To Help Others Like Me

Quechan and Cocopah Postsecondary Persistence for Nation-Building

by

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ABSTRACT

Native American students often enter postsecondary education as means of serving a broader community. Studies among a broad base of tribes found that the desire to serve a larger community acts as a motivation to persist through college. However, institutions of higher education often center on individualistic empowerment rather than focusing on how to empower tribal communities.

Due to the lack of quality datasets that lend to quantitative research, our understanding of factors related to American Indian/Alaska Native (AI/AN) postsecondary persistence has primarily been based on qualitative studies The purpose of this study is to understand how the desire to serve a larger community influences current and former Cocopah and Quechan undergraduate students' college persistence. The study adds to the Native American postsecondary persistence literature base, that up till now, has not quantitatively examined students' desire to serve a larger community as a persistence factor while intentionally sampling two smaller tribes with tribal enrollments less than four thousand.

This dissertation presents a Native American persistence model and alternative method of sampling small Indigenous nations, establishes construct validity for an instrument measuring the proposed persistence model and provides evidence the proposed model predicts postsecondary persistence and academic performance. The design of the model derives from a review theories and scholarship on Native American persistence. Subsequently, construction of an instrument measuring the model emerged from the theories, literature, expert feedback, and pilot testing. Using data collected from

an online survey of a sample of Cocopah and Quechan students (n=117), the study provides evidence of construct validity of the instrument through an exploratory factor analysis. Following the instrument validation, regression analyses indicates that AI/AN postsecondary persistence within both two-year and four-year institutions is positively associated with student desire to give back. The evidence further suggests that researchers, practitioners, and administrators should expand programs that center on nation-building to increase the persistence of Native American students while simultaneously meeting the needs of tribal nations.

DEDICATION

Vanessa for constantly believing, urging, and making life meaningful

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CHAPTER 1

SERVING A LARGER COMMUNITY

My Mother tells me stories about my Grandmother. I was not fortunate enough to know her, but from what my Mom tells me, she was a beautifully flawed person. My Grandma Catherine was born in the 1920s on the Fort Yuma Indian reservation in California. She attended school with my grandfather at St. John's Indian boarding school in Laveen, AZ. She completed the 8th grade, and then went back to our reservation in Fort Yuma to live the rest of her life. My Mom and Uncles recount my Grandma Catherine's life, and when speaking of her, they acknowledge her generosity by telling stories about her giving what little they had to neighbors and family. However, the history of traumatic abuse my Grandma received in boarding school influenced her alcohol use to cope with emotional scarring from her boarding school experiences.

My Mother also tells me stories of her childhood and being raised in a one-bedroom sandwich house (mud house) with dirt floors while her family was wracked by alcohol addiction and abuse. She talks about being left alone at home throughout her childhood, for days at a time, trying to find food to survive. When my Mother was twelve years old, she found her Father's lifeless body under a Mesquite tree just outside their sandwich home, after he passed away from alcohol poisoning. Despite her tragic childhood, with the encouragement of a group of Native American college students and financial support from our tribe, she finished high school and went to college. At the age of seventeen, my Mom flew to Texas to attend her first undergraduate course. It was a predominately White college, and one of her memories she often told my siblings and me

was about the White girls that complained about how small the dorm rooms were and the gang showers and restrooms. All she could think was how amazing it was to have her own bed, running water, and an inside toilet for the first time in her life.

My Mother had to overcome college challenges such as deficient academic preparation coming from a small reservation school, financial aid knowledge to help pay for tuition, a lack of Native American faculty or academic mentors for guidance, and no family close by for comfort. I frequently think about all the challenges she had to overcome to graduate college, and how I never had to face even a fraction of the challenges she did, and I wonder how she finished. When I asked her she responded, "the tribe (who supported her financially), an older Native couple who lived in Dallas, and my desire to help others like me."

After earning her bachelor's degree, my Mother would go on to finish graduate school and teach and train hundreds of educators at American Indian College. Ultimately, my Mom went to college to ensure that my siblings and I had a better childhood than her own, to help students serve their community, and to give back. She did all this to serve a community broader than herself.

Background

My Mother's story of my Grandma's drive to alcohol to cope with boarding school experiences is a result of governmental and educational policies linked to the problematic goal of assimilation (Brayboy, 2005). Assimilation refers to adopting the characteristics of a particular group, and most often the dominant group. Nonetheless, the issue of assimilation through education extends far beyond my grandparents' generation

in boarding school. Assimilation through education reaches as early as 1819 when the United States first supported mission schools through the Indian Civilization Act, which authorized ten thousand dollars a year to support Christian attempts to assimilate American Indians (Prucha, 1995).

More than a half-century after the establishment of mission schools, the United States initiated government-run schools in 1879 (Child, 1998). The introduction of government-run boarding schools would be commemorated by an infamous quote by Captain Richard Henry Pratt, "Kill the Indian in him and save the man," (Utter, 1993, p.196). The boarding school era of American Indian/Alaska Native (AI/AN) education is devastating, mostly due to the abuse AI/AN students endured emotionally and physically through forced assimilation. In 1884, Zitkala-Sa (2012) recounted her boarding school experiences when missionaries cut her hair, a symbol of mourning or cowards for her tribe. Her experience shows one aspect of how the United States (U.S.) government attempted to take culture away from AI/AN students through boarding schools. Furthermore, the vicious treatment of AI/AN students in boarding schools by religious and government officials during that time permeates through generational misfortunes of some AI/AN communities (Brave Heart & DeBruyn, 1998), as was apparent in the case of my grandparents.

In the 1920s, it became more evident that policies toward AI/AN education were not working, as many Indian reservations remained in poverty (Meriam, 1928). The Meriam Report helped expand the educational policies toward AI/AN through legislation signed in 1934 by President Franklin Roosevelt. In that same year, Congress passed the

Johnson O'Malley Act (Olson & Wilson, 1984) that authorized the U.S. Secretary of the Interior to develop contracts with states and territories to supplement American Indian education. A few decades later, advocates for the rights of Indigenous communities to determine their future supported efforts to pass the Indian Education Act of 1972, Indian Self-Determination, and Education Assistance Act (Reyhner & Eder, 2015). A report from the U.S. Senate subcommittee entitled, "Indian Education: A National Tragedy, A National Challenge," (Sharpes, 1979) highlighted these efforts. The report, like the Merriam Report, documented the failures of federal efforts to educate American Indians.

