions that are mutually beneficial, and obtaining possessions. While they disagree with the psychological aspects of need attainment, they still agree to the progression that is inherent in his model. The sequential progression of Maslow's hierarchy of needs is consistent among various uses and has withstood time and applications. However, the sequence is not always pointed to as an explanation for lack of need attainment at any given level. However, there are instances where there may be a vacillation between stages depending on situational needs.

The consistency and trajectory of growth is based on the attainment of prepotent needs (Maslow, 1943). An example that is accessible to anyone is eating food. Nobuyuki (2014) studied the psychology of eating from a few perspectives including an applied synthesis of the hierarchy of needs as it pertains to eating. This synthesis suggested that even what one eats depends on the level of need attainment in Maslow's hierarchy. One would be willing to eat just about anything edible when in extreme isolation and when death is imminent. However, when there is no threat of survival, one may select a food based on taste or desire. Also eating with others may be a consideration when belonging needs are met, but not when the individual feels isolated or unaffiliated. The circumstantial expression of need attainment is a microcosm of how need attainment can influence trajectory in long-term psychological and motivational development. Another example of prepotent needs superseding other needs is in a study with homeless populations with mental health disorders. Henwood, Derejko, Couture, and Padgett (2015) compared need attainment decision between a population of homeless individuals with mental health disorders. Their findings revealed that the individuals preferred to address homelessness, their immediate safety concern, over their mental health concern despite mental health having a broader, better outcome for long-term stability. This indicates that a stable living environment takes precedence over even psychological safety. A mirror of this situation is that even in very brief instances need attainment can interrupt even well-established social relationship, which is the case when hunger undermines social connectedness (Pettijohn, et al., 2012). Pettijohn et al. (2012) found that students who were hungry, not food deprived, would postpone social engagement with others until their hunger was satiated. On the other hand, when financial and environmental safety needs are only mildly threatened, psychological needs are prioritized in measures of wellbeing (Chen, Assche, Vansteenkiste, Soenens, & Byers, 2015).

Chen et al. (2015) provide a level of complexity into the research by removing a binary attainment decision. This can provide a variation of consistency in predicting outcomes. The trajectory of growth with regard to money decisions—a safety need—is also based on prepotent needs. Savings goals are different for people who have varying degrees of need attainment in that depending on levels of physical and material safety one will save for different reasons (Lee & Hanna, 2015). In all, prepotent needs have been found to significantly predict the trajectory of less potent needs especially when prior needs are threatened either on a large or small scale. At the same time, how to measure the needs in a way that maintains a metric of sequential attainment has been difficult.

The primary enhancement in research on basic need attainment has been in a method to objectively measure need attainment. Many critics have suggested that the lack of an instrument has led to inconsistencies in quantitatively measuring attainment. This has widely led to a discrediting of Maslow's model despite sound theoretical influences. However, several attempts to measure the model have been successful at developing psychometrically sound instruments. Saeednia and Mariani (2013) implemented the *Basic Needs Satisfaction Scale* (BNSS) for their study on life satisfaction and need satisfaction. Lester (1983, 1990) has proposed the *Need Satisfaction Inventory* (NSI) as a similarly-structured inventory that asks questions about the satisfaction of each need in Maslow's Hierarchy. It has been implemented in many studies, most notably in Bloomquist (2014), to study adaptation based on level of need attainment. However, as above, the integrity of the hierarchy is not always adhered to when reporting why adaptation is affected. The focus of the current study is on the effects that prepotent needs have on levels of belonging according to the NSI while maintaining the sequential integrity of the needs hierarchy.

Maslowian Physiological, Safety, and Belonging Needs

Physiological needs. The most potent needs, physiological, must to be satisfied in ways that relate to hunger, thirst, and other basic life functions (Maslow, 1943). Maslow's work included research into theories of biological functioning and its implication in categorizing good specimens for research (Maslow, 1969). He suggests that this negatively skews the importance of survival needs. In doing so physiological needs can be taken for granted in individuals who are seemingly working through more sophisticated stages like belonging. However, there has been a great deal of research on how physiological needs undermine personality development and motivation.

Pettijohn, et al., (2012) identified the importance of food in their research that identified hunger as a factor that contributed to lower belonging. This was the case even in the short time period of a few hours in their study. In their convenience sample of 204 students, their survey revealed a marked decrease in social (belonging) desires before and after having eaten dinner. Maslow (1943) identified this as a theoretical assumption of his hierarchy in that attained levels would be inhibited by more primary needs. That is, the lower the need is on the hierarchy, the more attention it gets. While there is theoretical (Maslow, 1943) and archival support (Hagerty, 1999) for working through different needs simultaneously, certainly the evidence provided (Pettijohn et al., 2012) suggests that a distribution of attention is not equal in some cases. Taormina and Gao (2012) also invoked Maslow's hierarchy when they combined several hypotheses that linked the sequential acquisition of needs. They found that when they looked at the sequential pairs of steps leading up to self-actualization, there were significant correlations between those who had struggle with physiological needs and the attainment of other needs. This points to physiological needs as basis for any other need attainment.

As budding adults heading to college, and presumably the first residential experience away from home, it may seem contrary to think about the role that meeting basic physiological needs have in making that transition. Maslow (1943) describes physiological needs as those that promote homeostasis within the body. These include basic life function like eating, breathing, drinking, balancing biochemistry, and other necessary functions. Threats to these functions, like not being able to find time for lunch with a busy class schedule, missing dinner at the dining hall, or having difficulties with environmental allergens can lead to poor functioning and adjustment. Pettijohn et al. (2012) found that threats to hunger, like not eating for a few hours, led to disproportionate attention to satiety. The social relationships that respondents were maintaining were rated as less important in their between-subjects study when the degree of hunger was high. Their conclusion was that when hunger, a very basic need, is threatened, then other needs are put on hold until the hunger is satisfied. In this sense, *threat* is used liberally but accurately. The homeostatic function that hunger serves can span a degree of purposes including eating for comfort, so it becomes more important than providing fuel to the body, but to satisfy psychological discomfort. At the same time, Chen et al. (2015) found that despite the level of the physiological threat, it undermines attainment those safety needs that were met prior to the threat. In this case, there is an admission by the authors of the presence hierarchy. Furthermore, it also supports an overlooking of prepotent needs when there is not threat. This is evidenced by the intensity of even mild threats akin to being startled by a seemingly conquered threat.

In accordance with Maslow (1943) and Pettijohn et al. (2012), Taormina and Gao (2013) suggest that prepotent needs will interfere with less potent need attainment. That is, growth is stunted by prepotent need development. Dominguez-Whitehead (2015) found that food acquisition is a real concern for students in South African universities where an allowance

system, akin to a meal plan, provides students with food stipends. In their qualitative analysis it was found that the perception of rations being low were cause for concern and preoccupied them. Similar deficits in physiological functioning is apparent in Herts, Wallis and Maslow's (2013) research on chronic illness as a function of quality of life in college. They found that chronic illness—compared with those with no chronic illness—increased the challenges with residential academic living situations. These short-term reversions to prior levels are made more substantial by long-term effects on personality development, specifically partner choice.

Pettijohn, Sacco, and Yerkes (2009) studied the characteristics of one's partner of choice in their exploration of physiological hunger as a motivator. Their research on the perception of environmental safety led to findings that when hunger is present one may seek a partner who would provide better security. A compensatory response that pervades physiological and enters into belonging and security needs demonstrates a need to attend to multiple stages simultaneously.

Safety needs. The Maslowian safety needs include security of the body, resources, environment, and of relationships (Maslow, 1943). They address the level of security and stability one has in life. Broadly, safety needs can be assessed in terms of everyday life including work environments (Rasskazova, Ivanova, & Sheldon, 2016), education (Noltemeyer, Bush, Patton, & Bergen, 2012), and psychological adjustment as noted by Henwood et al. (2015) in an earlier section of this review. The literature on safety needs runs the gamut of situations. First, a general assessment of the literature on several areas of safety will support the need to attend to psychological security. Second, a more specific application to the challenges of the college transition will provide support for the most relevant area of this topic. Some challenges include finding and using resources, feelings of safety on campus, and the adverse effects related

to threats to safety. While not limited to the college transition, safety needs need particular attention during this time.

Safety needs in general contexts. Safety needs are a part of everyday life. Many authors have demonstrated that safety needs create maladjustment in employment settings. Binyamin, Friedman, and Carmeli (2018) found that in work settings where a culture of admitting mistakes, voicing dissent, and caring for one another can lead to innovative behaviors. They cite psychological security as a driving force in the ability to innovate. Else, their preoccupation with feeling a sense of safety is threatened and higher order needs are suppressed—like innovation. Rasskozova et al. (2016) saw similar findings in the context of work where the low-level effects of worker satisfaction—that is, when psychological safety is threatened—led to poorer high-level outcomes. Interestingly, their main assertion about safety needs is that they are seldom, if ever, credited for successful attainment of higher-order needs. Rather, safety needs are blamed when higher-order needs are not attained. Perhaps this speaks to the invisibility of safety needs when there is no threat. However, safety needs do not appear only in the context of work.

Perceived and possible threats to safety needs is evident in several studies where one feels there may be an imminent threat or a possible threat in the future. Winston et al. (2017) provide a general context for the analysis of safety needs and well-being. Like Rasskozova et al. (2016), they found that there is a transience of safety need awareness depending on the level of threat to the need. One distinction that Winston et al. (2017) made was that when safety needs were threatened, it was due to a situation that was perceived to be out of one's control. Their factor analysis revealed that each factor in their survey that loaded on safety was unavoidable—"there are many dangers around me," "not being able to protect myself," and "my safety" (Winston et al., 2017, p. 302). Taorimina and Gao (2012) also understood the nature of safety

needs in that they need not be actual threats. Perceived threats to safety can intensify feelings of the threat. Threats to one's immediate surroundings, real or not, lower a perceived sense of safety. Even when personal safety is not immediately threatened, one may plan for a possible threat to resources in the future. Money savings motivation demonstrates how one may leverage psychological safety to prevent possible threats. Lee and Hanna (2015) found that the highest percentage of money saving motivation was related to safety and security needs. Participants reported planning for some eventual financial threat, like retirement, in the future as a primary reason for saving money. This contrasts with planning for physiological needs (food, warmth, etc.), esteem needs (socializing, luxuries), and self-actualization goals (achieving one's true purpose or capabilities). It becomes clear that in general contexts safety needs pervade everyday decisions. Despite a seemingly contrived and protected experience, college students also experience threats to safety needs.

Safety needs in college. In the context of college, safety needs could be addressed in terms of being able to seek assistance when there are problems or feels security of resources. Knowing who academic advisors are, feeling comfortable with roommates, being able to predict events could all be considered safety needs. Making a transition from home life to college can interfere with these safety needs. Noltemeyer et al. (2012) found evidence that provides "some support" the sequential nature of safety needs among elementary students. Their study used age-appropriate measures of safety for their study.

The safety needs that are apparent in college students are not unlike what a child may experience. From this perspective it becomes easier to see how safety is identified as a need (Maslow, 1943) for college students. Maslowian safety needs can be situated in the college context like feeling secure in the environment, having enough resources, having pleasant

roommates, feeling clean and having access to adequate facilities, and financial security prevail as points of security for college students. Brown et al. (2017) cited the security of the environment as a quality that is important for adjusting to a new situation. While the home environment may have felt safe, a new situation may not provide the same comfort to explore. Using a meal plan, having a trustworthy roommate, getting along with others, and knowing how to move around campus could be reasonable safety needs to attain while making a transition. While some demographic differences, men and women, lead to differing levels of safety on campus (Pritchard et al., 2015), the more universal concerns are in alignment with the theory. Noltemeyer et al. (2012) found that a key determinant of the attainment of safety needs is early intervention. This provides some support for the ubiquitous orientation process for college students, but the appropriate safety needs need addressing. It is not apparent what the "correct" safety needs are which need to be widely addressed preemptively (Baker & Boland, 2011). In short safety needs deserve to be addressed early and taken seriously in order to be alleviated.

Belonging needs. Belonging as it pertains to college adaptation has been the topic of study in many articles but not directly connected with prior Maslowian need attainment. Layous et al. (2017) perhaps provide the more precise use of belonging as it pertains to the effects of Maslowian belonging. Their study indicates that belonging is a moderating effect in measures of academic success, which is a typical measure of various aspects of college adaptation. A few authors use the context of an interpersonal relationship to observe belonging among college-aged students. Among them, Paul, Poole, and Jakubowyc (1998) found that those who maintain relationships through the transition to college would fare better in developing belonging and closeness. Williams and Russell (2013) echo the notion of the positive effects of relationships in their findings that those in steady relationships led to a more developed sense of participation

and engagement, an indicator of belonging. Hale, Hannum, and Espelage (2005) indicate that belonging is connected with physical health. This is the first hint toward the proposed research that safety and physiological needs may play a role in the development of belonging.

The key need driving the current study is the need to belong. This is an oft-studied aspect of adjustment to college, and consequently has garnered many of the solutions. The need to belong has a great deal of implications in college with obvious attempts to provide continuity from high school to college. Sports teams, clubs, organization, orientation, ice breaker activities and many other engagement opportunities are prevalent on campus. However, despite these attempts, belonging still lacks in a certain number of individuals. Molden et al. (2009) found social exclusion responses varied based on either being ignored or rejected by peers. The motivation to belong increased when threats of rejection were present. In this case, continuing to feel a sense of belonging may be primary, but there is an argument for how belonging begins to decrease in the first place.

The likely culprit according to Maslow (1943) is a deficit in prior functioning. Much research has used belonging as the genesis of the problem of adjustment without obvious theoretical attention to prepotent need deficits (Layous et al., 2017). Other authors tout a continuation of interpersonal relationships during the transition as a relative safeguard against isolation and feeling lonely (Paul et al., 1998; Williams & Russell, 2013; Kilgo, Mollet & Pascarella, 2016; Taylor, Doane & Eisenberg, 2014). A sense of community, to many college's credit, is a strong factor of belonging among students from rural hometowns where local community ties are found to be supportive (Walker & Raval, 2017). However, the initial sense of belonging that is instilled by college orientation and ice breaker activities has not been found to substitute for authentic belonging at a sustainable level (Clegg, 2006; Millheim, 2012; Museus

et al., 2017; Schwitzer, 2009; Wilczynska, Januszek, & Bargiel-Matusiewics, 2015). That is, simply being a member of a group does not lead to belonging. At the same time, the theoretical insistence that the lack of belonging is due to prepotent needs may alleviate the blame of poor orientation practices. The lack of belonging may be due to a sudden and jarring decrease of physiological and safety needs that come with the uncertain territory of a new environment. This represents the gap in literature that the current study will seek to close.

Adaptation to College

Adaptation to college has been often studied as an outcome of various predictors related to physiological, safety, and belonging need attainment. However, there is a greater tendency to focus on higher-order needs like belonging. Threats to prepotent needs are evident in findings by Taylor et al. (2014) where the adaptation to college during what they termed *emerging adulthood* is undermined by a renewed task in developing psychological safety, which had been attained to some degree prior. In the same context of transitioning from high school to college, confidence in one's ability to attain a job after high school improved when adaptation was higher according to the Positive Mental Health Scale (PMHS) (Stringer et al., 2012). The PMHS included subscales including emotional stability, social adaptation (synonymous with belonging), and self-actualization (another Maslowian construct). Further, their longitudinal study found that those with better scores on the PMHS were better equipped to make decisions about adapting to college, like managing a course schedule and coursework. This study is only one piece of evidence that supports the threatening context of making a transition to college.

Perhaps the most compelling demonstration of the need to focus on adaptation in the first year is in Sharma's (2012) study on the differences between first-year and last-year students in college. Social, emotional, and educational adaptation significantly increased between the

groups of first- and last-year students. The most compelling finding is that the *social maladaptation* subscale of their *emotional security* had the largest difference between first-and third-year students, $t = 3.59$, $p < .01$. Once again, social belonging may be a major culprit in adaptation. Similarly, Ostrove (2007) found that adaptation to college according to the Student Adaptation to College Questionnaire (SACQ) produces data supporting prior functioning and associations with current adaptation. They found that social class before college influenced social class in college. The categorized their participants into levels of social class using proxy measures like family income. They concluded that while there was a predictive relationship between social class prior to and in college, there were differing levels of adaptation for each social stratum. Mattanah, et al. (2010) also used the SACQ when exploring the adaptation of college students during the transition from home. Their study revealed that students who were part of a peer-led support group during the first year had better adaptation scores and scored lower on measures of qualities of poor belonging, like loneliness. While adaptation is an often-cited concern among college students in the transition from home, the underpinnings are varied.

Among the most striking concerns in college adaptation is that there is a strong difference between first-year students and those in their later years of college for several reasons. Once again, Sharma (2012) finds that adaptation suffers in several domains related to the academic and social realms of college life, while the upperclassmen counterparts are less likely to have those same difficulties. The type of academic deficits Sharma found were also found in Bhagat et al.'s (2017) study of medical students. Bowman (2010), Freeman et al. (2007), and Hausman, Schofield, and Woods (2007) also point to psychological wellbeing during the first year of college as a predictor of persisting and excelling in social and academic realms. In each study, a sense of belonging is a strong factor, but the underlying concerns related to prior Maslowian

stages remains omitted from a rather apparently related set of concerns. Belonging is often seen as the beginning and end of adaptation concerns for this adaptation, but it seems that an investigation into the prepotent needs would identify some possible root issues as the authors above indicate.