Due to failed federal policies in American Indian education, in 2001 Congress passed the Native American Education Improvement Act as part of the No Child Left Behind act to raise the academic achievement of Native American students (U.S. Department of Education, 2001). However, as with past federal policies in Indian education, there has yet to be substantial increases in achievement for Native American students (Reyhner & Eder, 2015). In 2013, a report entitled "The State of Education for Native Students" showed no significant improvement in American Indian academic achievement since 2005 (The Education Trust, 2013). Using National Assessment of Educational Progress, the Education Trust (2013) found that Native American 4th-grade reading and 8th-grade math remained relatively the same from 2005 to 2011 while other ethnic groups experienced a minimum 2% increase in reading and 5% increase in math performance. It would be a disservice to think that AI/AN education has not advanced within this period, as Native American college enrollment has doubled over the past 30

years (DeVoe & Darilling-Churchill, 2008). Nonetheless, the evidence demonstrates the apparent need for continual progress advancing AI/AN student achievement.

Through my Mother's story and the policies toward AI/AN education, there is clear evidence that assimilation is a detrimental goal of many of the policies attempting to improve Native American education and continues to prevent substantial educational advancement. Currently, AI/AN enrolled in postsecondary education only represent 1% of the total college enrollment population, whereas Native Americans make up about 2% of the total United States population (NCES, 2016). A college education is important because it is a means of tribes maintaining cultural identity and engaging in nation-building within their communities. However, there is a need for more literature on the status of AI/AN education that will assist academic achievement.

Statement of the Problem

Native American students are enrolling and persisting through postsecondary education at lower rates than any other ethnic group. According to the National Center for Education Statistics (NCES, 2016), the 2013 college enrollment rate for AIs/ANs ages eighteen to twenty-four was 32%, compared to 42% of White students. Further, 15% AIs/ANs age twenty-five or older held at least a bachelor's degree, compared to 33% of White students (NCES, 2016). These statistics are routinely reported to illustrate achievement and attainment gaps (Faircloth, Alcantar, & Stage, 2015; NCES, 2016). However, these statistics also have major limitations such as the lack of proper research designs that address methodological concerns with small and unrepresentative samples of Native Americans, and inadequate culturally relevant variables (Lopez & Marley, in

press). Furthermore, the lack of quantitative research from an asterisk phenomenon (where Native American samples are footnoted as being non-statistically significant) marginalizes, erases and creates misunderstanding that lead to solutions to the achievement gap between Native Americans and White students. Therefore, a gap remains in the collection of higher quality data, that lends itself to quantitative analysis, to understand Native American postsecondary persistence.

Higher education researchers using national and large institutional datasets have recognized several limitations with American Indian samples. For example, AI/AN samples are often too small, resulting in reduced statistical power and reliability of findings, and lead researchers to reporting biased and unreliable estimates due to over reliance of participants self-identifying as Native American as opposed to using tribal government enrollment designations (Aud et al., 2013). Researchers' dependence on small and non-representative samples is particularly problematic as the assumption is federally managed datasets, and institutional datasets, will yield findings that are generalizable to target populations and useful for informing educational policies (Wine, Bryan, & Siegel, 2014).

Pavel and colleagues (1998) argue that federally-managed, nationally-representative datasets have too many limitations to make valid inferences about AI/AN populations. Primarily, the reason for this challenge is that the United States consists of 573 federally recognized tribes and even more state-recognized tribes (Indian Affairs, 2018). These tribes are in every region of the United States, yet the available data does not reflect the diversity among them as no existing datasets contain representative

samples of every tribe in the United States (Pavel & Padilla, 1993). Researchers disregarding the collection of representative samples lead to data that is inconsistent with tribal nations in the United States and ultimately cause invisibility of Native Americans in higher education.

Purpose of the Study

Native American students often enter postsecondary education as means of serving a broader community, and this commitment to service acts as a motivation to persist through college. However, institutions of higher education often center on individualistic empowerment rather than focusing on how to empower communities. To address a gap in the quantitative literature regarding AI/AN students' desire to serve a larger community as an important factor shaping the likelihood of persistence. The purpose of this study is to understand how the desire to serve a larger community influences current and former Cocopah and Quechan undergraduate students' postsecondary experiences and outcomes, and this dissertation makes four primary contributions: establishing a theoretical model of AI/AN postsecondary student persistence (AI/AN Millennium Falcon Model of Postsecondary Persistence); developing a method to collecting survey data in Indigenous communities (Indigenous Data Collection); validating a scale to measure students' desire to give back to their community (Scale of Native Americans Giving Back [SNAG]); and examining how AI/AN students' desire to give back influences first to second semester/year college persistence and college GPA.

Scope of the Study

In this dissertation, I collect and analyze retrospective survey data from current and previous Cocopah and Quechan undergraduates to understand their desire to serve a larger community and postsecondary persistence. I was able to gather 117 responses for the exploratory factor analysis and 102 for the regression analyses. I chose Cocopah and Quechan college students for several reasons.

Data collection among tribes in the United States is inherently challenging. Tribes are so diverse that the data available may not include members from smaller tribes. For example, if a researcher wanted to collect a random sample of Arizona tribes, given the Navajo tribe has over 300,000 enrolled members (Donovan, 2011) it is likely to have substantial members of their nation and less likely to have members of smaller tribes. The sample would likely exclude smaller tribal nations like my own (Quechan) because of a much smaller total tribal enrollment of 3,800. The small numbers of tribal members can make it difficult for researchers conducting investigations of focused topics, such as tribal postsecondary persistence because scholars need a minimum thresholds of observations for quantitative analysis (see Cohen, 1992). So, the likelihood the results extend across tribal nations in Arizona is substantially decreased because of community differences such as culture, although the results would methodologically be considered "representative."

I decided to collect data among the Quechan and Cocopah because smaller tribes are often too small to provide a large enough sample to identify statistically significant relationships. Tribes can meet this challenge by collecting their own data, but even then,

smaller tribes will have to work together to gather sufficient participants (a minimum of 30-50) to produce statistically significant findings.

The two significant limitations of this study are related to external and internal validity (Shadish, Cook, and Campbell, 2002). External validity is the ability to use findings from a smaller sample to generalize to a larger population. Internal validity is a researcher's ability to make a causal claim about two variables. External validity diminishes by the use of a census sample that increases the likelihood of nonresponse. The Cocopah and Quechan sample that I collected is a census, as opposed to collecting a random sample, to ensure I have sufficient participation. Census sampling may create non-response bias, for users who are more inclined to take surveys and have access to a computer or refuse to take the survey that will cause unit non-response bias (Daniel, 2011). Additionally, the sample may not be representative of the tribes because it has 82% female college participants compared to a national average of 60%. As a threat to internal validity, this study uses statistical controls as opposed to experimental designs. However, my survey instrument also provides an opportunity to account for constructs that other large datasets focusing on non-AI/AN do not include (i.e., the desire to give back).