Prepotent need exploration is a key to alleviating adaptation issues that appear to be rooted in belonging needs. With respect to prepotent need exploration, Litwack (2007) suggests a comprehensive look at all needs when one is not attained. An isolated perspective leads to an isolated solution. If poor belonging is seen as an indicator of poor adaptation in college as Ostrove (2007), Mattanah et al. (2010), and Lester (2010) suppose, it seems that it could be alleviated by attention to belonging only as cited earlier. However, the potential for genuine adaptation is lacking because of omissions of prepotent need development. The best-case scenario is attention to prior unattained or threatened needs that undermine the ability to develop a sense of belonging which in turn leads to poor adaptation.

Several studies have explored a more comprehensive explanation for poor adaptation. Burdenski and Falkner (2010), Freitas and Leonard (2011), and Sciangula and Morry (2009) have found that adaptation can be aided by a look at the total array of concerns rather than just the evident ones. This has been found to provide a better perspective on the issue rather than the superficial manifestation of it. Burdenski and Falkner (2010) provide a pedagogical context for studying basic needs in college students. Their findings are that there is an increase in general psychological well-being—locus of control and self-esteem—when the participants were taught strategies to develop basic needs including survival and belonging. Sciangula and Morry (2009) also found a link between Maslowian constructs and adaptation. They found that negative perceptions of self, self-esteem, negatively affects their perceptions of interpersonal

relationships. This finding demonstrates that even higher-order Maslowian needs are not isolated. Perhaps most comprehensive, Freitas and Leonard (2011) also take care to address multiple aspects of college student adaptation in alignment with Maslow's (1943) hierarchy of needs. Their findings suggest that prepotent need lack leads to higher levels of stress that manifest as higher-order need deficits, like belonging and esteem. This point illustrates that prepotent need deficits can present in a social context and mask relevant solutions and conclusions. Similarly, more general measures of adjustment are increased by academic support academic performance (Shanti, Janssens, & Setiadi, 2016). These findings demonstrate the vastness of explanations for degrees of adaptation to college.

Conclusion

While the research about physiological, safety, and belonging needs and adaptation is extensive, the body of research does not cover the specific issues about the transition to college that indicate regression—to borrow a psychoanalytical term—to prior Maslowian needs. A study of the sequence of the hierarchy of needs can support a long-standing theory. Pettijohn et al. (2012) found that hunger, a physiological need, undermines social adaptation at a fairly transient rate, so why would one expect other need deficiencies not to lead to the same kind of deficiencies? Their between-subjects study indicated that hunger moderated social interest and even another physiological need, sex. Litwack (2007) proposes that reversion to prior states of need attainment according to Maslow would align with the notion that a transition could jar safety needs. Predictability, order, and structure suffer when someone is placed into a new situation. The apparent attention has been on belonging despite relevant and theoretical underpinnings like physiological and safety need deficits. The ubiquitous "orientation" is the attempt to provide the student with safety and physiological need attainment, but there is clearly

additional need if only because of the evidence from current research that adaptation is suffering. Finally, it is apparent from current research that there needs to be more attention to how early Maslowian need deficits inform poor adaptation that has traditionally been treated as a belonging-only issue. The proposed study would identify and address the ways that threats to physiological and safety needs inhibits belonging, which is a strong predictor in adaptation.

Findings

The review of the literature has led to findings that support the purpose of the using a predictive model to affirm the sequential attainment of Maslowian needs and the threats when making a transition to college. In order to maintain the legitimacy of Maslow's hierarchy of needs as a unified and sequential model, current research must continue to explore it in its entirety. In general, the current research falls into one of two categories: (a) individual stages in the hierarchy are isolated from the rest of the model, or (b) the stages are used more comprehensively, but the outcomes of the study are not linked to sequential acquisition or losses of each stage. The following synthesis of the literature will provide a rationale for this dissertation's topic by providing examples of research that align with theoretical and methodological themes.

Theoretical Research Findings

While not always attributable to Maslowian, or even humanistic, theories, current research makes use of similar constructs to the ones studied in this project—physiological, safety, and belonging needs. Burns, Vance, Szadokierski, and Stockwell (2006) make an attempt at creating a measure of the five basic needs. However, these needs are not Maslowian but in line with choice theory. Interestingly, the five basic needs stipulated by Burns et al. (2006) are belonging, power, freedom, survival, and fun. Three, possibly four, of these constructs can be

linked to Maslowian needs. Belonging and survival needs are obvious candidates for theoretical overlap. Fun could be linked to a self-actualization goal in the context of Maslow's hierarchy. Power could be possibly related to esteem needs, but that may be a tenuous link. Chen et al. (2015) use self-determination theory to explore the subscale *basic psychological needs theory*. A scale of psychological wellbeing was also used to provide data for comparison. The constructs analyzed in the study again could related to Maslowian stages; environmental safety and relatedness illustrate an overlap in conceptual uses between Maslowian need attainment and self-determination theory. Yamplosky and Amiot (2013) used social identity as a singular variable and construct, to test the effects of in-group bias. There were a couple instances of conceptual overlap between the constructs of in-group bias and Maslowian belonging as well between self-determined motivation and safety needs. Admittedly, a more abstract interpretation of Maslowian safety need attainment is applied in the second comparison in that one's sense of safety may relate to the ability to attend to internal preferences. Perhaps a more obvious comparison to Maslowian interpretations of need attainment is between Hale et al.'s (2005) research on social support, physical health, and belonging. They suggest that there is predictive quality between belonging and physical health. While the authors found a link between two terms that align with Maslow's hierarchy, the study is not situated in the obvious model that would theoretically support the findings. Further, they also supported the interrelatedness of the needs. While some research has evaded the direct use of Maslow's hierarchy of needs, several authors have successfully relied on Maslow's theory.

In order to provide a context for this dissertation, it is reasonable to align need exploration with other research that has done the same. Two studies exemplify the use of Maslow's hierarchy of needs. First, Pettijohn et al. (2012) used hunger, a physiological need,

and social relationship, belonging, to test the effects of Maslowian threats. Here the authors relied on Maslowian theories to not only test the mechanics but also incorporate the transience of specific behaviors, like sexual gratification. Their findings were affirmatory to the overall model, but they indicated that sexual desire could be linked to either physiological need attainment or esteem. Maslow (1934) originally situated sexual desire in the physiological needs, but Pettijohn et al. (2012) indicate that sexual desire could be an esteem need related to feeling good about oneself as well as a belonging need. Second, Noltemeyer et al. (2015) sought to investigate Maslow's theory by looking at two lower needs (safety and physiological needs combined, and belonging/love needs) and comparing outcomes related to learning among adolescent children. The authors support the theoretical implication that deficiency needs support growth needs by the correlation between measures of safety or belonging needs and academic outcomes. This study invigorates the current study by demonstrating a basic principle of need attainment and academic outcomes, which is the partial basis for this dissertation. These two studies provide a sound basis for using Maslowian needs in the context of the theory as opposed to piecing them together through the tenuous connections that other authors make while exploring other theories.

Research Methodology Trends

A great deal of research that uses Maslowian constructs has been done using a non-experimental survey questionnaire. The structure of the hierarchy of needs combined with the psychological roots of the constructs makes objective measurements difficult. That is, self-reports tend to be more reasonable. Most authors use some kind of questionnaire to conduct research related to need attainment either as a predictor or outcome. Freeman, et al. (2007) used the Psychological Sense of School Membership (PSSM) to test varying predictors of school

membership, a questionnaire that the participants completed. Freitas and Leonard (2011) found that academic failure is related to lack of need attainment. In their study a survey was used to explore varying levels of need attainment using a proprietary instrument. Similarly, Malahat and Shahabang (2017) implemented a questionnaire to explore Maslow's needs with respect to money decisions (a safety need) among those with mental health deficits. In their study, the questionnaire provided high correlations between mental health satisfaction and money attitudes, which is attributable to improved self-efficacy. In this case, they used an instrument, Need Satisfaction Inventory, that directly measures each Maslowian need.

Several other studies use the same questionnaires that are used in this dissertation. In testing psychological drives and needs, Deckers (2009) explored Maslow's needs using the Need Satisfaction Inventory (NSI). The NSI (Lester, 2000) is a questionnaire that breaks down each Maslowian domain into 10 questions. A composite of the questions reveals the level of attainment for the domain. In this dissertation, the NSI is used to determine the degree of need attainment for each participant as both predictors and outcomes of the hierarchical regression. The other instrument used in this dissertation, the Student Adaptation to College Questionnaire—Modified (SACQ) (LaBrie et al., 2012b), also appears in a number of studies. Beyers and Goossens (2002) studied its psychometric properties with a sample of college freshmen, akin to this dissertation. Feldt et al. (2011) also compared the construct validity of the instrument using the same framework of college transition difficulties. They found support for the constructs is purports to measure. Ostrove and Long (2007) used the SACQ to determine how social class and belonging impacts adjustment to college. Their findings support the use of the SACQ as a valid outcome tool. Prior research has made use of the NSI and SACQ in a way

that supports both the method, survey questionnaire, and the theoretical perspective, Maslow's model within humanism.

Even though the majority of studies in this topic are conducted using a quantitative questionnaire, some other studies have used other methods. Dominguez-Whitehead (2015) used a qualitative case study design to explore hinger as a factor of social motivation. The outcome was a narrative of the experiences of several college-aged students in South Africa. Henwood et al. (2015) also implemented a qualitative interview of homeless participants. They studied the Maslowian needs related to homelessness and mental health deficits. The vulnerability coupled with the relatively low propensity of the participants makes a qualitative study more reasonable. That is, there are not enough participants in general who can participate. Kilgo et al. (2016) leveraged archival data to conduct a study that explored involvement and well-being among college students. The Wabash National Study of Liberal Arts Education provided data for their study over the longitudinal study. Despite several other methods, these examples are much fewer in number than studies that use survey questionnaires to gather data on Maslowian need attainment.

Critique of Previous Research Methods

Cozby and Bates (2015) and Leedy and Ormrod (2015) suggest that both the research questions and past research should drive the research methodology. The consistency of research methods, designs, and procedures in prior research is encouraging to the current dissertation. Most research has been conducted using quantitative methods. Of the few exceptions, Dominguez-Whitehead (2015) and Henwood et al. (2015) researched various aspects of need attainment using qualitative interviews. In this case, their method supported their research questions that sought to develop an understanding of the experiences or phenomena of their

topics. In both the above cases, their method supported both these conditions. With regard to the quantitative studies identified in the research trends, many of them follow the same methodology with some variations in the designs.

Nearly all the studies of Maslowian need attainment, singularly or combined, involve some type of quantitative survey. Methodologically these follow a reasonable path to answer the research questions that revolve around need attainment by surveying attitudes and beliefs that are difficult to measure. Fowler (2014) indicates that other designs like naturalistic observation or contrived experimental conditions are not adequate to understand underlying motivations and personality features. The use of the NSI (Lester, 2000), SACQ (LaBrie et al., 2012b; Ostrove & Long, 2007; Baker & Siryk, 1984; Beyers & Goossens, 2002), PSSM (Pittman & Richmond, 2007; Freeman et al., 2007), and other measures of need attainment has contributed to the legitimacy of using these instruments in similar studies like in this study of adaptation to college among freshmen. Each of the instruments above provide quantitative outcomes based on self-reports of attitudes and beliefs related to need attainment and/or the transition to college. Having used similar instruments in multiple studies using college students as participants demonstrates reliability of measures and rationale for their current uses in this dissertation. The design consistencies in recent research are compelling, but the procedural consistencies can also add to the value.

The relevant qualities of the samples in recent research are consistent and strengthen the quality of the body of literature that supports this dissertation. The use of college students is evident in much of the research that uses either the SACQ or NSI. While college students may be common participants because of their availability (Cozby & Bates 2015), the research related to the topic of college transitions demands it. Thus, the use of college students for research is not

merely convenient, it is relevant. This relevance increases the value of the research because of the generalization that can occur. Pettijohn et al. (2012) used a sample of 207 college students in their between-subjects design to determine differences in satiety as a mediator of social interest. Hale et al. (2005) sampled 247 undergraduate students in their study of social support and physical health. Yampolsky and Amiot (2013) sampled 113 undergraduate students to study group identification as a way to explore belonging-related issues. These three studies are a few of many that use a modest sample size of students to study the correlations and group differences of Maslowian-related needs. The quality of the sample size and the actual *N* is reasonable given both the topics of the research and the statistical analyses.

In general, the methodology, design, and sample characteristics of the recent research supports the current dissertation. A quantitative method using a survey questionnaire has precedence in much research and adequately explores the attitudes and beliefs of the participants without a contrived experimental condition. The humanism school of thought reflects this sentiment though its tenet of global experiences that may be common among most people (DeCarvalho, 1991). The sample of college students provides a relevant group of individuals who may be experiencing a jostling of need attainment. Current research also has been consistent with the use of modest sample sizes needed to observe correlational relationships as well as group differences. The current research has used consistent methods, designs, and samples which will provide a foundation for the current dissertation in making a unique contribution to the body of research.

Summary

This chapter provided a detailed exploration of the research that supports the dissertation topic. Maslow's hierarchy of needs (1943) is linked to a great deal of research that aligns with

the entire model in it whole, in part, or by related, but otherwise oriented, constructs. A search of relevant terms led to prior and cited research that provided a context of the theoretical orientation as well as a review of literature that both supports this dissertation and demonstrates a gap. The current dissertation will seek to demonstrate the cohesion of the model, which prior research does not always consider, as well as test the integrity of the theorized hierarchical structure. Prior studies have implemented various instruments and methods to study topics related to the topic of this dissertation, but none have used a combination of instruments that specifically address the transition of college freshmen from home. Using the NSI—specifically for measuring Maslowian need attainment—and the SACQ—specifically for measuring student adaptation to college—will combine the best qualities of two instruments tailored to the topic. Further, the prior research methods, designs, and samples are encouraging in that this dissertation aligns with widely accepted ways of exploring both Maslowian need attainment and adjustment to college. Having demonstrated the value of prior research with respect to the current dissertation, Chapter 3 will lay the foundation of the research methodology used to explore the predictive quality of Maslowian need attainment in the transition to college.

CHAPTER 3. METHODOLOGY

This chapter will provide a justification for the methodology and a structure for exploring the research topic. The discussion of the purpose of the study will remind the reader of the topic and specific questions to be answered by the data and analysis. The research questions establish the structure for the data analysis using a hierarchical regression. A description of the target and sample populations elaborates on the characteristics of the participants selected for the study. The procedures used to gather the data are explained in detail. Then, a description of the instruments and their psychometric properties reinforces the constructs in the study. Last, ethical considerations are made with respect to the design and the sample.

Purpose of the Study

The purpose of this study was to test the predictive capability of Maslowian need attainment via the hierarchy of needs (Maslow, 1943) on student adaptation to college. A quantitative non-experimental survey questionnaire provided a data collection design able to acquire the self-report measures of two instruments designed to measure Maslow's need attainment and adaptation respectively. The general research problem, as elaborated on in Chapter 1, is that there is a great deal of research on the individual elements in the hierarchy of needs and adaptation separately, but there is not much that explores the use of the sequential nature of the needs to predict adaptation. This study focused on the integration of the original theoretical sequence that Maslow (1943) originally proposed. Thus, the conclusions made here are limited to the role that sequential predictors have in predicting adaptation. The goal was to provide a rationale for relying on an established sequential attainment of Maslowian needs rather than separating them from their hierarchy. The results of this study would demonstrate the

sequential role that physiological, safety, and belonging need attainment collectively have on predicting adaptation.

Research Questions and Hypotheses

This dissertation's general question about the predicative quality of Maslow's hierarchy of needs aligns with a hierarchical multiple regression test. Each predictor was entered into the regression model in its prioritized order (Warner, 2013) within Maslow's model. In doing so, four research questions were generated that incorporate the change in overall prediction of adaptation when each predictor was entered into the model. A fifth research question identified the predictability of the sequential entering of physiological and safety need attainment on belonging need attainment.

Research Question 1 and Hypotheses

RQ_1: Is there an overall statistically significant model for predicting student adaptation with the sequential entry of physiological, safety, and belonging need attainment?

$H1_A$: The sequential entry of physiological, safety, and belonging needs will be statistically significant predictors of adaptation.

$H1_0$: The sequential entry of physiological, safety, and belonging needs will not be statistically significant predictors of adaptation.

Research Question 2 and Hypotheses

RQ_2: Does physiological need attainment predict adaptation alone?

$H2_A$: Physiological need attainment will be a statistically significant predictor of adaptation.

$H2_0$: Physiological need attainment will not be a statistically significant predictor of adaptation.

Research Question 3 and Hypotheses

RQ_3: Does adding safety need attainment to the hierarchical model statistically significantly increase the predictive capability in adaptation?

$H3_A$: Adding safety need attainment will lead to a statistically significant change in the predictive capability of adaptation.

$H3_0$: Adding safety need attainment will not lead to a statistically significant change in the predictive capability of adaptation.

Research Question 4 and Hypotheses

RQ_4: Does adding belonging needs to the hierarchical model statistically significantly increase the predictive capability of adaptation?

$H4_A$: Adding belonging need attainment will lead to a statistically significant change in the predictive capability of adaptation.

$H4_0$: Adding safety need attainment will not lead to a statistically significant change in the predictive capability of adaptation.

Research Question 5 and Hypotheses

RQ_5: Is there an overall statistically significant model for predicting belonging need attainment with the sequential entry of physiological and safety need attainment?

$H5_A$: The sequential entry of physiological and safety need attainment will be statistically significant predictors of belonging need attainment.

$H5_0$: The sequential entry of physiological and safety need attainment will not be statistically significant predictors of belonging need attainment.

Research Design

In order to explore the sequential predictive quality of physiological, safety, and belonging needs on adaptation, the research design was a non-experimental survey. Fowler (2014) further delineates the survey into a questionnaire or an interview. In this case, the survey was a quantitative questionnaire of the satisfaction of physiological needs, safety needs, belonging needs, and adaptation of the college students as well as a measure of overall college adaptation. A measure of physiological needs, safety, and belonging was combined in the questionnaire as well as a measure of overall adaptation. The scales used are the Need Satisfaction Inventory (Lester, 2000) and Student Adaptation to College Questionnaire-Modified (LaBrie et al. 2012b). The psychometric properties of the SACQ and NSI are listed in a later section. The NSI measures need satisfaction of all five tiers of Maslow's Hierarchy of needs (1943). The SACQ is a measure of adaptation for residential students only, which is precisely the target population of this study. A composite of these scales in a single questionnaire provided meaningful comparisons among the satisfaction of levels of Maslow's hierarchy of needs and overall adaptation to college.

The study was conducted as a Qualtrics-platformed, internet-based quantitative questionnaire that integrates the scales mentioned above. The participants engaged voluntarily based on their responses to an email solicitation from Qualtrics. A link to the survey directed the participants to Qualtrics for completion. A spreadsheet collected the data upon completion. All information was collected anonymously. The justification for a Qualtrics-based survey is based the increased quality of data compared with free or cheaper versions of panel-based recruitment means (Roulin, 2015; Miliaikeala, Heen, Lieberman, & Miethe, 2014).

Joye, Wolf, Smith, and Fu (2017) indicate that the survey questionnaire is an appropriate way to collect large amounts of data that would otherwise be difficult to obtain. Specifically, they indicate that internet-based research is a reasonable transition from the historical perspectives on administration either through in-person interviews, mail, or phone interviews and questionnaires. The underlying method of the traditional paper-and-pencil questionnaire remains intact while conducting internet-based interviews. Even though there may be concern about obtaining participants through a reasonable sample frame using an internet-based survey (Asan & Ayhan, 2013), Shih and Fan (2012) found in a meta-analysis of approximately 60 studies that the differences in response rate between traditional mail surveys and internet-based survey is about 10%. However, the response rates for internet-based surveys among college students is higher, by 3%, than mail or phone surveys. In a study by Guo, Kopec, Cibere, Li, and Goldsmith (2016), they experienced a response rate of 20.5% for their online, long survey with a low cash incentive. In this study, the response rate is calculable because they sent out 1000 surveys to known respondents. In this dissertation, the response rate will be unknown because Qualtrics does not report their panel *N*. The combination of the survey research method and the population supports the overall goal of obtaining large amounts of data with relatively low interactivity especially with the internet-based questionnaire.

Target Population and Sample

Population

The target population was of college freshmen students in the United States. The National Center for Education Statistics (NCES; 2018a) reports that for the 2014 school year there were 12,453,975 full-time undergraduate students attending postsecondary institutions in the United States. Of the full-time students, 2,925,026 were first-year, full-time students at four-year

institutions (NCES, 2018b) between the ages of 18-24 (NCES, 2018d). The NCES (2018c) indicated that there were 3,039 4-year degree-granting institutions.

Sample

The sampling frame was of college students who attend small (<1,500 full-time students on campus) (Bahns, Pickett, & Crandall, 2012) educational institutions which was screened by the inclusion criteria. Qualtrics screened their participant panel based on these criteria. Diversity criteria were not included in order to increase generalizability. The sample characteristics can be generalized only to the population of individuals who also meet the inclusion criteria. A nation-wide nonprobability volunteer sample was obtained through Qualtrics. Inclusion and exclusion criteria further established the desired characteristics of the sample.

The sampling strategy was a non-probabilistic volunteer sample. The sample was of college freshmen. The inclusion criteria for the survey were that the participants must

- live on campus or independently in proximity (1 mile) to campus
- be full-time students (at least 12 credits)
- be first-year freshmen
- be of a traditional college age at the time of administration (18-24)

The exclusion criteria were that the students must not

- have engaged in post-secondary education anywhere else except through a dual enrollment program
- live with a relative or someone who is responsible for the participants' material wellbeing.
- have been in the military or other situation that would be considered a residential organization

Power Analysis

This study used a hierarchical multiple regression as the main statistical analyses. The main hierarchical regression used three predictors—physiological, safety, and belonging need attainment according to the average of the NSI subscales—entered singularly and sequentially. The outcome variable for the hierarchical regression was the average rating of the SACQ for each participant. The use of a hierarchical regression is appropriate for a predictive model with quantitative predictors and a quantitative outcome where the entry of the predictors in a prioritized fashion is theoretically or logically warranted (Laerd Statistics, 2018; Warner, 2013). The correct statistical test in GPower 3.1 for a hierarchical regression is the *F* test linear multiple regression is the fixed model, R^2 increase (Faul, Erdfelder, Buchner, & Lang, 2009). For a hierarchical regression with three predictors entered singularly, GPower 3.1 (Faul et al., 2009) indicated the sample size required to achieve the desired conventional power (.80) with a moderate effect size (.15) with two tails is N=77. That is, there was an 80% chance of detecting an effect when there is a significant finding if all the assumptions of the power analysis are met. The questionnaire in this study yielded 100 valid cases surpassing the necessary *N* for adequate power. While obtaining a larger sample size would increase the power in the study, a balance between needed power and practical limitations renders the obtained sample reasonable (Dattalo, 2008).

Procedures

Participant Selection

Because Qualtrics was used, the recruitment was done through their soliciting registered users who fit the inclusion criteria with additional screening within the survey itself using the inclusion criteria. This was a Qualtrics-recommended check system to provide a better response

rate. This researcher was interested in participants who are college undergraduates who are attending a small (fewer than 1,500 students) college in the Midwest having moved from home and never attending another post-secondary institution. These criteria focused on the desire to survey those who have moved from the relative stability of the home life to college. The following criteria were used on the survey to screen participants. The strategy implemented was a convenience sample using paneled volunteers because the survey relied on those willing to participate (Fowler, 2014). However, the respondents were solicited by Qualtrics based on their known matching characteristics to the inclusion criteria. Qualtrics provided modest financial incentives to their paneled respondents. However, this researcher did not provided incentive directly to the respondents. Because Qualtrics served as the recruitment entity, there were no singular sites requiring permission.

Protection of Participants

The protection of the participants was enhanced in two ways in this study. First, the participants were kept completely anonymous by means of the content of the survey. There are no identifying demographic questions aside from a question about biological sex, which would not provide any meaningful identifying information. Also, the questions in the survey could not lead to a deduction about any individual's identity in the survey. Second, the content of the survey itself does not seem to pose a threat or re-traumatizing effect. In this way, the participants were not likely to experience negative effects of the survey. Fowler (2014) indicates that the use of an anonymous survey provides some assurance that the participants' wellbeing is reasonably provided for.

With respect to the data itself, the participants were protected by two main factors. First, the data is anonymous. There were no identifying characteristics sought in the survey. Any data

breaches would yield untraceable, meaningless data. At the same time, data tables have variables that were named proprietarily (NSI31, for example). Second, the raw data is held by Qualtrics, and the data used in the analysis is kept on a secure and encrypted home server not accessible via the internet. The data will be stored for seven years and digitally shredded. With both the anonymous data and secure storage, the participants are minimally vulnerable to identification through a data breach.

Data Collection

An online survey questionnaire was used to collect data about the research questions by seeking personal assessments of the several predictors, belonging, safety, and physiological needs, on an outcome variable adaptation. The relationships between perceived safety needs, survival needs, and belonging needs can reveal a relationship that points to something deeper than belonging to explain adaptation among college students. The survey included questions from the Need Satisfaction Inventory (Lester, 2000), and the Student Adaptation to College Questionnaire (LaBrie, et al., 2012b) as well as a demographic question. The reported levels of each need as well as a measure of adaptation yielded data for hierarchical regression analyses through self-reported measures of the variables from a screened convenience sample.

Once the Adult Online Survey Informed Consent had been acknowledged in the beginning of the Qualtrics-based survey, the respondents continued to the main elements of the survey. They answered the inclusion criteria in order to proceed. If any of the inclusion criteria were not met, then the participants were terminated from the survey and sent to a debriefing screen that thanked them for participating. Any participant that completed the inclusion criteria also answered a demographic question that asked for their biological sex. While this question was not used for analyses, it was asked as a way to align with most other studies that used it as

an exploratory means to identify gender differences. Next, the NSI was presented in its entirety—50 items. After the NSI, the SACQ was presented in its entirety—55 items. Last, the participants were sent to a debriefing screen thanking them for their time, and this researcher's contact information was provided if a participant wished to follow-up.

All data in the analyses were quantitative-interval responses to the Needs Satisfaction Inventory (Lester, 2000) and the Student Adaptation to College Questionnaire (LaBrie et al., 2012b). No other types of data were used in the analyses. The raw data was automatically collated by Qualtrics as data was obtained. Once the survey closed, all data was downloaded as a spreadsheet into Microsoft Excel for preliminary cleaning. Variable names were recoded to analysis-friendly terms. The data was ready for processing immediately after the spreadsheet was downloaded. Once the data was cleaned, it was imported into IBM SPSS Statistics version 24. The Microsoft Excel spreadsheet was digitally shredded after successful importing.

Data was processed and managed through IBM SPSS Statistics 24. This statistical software package is able to both manage and process the data independent of any other software once the data is loaded.

Data Analysis

The data analysis for this study is the result of the Qualtrics-driven survey. After the data was downloaded and cleaned via Microsoft Excel, it was imported into SPSS version 24 for screening and analysis according to the hierarchical regression procedure.

Descriptive Statistics. This analysis did not rely on demographic variables. The descriptive statistics in this study were used mainly for data screening, testing assumptions, and for calculations in the hierarchical regression analysis itself. The predictors were scores on the

NSI (Lester, 2000), and the outcomes were the scores on the SACQ (LaBrie et al., 2012b). Descriptive statistics were run using SPSS version 24.

Testing Assumptions. In order to provide an environment for appropriate interpretations of the results, several assumptions of the hierarchical regression test must have been met. SPSS version 24 was able to provide results for each of the following assumptions (Laerd Statistics, 2018; Warner, 2013). N.B. design assumptions are addressed collectively.

Design assumptions. The correct level of the variables, number of variables, and independence of observations reflected the decision to use the hierarchical multiple regression.

Linearity. The predictor variables—physiological, safety, and belonging need attainment—should collectively and individually have a linear relationship with the outcome variable—adaptation. A scatterplot of the studentized residuals against the predicted values provided a visual confirmation of linearity. Each predictor should also have a linear relationship with the outcome variable individually. This was inspected through partial correlation plot produced by the full hierarchical regression model.

Homoscedasticity of residuals. A visual inspection of the residuals plot created for the assumption of linearity was used to check for equal error in the variances among the predictors and outcome.

Multicollinearity. SPSS version 24 provided the multicollinearity coefficients when that option was selected in the hierarchical regression *options* dialogue box. Conventional interpretations of the Tolerance/VIF coefficients were used to test the assumption of multicollinearity (Laerd Statistics, 2018).

Outliers and Influential Points. Obvious low-effort participants were screened out prior to analysis. Influential points and outliers were identified through the combination of a

scatterplot and an analysis of *Z* scores for each subscale of the NSI and the SACQ in its entirety. Any *Z* score above |3|, indicating that the score is more than three standard deviations from the mean, were removed from the analysis as a possible influential point. Leverage points will also be examined via the SPSS output where any point having a leverage value less than 0.2 would be considered safe (Huber, 1981). Cook's Distance was used to determine if any points are influential in the regression analysis. Any value above 1 was suspect to influence (Cook & Weisberg, 1982).

Normality of the residuals. A normal Q-Q plot of the studentized residuals will serve as a visual inspection for the normal distribution of the residuals. Serious violations in normality were visible through a point's inordinate distance from the line of best fit of the plot.

Hypotheses Testing. The hypothesis testing procedure used in a hierarchical regression builds on a series of blocks of variables entered into a regression model in sequence (Warner, 2013). For this analysis, there were two regression models run. First, the main model addressed each predictor (physiological, safety, and belonging need attainment) of adaptation in its sequence by adding the predictors one at a time. Second, a hierarchical regression model explored the way that physiological and safety need attainment predict belonging need attainment. The purpose of this analysis is to explore the merits of focusing on belonging itself as many authors have suggested in prior research.

The main hierarchical regression model addresses the following research questions.

RQ_1: Is there an overall statistically significant model for predicting student adaptation with the sequential entry of physiological, safety, and belonging need attainment?

RQ_2: Does physiological need attainment predict adaptation alone?

RQ_3: Does adding safety need attainment to the hierarchical model statistically significantly increase the predictive capability in adaptation?

RQ_4: Does adding belonging needs to the hierarchical model statistically significantly increase the predictive capability of adaptation?

The second multiple regression model addresses the collective predictive quality of physiological and safety need attainment on belonging need attainment. Because there is only one block, the results will mimic those of a standard multiple regression test.

RQ_5: Is there an overall statistically significant model for predicting belonging need attainment with the sequential entry of physiological and safety need attainment?

Hierarchical Multiple Regression Block Entry. The procedure for carrying out each test above was identical. Each predictor is added as a block. The "enter method" in SPSS version 24 allows the user to enter the variables for consideration in a preferred order. In this case, the variables were entered in their theorized order of importance (Maslow, 1943). The block method produced several models that addressed each research question individually. More important each model produced a change in *R* that will demonstrate the change in predictive quality when each predictor is entered in the model sequentially (Laerd Statistics, 2018; Warner, 2013). When the entire model had been produced, the beta coefficients were used to determine the strength of the prediction of each predictor variable.

Table 1
Data Analysis Summary

	Type of analysis	Descriptive Statistics	Hypothesis Testing
RQ_1	Hierarchical Multiple Regression	To test assumptions: Frequencies, Means, Standard Deviations	Test null hypothesis at the $\alpha = .05$ level of the overall model.
RQ_2	Hierarchical Multiple Regression	To test assumptions: Frequencies, Means, Standard Deviations	Test null hypothesis at the $\alpha = .05$ level of first predictor and outcome.
RQ_3	Hierarchical Multiple Regression	To test assumptions: Frequencies, Means, Standard Deviations	Test null hypothesis at the $\alpha = .05$ level of additional predictor.
RQ_4	Hierarchical Multiple Regression	To test assumptions: Frequencies, Means, Standard Deviations	Test null hypothesis at the $\alpha = .05$ level of additional predictor.
RQ_5	Hierarchical Multiple Regression	To test assumptions: Frequencies, Means, Standard Deviations	Test null hypothesis at the $\alpha = .05$ level of the two predictors collectively

Instruments

Data was collected through a quantitative survey distributed through Qualtrics. The survey included the Needs Satisfaction Inventory (Lester, 2000) and the Student Adaptation to College Questionnaire (LaBrie et al., 2012b). The instruments were used in their entireties in the survey. The survey also included the inclusion and exclusion criteria and one exploratory demographic question—biological sex—that was not included in any analyses. Items that required reverse-coding were coded appropriately at the time of survey design to reduce errors in transformation during data analyses. The users did not see the coding structure. Survey length was a concern for this study as there were more than 105 questions for analysis between the two instruments included. However, Toepel, Das, and van Soest (2012) found that the response rates

for surveys of various lengths were similar. Further, the data quality varied only by the number of items per screen. When more items were presented per screen, response times decreased while non-response items increased. Fewer items per screen led to fewer non-response items, but the survey took much longer to complete. Because the survey for this dissertation utilized forced responses, multiple items per screen were preferred because non-response was not a concern. The characteristics of the two instruments included in the survey are below.

Need Satisfaction Inventory

The five Maslowian needs, physiological, safety/security, belonging, esteem, and self-actualization, are measured according to the scores on the NSI (Lester, 2000), copyright 1990. The constructs measured on this instrument are the Maslowian Needs in their entirety even though the two highest stages, esteem and self-actualization are delimited. The original NSI was announced by Lester (1990), and it examined the *Needs Hierarchy* and personality traits. The version used in this study is the published version acquired from psycTESTS in its full form. The instrument contained verbiage that indicates that it may be used freely for research or educational purposes. The test format is a Likert-scale inventory using 50 questions to investigate the 5 tiers of the Hierarchy of needs. The original scale used a 7-point scale ranging from -3 to +3 using anchors *Strongly Disagree* and *Strongly Agree* respectively, omitting the numerical indicators.