Definition of Terms

In this writing, I primarily use the terms American Indian and Alaska Natives (AI/AN). The primary purpose for this is because I want to distinguish that I am referring to American Indian tribes in the United States and this is the term that the United States government uses. Ideally, I feel that researchers should use the individual tribal nation

names. However, having 573 tribes in the United States this infeasible. Interchangeably, I use the terms Native American and Indigenous. Please note that I am still referring to American Indians and Alaska Natives in the United States.

Other terms in the writing I use are persistence and retention. When referring to persistence, the term references the individual's ability to continue through higher education, as individuals do not retain. When I use the term retention, it is referring to the institution's ability to retain students, as institutions do not persist. In this writing, I use the terms postsecondary and higher education interchangeably to refer to two and four-year college institutions. Finally, I use the term Native nation-building to reference the intentional and specific application of tribal members collective resources, energy, and knowledge to developing the ideological and physical space that is recognized as their own (Brayboy et al., 2012). A more comprehensive definition is provided in Chapter Four.

Author Positionality

I am an enrolled member of the Quechan tribe located in Fort Yuma, California. I was born at Phoenix Indian Medical Center and raised in a predominately White neighborhood in North Phoenix. Due to my Father's position as a Native American administrator and my Mother's position as Native American faculty, we traveled to Indian reservations across the United States to encourage and recruit students to pursue higher educations. Those travels taught me several life lessons. I learned to be thankful watching tarantulas running through the hot summer nights while trying to sleep on the floor on the Apache reservation. I experienced what it meant to be a proud Native,

listening to first-hand stories of Kiowa American Indian Movement activists and their occupation of Wounded Knee. I learned the reality of our hardships while trying to encourage children to stop smoking while on the Blackfeet reservation. I learned about our ability to be resilient watching our tribal youth continue to live their lives, after attending a cremation ceremony for a young boy who had committed suicide. I ultimately learned how to sacrifice to those in need, watching my parents take pay cuts and continually give of what little money or food we had. When I reflect on the life lessons, I recognize my parents' unwavering determination to serve our Native community without regard for self. During this time, I also observed many students succeed or fail to accomplish their postsecondary goals. Considering these experiences, and experiences in student affairs, I acknowledge contemporary mainstream postsecondary persistence theories diverged from my understandings of influences on Native American postsecondary persistence.

Furthermore, I am an Indigenous quantitative researcher with expertise in the limitations of collecting and applying quantitative results to Indigenous populations. I use Indigenous methodologies defined as how researchers use Indigenous positionality and viewpoints to research with and within tribal communities and privilege the tribal community's voice(s) to support the community (Battiste, 2011; Louis, 2007; Windchief, Polacek, Munson, Ulrich, & Cummins, 2017). I recognize that quantitative paradigms such as postpositivism do not align completely with my beliefs. The emphasis of postpositivists is generally on explaining the world through examining causal relationships to create laws and theories while also focusing on replication (using same

procedures to reproduce results) and intersubjectivity (communicating methods so others can validate and replicate) as the basis for sound research (Fitzpatrick, Sanders, & Worthen, 2011). However, there are similarities among worldviews between Indigenous paradigms and postpositivism. Such as a distrust of the narrow notions of rigorous research, the interplay of researcher values with research questions, and that many educational challenges stem from political influence on education policy and research (Campbell & Stanley, 1966; Cook & Campbell, 1979; Fitzpatrick et al., 2011; Richardson, 2015). I combine both approaches to research through Indigenous quantitative methodologies that emphasize (1) the creation of statistical data from an Indigenous lens that privileges Native American voices, rejects dominant mainstream value systems and refuses deficit approaches as a starting point in research; and (2) challenges statistical practice within Indigenous nations by exposing the view from which traditional quantitative research operates in Indigenous communities (Snowshoe, Crooks, Tremblay, Craig, & Hinson, 2015; Walter & Andersen, 2013). Furthermore, I tend to examine research through tribal critical race theory (Brayboy, 2005), which contends government American Indian policies focus on the problematic goal of assimilation, often through the guise of quantitative research. This challenge often results in relatively few AI/AN voices in comparison to dominant culture voices in quantitative research but can be overcome through increasing Native American participation in academic and policy discourse.

Overview of Chapters

In this dissertation, I examine Native American postsecondary persistence and construct a persistence model, provide an alternative model of sampling Native American communities, establish construct validity for an instrument measuring postsecondary persistence, and test the proposed postsecondary persistence model. Chapter 2, adapted from an article recently published in *Research in Higher Education*, reviews theories used to examine general postsecondary persistence, minority persistence, and Native American persistence. Following the examination of theories is a review of peer-reviewed journal articles investigating Native American persistence. The chapter ends with a persistence model using five theories of Native American postsecondary persistence. Chapter 3 introduces and validates a scale that measures the proposed postsecondary persistence model and develops a method for collecting data among Native Americans to address statistical limitations found in "nationally representative" datasets. The fourth chapter examines the postsecondary persistence model, highlighting giving back, as a factor predicting Native American persistence. The final chapter, chapter five, provides a conclusion to the studies and provides next steps.

CHAPTER 2

AMERICAN INDIAN/ALASKA NATIVE MILLENNIUM FALCON PERSISTENCE MODEL

The extreme differences in the rate of Native Americans persisting through college is not attributed to a singular problem but is an accumulation of experiences that AI/AN students have at college and home. The persistently low rates of college graduation indicate the need to investigate further factors influencing student persistence. The purpose of this review of literature is to identify variables relevant to AI/AN postsecondary persistence (Hart, 1998), and to create a model for AI/AN persistence drawing from past research and postsecondary persistence theories at two and four-year institutions.

An exhaustive review with selective citation was used to locate relevant empirical literature (Cooper, 1988). Due to the purpose and focus of this chapter, the emphasis is on the empirical and theoretical results related to AI/AN postsecondary persistence, as opposed historical studies of AI/AN postsecondary persistence (cf. Adelman, Taylor, & Nelson, 2013; Carney, 2009; Fox, Lowe, & McClellan; Mosholder & Goslin, 2013; Patterson & Butler-Barnes, 2017; Reyhner & Eder, 2015; Shotton, Lowe, & Waterman, 2013). The main question this paper seeks to answer is, what factors influence AI/AN students' postsecondary persistence?