Validity and Reliability. The early version of the NSI was normed on 166 college undergraduate students (Lester, 1983), and successive studies on divergent validity were conducted using undergraduate students again but a small sample; N=51 (Lester, 2013). Lester's (2013) study offered reliability coefficients for their administration of the NSI. Cronbach's α for the subscales are as follows: physiological .57, safety/security .76, belonging .45, esteem .65, and self-actualization .56. While these coefficients are not impressive, this study offered the

most about reliability. Also, the *N* was relatively low. A pilot study with a larger sample may reveal a better reliability analysis. Divergent validity was assessed by a comparison to the Strong and Fiebert inventory in Lester (2013). An important distinction was made here as there were no significant correlations between the responses on the two instruments that both measured Maslow's Needs Hierarchy. The Strong and Fiebert inventory asked, "How important are these needs?" while the NSI asks, "To what extent are these needs satisfied?" This provides some support for the validity of the NSI (Deckers, 2009; Lester, 2000).

Student Adaptation to College Questionnaire

Baker and Siryk (1984) developed the SACQ to determine how students are adjusting to college in their first year. The original SACQ was published in 1987 as a 67-question questionnaire, and it is available through WPS publishing (WPS, 2018) with the accompanying manual (Baker & Siryk, 1999). The construct measured is adaptation with several categories: academic, social, personal-emotional, and general adaptation. However, the scale is also used as a full-scale measure of adaptation without respect to the other constructs (Baker & Siryk, 1984). This dissertation will rely on the entire scale rather than its subscales. In addition to that, an abbreviated version (LaBrie et al., 2012b) was used that excludes question that relate to commuter students, a population not involved in this study. Permission is granted through verbage on the instrument published in the psycTESTS database (LaBrie et al., 2012b). Reliability and validity for each version of the SACQ is provided to support either use and to demonstrate the stability of the instrument.

Validity and Reliability. The original version of the SACQ is normed on 1,218 undergraduate students in their first and second semesters (Baker & Siryk, 2984). This is the target population for the current proposed research. Over three sets of administrations (six all

together, three successive years in the first and second semesters), Cronbach's α for each subscale and the full test were provided in Baker and Siryk (1984): academic adaptation .82-.87, social adaptation .83-.89, personal-emotional .73-.79, and general .84-.88. The full-scale test had a Cronbach's α range from .92-.94 across the six administrations. Warner (2013) and Fowler (2014) indicate a coefficient of .80 or better to be considered adequate. Baker and Siryk (1983) explored criterion validity by examining and supposing that attrition is a main factor in adaptation. That is, if students are not returning to college then adaptation may be a factor. Their findings support the validity of attrition as a measure of poorer adaptation with a significant negative correlation—each at least significant at the $p < .05$ level—between the full-scale adaptation scores and attrition rates at each set of questionnaire administrations.

The version of SACQ proposed is the modified version that excludes questions about those students who were commuters because the focus of this study is residential students. LaBrie, et al. (2012b) developed the SACQ—modified that used a full-scale version of the original SACQ without 12 questions about commuter students. LaBrie, Ehret, Hummer, and Prenovost (2012a) expound on their modifications to the SACQ. Their reliability analysis split the questions into two types of adaptation experiences, positive and negative. The reliability analyses for this modification yielded a Cronbach's α of .93 for positive experiences and .92 for negative experiences. These coefficients are on par with Baker and Siryk's findings for the full-scale administration. The modified version fits both the theoretical and practical imperatives for the proposed research. There are 30 reverse-scored items that were reverse scored for analysis. These reverse coded-items reflect the negative wording for some items.

Table 2
Summary of Instruments

Instrument	Variable	Data Type
Student Adaptation to College Questionnaire	Adaptation	Interval
Needs Satisfaction Inventory	Physiological Need Attainment	Interval
	Safety Need Attainment	Interval
	Belonging Need Attainment	Interval
	Esteem Need Attainment*	Interval
	Self-actualization Attainment*	Interval
Single Item: Demographics	Biological Sex*	Nominal

Note. *These items were included in the instruments, but they were not used in the analyses.

Ethical Considerations

The Belmont Report suggests three main categories of ethical consideration (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). Respect for persons, beneficence, and justice must be identified and addressed in the research. These considerations are made with the following population in mind.

The population was of first-year college-aged (18-24) students who are living on campus for the first time. There was one concern with the vulnerability of this population according to Capella University. College students may be open to vulnerability because of their perceived obligation to participate in a study. However, the methodology used, a quantitative survey, would be anonymous and voluntary with no reasonable expectation of recourse for participation or non-participation. The research topic was not considered sensitive by an evaluation of its content.

With regard to Respect for Persons, the construction of the survey considered the participants' statuses as students. Their comprehension level and reading ability was a consideration. The American Psychological Association (APA; 2017) suggests that respect for

persons includes the need to attend to how the participants engage and interact with the research. Even in the case of a survey, the wording and assumptions made of the participants needs to reflect an appreciation and acknowledgement of their assistance in research. Additionally, the APA (2017) indicates that respect for persons includes potential adverse reactions to the survey experience. A potential, even if unlikely, response was the realization that one lacks belonging and is dissatisfied by this lack. Because the participants were taking part in an online survey, obtaining signed informed consent was not feasible. However, because of the low risk to the participants it would likely have be easy to obtain a waiver of informed consent for this study (Collaborative Institutional Training Initiative, 2017). As an alternative, a Capella-University-provided statement of understanding, Adult Online Survey Informed Consent, was used to advise the participants of the nature of the study and potential risks. Affirming the informed consent statement was a required question in the survey in order to participate. While this does not provide informed consent in a strict sense, it sufficed for a project that has such low risk and magnitude.

The Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979) also suggests that beneficence be a part of all research. The current study addressed this by using anonymous data through an internet-based survey platform. The identities of the participants were never known, and the results of the surveys are protected through data security. Any data that were breached would be unintelligible, which would eliminate reasonable tracing to the individual participants. All data is coded so that any raw data accessed would not be meaningful. In general, the care of the participants was addressed through anonymity and data obfuscation. Thus, there is care to maximize benefit and minimize risk.

Last, the Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979) indicates that justice be addressed in all research. The current research is a non-experimental design where there is no comparison between groups in a sample. Thus, there were no differential treatment effects. Only current traits inherent in the participants were used for exploration of the data. No obvious concerns about research bias existed in the use of the data since the instruments were already available and validated. Because there is no participant contact, there was no opportunity to engage in biases at the personal level. Also, the outcomes of the study were limited to statistical analyses rather than treatment outcomes or interventions. So, there is equivalent engagement in the individuals in the study.

Capella University indicates that the assessment of risk is done with regard to principles of magnitude and probability of harm. In the current research, the probability of harm to the individual through a data breach or similar disclosure was low. Secured and encrypted data would be stored on a local server. This is a reasonably secure method (Fowler, 2014), and no hard copies of the data are available. The magnitude of risk is also low. All data was de-identified, coded numerically, and the questions will be kept separately from the data so inferring the answers would not be possible. Altogether, a breach in data would lead to disclosure of a numeric table that is meaningless to someone unrelated to the research. With respect to harm to the participants, the topic is non-invasive and would not produce harms above those experiences in ordinary life. The research was about how the participants are adjusting and how they are experiencing belonging. These concepts are likely a conscious part of everyday life. The overall risk to the participants is minimal. With the above considerations, Capella University's Institutional Review Board has granted approval to this study.

Summary

Chapter 3 sought to demonstrate the methodological justification for exploring the research topic. A non-experimental quantitative survey questionnaire is capable of generating data in order to conduct a hierarchical multiple regression. The research questions adequately address the individual block models in each analysis that align with a distinct feature of the hierarchy of needs. All the while, participant experiences are protected as well as the data resulting from their participation. The following chapter will elucidate the results of the analyses proposed in Chapter 3 and report the findings. Each research question will be addressed in Chapter 4 according to the appropriate interpretation of the analysis with respect to the assumptions of each test.

CHAPTER 4. RESULTS

In Chapter Four, the results of the data analyses are presented. The background of the research questions and hypotheses reminds the reader of the purpose of the study and the questions used to explore the topic. A summary of the sample describes the characteristics of the participants in order to frame the results. The hypothesis testing section addresses each research question, tests the assumptions of hierarchical multiple regressions, and reports the conclusion of each test. Last, a summary will provide an overview of the results in this chapter and introduce the elements of Chapter Five where the results are discussed.

Background

This study aims to determine the sequential predictive quality of physiological, safety, and belonging need attainment on adaptation to college among first-year residential college freshmen. In order to explore this hierarchy, four main research questions set up the analysis of the hierarchical model. The first research question tests the overall model. Research question 2-4 test the change in predictability when each predictor is entered in order. A fifth research question was used to analyze the predictive quality of physiological and safety need attainment on belonging need attainment. The research questions were as follows.

Research Question 1 and Hypotheses

RQ_1: Is there an overall statistically significant model for predicting student adaptation with the sequential entry of physiological, safety, and belonging need attainment?

$H1_A$: The sequential entry of physiological, safety, and belonging needs will be statistically significant predictors of adaptation.

$H1_0$: The sequential entry of physiological, safety, and belonging needs will not be statistically significant predictors of adaptation.

Research Question 2 and Hypotheses

RQ_2: Does physiological need attainment predict adaptation alone?

$H2_A$: Physiological need attainment will be a statistically significant predictor of adaptation.

$H2_0$: Physiological need attainment will not be a statistically significant predictor of adaptation.

Research Question 3 and Hypotheses

RQ_3: Does adding safety need attainment to the hierarchical model statistically significantly increase the predictive capability in adaptation?

$H3_A$: Adding safety need attainment will lead to a statistically significant change in the predictive capability of adaptation.

$H3_0$: Adding safety need attainment will not lead to a statistically significant change in the predictive capability of adaptation.

Research Question 4 and Hypotheses

RQ_4: Does adding belonging needs to the hierarchical model statistically significantly increase the predictive capability of adaptation?

$H4_A$: Adding belonging need attainment will lead to a statistically significant change in the predictive capability of adaptation.

$H4_0$: Adding safety need attainment will not lead to a statistically significant change in the predictive capability of adaptation.

Research Question 5 and Hypotheses

RQ_5: Is there an overall statistically significant model for predicting belonging need attainment with the sequential entry of physiological and safety need attainment?

$H5_A$: The sequential entry of physiological and safety need attainment will be statistically significant predictors of belonging need attainment.

$H5_0$: The sequential entry of physiological and safety need attainment will not be statistically significant predictors of belonging need attainment.

Description of the Sample

This study was able to achieve a sample of $N = 104$ participants found via the Qualtrics participant panel. Six-hundred ninety-eight respondents started the survey, but only 104 completed the survey. The remainder failed the inclusion criteria. The original desired sample size as calculated by G*Power (Faul et al., 2009) for this analysis was $N = 77$ using a moderate effect size (.15) and a conventional power (.80) (Faul et al., 2009). Of the 104 participants, three were screened out because of obvious satisficing; subscores on several measures had an average obtained only by selecting the highest possible scores indicating low effort (Fowler, 2014). The final sample was $n = 101$, which surpassed the sample size needed to achieve the priori power estimate above. Using the observed effect size as reported as R^2 in the overall model summary in SPSS (Warner, 2013), the obtained sample size, and retaining a conventional significance level $\alpha = .05$, the observed power was calculated using G*Power (Faul et al., 2009). For the overall model of three predictors with $\alpha = .05$, $N = 101$, $R^2 = .292$, the observed power was .995. This is well above the priori power level of .80.

While a single demographic question, biological sex, was included in the survey, it was not a part of any analysis. Thus, it will not be expounded on here. Other information about the sample is not available because of the use of a third-party panel recruitment entity (Qualtrics, 2018). Thus, there is no information about the sample frame other than they reported fitting the inclusion criteria as solicited by Qualtrics. The number of total participants that were solicited

was not available. Partial responses, $n = 698$, of individuals who started the survey but failed the inclusion criteria were available. However, this is not an indication of the response rate because it is not known how many individuals were in the sampling frame. All data was collected within 72 hours of the release of the survey. All questions required responses, so there were no partial responses of individuals who completed the survey, and there were no missing items.

Hypothesis Testing

The hypothesis testing procedure for the hierarchical multiple regression analyses is straightforward considering the data set produced by the survey results. There are four total variables. The Student Adaptation to College Questionnaire results in 55 items that were averaged to create one composite score *SACQcomposite*. The Need Satisfaction Inventory yielded 50 questions across five tiers of Maslow's Hierarchy of needs. From this inventory, 5 subscale scores were calculated. The items from each of the three lowest tiers for physiological need attainment (*NSIphys*), safety need attainment (*NSIsafety*), and belonging need attainment (*NSIbelonging*) were averaged to create individual subscales for this analysis. The result is four quantitative scores used for two different hierarchical multiple regression analyses. The first analysis will address the first four research questions. Four questions are needed to address the predictive quality of each of the predictors individually when added to the model as well as the overall model that includes all the variables. The second analysis will use physiological and safety need attainment as sequential predictors of belonging need attainment. This will require a single, fifth research question.

Assumptions

In order to perform the analyses, nine assumptions were tested to verify the validity of the data (Laerd Statistics, 2018; Warner, 2013).

- Three design assumptions—quantitative variables, number of variables, and independence of observations—were tested according to the quality of the research design.
- Linearity, collectively and individually, was tested using a visual inspection of the correlation and partial correlation scatterplots.
- Homoscedasticity of the residuals was tested through a visual inspection of the errors of the residuals.
- Multicollinearity was tested using interpretations of the Tolerance/VIF values.
- Outliers and residuals were assessed using a conventional threshold of $Z > |3|$, a leverage value < 0.2, along with an evaluation of Cook's distance for any value greater than 1.0.
- A visual inspection of the Q-Q plot of studentized residuals to test for normality.

Design assumptions. Three assumptions rely on the design of the study. First, the variables in the hierarchical multiple regression analysis must be quantitative. In this case, the variables are scaled scored based on a self-report survey. Each subscale produced is an average of the items in that subscale and measured at an interval level of measurement. Second, the hierarchical multiple regression requires at least two predictors and an outcome variable (Warner, 2013). For this analysis, there are three predictors, physiological, safety, and belonging need attainment, and one outcome variable, adaptation to college. Third, there must be independence of observations. As this is a single administration with no within-subjects measures, independence of observations is assumed.

Linearity. The assumption of linearity is made through a visual inspection of the scatterplots of the predictor variables, individually and collectively, and outcome variable. To

achieve this, a scatterplot of the studentized residuals and the unstandardized predicted residuals was plotted. Each of the four scatterplots revealed a linear relationship. Figures of the correlation and partial regression plots are located in Appendix A. Correlation Plots.

Homoscedasticity. Homoscedasticity assumes that the variances of the unstandardized predicted values and the studentized residuals are equal across the shape of the scatterplot (Laerd Statistics, 2018). A visual inspection of the SRE_1 and PRE_1 plot in Appendix A. Correlation Plots reveals a consistent shape across the scatterplot indicating homoscedasticity.

Multicollinearity. The hierarchical multiple regression analysis provides multicollinearity coefficients for each model in the hierarchical regression analysis. The tolerance or VIF coefficients indicate the level to which each variable is collinear with the others. Laerd Statistics (2018) suggests that any tolerance coefficient less than 0.1 or VIF greater than 10 would be considered multicollinear. The lowest tolerance coefficient in this analysis is 0.362. The highest VIF coefficient in this analysis is 2.760. In either case the coefficients do not indicate multicollinearity in the data. The VIF/Tolerance values are reported in the respective models where they occur.

An inspection of a correlation matrix reveals a correlation coefficient, >.70 (Laerd Statistics, 2018) for the physiological need attainment and safety need attainment subscales. The correlation among these two variables conflicts with the VIF/tolerance figures provide in each model which does not indicate multicollinearity. A careful interpretation of the results of each model will uncover a possible effect between these two variables.

Table 3
Correlations Among NSI Subscales and SACQ Composite

Measure	1	2	3	4
1. NSI Physiological	-			
2. NSI Safety	*.839	-		
3. NSI Belonging	.624	.649	-	
4. SACQ Composite	-.507	-.630	-.561	-

Note. * Exceeds correlation coefficient for multicollinearity

Outliers, high leverage points, and highly influential points. Three screening procedures were used to determine the presence of statistical outliers, high leverage points, and highly influential points. Any outliers would have standardized values greater than |3|. This study's data has no outliers with the highest standardized value of 2.74. High leverage points are indicated by leverage values greater than 0.2. An analysis of the LEV_1 variable reveals the highest leverage of 0.16, which is considered safe (Huber, 1981). Influential points are indicated by an assessment of the Cook's Distance for each case. A Cook's Distance of less than 1.0 indicates the point is not highly influential. An assessment of the COO_1 variable indicates that there are no highly influential points with the highest Cook's Distance of 0.13.

Normality. A visual inspection of the Q-Q plot will serve as the test for normality of residuals (Laerd Statistics, 2018). The Q-Q plot in Appendix B reveals a distribution that does not deviate from the diagonal line of fit. This indicates no violate of normality. Further, *Table 4* provides skewness and kurtosis values that are within an acceptable range as discussed in the following section.

Descriptive Statistics

Descriptive statistics are presented for each of the three predictors in the main analysis as well as for the outcome. The descriptive statistics of the secondary analysis using physiological and safety need attainment as predictors of belonging need attainment are identical and will not be presented redundantly. The possible scores for the physiological, safety, and belonging subscales on the Need Satisfaction Inventory are 1-7. The mean score for the physiological need attainment subscale was 4.30 with a standard deviation of .81. The mean score for the safety need attainment subscale was 4.27 with a standard deviation of .72. The mean score for the belonging need attainment score was 4.63 with a standard deviation of .84. The possible scores for the SACQ are 1-9. The SACQ composite score mean was 4.19 with a standard deviation of .92. Table 4 summarizes the unrounded descriptive statistics for the three NSI subscales and SACQ composite.

Table 4
Descriptive Statistics: NSI Subscales and SACQ Composite.

		NSI Physiological	NSI Safety	NSI Belonging	SACQ Composite
N	Valid	101	101	101	101
	Missing	0	0	0	0
Mean		4.304	4.2703	4.6327	4.1874
Median		4.30	4.20	4.70	4.3636
Mode		4.60	4.20	4.40	4.00
Std. Deviation		.80609	.71882	.83703	.92278
Variance		.650	.517	.701	.852
Skewness		.228	.557	-.147	-.541
Std. Error of Skewness		.240	.240	.240	.240
Kurtosis		.987	2.062	.387	.518
Std. Error of Kurtosis		.476	.476	.476	.476

When reviewing the descriptive statistics for each variable in the analyses, there are no values that violate the assumptions of the shape of the distributions. Warner (2013) suggests skewness and kurtosis values that are less than |3|. All values fall within this range. No transformations are necessary for this data. A review of the descriptive statistics as well as the underlying assumptions of the hierarchical multiple regression provided in the previous section demonstrate that the data is suitable for testing the research questions for this dissertation. Research Questions 1-4 rely on a single analysis that contains three models. Research question five relies on a second analysis with one model. The second analysis uses the same data as the first, so all assumptions for the first analysis apply to the second analysis.

Research Questions/ Hypothesis

Research question 1. The first research question sought to determine the overall sequential predictive quality of three predictors: *NSIphys*, *NSIsafety*, and *NSIbelonging*. This model will determine the overall strength of the predictors as reported in the final model in the ANOVA table. This analysis uses an α=.05 to reject the null hypothesis.

RQ1: Is there an overall statistically significant model for predicting student adaptation with the sequential entry of physiological, safety, and belonging need attainment?

The hypothesis pair below was used to evaluate the question.

$H1_A$: The sequential entry of physiological, safety, and belonging needs will be statistically significant predictors of adaptation.

$H1_0$: The sequential entry of physiological, safety, and belonging needs will not be statistically significant predictors of adaptation.

An analysis of the full hierarchical regression model was used to determine if there is a statistically significant prediction of *NSIphys*, *NSIsafety*, and *NSIbelonging* on the outcome

SACQcomposite. The results indicate that there was a statistically significant predictive model that included each predictor; F (3,97) = 13.341, $p <$ .001. The effect size as reported by adjusted R^2 = .270, which means that 27% of the variation in the outcome is explained for by the predictors (Warner, 2013). The observed power of this analysis was .995 (Faul et al., 2009). These results indicate a rejection of the null hypothesis that the sequential entry of physiological, safety, and belonging needs will not be statistically significant predictors of adaptation. The table below summarizes the coefficients of the overall model. N.B. Analyses of each predictor's contribution to the model is described in research questions 2-4.

Table 5
Summary of the Full Model

	Coefficients[a]						
Variable	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	SE_B	β	t	Sig.	Tolerance	VIF
Constant	7.325	.524		13.894	.000		
NSIphys	.195	.159	.170	1.220	.225	.376	2.659
NSIsafety	-.612	.182	-.477	-3.360	.001	.362	2.760
NSIbelonging	-.294	.114	-2.66	-2.569	.012	.678	1.474
F	13.241*						

a. Dependent Variable: SACQcomposite.
*significant p<.001

Research Question 2. Research question two is the first step in determining the sequential contributions of the predictors to the overall hierarchical model. This is assessed by a change in R^2 of the model when each predictor is entered. For the first model, physiological need attainment only is entered to determine its impact on the outcome adaptation. This analysis uses an α =.05 to reject the null hypothesis.

RQ_2: Does physiological need attainment predict adaptation alone?

The hypothesis pair below was used to evaluate the question.

$H2_A$: Physiological need attainment will be a statistically significant predictor of adaptation.

$H2_0$: Physiological need attainment will not be a statistically significant predictor of adaptation.

Model 1 of the hierarchical multiple regression was used to determine the predictive quality of a single variable, *NSIphys*, on the outcome *SACQcomposite.* This was done by evaluating the significance of the R^2 change in the model. The results indicate that there is a statistically significant change in R^2 of .117 when entering *NSIphys* into the model; $R^2 = .117$, F (1,99) = 13.095, $p < .001$. The effect size as reported by adjusted $R^2 = .108$, which means that 10.8% of the variation in the outcome is explained by the predictor (Warner, 2013). The observed power of this analysis was .905 (Faul et al., 2009). These results suggest a rejection of the null hypothesis that physiological need attainment will not be a statistically significant predictor of adaptation. The table below summarizes the coefficients for Model 1.

Table 6
Summary of Model 1: NSIphys

	Coefficients[a]						
Variable	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	SE_B	β	t	Sig.	Tolerance	VIF
Constant	5.871	.473		12.403	.000		
NSIphys	-.391	.108	-.342	-3.619	.000	1.000	1.000
R^2	.117						
F	13.095*						
ΔR^2	.117						
ΔF	13.095*						

a. Dependent Variable: SACQcomposite.
*significant p<.001

Research Question 3. Research question three tests the change in the predictive quality of the model when safety need attainment need is added to physiological need attainment. This is assessed by a change in R^2 of the model when *NSIsafety* is added. This analysis uses an $\alpha = .05$ to reject the null hypothesis.

RQ_3: Does adding safety need attainment to the hierarchical model statistically significantly increase the predictive capability in adaptation?

The hypothesis pair below was used to evaluate the question.

$H3_A$: Adding safety need attainment will lead to a statistically significant change in the predictive capability of adaptation.

$H3_0$: Adding safety need attainment will not lead to a statistically significant change in the predictive capability of adaptation.

Model 2 of the multiple hierarchical regression was used to determine the change in predictive quality when *NSIsafety* was added to *NSIphys* to predict the outcome *SACQcomposite*. This was done by evaluating the significance of the R^2 change in the model. The results indicate that there is a statistically significant change in R^2 of .127 when entering *NSIphys* into the model; $R^2 = .244$, $F(1,98) = 15.809$, $p < .001$. The effect size as reported by adjusted $R^2 = .229$, which means that 22.9% of the variation in the outcome is explained by the predictor (Warner, 2013). The observed power for this analysis was .992 (Faul et al., 2009). These results indicate a rejection of the null hypothesis that adding safety need attainment will not lead to a statistically significant change in the predictive capability of adaptation. The table below summarizes the coefficients for Model 1.

Table 7
Summary of Model 2: NSIphys, NSIsafety

	Coefficients[a]						
Variable	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	SE_B	β	t	Sig.	Tolerance	VIF
Constant	6.803	.496		13.703	.000		
NSIphys	.121	.161	.105	.747	.457	.389	2.572
NSIsafety	-.734	.181	-.572	-4.059	.000	.389	2.572
R^2	.244						
F	15.809*						
ΔR^2	.127						
ΔF	16.476*						

a. Dependent Variable: SACQcomposite.
*significant $p<.001$

Research Question 4. Research question four tests the change in the predictive quality of the model when belonging need attainment need is added to physiological and safety need attainment. This is assessed by a change in R^2 of the model when *NSIbelonging* is added. This analysis uses an $\alpha = .05$ to reject the null hypothesis. It is important to note that these results will overlap the results in research question one, but the focus here is the change in the predictive quality of the model when adding an additional predictor rather than the overall predictive quality of the model.

RQ_4: Does adding belonging needs to the hierarchical model statistically significantly increase the predictive capability of adaptation?

The hypothesis pair below was used to evaluate the question.

$H4_A$: Adding belonging need attainment will lead to a statistically significant change in the predictive capability of adaptation.

$H4_0$: Adding safety need attainment will not lead to a statistically significant change in the predictive capability of adaptation.

Model 3 of the multiple hierarchical regression was used to determine the change in predictive quality when *NSIbelonging* was added to *NSIphys* and *NSIsafety* to predict the outcome *SACQcomposite*. This was done by evaluating the significance of the R^2 change in the model. The results indicate that there is a statistically significant change in R^2 of .048 when entering *NSIbelonging* into the model; $R^2 = .292$, $F\ (1,97) = 6.599$, $p = .012$. The effect size as reported by adjusted $R^2 = .270$, which means that 27% of the variation in the outcome is explained by the predictor (Warner, 2013). The observed power for this analysis was .995 (Faul et al., 2009). These results indicate a rejection of the null hypothesis that adding safety need attainment will not lead to a statistically significant change in the predictive capability of adaptation. The table below summarizes the coefficients for Model 3.

Table 8
Summary of Model 3: NSIphys, NSIsafety, NSIbelonging

Coefficients[a]							
Variable	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	SE_B	β	t	Sig.	Tolerance	VIF
Constant	7.325	.524		13.984	.000		
NSIphys	.195	.159	.170	1.220	.225	.376	2.659
NSIsafety	-.612	.182	-.477	-3.360	.001	.362	2.760
NSIbelonging	-.294	.114	-.266	-2.569	.012	.678	1.474
R^2	.292						
F	13.341*						
ΔR^2	.048						
ΔF	6.599*						

a. Dependent Variable: SACQcomposite.
*significant $p<.001$

Research Question 5. The final research question tests the overall model to determine the predictive quality of physiological and safety need attainment on the outcome belonging need attainment. This research question is considered a separate analysis because the outcome variable is different than the analyses in research questions 1-4. This research question sought to determine the overall sequential predictive quality of two predictors, *NSIphys* and *NSIsafety*, on the outcome *NSIbelonging*. This model will determine the overall strength of the predictors as reported in the final model in the ANOVA table. This analysis uses an α=.05 to reject the null hypothesis.

RQ_5: Is there an overall statistically significant model for predicting belonging need attainment with the sequential entry of physiological and safety need attainment?

The hypothesis pair below was used to evaluate the question.

$H5_A$: The sequential entry of physiological and safety need attainment will be statistically significant predictors of belonging need attainment.

$H5_0$: The sequential entry of physiological and safety need attainment will not be statistically significant predictors of belonging need attainment.

An analysis of the full hierarchical regression model was used to determine if there is a statistically significant prediction of *NSIphys* and *NSIsafety* on the outcome *NSIbelonging*. The results indicate that there was a statistically significant predictive model that included each predictor; F (2,98) = 23.222, $p < .001$. The effect size as reported by adjusted R^2 = .308, which means that 30.8% of the variation in the outcome is explained for by the predictors (Warner, 2013). The observed power of this analysis was .999 (Faul et al., 2009). These results indicate a rejection of the null hypothesis that the sequential entry of physiological and safety need

attainment will not be statistically significant predictors of belonging need attainment. The table below summarizes the coefficients of the overall model.

Table 9
Summary of the Full Model: DV: NSIbelonging

	Coefficients[a]						
Variable	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	SE_B	β	t	Sig.	Tolerance	VIF
Constant	1.774	.427		4.159	.000		
NSIphys	.252	.139	.243	1.820	.072	.389	2.572
NSIsafety	.415	.155	.357	-2.672	.009	.389	2.572
F	23.222*						

a. Dependent Variable: NSIbelonging.
*significant $p<.001$

Summary of Hypothesis Testing

Research Question 1. The research question was, "Is there an overall statistically significant model for predicting student adaptation with the sequential entry of physiological, safety, and belonging need attainment?" The results indicate that there is a statistically significant model for the sequential prediction of adaptation with the sequential entry of physiological, safety, and belonging need; the null hypothesis was rejected. Therefore, the alternative hypothesis was retained.

Research Question 2. The research question was, "Does physiological need attainment predict adaptation alone?" The results indicate that there is a statistically significant increase in the predictability of adaptation when physiological need alone is entered into the hierarchical regression model; the null hypothesis was rejected. Therefore, the alternative hypothesis was retained.

Research Question 3. The research question was, "Does adding safety need attainment to the hierarchical model statistically significantly increase the predictive capability in adaptation?" The results indicate that there is a statistically significant increase in predictability of adaptation when safety need attainment is added to physiological need attainment: the null hypothesis was rejected. Therefore, the alternative hypothesis was retained.

Research Question 4. The research question was, "Does adding belonging needs to the hierarchical model statistically significantly increase the predictive capability of adaptation?" The results indicate that there is a statistically significant increase in the predictability of adaptation when belonging need attainment is added to physiological and safety need attainment: the null hypothesis was rejected. Therefore, the alternative hypothesis was retained.

Research Question 5. The research question was, "Is there an overall statistically significant model for predicting belonging need attainment with the sequential entry of physiological and safety need attainment?" The results indicate that there is a statistically significant model for the sequential prediction of belonging need attainment with the sequential entry of physiological and safety need attainment; the null hypothesis was rejected. Therefore, the alternative hypothesis was retained.

Summary

The results of the analyses above indicate that there is a statistically significant predictive model using the subscales of the NSI and the composite SACQ scale. Each of the null hypotheses was rejected. In the primary analyses addressing Research Questions 1-4, physiological, safety, and belonging need attainment appear to sequentially predict adaptation. In the secondary analysis physiological and safety need attainment appear to sequentially predict belonging need attainment. This chapter presented the objective findings based on statistical

analyses. Chapter 5 will delve into a discussion of the interpretations of the findings and parse out the meaning of the direction of the prediction through assessment of the beta values. Implications and limitations of the findings will also be discussed in order to provide recommendations for further study.

CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

Chapter 5 will provide a discussion of the results of the study. This will be done in several steps. First, a summary of the results will be presented in light of the general and research problem, the significance of the study outlined in Chapter 2, the reviewed literature, and the methodology. Second, a discussion of the research questions will demonstrate the ability of the results to answer them. Third, an interpretation of the conclusions based on the results will be compared to the theoretical and literature bases as well as an explanation of why the results mean what they do. Fourth, study limitations will be discussed. Fifth, the practice implications will provide a purpose for implementing new practice based on this study's results. Sixth, recommendations for further research will help to guide other researchers in their endeavors to study this topic. Last, a conclusion to the chapter and the study will tie together the research.

Summary of the Results

The general question in this dissertation is to what degree is there a hierarchical predictive relationship among Maslow's (1943) first three needs and adaptation to college. That is, is there a predictive model for the sequential entry of physiological, safety, and belonging need attainment on the outcome adaptation to college? The significance of the study is to determine if there is a change in the strength of the predictive model when each need is entered into the model. The goal was to determine the veracity of Maslow's theory of a hierarchical progression through attainment of several need categories. This was done by analyzing the change in R^2 of the prediction of adaptation when each variable was entered into the model in a sequential fashion with a two-tailed hypothesis to account for significant contributions in either a positive or negative direction. In this study, a two-tailed hypothesis revealed a significant change in many cases even though the changes were unexpectedly negative. The body of

literature available seems to separate the three predictors and treats them singularly. Pettijohn et al. (2012) looks at physiological needs independently as predictors of adjustment and its impact on belonging as an outcome. Noltemeyer et al. (2012) and Pritchard, Jordan, and Wilcox (2015) demonstrated the role of safety needs on campus and the effects that safety needs have on adjustment to campus. The importance of belonging need attainment was echoed in several studies where the focus was on how adjustment can be aided by leveraging belonging-based activities like orientation and club affiliation in college (Williams and Russell, 2013; Paul et al., 1998; Museus, Yi, & Saeula, 2017). Taormina and Gao (2012) provided a study that aligns with this dissertation in that they observed the relationships between pairs of Maslowian needs leading up to self-actualization. This led to an analysis of a comprehensive use of Maslow's theory. Their study encouraged the use of the Maslowian model for a delimited (using the three most potent needs) analysis of the hierarchy of needs as a sequential predictor of adaptation in college freshmen. In order to explore the use of Maslow's hierarchy of needs in a complete sense, a quantitative non-experimental survey questionnaire using a nonprobability volunteer sample of college freshmen was used to develop a hierarchical prediction model. The results of the analyses provided in the previous chapter yielded (a) a significant overall hierarchical model with all predictors entered, (b) significant models for the change in the predictive quality when each variable—physiological need, safety need, and belonging need attainment—was entered sequentially, and (c) a significant predictive model when physiological and safety need attainment were used to predict belonging need attainment. The following section will attempt to describe the significant results even when the direction of the significance is negative. These results will be expanded on in the rest of this chapter.

The discussion of the results in the following section follow the research questions to test the main hierarchical regression—questions 1-4—and a fifth to test the significance of predictive quality of physiological and safety needs on belonging need attainment as an outcome—question 5.

RQ1: Is there an overall statistically significant model for predicting student adaptation with the sequential entry of physiological, safety, and belonging need attainment?

RQ2: Does physiological need attainment predict adaptation alone?

RQ3: Does adding safety need attainment to the hierarchical model statistically significantly increase the predictive capability in adaptation?

RQ4: Does adding belonging needs to the hierarchical model statistically significantly increase the predictive capability of adaptation?

RQ5: Is there an overall statistically significant model for predicting belonging need attainment with the sequential entry of physiological and safety need attainment?

Discussion of the Results

This section will focus on the results of each regression model that answers each research question. As such, the research questions in chapter four will be addressed individually and in the same order they were addressed in the results section of chapter four. An integration of all the research questions into a comprehensive summary follows the individual discussions. Finally, other plausible methodological explanations for the results will be examined. As a reminder, the intent of the hierarchical regression is to determine the change to the strength of the prediction of each newly added predictor. So, the focus at each step is the change of the R coefficient of the model. To give a more comprehensive explanation of the results, each added

predictor's contribution in terms of the beta coefficient is addressed to discuss the direction of the significance of the model.