Theory

Several scholars developed and tested theoretical examinations for academic persistence with college students. In this section, I included prominent theories that

researchers used to examine AI/AN postsecondary persistence. Two of the most prominent general persistence theories are Tinto's (1975) longitudinal model of college dropout and Bean's (1980) causal model of student attrition. I review Tinto's model because researchers tested and challenged the model with AI/AN samples in postsecondary persistence. I discuss Bean's model because the model used factors, such as student beliefs, which previous literature showed to predict AI/AN persistence (Guillory, 2009; Guillory & Wolverton, 2008). Subsequently, I review theories challenging these two dominant theories from minority perspectives, and review theories related to AI/AN postsecondary persistence. Following the description of persistence theories, is an examination of their strengths and limitations. The next section illustrates the similarities and differences in theories related to AI/AN postsecondary persistence.

Postsecondary Persistence Theories

Tinto's model of college dropout. Tinto proposes that college departure is a longitudinal process of relationships between student, academic, and college social systems. Tinto (1975) used Durkheim's theory of suicide (1961) that proposes people commit suicide when inadequately integrated into society. Additionally, Tinto used Spady's (1970) emphasis on relationships between student academic integration and future career and went further to theorize that college is a social system where students need to be integrated. Tinto's theory suggests persistence is dependent on the fit between academic ability, motivation and an institution's academic and social characteristics.

Bean's model of student attrition. Bean's (1980) model theorized behavioral intentions predict persistence behavior. Furthermore, student beliefs, attitudes,

experiences and student background characteristics influenced behavioral intentions (Bean, 1982; Bean, 1983; Bean, 1985). The model argued behavioral intentions originate from attitudes formed by beliefs, which subsequently influenced behavioral intentions. Some of the variables measured by the theory are student background variables such as previous academic performance, socioeconomic status, residence, distance to home from college, and hometown size. Additionally, there were measures of institutional characteristics such as social networks, courses, and overall institutional quality by the number of informal contacts with faculty members, academic major, and student perception of being at a quality institution.

Minority college student persistence theories. Scholars critiqued Tinto's and Bean's theories because they do not capture the entire experiences of AI/AN students and other minority student populations. For example, Tierney (1992) challenged Tinto's theory that used social integration. Integration suggested all individuals must follow the correct steps to assimilate into society. Tierney (1992) contended academic and social integration were not vital to college persistence for some minority groups and followed an assimilationist mentality detrimental to AI/AN communities (Brayboy, 2005). Tierney suggested a strong association exists between minority student persistence and student home culture as opposed to college integration. The call to use alternative models to research postsecondary persistence encouraged scholars to develop alternative postsecondary persistence theories. The subsequent theories indicate the factors integral to postsecondary persistence for minority students.

Hurtado (1992) began to look at campus racial climates for further examination on the influence on persistence. Hurtado stated that a collection of historical and contemporary external influences, institutional structure and group relations, and institutional ideologies influences racial tension on college campuses. This work helped lay the foundation for the future theory by Nora and Cabrera (1996), who used a converged model of Tinto (1975) and Bean (1980) to theorize how perceptions of prejudice and discrimination among minority and nonminority influence postsecondary persistence. Perceptions of discrimination had an indirect effect on student decision to persist and reaffirmed the need to examine additional factors influencing college persistence. Cabrera, Nora, Terenzini, Pascarella, and Hagedorn (1999) theorized perceptions of discrimination are unique to minorities, and exposure to discrimination climate primarily influences persistence decisions for non-White students. Discrimination continues throughout institutes of higher education when the cultural backgrounds of minority students are unaccepted and forced to assimilate into the college culture.

Guiffrida (2006) built on these previous theories that diagnosed the need to retain home culture and establish cultural connections to influence persistence. Proposing changes to Tinto's model (1975), Guiffrida (2006) suggested that student motivation, impacted by cultural norms, impacts college persistence. Also, home and institutional social systems shape and fulfill student needs that are important to college persistence. Museus, Nichols, and Lambert (2008) further theorized that the relationship between precollege cultures and campus cultures influences minority postsecondary persistence. An essential aspect of culture is identity and Hurtado, Alvarado, and Guillermo-Wann

(2015) contended that racial identity salience influences postsecondary persistence, and is important to students because of more awareness of racial differences that may shape campus climate experiences among college students. From these broader persistence theories, AI/AN scholars began to theorize factors predicting persistence among AI/AN college students.

AI/AN Postsecondary Persistence Theories.

Family education model. HeavyRunner and DeCelles (2002) extended the study of persistence to AI/AN students through the development of the family education model. Using personal experiences as educators and prior research, they developed the following assumptions underpinning the model: 1) Tribal College AI/AN students and their families need the college to act as an advocate for social services and health services; 2) Tribal colleges need to help develop strong support systems for their students; and, 3) Tribal colleges need to engage student family members in the college community. The model emphasizes the importance of family to improve persistence but additionally focuses on the importance of community, and culture to postsecondary education.

AI/AN college student retention strategies. Guillory (2009) developed the AI/AN college student retention strategies model to assist colleges and universities support of AI/AN student persistence. Based on findings from a qualitative study, the model argues AI/AN postsecondary persistence can be predicted by (Guillory, 2009):

> (1) maintaining family and tribal community connections (2) addressing single-parent challenges; and (3) providing academic remediation through

developmental education methods focusing on culturally sensitive career counseling, peer mentoring, and academic counseling. (p. 17).

Similar to the family education model, Guillory's (2009) model emphasizes family as a factor influencing persistence but argues strong family connection to the entire tribe additionally predicts persistence (Carlyle, Thompson, Hare, Miller, & Purvis, 2011; Guillory, 2008; Windchief, & Joseph, 2015). Finally, Guillory suggests students' desire to give back to their communities predicts postsecondary persistence.

AI/AN Nation-Building. Brayboy, Fann, Castagno, and Solyom (2012) developed a theory of AI/AN postsecondary persistence related nation-building. Postsecondary education success is one aspect that Brayboy et al. (2012) argue is a "necessary element of successful nation building." The researchers theorized that persistence rates increase for AI/AN students when the pursuit of education is with a determination to serve a broader community as opposed to oneself, similar to Guiffrida's (2006) theory related to student motivation. The notion of giving back, where AI/AN students desire to give back or serve their community is often an expectation for AI/AN students and a goal for after graduation (Brayboy, Solyom & Castagno, 2014). In short, the theory proposed the relationship between student commitment to their community and level to which institutional support AI/AN commitment to the community, predicts persistence.