Research Question 1

Is there an overall statistically significant model for predicting student adaptation with the sequential entry of physiological, safety, and belonging need attainment?

The first research question tested the overall model that included each prepotent need (physiological, safety, and belonging) on the outcome adaptation. The results indicated a significant prediction of adaptation to college when the three predictors were added to the model sequentially. These results indicate that adaptation according to the SACQ could be reasonably predicted using the three subscales in the NSI. Together, the predictors accounted for 27% of the overall variance in the outcome.

Of the three predictors included in the model, each was significant except for physiological need attainment, which had a $p = .225$. Despite this, the research question was addressed by the overall model, which was significant. A possible explanation for a non-significant physiological need attainment beta coefficient is that a college student may underestimate the role of physiological needs. That is, a general assumption that one's most basic needs are met may undermine a thoughtful assessment of how there may be threats to survival in the college transition. Another possible explanation is a difference in conceptualizing the items in the physiological need attainment subscale of the NSI. For example, "I eat enough to satisfy my physiological needs" is a question that may be dichotomous. One could interpret the question as "Am I surviving on the food that I am eating?" If this were the case, then the psychological need for physiological survival is replaced by a simple question of whether or not

the individual is alive. Thus, attaining psychological safety by means of meeting physiological needs is difficult to ascertain.

Alternatively, other higher-order needs may be more prominent in the minds of the students. For example, one could be more overtly concerned with campus safety concerns and therefore not as attentive to more basic needs. In a western society, it is possible that physiological needs are taken for granted and that safety of the person (safety need) is more important. Considering an increase in mass shootings, including campus shootings, the mental health consequences are apparent in how individuals function post-violence. Lowe and Galea (2017) found in their meta-analysis of 49 articles that there are several risk factors of poor adjusting that all relate to a sense of personal threats to safety. They cite an increase of media exposure that may point to how individuals conceptualize their sense of safety. It seems reasonable to conclude that one would relate to the more apparent threat, in this case safety, rather than physiological needs.

Another interesting find in the model is the presence of negative beta coefficients. The presence of negative prediction coefficients indicates a decrease in the outcome (Laerd Statistics, 2018). In this case, safety need scores and belonging need scores decreased the adaptation scored. For every standardized unit of increase in safety need attainment, adaptation decreased by 0.477 standardized units; $\beta = -0.477$. Similarly, belonging need attainment led to a decrease in adaptation; $\beta = -2.66$. This finding is interesting because there is theoretical underpinning (Maslow, 1943) for the three prepotent needs *increasing* scores of adaptation, but the inclusion of the prepotent needs collectively decreases adaptation scores. However, the constant for the model is particularly high; 7.325. This means that on the scale of 1-9, the range of responses on the SACQ, the best prediction of adjustment with no other variables entered is relatively high,

M = 7.325, compared with the sample's mean, 4.18. While the negative beta value for some predictors may seem discouraging, the coefficients are adjusting a high constant. This means that while some variables may decrease the overall model, the high constant would still lead to scores greater than the average of the outcome variable. Warner (2014) indicates that the effect of including multiple variables may be suspect to cause changes to the predictive model that are not expected. The explanations for the changes may not always be intuitive.

With the above considerations, the research question was adequately addressed by the results. There is indeed a statistically significant model for predicting the outcome adaptation with the sequential entry of physiological, safety, and belonging needs. However, admittedly, the direction of the prediction is not what was expected based on the literature review in chapter 2 or the theoretical basis for the study. The next three research questions analyze the individual steps used to arrive at the overall model in research question one.

Research Question 2

Does physiological need attainment predict adaptation alone?

The first step in the hierarchical regression model is the entry of the most potent need, physiological need. The statistic of interest is the change in the prediction model when physiological need attainment is added. The statistical analysis suggested a significant contribution of physiological need to the prediction of adaptation. The change in significance was $R^2 = .117$. This finding means that physiological need attainment is a statistically significant predictor of adaptation according to the SACQ.

However, as in the overall model, the unstandardized beta coefficient is negative, $\beta = -.342$. This indicates a decrease in adaptation scores as physiological need attainment increases. A reasonable explanation for this is that adaptation to college on its own may be high.

Therefore, the scores on physiological need attainment may be generally less than the adaptation scores. Simply put, perceived adaptation to college is so high that physiological need attainment scores are negatively correlated in order to regress toward the mean. Whatever plausible reasons are at play, it is clear that there is a negative correlation between physiological need attainment according to the NSI and adaptation according to the SACQ. The same arguments for research question 1 apply to this finding as they are similar findings. Research question 2 seeks only to isolate the predictive quality of physiological need attainment itself on adaptation.

Research Question 3

Does adding safety need attainment to the hierarchical model statistically significantly increase the predictive capability in adaptation?

Once again, the overall change in the predictive strength of the model is increased by the addition of the next prepotent need, safety need attainment; $R^2 = .244$. The results suggest that adding safety need attainment need to the model increased the prediction of adaptation to college. This supports the alternative hypothesis.

As in the first step in the model, the newly added predictor has a negative correlation with the outcome adaptation. Even though the null hypothesis was rejected, it was hopeful that the predictor would positively contribute to adaptation. In this case, as safety need attainment increases, the individual is predicted to report a decreased adaptation score, $\beta = -0.572$. While the negative beta coefficient is not necessarily expected, the high constant for this model may justify it. The constant equals 6.803, which is reasonably high compared to the adaptation mean, 4.19. So, the starting point for the regression equation in this model is fairly high resulting in a negative beta. Regardless, the anticipated correlation between the two variables was positive.

These results are significant but not in the direction desired. However, there was an interesting change that happened to the model when safety need attainment was added.

When safety need attainment was added to the model, physiological need attainment became a non-significant predictor. When added individually in research question 2, physiological need attainment was a significant predictor, $p < .001$. However, the addition of another variable had an effect on the previous one consistent with the description of multiple regression provided by Warner (2014). This change appears to be due in part to the redundancies in explained variance that are likely due to a higher correlation as described in the assumption for multicollinearity in chapter 3 and in Table 3. A likely explanation is the similarities between the NSI's operational definitions of safety and physiological needs. When the participant takes the survey, there may be no conceptual distinctions between some questions. For example, a physiological need item from the survey is "I have an income that is adequate to satisfy my needs." An item from the safety need subscale is "I feel secure about the amount of money I have and earn." Without an esoteric understanding of Maslowian theory, these two questions are similar. So, the likely conclusion about the relationship between safety and physiological needs is that there is not enough of a distinction for the layperson to respond in a way that sorts out the finer points of the theory. When this is the case, the results found in Research Question 3 are reasonable. However, it does not instill much confidence in the stability of the instruments when used together.

Research Question 4

Does adding belonging needs to the hierarchical model statistically significantly increase the predictive capability of adaptation?

The last step in the hierarchical regression model was to add belonging need attainment. In doing so, the resulting model yielded a significant finding, $R^2 = .292$. The change in R^2 when adding belonging need attainment equaled .048. This result indicates that belonging need attainment statistically significantly contributed to the prediction of adaption when sequentially added to physiological and safety need attainment. This supports the alternative hypothesis.

Once again, the newly added predictor has a negative correlation and for the same reasons as prior variables. There is a high constant, 7.325, and the β equals -0.266. For every standardized unit of increase in belonging need attainment, adaptation decreases by .266 units. Again, while undesirable, the rationale for the result is likely due to a high adaptation score among the respondents. That is, overall adaptation may be occurring for other reasons not related to the subscales of the NSI used in the analysis. An interesting change that occurred to the prior added variables is that their contribution to the overall model were reduced because of the shared variance when the number of predictors went from 2 to 3.

This model shares statistical characteristics with the model created in research question 1. In research question 1, the goal was to determine if there was an overall statistically significant model that predicted adaptation with physiological, safety, and belonging need attainment as predictors. In this research question, the goal was to determine the contribution to the model that the last predictor, belonging need attainment, had when it was added sequentially to the model. Its negative contribution, $\beta = -0.266$, is consistent with earlier findings. The plausible statistical reasons are listed above, but there may be instrument-based and theoretical reasons as well.

The NSI has several questions in the belonging need subscale that may contribute to ambiguous, overlapping, or contrary-to-expectations findings. It is possible that some questions are conceptually similar between subscales. For example, in the belonging need subscale of the

NSI a question that asks, “I feel rootless,” may be similar to a question from the safety subscale, “I feel safe and secure.” Even though the first example is negatively worded, the concepts are similar. These two questions may yield similar results that could distort the results and interpretations of the statistical results. Another possible overlapping question from the safety subscale is,” I can depend on others to help me when I am afraid.” This question seems to combine safety and belonging into one question. Combing concepts may have led to a situation where the results are ambiguous or contrary to expectation.

A possible theoretical explanation for the findings is global changes in how psychological belonging needs are perceived by current students in the pursuit of adaptation to college. Winston et al. (2017) indicate that in order to achieve higher levels of Maslow’s hierarchy, a Humanistic sense of accomplishment must occur. However, the issue here is how it is perceived by the individuals in the current dissertation. Clearly, there was a decrease in perceived belonging need. At the same time, there was a consistent higher level of adaptation according to their scores on the SACQ. The conclusion, then, is that the way that the SACQ measures adaptation is attainable even when Maslowian need attainment negatively contributes to the predictive capability of the model. While this section focuses on intra-study explanations of the results, the methodological explanations in a later section will elaborate on the results.

Research Question 5

Is there an overall statistically significant model for predicting belonging need attainment with the sequential entry of physiological and safety need attainment?

Research question 5 is an exploration of a single model that determines to what degree physiological and safety need attainment can predict belonging. This is slightly different from previous models in that belonging need attainment is an outcome variable rather than a predictor.

This research question aligns with an attempt to reinforce the internal hierarchical structure of Maslow's (1943) model using the NSI as an instrument to measure Maslowian need attainment. The results support a statistically significant predictive model where physiological and safety need attainment sequentially predict belonging, F (2,98) = 23.222, p <.001 . This significant positive result reflects a long-standing theory about the internal structure of the hierarchy of needs.

In terms of the methodological explanations, this finding is different from the prior research questions in that it supports the significance *and* the expected direction of the hypothesis. A probable explanation for such a different result is that, despite some concern about overlapping constructs identified in earlier sections, the NSI is stable on its own and that the combination of these two measures may render the NSI unstable. In Chapter 3, these instruments were found to be valid on their own, but with the results of this model, it is suspected that there needs to be some validation of the mingled instruments. This will be elaborated on in a later section.

The implications of these results for the study is that the abandonment of Maslow's hierarchy of needs (1943) is not imminent. In the prior research questions, it was found that the results were significant but contrary to the direction indicated by the original hierarchy of needs model. However, without the inclusion of the adaptation questions from the SACQ, the NSI appears to have structural integrity. The positive prediction of belonging need attainment based on physiological and safety need attainment as predictors follows hierarchical theory (Maslow, 1943; Harrigan & Commons, 2015; D'Souza, 2017). The results of this research question spark curiosity about the nature of the instruments not from a statistical perspective—their validation has been noted—but from a practical perspective. The ways that needs and adaptation may no

longer align with these instruments with variations in the social climate. This idea will be expanded on in a later section.

Conclusions Based on the Results

The results of this study seem to contradict the established theoretical model on which this study is based. However, there are some explanations that may elucidate the contradiction. Instrument concerns, noted previously, account for one half of the unexpected direction of the results. Cultural or situational dimensions may account for the other half. The data suggested that attaining higher levels of Maslowian need predicted a significant decrease in the adaptation to college in the sample. The conclusion, if interpreting the data only, is that need attainment inhibits adaptation. These findings seem to defy common reason. So, alternative explanations will be examined in the next sections while comparing them to the theoretical frameworks from which they come as well as the literature that makes use of the same constructs as this dissertation.

Comparison of Findings With the Theoretical Framework and Previous Literature

The two following subsections remind the reader of the theoretical framework and the relevant aspects of the literature review with respect to the results of this dissertation. The theoretical framework appears to suffer a blow by these results. However, as with any theory, the context of the study and alternative explanations are at play. The results of this study may not align with the expected direction of the results other authors have found, but the speculation is that the instruments may not work well together as alluded to in the Research Question discussions above.

Comparison to the theoretical framework. The root of the current study is Maslow's (1943) hierarchy of needs, which has been largely unchanged since its inception. An exception to this is the *plateau experience* as noted by Gruel (2015). However, this change is part of the hierarchy that is above the delimited stages in this study. As this model has been in existence for more than 70 years, one could assume that it is a stable way to understand motivational psychology. Talfel and Turner (1979) situated intergroup behavior (a form of belonging) within Maslow's model. Lester (1990) developed the instrument used in this study based on the longevity and stability of the theoretical underpinnings of Maslow's model as well. Even Hagerty (1999) found agreement with the trajectory of the stages, however, there was a conclusion that created some separation from the mechanics of the Maslowian theory. Maslow (1943) suggested that growth is phasic and that focused attention at deficiency stages is critical. Hagerty's (1999) findings suggest that there is overlapping attention and even concordant attention at certain times. That is, as much deficiency can happen at a higher stage, like belonging need attainment, as in safety need attainment despite the theoretical imperatives. This result leads to a weakness in the original theory.

When considering the mechanics of the hierarchy of needs, there is a also a need to include the humanistic dynamics of need attainment. The results do align with the humanistic endeavor to find one's way and cope with presented challenges (Hergenhahn & Henley, 2014). To adapt to a new situation is a complex experience, and each person will use personal experience in order to make the adaptation. There is no accounting in this study for personal experience and history as mediators of adaptation because of the sample's lack of demographic information. A critique of Maslow's model is offered by Neher (1991) that points out that even when faced with life-threatening hunger, isolated populations will have strong family and social

ties. However, when this dissertation's sample is considered there is likely to not be such a present and obvious danger. So, these results contradicting the Maslowian model may speak more to the unique experiences of the individuals in the study and less on the stability of the model.

An interesting theoretical analysis by Winston (2016) provides another explanation that incorporates Maslow's hierarchy of needs as well as the humanistic perspective to explain motivation through adaptation. There here-and-now approach to meeting deficiency needs that Maslow (1943) suggests struggles to account for the results found in this study. Not that this invalidates either the study of the theory, but it is a reasonable task to compare related theoretical perspectives in the pursuit of an explanation. In Winston's (2016) approach, the existential approach is added to the humanistic approach. The contribution to the explanation of the results of this study is that rather than motivation that is directed by meeting deficiency needs, she posits that ideal life situations and outcomes drive motivation. What this means for the results is that adaptation may be elevated by feelings of achievement and work toward an outcome that is ideal, or at least favorable. A promise of accomplishment during the quagmire of undergraduate work may lead to attenuated attention to deficiency needs. For example, one may think that it is okay to be tired all the time because he or she is an undergraduate, and it is expected. The expectation and promise of success attenuate the sense of the deficiency. Furthermore, it may feel like reasonable adaptation. A student may feel that lacking sleep, not eating well, and dealing with rambunctious roommates is what college is all about; this feeling masks the feeling of a lack of need attainment. The student is acknowledging lower need attainment while sensing higher adaptation. Feelings like this may reinforce feelings of successful adaptation and reflect higher

scores on the SACQ (Labrie et al., 2012a) while leading to lower scores on the NSI (Lester, 2000), which scores the Maslowian need subscales.

Summary. The results of this study seem to defy the mechanics of Maslow's (1943) hierarchy of needs. However, the conclusion based on the theory is not that the theory is wrong or even that the results of the survey themselves are flawed. There is enough room within a unified theory to explain the peculiar findings. Winston's (2016) inclusion of an existential idea of striving for an outcome explains how it is reasonable for high levels of adaptation to occur with negative predictors of need attainment. The sophisticated cognitive process of ignoring apparent deficiencies in favor of focusing on the outcome of college demonstrates how motivation can overcome present dangers. Even buying into the supposed college experience that includes threats to physiological, safety, and belonging need appears to be enough to believe that one is adapting even when threats are present.

Comparison to the previous literature. There are two main goals of this study. Primarily, Maslow's hierarchy of needs is used to predict levels of adaptation to college. Second, the Maslowian belonging need is used as an outcome of the two prepotent stages, physiological and safety need attainment, to determine if the internal structure of Maslow's hierarchy of needs remains intact. The second item is covered first in this section followed by the more salient primary goal.

Belonging as an outcome. Belonging need attainment is often used as a focal point in studies where adaptation to college is the outcome (Layous et al., 2017; Williams & Russell, 2013; Hale, Hannum & Espelage, 2005; Wann et al., 2017). The findings unanimously support belonging as a key component of adaptation in many situations. However, the underlying issues of prepotent need development was not as prominent in other studies, as mentioned in Chapter 2.

Maslow theorized that belonging need attainment relied on successful attention to prior levels. This dissertation did support the sequential nature of need attainment in the same way that current research did. Taormina and Gao (2012), Winston et al. (2017), and Harrigan and Commons (2015) all had similar results that pointed to a hierarchy. Research question 5 had a significant hierarchical prediction model where physiological and safety need attainment predicted belonging need attainment as the outcome, $p < .001$. This result both confirms that there is a sequential basis for need attainment as well as promotes the notion that it is worth exploring proponent needs when a higher-order need, like belonging is lacking. However, these results are limited to the internal structure of Maslow's hierarchy of needs when measured according to the NSI (Lester, 2000).