AI/AN home going. Waterman, (2012) extended notions of the family education model and using Indigenous epistemologies theorized that AI/AN students' home-going behavior, or returning home for college support, increase the likelihood of persistence.

Waterman further emphasized that home-going as a strategy is integral to AI/AN cultural responsibility to their community. The theory argues against the notion that college students must integrate into the college social system and reaffirms the importance of cultural factors. Additionally, the visits to home is a personal anchor from which AI/AN can draw strength and motivation to persist.

Indigenous claiming of education. Windchief and Joseph (2015) proposed that claiming higher education as Indigenous space predicts AI/AN postsecondary persistence. Specifically, the authors argue that claiming higher education through policy and curriculum, American Indian student services, and contemporary digital activism predicts persistence among Indigenous students. The theory suggests that: (1) the extent to which policies incorporate AI/AN history and culture, (2) institutes build a Native American community, (3) and allow AI/AN students to share their experiences through technology will predict persistence for Indigenous students.

Strengths and Limitations.

A key limitation with Tinto's model limitations is the focus on institutional experience without controlling for the influence of family on AI/AN persistence (Guillory & Wolverton, 2008). Furthermore, Tinto uses an assimilationist framework shown to be detrimental in AI/AN communities (Tierney, 1992; Waterman, 2013). Nonetheless, scholars found relationships between the institutional fit and student academic background, institutional commitment, and student goals (Pavel & Padilla, 1993). An additional notable limitation in Tinto's model is the lack of factors measuring

college student support programs that influence AI/AN college persistence (Guillory, 2009).

Bean's (1980) student attrition model accounted for the distance from home to the college that may be helpful in predicting AI/AN student persistence (Waterman, 2012). A shortcoming of the model is the omission of AI/AN student experiences that influence AI/AN persistence (Saggio & Rendón, 2004). Another omission is student interaction with faculty members. Faculty support is integral to AI/AN persistence (Falk & Aitken, 1984; Waterman, 2007). Also, some research suggests AI/AN students may be more likely to attain a degree with AI/AN faculty mentors of ethnic backgrounds (Waterman, 2007). Due to the omission of factors from these theories, researchers addressed the limitations of these two dominant theories.

Hurtado (1992) began to look at the campus climate and understanding the effects of discrimination and college success by considering how culture influences persistence among college students. Guffrida (2006) started to look at student motivation, which is an extension of Bean's model that looks at student beliefs. However, Guffrida (2006) examined how culture influenced beliefs more intricately than Bean (1980). Brayboy et al. (2012) found student motivation (measured by AI/AN desire to give back) to be essential to AI/AN persistence. Hurtado et al. (2015) focused on racial identity saliency as one aspect of culture and beliefs theorized to predict persistence. Although these theories extended the notions of Tinto (1975) and Bean (1980) to fit minority students, scholars sought to continually develop these theories to fit within the AI/AN college community.

The theories discuss backgrounds in the persistence theories, but not overly emphasized as they are in AI/AN persistence theories (HeavyRunner, & DeCelles, 2002). One strength of AI/AN persistence theories was the emphasis on family as a dominant factor in AI/AN postsecondary persistence. The family supports students (Guillory, 2008; Waterman, 2012) and is a source of motivation (Brayboy et al., 2012). Windchief and Joseph (2015) theorized that if colleges were able to create an AI/AN community on campus, AI/AN students would be more likely persist. Extending the AI/AN community is extending the family to college campuses, as AI/AN student support services often help integrate AI/AN students into the college community while helping maintain student cultural identity. The use of student support services (Windchief & Joseph, 2015) and AI/AN faculty mentorship (Waterman, 2007) redefine college integration according to Tinto's (1975) original model because now colleges are integrating into the needs of students. However, there is a need to develop further and analyze these theories.

The limitations of AI/AN persistence theories are the lack of connectedness between theories and quantitative examination. Often scholars examined one theory without examining relationships to other AI/AN postsecondary persistence theories, not to mention that the majority of these theoretical paradigms do not conceptualize how to measure difficult constructs such as culture and AI/AN desire to give back that are important to persistence. Nor do these theories attempt to examine how these different factors interact together when examining AI/AN postsecondary persistence.

The theories described throughout this section of the dissertation illustrate the growing understanding of postsecondary persistence among college students. The

theories range from beliefs that students must integrate into the college society, to rejecting assimilation type theories, and recognize the importance of culture. The more recent theories related to AI/AN postsecondary persistence reveal the inadequacy of previous theories, and the need to continue research to understand AI/AN postsecondary persistence. In the next section is a review of literature testing the theories examined. The section begins with the methods used to find articles, followed by a description of findings from those articles. The chapter ends with a discussion and conclusion.

Method

I conducted searches for peer-reviewed journal articles, research reports, book chapters, books, and dissertations using the online Education Resource Information Center (ERIC), Arizona State University's Library One Search, backward/forward searching articles on Google Scholar, and from articles retrieved from the online library searches. The descriptors were "Native Americans or American Indians," "Persistence or Retention" and "Higher Education or Postsecondary Education." The searches revealed over three hundred documents. I limited the articles by including only studies with the following criteria:

1. The research had empirical evidence produced from primary research.
2. The research went through the peer-review process.
3. Publication was within the past twenty-five years.
4. The research sample contained an analysis of AI/AN students.
5. The research was from two or four-year institutions of higher education, including tribal colleges and universities.

6. The research was explicitly related to AI/AN persistence or retention in postsecondary or higher education.

To separate the documents relevant to this review, I read the abstract, title, and methods. While the search method and criteria excluded empirical peer-reviewed research reports, book chapters and books, there were eighty-two dissertations found related to AI/AN postsecondary persistence. In addition to the dissertations, I found nineteen quantitative and twenty-five qualitative peer-reviewed empirical journal articles published between 1993 and 2016.