Sequential prediction of adaptation. The results of this dissertation do not align with the majority of the findings of previous literature. As such, the comparisons will be made along with speculation as to the differences in a more holistic interpretation of the results following this section. The results in this dissertation indicated that while the Maslowian needs—physiological, safety, and belonging—were significant predictors of adaptation, they were negative predictors when added sequentially to the model. Other studies reviewed do not have these same results. Taylor et al. (2014) found that adaptation to college was greater when similar constructs to Maslow's were used as predictors. The authors found positive correlations whereas this study found negative correlations. Sharma (2012 also found that there was an increase of adaptation in a between-subjects study of first- and third-year students when measuring social maladaptation (conceptually similar to belonging) and emotional security (conceptually similar to belonging). This study supports positive adaptation with conceptually similar constructs. Even authors who used the SACQ, as in this dissertation, found positive predictions for

Maslowian ideas. Mattanah et al. (2010) found that those who had higher levels of belonging, measured by engagement in a support group, had higher levels of adaptation according to the SACQ. While the measurement of belonging using the NSI and levels of engagement in a support group may not measure the exact same operational definition, it is reasonable to believe that they would yield similar results on adaptation. The results of this study do not align with the positive predictability of adaptation, according to the SACQ, when Maslowian need attainment is measured according to the NSI. Despite validation of both instruments (Lester, 1990; Labrie et al., 2012b) they appear to not work together.

Summary. The theoretical framework and previous literature appeared to layout a straightforward study. Maslow's hierarchy of needs had been tested multiple time by authors since its inception. However, there may be theoretical interplay at work with Winston's (2016) approach to humanistic/existentialist melding. Students may be attenuating the effects of need deficiency in favor of what is perceived to be a usual college experience. While the results of this dissertation generally contradict previous literature, a holistic interpretation of the findings will illuminate alternative explanations.

Interpretation of the Findings

When considering theoretical and literature bases, results of this study seem to diverge from longstanding models (Maslow, 1943; Hergenhahn & Henley, 2014). Research Questions 1-4 in the main analysis reveal that at each stage where a new variable was entered into the prediction model the result was a negative beta value. This result leads one to conclude that when need attainment increases, adaptation decreases. This apparently means that when students have higher levels of physiological, safety, and belonging stability they report lower levels of adaptation to college. Neher (1999) offers a now 20-year old assessment of what may be

happening. Simultaneous attention to each step may be occurring. If this is the case, then these results mean that there could be compensatory attention to a higher-order need, like belonging to overcome other deficiencies. If one is feeling psychologically unsafe, then rather than attend to that specific need, one may find comfort in friendships. The motivation to feel good fits within the humanistic school of thought even if it violates Maslowian principles mechanically.

Another possible explanation lies in individual experiences. Adaptation can happen predictably (Ostrove, 2007), but a self-determined individual may find ways that are unique for the situation. Patrick's (2014) analysis of working through Maslow's hierarchy of needs from a Self-Determination Theory perspective suggests that there is fluidity of need attainment in the midst of adapting to specific situations. The results of this study are based on a sample of individuals about whom nothing is known outside of the inclusion criteria and biological sex. That means that there are many characteristics that are not available for analysis. Negative predictors of adaptation could come from situational nuances. At the same time, the observed power and significance of the findings would not generally reflect one or two cases where individual differences are occurring. Speculatively, there may be a more systemic issue at play. At the same time, Crede and Nierhorster (2011) identified that demographic traits strength of parental relationships are moderately related to adaptation using the SACQ. When adaptation as poorer, then demographic qualities and coping approaches are suspects for influence.

Winston's (2016) inclusion of existentialism contributes most to the interpretation of the findings. The relationship between adaptation and need satisfaction is negative. What this can mean is that even with low need satisfaction, adaptation can be increase. Winston's theory indicates that there is something more motivating that the satisfaction of needs that is increasing a sense of adaptation. The forward-thinking student may be able to sense that despite feeling

dissatisfied, he or she is adapting. Sears et al. (2017) found that those who are engaged in thesis-based studies are often more satisfied with their college experience compared to their major-based counterparts. This finding may support a general sense of satisfaction despite a higher level of stress. Again, this speculation is outside the scope of the study, which does not have access to qualitative aspects of the participants' motivation.

The three predictors, physiological, safety, and belonging need attainment, ultimately contributed to a significant negative result on adaptation. Considering both instruments, the NSI and SACQ had been validated and used in several studies by their authors (Labrie, et al., 2012b; Lester, 1990; Lester, 2000), the combination of the two may not work as expected. There are some overlapping constructs between the two instruments that could contribute to unexpected findings. For example, a physiological need item on the NSI, "In general, my health is good," is conceptually similar to an item on the SACQ, "I have been feeling in good health lately." If these two questions are not answered identically, then they contribute to a negative correlation leading to a negative prediction. In short, overlapping questions on the two instruments could be acting as a multiphasic test where inconsistencies would create unexpected responses. Another issue that could lead to unexpected results is the degree of self-assessment one does when answering a question. On the SACQ, a question about adaptation is, "I'm not doing well enough academically for the amount of work I put in." While a self-assessment question seems reasonable, this could be unintentionally measuring a different construct, like effort. The student may be (a) putting in adequate work but not doing well, (b) putting in adequate work and doing well, (c) putting in inadequate work and not doing well, or (d) putting in inadequate work and doing well. It can be difficult to assess one's own effort in relationship to how he or she *should* be doing. This self-assessment could lead to a result that does not match the idea of adaptation.

Summary. While the results of this study are not as expected, there are some reasonable limitations and explanations that lead to recommendations for future research. Theoretical and literature bases help to provide understanding of how these results can happen. The instruments themselves may also contribute to the negative direction of the results. However, participant characteristics and experiences in addition to the instruments may be the best way to make sense of the results.

Limitations

Design and Sample Limitations

This study, like many others, could have been addressed through a variety of research methods. Because of this, the selection of the nonexperimental survey questionnaire as the research design and strategy was a matter of preference. Chapter 3 noted the benefits and drawbacks of the research design. Namely, the nonexperimental approach carried a lower amount of internal validity (Leedy & Ormrod, 2016; Creswell, 2012), the purposive sample restricts a generalizable sample in favor of a sample of interest (Gravetter & Forzano, 2016), and survey strategies are limited to snapshots of the sample with little control over extraneous conditions that may lead to confounds (Fricker & Schonlau, 2012; Fowler, 2014). Further, there may be systematic differences in the responses of individuals who are part of a volunteer sample in that they may respond in a way that is not externally valid or even predictable (Fowler, 2014) One can consider these to be concessions of the method rather than limitations as there are limitations of any study because of the balance between external and internal validity (Trochim, 2006). However, it does appear that a design flaw that led to surprising results was the combination of the two instruments. The instruments that comprised the survey, chiefly the SACQ and NSI, do not seem to work together well. This was a surprising discovery considering

that both instruments—SACQ (Baker & Siryk, 1984; Labrie et al., 2012b; Labrie et al. 2012a), NSI (Lester, 1983; Lester 2000)—had been validated on their own. At the same time, both had apparent face validity. The recommendation for overcoming poor instrument combination is to conduct a confirmatory factor analysis. Creswell (2012) suggests that field studies and pilot testing can provide preliminary data for testing unknown instruments. In this case, the unknown aspect is the combination of the two. The confirmatory factor analysis of a pilot study would determine two aspects.

First, to what degree does each instrument have individual items that load on their anticipated factor (Warner, 2012)? The NSI and SACQ would be tested individually to confirm that each item loads where it is expected to. One of the explanations of the findings was that there was overlap of items across categories in the NSI where some items related to belonging need attainment may also relate to safety need attainment. Second, because there may have been conceptual overlap between items on the NSI and SACQ, the results may be difficult to interpret. A confirmatory factor analysis of all items in the NSI and SACQ would determine to what degree the items across both instruments load on the same factors (Warner, 2012). If a pilot study were conducted, the results of the confirmatory factor analysis would illuminate situations where there were items on the NSI and SACQ overlap categories. An assessment of the items on the SACQ that loaded heavily on NSI would determine the validity of combining the two instruments.

The sampling strategy fit the desires of attaining a more natural representation of the target population. In doing so, there was a lack of control over exactly who completed the survey. While the inclusion criteria specified the parameters for participation, there was still a great deal of possible variances in the characteristics of the participants. A nation-wide survey

potentially includes vast differences in culture and experience. Even though the power analysis yielded appropriate observed power, the statistical certainty of the survey results does not necessarily compensate for human responding. The concession of obtaining a nationwide sample was made in order to apply results more broadly, but focusing on a more specific sample would likely yield more interpretable results. For example, studying several schools in a geographic location or schools with known similar demographic distributions may lead to better, more cohesive results. Even though the goal of this study was the predictive quality of the categories of the NSI on the SACQ, discovering *why* the results occurred is important when they were not as expected. Retrospectively, it would help the study to be able to make firmer assertions about the sample.

Delimiters

The main delimiter in this study is the exclusion of the top two tiers of Maslow's (1943) hierarchy of needs from the analysis. The goal of the study was to focus on the integrity of the hierarchy of needs through belonging need attainment. This was based on the review of literature in Chapter 2 where the focus of most research was on the sense of belonging (Winston et al., 2017; Wann, et al., 2017; Layous, et al., 2017). The transition to college seemed to challenge belonging the most according to the authors, but Maslow's hierarchy of needs suggested prepotent needs could inhibit maintaining belonging across the transition. So, belonging and the prepotent needs were the focus. In order to maintain the validity of the instrument (NSI), all domains were included in the survey. However, they were not explored in the analyses. Esteem need attainment and self-actualization were not part of the focus of this study and did not appear in much research about the transition to college.

Implications for Practice

With careful interpretation of the results, stakeholders could use this study to re-evaluate how students identify and report the realities and of making the college transition. If Winston's (2016) theory is applied to these findings, then it may suggest that college students have expectations that do not align with perhaps traditional views of the college experience. During the transition to college, social connectedness enhanced resiliency for a sample of first year college students (Taylor et al., 2014). However, their findings also suggest that prior sources of support (i.e. family) increased resiliency. So, there is an experiential component to this transition. Earlier in this dissertation, an explanation for the results was that there were extraneous individual differences. Stakeholders would benefit from a more personalized approach to screening out cases where adaptation may be an issue. Using an instrument like the SACQ, while a possible broad screening tool, would not yield answers to *why* someone is not adaption well. A personal interview may elucidate these issues if there is a need based on a general screen.

Because the results of this study led to a positive predictive model for physiological and safety need attainment on belonging need attainment, Maslow's (1943) assertion of attending to prepotent needs is still valid. When college staff recognize a lack of belonging, it would be reasonable to attend to possible lacks in either physiological, safety, or both, domains. Mattanah et al. (2010) used the SACQ in their study of college students making their freshman-year transition. At the same time, prior concerns were measured in their study through the New College Students Concerns Scale (NCSCS) to identify potential concerns before transitioning to college. The items on this scale seek to identify prior concerns framed as expectations. For example, "I will have difficulty balancing work and studying." This phrasing encourages

students to use previous tendencies to evaluate current concerns. The type of evaluation asked of the students is akin to identifying prior needs as indicated in Maslow's model. The stakeholders would benefit from using prior behaviors and tendencies as predictors of current functioning.

Recommendations for Further Research

Recommendations Based on the Results, Method, And Limitations

The findings of this dissertation indicate several recommendations based on the data. Because each beta value in the hierarchical regression model testing adaptation was negative, there appears to be either a severe issue with a long-standing psychological model or a flaw in the combination of the NSI and SACQ. The recommendation for future researchers is a careful factor analysis of the two instruments. A pilot study of a similar target population would likely yield satisfactory data. If the items do not load on an oblique solution, then they should be dropped (Warner, 2012). Dropping items that load poorly or on more than one factor would help to eliminate overlapping constructs. Doing so would yield a final item list that simplifies the factors for use in the subscales. The surprising results in this study are suspicious because of how contrary they were to the theory.

Another recommendation based on the method and design is to add a qualitative component which would render the study a mixed-methods approach (Creswell, 2012). Because the goal of the study was to determine the legitimacy of the hierarch of needs (Maslow, 1943) and its predictive quality on adaptation, a qualitative assessment was not sought. However, when the results are not as expected it is certainly reasonably to question why. A qualitative component may render such a lengthy survey too long and contribute to fatigue (Fowler, 2014), but unless the results are exactly as hypothesized there is no way to explain them. Conjecture

only, perhaps there is an emerging theory based on a cultural movement or shift. This study could benefit from a way to unify the results with theory.

In addition to the qualitative component, it is recommended to create a more restrictive target population. This study relied on a nation-wide sample of participants. However, a more specific demographic would lead to more interpretable results. At the least, it would lead to a narrower explanation for the results if the sample characteristics are more homogenous (Leedy & Ormrod, 2016). Secondary to a more restrictive sample, using a survey interview with a semi-structured instrument would lead to the possibility of follow-up questions (Fowler, 2014). This supports a firmer interpretation of the results by providing opportunities to gather qualitative statements about the experiences of the individuals. Even though this design may be more intensive, explaining surprising results and developing or modifying theory may take priority.

Recommendations Based on Delimitations and Other Issues to Investigate

The delimitation in this study is the analysis of the three lowest levels only of Maslow's hierarchy of needs. The participants completed the entire instrument, which included all 5 levels, in order to maintain the integrity of the instrument as developed. Future researchers could benefit form including the entire hierarchy in the analysis to determine if the results change when the entire hierarchy of needs is included. D'Souza and Gurin (2016) demonstrate the universality of self-actualization that reinforces each prepotent need. So, if a holistic approach to the hierarchy of needs is sought, the entanglement of self-actualization may complicate an analysis. The results in Chapter 4 indicate that adding variables to the model changes the previous models considerably, so it is logical to suggest that including the last deficiency need, esteem needs, as well as the being need, self-actualization, could change the overall model as

well. This would increase the scope of the study considerably, but it may illuminate a trend not identified in this dissertation.

A speculative issue that could be at play is a change in the concepts of Maslow's hierarchy of needs. Lester's (1990) initial NSI may be outdated even with more recent, relatively, uses (Lester, 2000). A simple example of this is the increase of mental health concerns surrounding mass shootings, including school shootings. Lowe and Galea (2017) conducted a meta-analysis of 49 articles that indicate mass shootings lead to decreased emotional regulation and other related concerns. Adjustment, as a disorder and construct, was implicated in recovery in the aftermath of these shootings. Perhaps these intense experiences, either first-hand or through media, affect how people conceptualize feelings of safety. Maybe there is a sense that psychological safety is not as important as physical threats to safety despite the relatively low-risk. Again, this is a speculative issue that could benefit from further research in order to possibly develop or modify an instrument that measures different level of need attainment.

Conclusion

This study sought to determine the predictive quality of Maslow's hierarchy of needs on adaptation to college among college freshmen. The goal was two-fold. The first goal was to determine if Maslow's (1943) three prepotent needs hierarchically predict adaptation. This study concluded that while there was a significant prediction, each need when added in order contributed to a decrease in adaptation. This was the case for each variable. The interpretations and explanations provided for these unexpected findings attempt to situate the findings within a reasonable theory while accounting for potential flaws in the instruments and methods. At the same time, the recommendations based on these findings may lead to an explanation within a modern context of Maslow's hierarchy of needs. The second goal was to determine the degree to

which Maslow's two prepotent needs predicted belonging. There was a positive prediction model for this internal analysis of Maslow's hierarchy. This is encouraging as it points to the internal integrity of the model even when combined with the SACQ revealed a negative relationship. Even with the limitations in mind, this study promotes the continued exploration of a well-established theory and developmental milestone for academic-minded individuals.

In closing, I would like to acknowledge the process of completing this dissertation has been. The selection of my research topic fits a professional interest from both my jobs—as a counselor and professor. I approached it with a sense of structure, understanding, and competence. This approach served me well, because without it I would have been over my head when my results were opposite as expected. The need to justify opposite-as-expected results was new to me. It was, however, a fun exercise in problem solving both the research-based reasons for the results as well as the theoretical. Throughout this experience, I have not lost trust in either Maslow or the need to attend to prepotent needs when one is struggling to belong. On the other hand, I have been reminded that expectations are not permanent. Contexts change, and situating oneself in what appears to be a permanent stance can inhibit what would otherwise be an application of fluid wisdom.