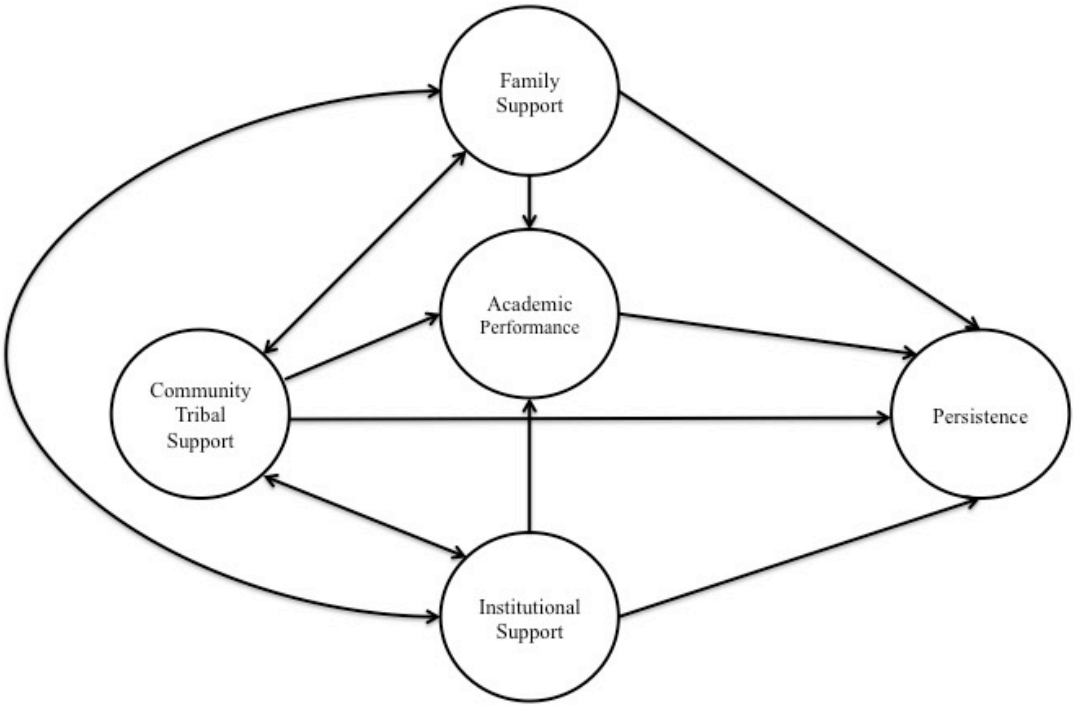
I put the articles into an annotated bibliography focusing on the sample, results, statistically significant measures for the quantitative research, and the themes that authors reported from the qualitative literature. The organization of this chapter follows a conceptual format, whereas the scheme of the chapter centers on the themes identified from the findings (Randolph, 2009). I organized the factors into four emerging themes: family support, institutional support, tribal community support, and academics. The themes contain subheadings that address particular factors under the theme (i.e., Family Support: motivation). The majority of the theme subheadings start chronologically, intermingling the qualitative and quantitative literature. The next section will discuss the themes related to AI/AN postsecondary retention and persistence.

Literature Review

To begin this discussion, I analyze AI/AN postsecondary persistence themes on family support, institutional support, tribal community support, and academic influence on college persistence (see Figure 1.). The studies follow a chronological organization

under each theme subheading. Following themes is a short description of some of the conflicting results regarding the influence of family on college persistence. The next section will be a discussion on the array of studies showing family support as a factor in AI/AN postsecondary persistence.

Figure 1. AI/AN Millennium Falcon Persistence Model: A conceptual model of the effects of community tribal support on postsecondary persistence



Notes: The model name references a fictional starship because of the similar appearance.

Family Support

Of all the factors that influence AI/AN student postsecondary persistence, family support is the most frequently reported factor. Two-thirds of the studies reviewed found that family social support influenced persistence, of which six were quantitative and twenty were qualitative. In the following subheadings is the discussion of how family influenced student persistence through encouragement and student motivation.

Encouragement. Family support came in different forms, and family encouragement is one form students reported helped with persistence. Benjamin, Chambers, and Reiterman (1993) investigated successful characteristics of 166 AI/AN students at a mid-west university, and interview responses revealed that going home to a family was a positive experience for AI/AN students in the study, as family members held students accountable for their grades. Going home was an opportunity for the family to encourage their students, and AI/AN students expressed that they rely on family for social support (Bass, 2014; Gloria & Kurpius, 2001; Pavel & Padilla, 1993; Guillory, 2009; Schmidtke, 2016). Family encouragement to their students came in forms of advice (Bass, 2014), pushing students to the point of fear of letting family down (Guillory, 2009; Guillory & Wolverton, 2008; Katz, 2005), and offering to sell cows to ease a student's feelings of financial distress (Jackson, Smith, & Hill, 2003).

Similarly, Marroquín and McCoach (2014), in a study of 501 AI/AN students across the United States, found that student perceptions of family support (measured by the family support of academic decisions) led to increases in grade point average. Other studies had similar findings and showed that family encouragement, such as family members telling students how proud they were of them for being in college, positively influenced student persistence (Montgomery, Miville, Winterowd, Jeffries, & Baysden, 2000; Reyes, 2000; Saggio & Rendón, 2004; Waterman, 2007; Waterman, 2012).

Motivation. Personal motivation was also an influential variable in postsecondary persistence. For example, some AI/AN students wanted to finish college to be a role model for their community (Guillory, 2009; Montgomery, Miville, Winterowd, Jeffries,

& Baysden, 2000), create a better life for their children, or make their parent(s) proud (Bass, 2014). Drywater-Whitekiller (2010) interviewed nineteen AI/AN students to examine their stories to persist through higher education and found that family viewed graduation as an accomplishment of the entire family. Makomenaw (2014) examined factors predictive of success for eight enrolled Native American tribal college students that transferred to predominately White institutions providing four-year degrees. Makomenaw (2014) found that family was a motivation for success because students wanted to make their parents proud and have family acceptance. Flynn, Duncan, and Jorgensen (2012) aimed to understand the same AI/AN higher education experiences using a sample of twenty-one AI/AN students, and found that despite persistence challenges, family support motivated participants to finish. Some families viewed the graduation of their relative as an accomplishment of family. The results indicate that students persist partially because of the family support they receive.