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APPENDIX A. SCATTERPLOTS

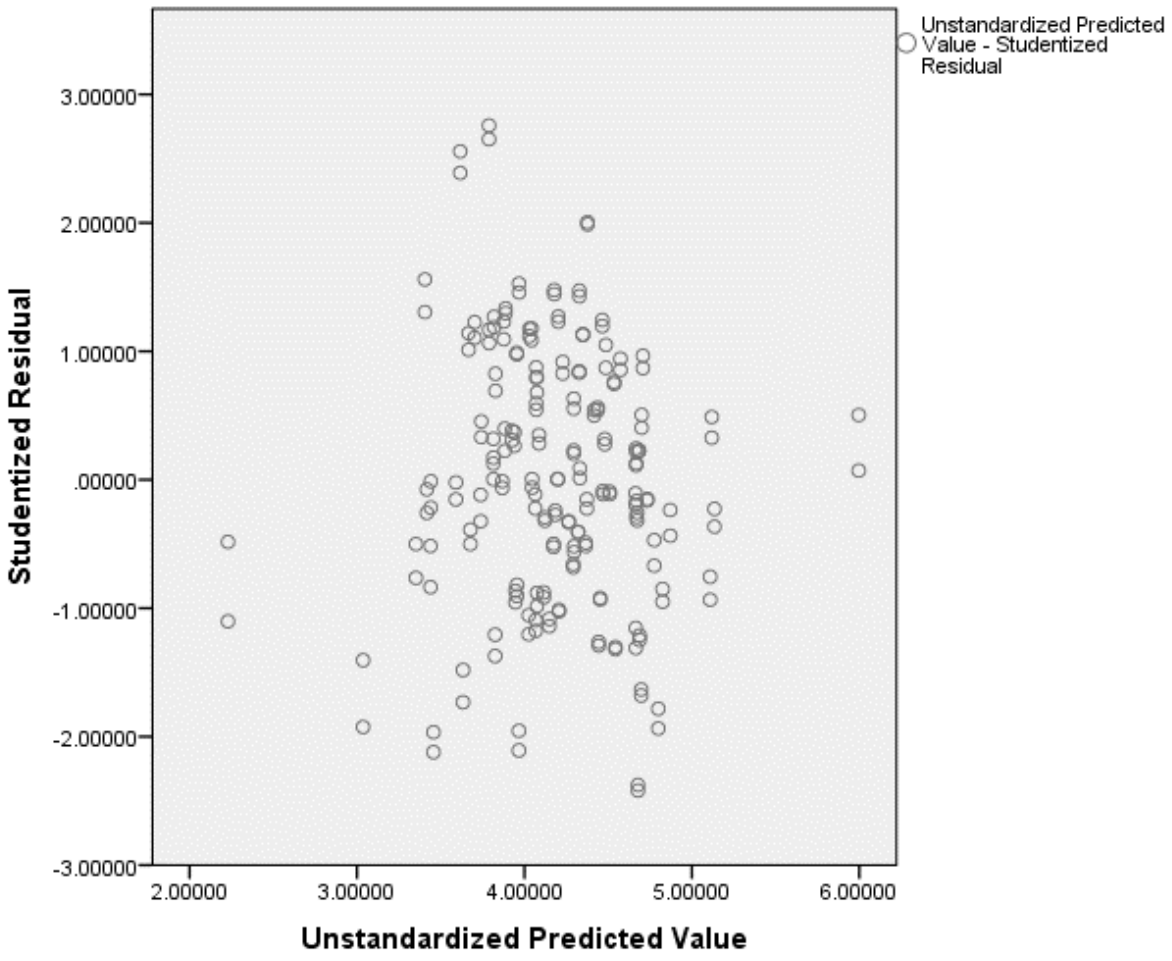

Figure A1. Scatterplot of studentized residuals by unstandardized predicted values for SACQ.

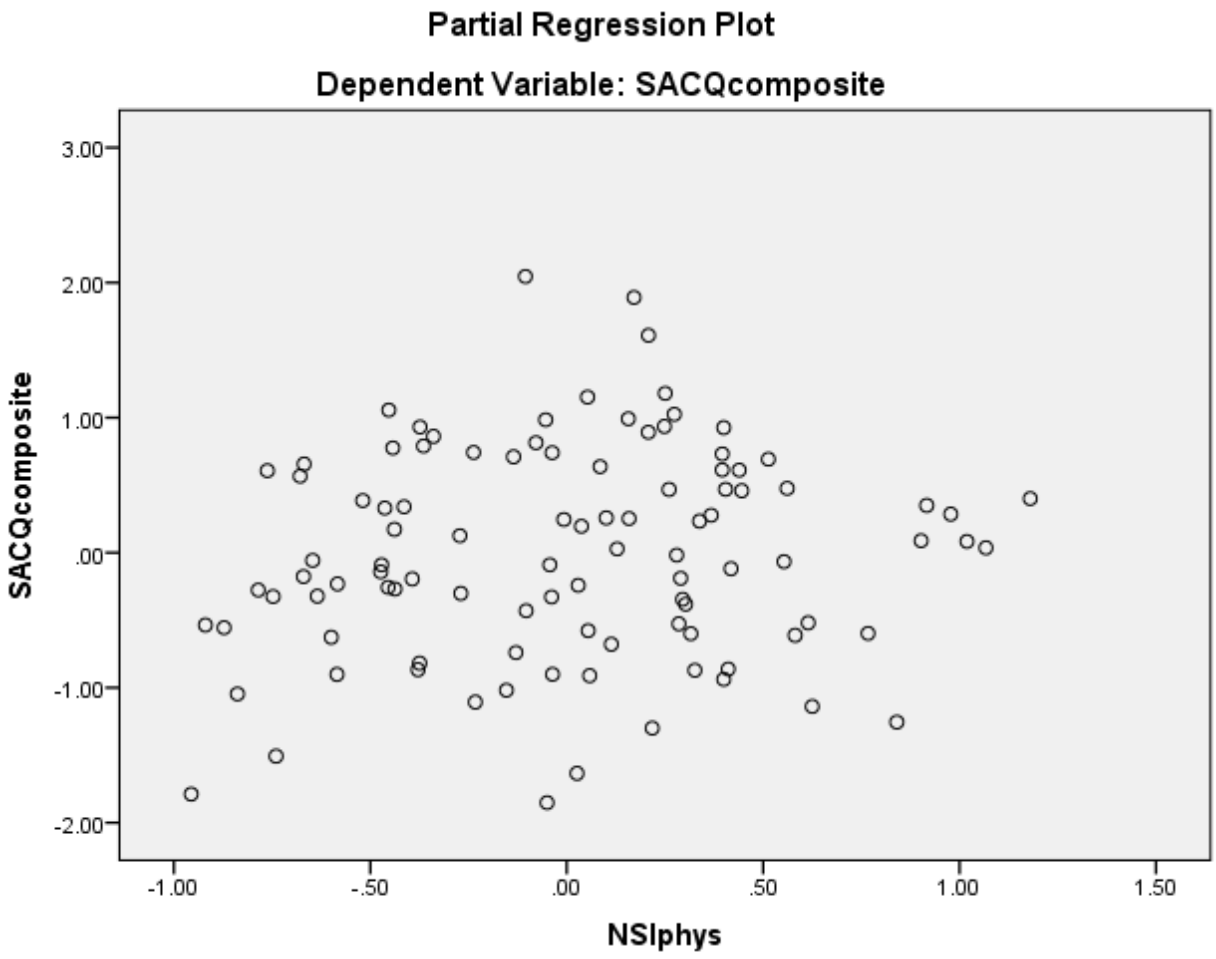

Figure A2. Partial regression plot for NSIphys by SACQcomposite

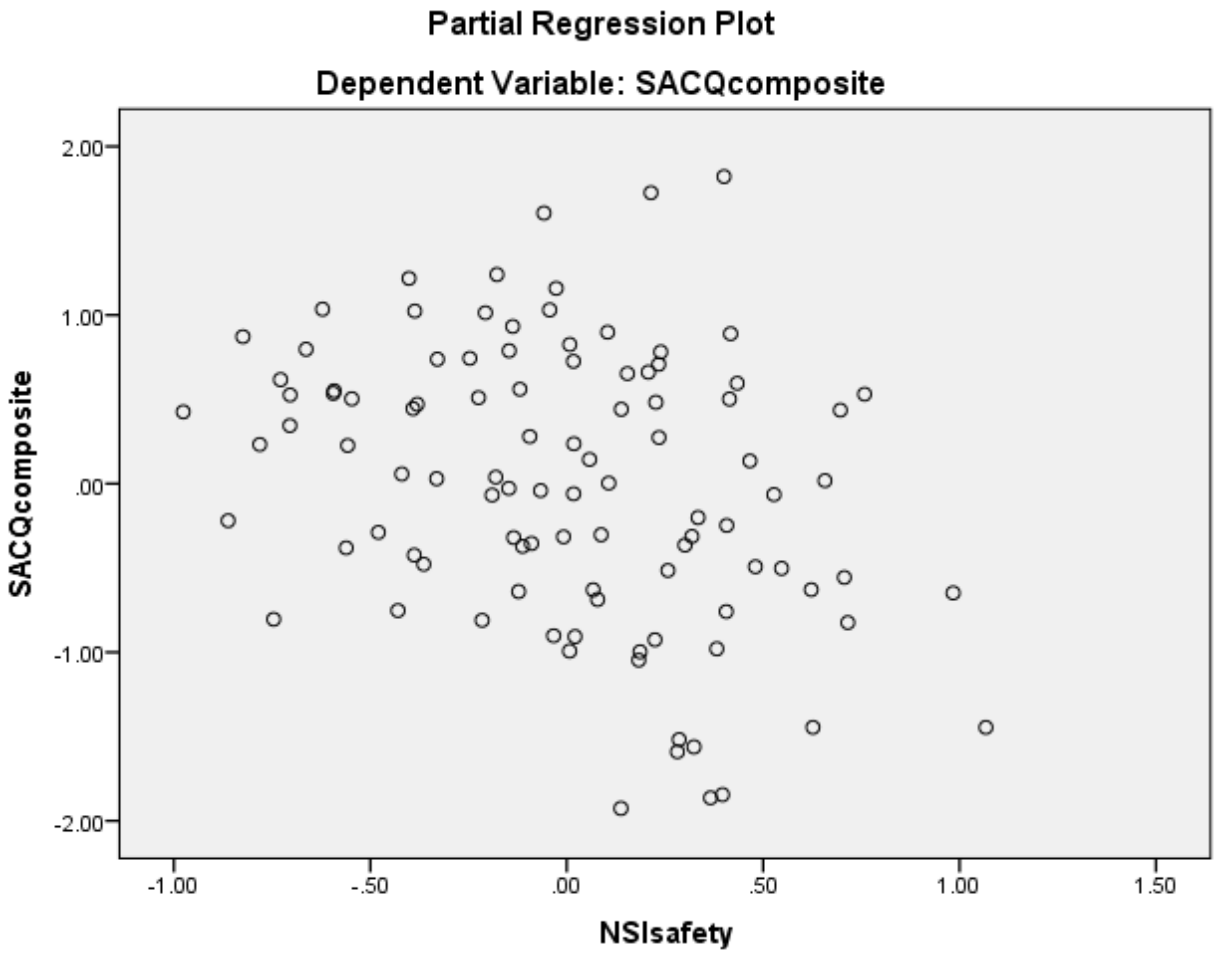

Figure A3. Partial regression plot for NSIsafety by SACQcomposite

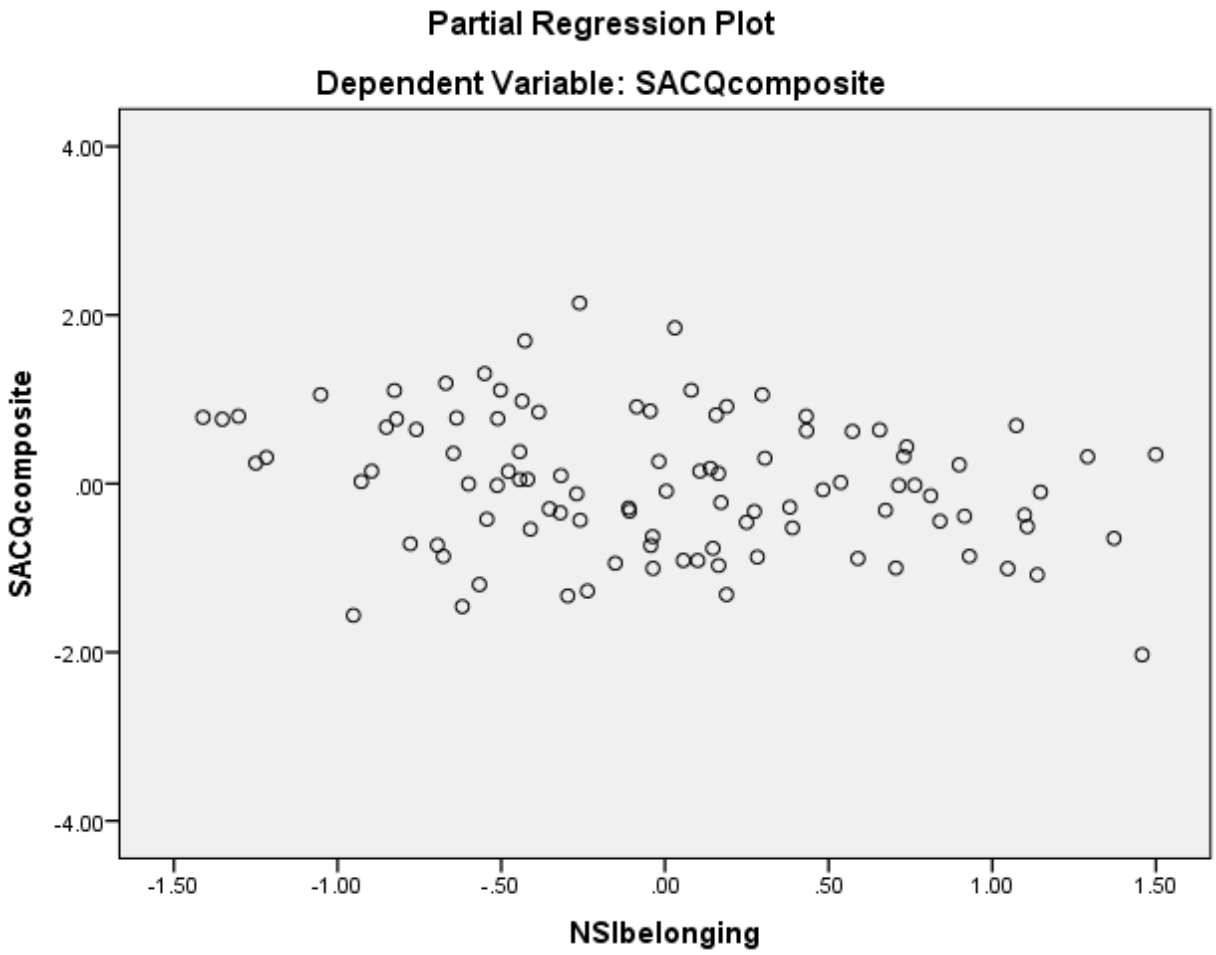

Figure A4. Partial regression plot for NSIbelonging by SACQcomposite.

APPENDIX B. Q-Q PLOT

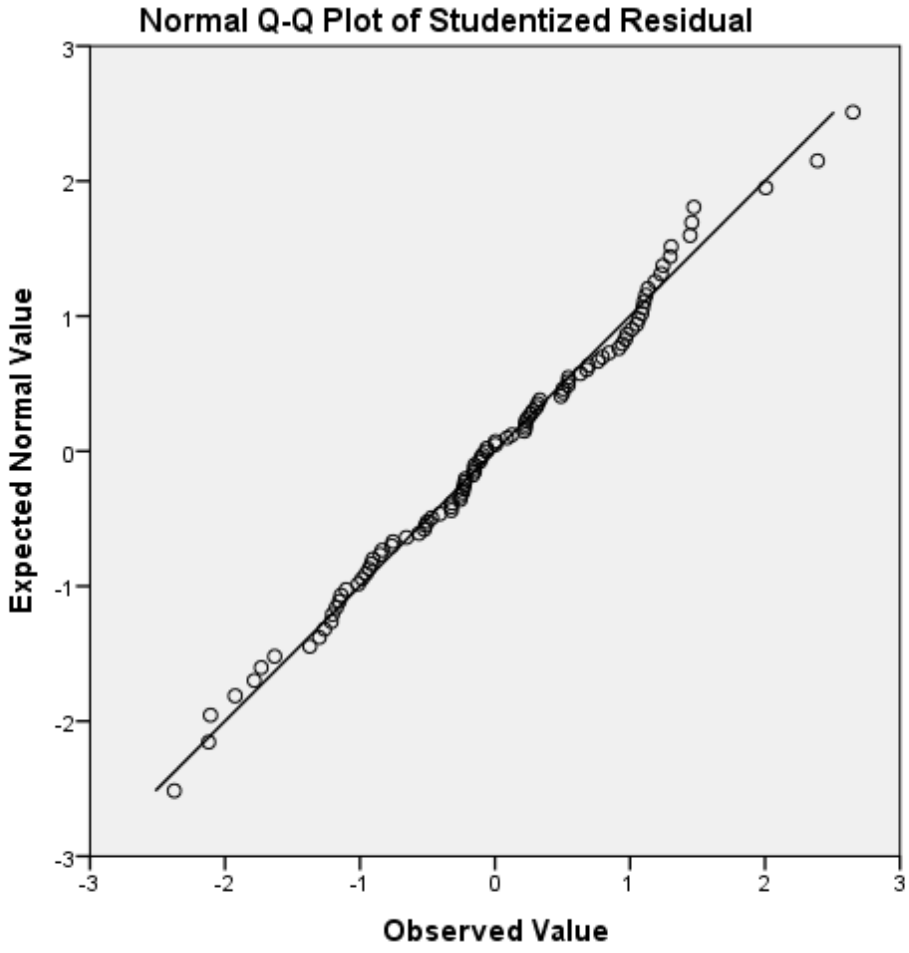

Figure B1. Q-Q plot of studentized residuals for SACQcomposite.