Conflicting results. There were contradicting findings to a family being a positive predictor of postsecondary persistence. Tate and Schwartz (1993) examined 184 AI/AN students in bachelors of social work programs to document barriers in American Indian persistence while in professional programs such as social work. Tate and Schwartz found that students had difficulties acculturating, measured by items such as, "Family obligations interfered with my academics," to college life (p. 27). Dodd, Garcia, Meccage, and Nelson (1995) further support this contradiction in some of the research, indicating that family problems influenced the decision to drop out among some of twenty-four American Indian students in their sample. Jackson and Smith (2001)

interviewed twenty-two Navajo American Indians students about their postsecondary transition experience and found that family conflict, such as having to attend funerals back home, negatively influenced persistence (Waterman [2012] found similar results regarding academic performance). Family obligations could be the reason why the longer AI/AN students stay in college past their fourth year, the less likely they are to persist to graduation (Ishitani, 2006; Patterson, Waya, Ahuna, Tinnesz, & Vanzile-Tamsen, 2014). Finally, the results showed that family could be a burden to persistence because of family financial struggles. Lee, Donlan, and Brown (2010) used an online questionnaire to examine factors affecting 330 AI/AN students' persistence and found family obligations caused some AI/AN students to use their financial aid to help support families, instead of their education.

Institutional Support

The evidence in this section indicates the role institutions have in AI/AN student persistence. The review found that institutional support served as an important factor in AI/AN student persistence across three areas: AI/AN support services, faculty, and finances. Despite the focus on persistence as opposed to retention, the university influences AI/AN persistence substantially.

AI/AN support services. Researchers found support services were a significant influence on persistence through the academic/social mentoring provided, and efforts to acculturate students to university life (Belgarde & Loré, 2004; Guillory, 2008; Jackson & Smith, 2001; Schmidtke, 2016; Shotton et al., 2007). Institutional support services are essential as AI/AN students often have difficulties adjusting to university life. Dodd et al.

(1995) showed that the AI/AN students in their study had experienced prejudice and lack of acceptance that influenced the decision to drop out, while student support services contributed to academic success. In an effort to ease AI/AN students into university life, mentoring helped AI/AN students overcome social barriers when adapting to university life (Guillory, 2008; Jackson & Smith, 2001). Through interviews with seven junior and senior AI/AN students attending a mainstream university, Shotton et al. (2007) found peer mentors helped their counterparts overcome potential barriers by, "connecting them to the community, providing support, and providing guidance," (p. 97).

If AI/AN students do not feel a sense of belonging, they have a higher likelihood of departing college (Brayboy et al., 2015). Cultural differences, such as feeling pressured to conform to university culture, are problematic for some AI/AN students (Tate & Schwartz, 1993; Jackson, Smith & Hill, 2003). AI/AN student support services are one way that institutions provide a sense of belonging to students. Marroquín and McCoach (2014) found that student perception of institutional support (measured by cultural activities and services) was a positive predictor of grade point average that is imperative to persistence.

Faculty. Faculty at institutions of higher education are integral to AI/AN student persistence because faculty provide the academic instruction and the mentoring that influence persistence (Bass, 2014; Brown & Robinson, 1997; Dodd et al., 1995; Jackson & Smith, 2001; Katz, 2005; Schmidtke, 2009; Schmidtke, 2016). Tate and Schwartz (1993) examined barriers in American Indian persistence using eighty-four participants from multiple institutions with accredited baccalaureate and masters of social work

degree programs and found that students had difficulties with faculty support measured by items such as, "faculty understood my educational needs." This finding demonstrates that faculty can influence increases or decreases in AI/AN student persistence (e.g., Flynn et al., 2012). Beck, Joshin, Nsia, and Ryerson (2014) examined attitudes and the influence on grades and graduation with sixty-seven AI/AN students from the larger sample of 2,200 students from a South Dakota university. The researchers found that as attitude toward faculty increased, so did GPA. Similarly, Marroquín and McCoach's (2014) examination of student perception of faculty/staff support (measured by the perception of cultural respect) showed a positive prediction of grade point average. Bass (2014) found that positive interactions with Native American faculty and mentors were most important in aiding AI/AN student pursuit of a bachelors' degree. These studies indicate that faculty have considerable influence on students' decisions to continue in higher education.

Finances. Since many AI/AN students come from low socio-economic statuses and live or have lived below the poverty line (United States Census Bureau, 2015), finances can become substantially large barriers to persistence (Dodd et al., 1995; Flynn, Duncan, & Jorgensen, 2012; Guillory & Wolverton, 2008; Huffman, 2003; Reyes, 2000). Lee, Donlan, and Brown (2010) used an online questionnaire to examine factors affecting 330 AI/AN undergraduates' persistence and found not having money for books and finances to continue their education, negatively influenced persistence. Several studies suggest that increases in grants and scholarships would increase student persistence (e.g., Chen & DesJardins, 2010; Chen & St. John, 2011; Mendez & Mendoza, 2011). Chen and

St. John (2011) analyzed how state-level financial policies influence persistence by racial/ethnic background using the Beginning Postsecondary Student Survey and found that as AI/AN student non-need based financial aid increased so did the odds of retention. However, Gross, Hossler, Ziskin, and Berry (2015) found that merit-based aid did not have a statistically significant influence on AI/AN student persistence, although this may be attributable to the small sample size and reduced statistical power.

Conflicting results. Despite evidence that increased finances improve AI/AN student persistence, some researchers have argued focus should be on awareness of opportunities and financial management training as opposed to financial funding. Tierney, Salle, and Venegas (2007) further investigated if finances influence AI/AN student persistence and found that while a substantial amount of financial aid for AI/AN students from the federal, state, and tribes (although not guaranteed) is available, more emphasis should be on how to apply for these types of aid. Moreover, Lee et al., (2010) showed that many AI/AN students lacked skills to manage financial aid, which influenced the likelihood of departure from the university.

Tribal Community Support

The third major theme that came from the literature was tribal community support for AI/AN student persistence. The literature shows a clear distinction that AI/AN students have different factors influencing persistence compared to other students in postsecondary education. One of the most common differences may be the interdependence of AI/ANs as opposed to the individualism emphasized by Americans in general (Huffman, 2001). The support of the tribal community and the community as a

motivation to succeed was most apparent by the desire of AI/AN students to "give back," to their communities. The review found that tribal community support as a factor in AI/AN student persistence was evident in three areas: giving back to the community, community connection, and culture.

Giving back. AI/AN students' desire to, "give back" was a personal motivation to persist through college for their respective communities. Guillory and Wolverton (2008) and Guillory (2009) interviewed thirty students, three university presidents, three faculties, and one state board member and found that "giving back," (measured by student's desire to help community) was a primary factor influencing AI/AN students' persistence. Drywater-Whitekiller (2010) provided further evidence by documenting AI/AN student's desire to "give back," as evidenced by statements related to helping the tribe by improving or addressing problems in areas such as education, healthcare, rehabilitation, environmental pollution, and ensuring the correct tribal history in museums. One reason students often want to "give back" to their community is that they feel like their community needs help and will benefit through their education (Makomenaw, 2014; Waterman & Lindley, 2013). Brayboy, Solyom, and Castagno (2015) further supported these claims in their investigation of findings from national data on experiences and success of AI/ANs in higher education. They found that AI/AN students who are more self-centered fair better in universities, but AI/AN students who focus on their communities as their motivation for college completion are more often successful than those individuals who focus on themselves.

Connection. The desire to give back was due to the connection that AI/AN students felt to their community. This connection did not always reflect the values of the university (Huffman, 2001) and often students went home to gain support from the community (Bass, 2014; Waterman, 2013). Although tribal communities often supported their students and were a dominant factor in persistence, the communities could also have negative influences. Waterman (2012) examined the going home experiences of twenty-six Haudenosaunee college graduates and found that the traveling sometimes negatively influenced students' academic performance. Due to the connection, students felt to their community; they often sensed the need to attend an academic program close to home to take care of home obligations and attend ceremonies or funerals. (Cross, Day, Gogliotti, & Pung, 2013; Motl, Multon & Zhao, 2018). Despite the negative influence that going home had on persistence, there is evidence that going home also had a positive influence. Waterman's (2012) sample was of all college graduates, and despite the negative influence going home had on their persistence, they still were able to graduate from college.

Culture. A common challenge that AI/ANs face coming to higher education is culture shock and the need to maintain an identity as they tend to struggle with feelings or pressure to conform to University culture (Gloria & Kurpius, 2001; Tate & Schwartz, 1993). Special activities and AI/AN student organizations can help students maintain their identities as they begin their educational careers in a new location (Dodd, Garcia, Meccage, & Nelson, 1995; Drywater-Whitekiller, 2010; Waterman, 2007). The activities and student organizations are imperative because they reinforce and help maintain

cultural identity tied to one's community, which in turn promotes college persistence (Huffman, 2001; Jackson & Smith, 2001; Ness, 2002; Reyes, 2000; Waterman & Lindley, 2013). Having close relationships to the community demonstrates how distance and access to one's tribal community are vital to the college success of an AI/AN student (Cross, Day, Gogliotti, & Pung, 2013).

Academic Performance

The last factor influencing AI/AN student postsecondary persistence is academic preparation and performance. Brown and Robinson (1997) studied psychosocial factors related to the academic persistence of 288 American Indian undergraduate students and found that academic preparation (high school grade point average) and skills (such as studying) were significant predictors of whether students persisted in school or not. Unfortunately, the location and experiences AI/AN students have in elementary and secondary education extensively influence persistence for AI/AN students.

Academic preparation. Reyes (2000) found that academic remediation, or not being academically prepared for college-level learning or participation in classroom discussions (i.e., not asking questions or contributing to the conversation due to embarrassment) hindered Alaska Native students at the University of Alaska Fairbanks. A lack of academic preparation or apprehension over the inadequate academic college preparation was the most enormous concern for some AI/AN students. Several of the students struggled with academic tasks such as going to class on time, and the need to take remedial courses (Flynn et al., 2012; Jackson & Smith, 2001). However, academic performance could be dependent on where you receive your education before enrolling in

college. Huffman (2003) found AI/AN students from the reservation reported significantly greater academic difficulties while in college compared to the AI/AN students who were from off the reservation.

Academic skills. Academic skills, such as studying and asking for faculty help on topics covered in courses, helped with persistence. (Guillory, 2009; Patterson et al., 2014; Waterman, 2007). Lee et al. (2010) found statistically significant correlations between persistence and academic skills (measured as high school GPA, SAT scores, ACT). Beck et al. (2014) found difficult class work (measured by student perception of difficulty) hurt retention.

Sometimes the perception of difficulty caused frustration or kept AI/AN students from discussions in course topics. Brayboy, Solyom, and Castagno (2015) found that AI/AN student experiences in college sometimes caused frustration in course assignments and uneasiness in course discussions. Patterson et al. (2017) examined how academic social context influences grade point average and found the lower your score on the academic social context scale, the lower your GPA. The results support findings that indicate AI/AN students who require additional academic assistance, need to receive academic remediation to improve persistence.

Discussion

Several factors influence AI/AN postsecondary persistence that supports different aspects of the persistence theories reviewed. The review of the literature found that family support, institutional support, tribal community, and academic performance were the predominant factors influencing college persistence for AI/AN students at two and

four-year colleges. Family support also appears to be both a positive (Bass, 2014; Gloria & Kurpius, 2001; Pavel & Padilla, 1993; Guillory, 2009) and negative factor (Tate & Schwartz, 1993; Dodd, Garcia, Meccage, & Nelson, 1995; Jackson & Smith, 2001; Waterman, 2012) in college persistence. Some students expressed the encouragement from family to continue through postsecondary challenges, but other students expressed academic interference due to family obligations. Institutional support was found to be a significant factor as well. As student's report that institutions with AI/AN student support services helped them acculturate to the university (Marroquín & McCoach, 2014). On the contrary, students who attended universities without AI/AN student support services reported much more difficulty adjusting to college life. Community impacted the majority of AI/AN students in the studies.

Noteworthy was the desire of AI/AN students to "give back," to their communities (Drywater-Whitekiller, 2010; Guillory, 2009; Guillory & Wolverton, 2008), which served as a motivation for AI/AN students to persist through college. Interestingly, these students found strength from their community and did not report that the connection to community negatively impacted persistence. In other cases, students reported that going home for funerals or ceremonies interfered with academics, but these students were still able to complete college (Waterman, 2012). It is inevitable that most students will face some challenges going through college, and despite some interference on academics, the community did not seem to be a barrier for AI/AN students (Bass, 2014; Waterman, 2012; Waterman, 2013).

Academic readiness and performance was the last major factor influencing AI/AN persistence in college (Lopez, 2017b). There were multiple studies where students indicated they felt unprepared for the academic rigor of university courses. Some evidence suggests that the location students received their K-12 schooling predicts persistence (Huffman, 2003). Other research showed that reservation schools consistently underperformed when compared to schools in other areas. The finding reemphasizes the importance of academic remediation courses at the university level, and support services.

The methods used throughout the forty-four articles reviewed tended to produce different results. For example, in the quantitative research, none of the results produced evidence of AI/AN students desires to "give back" to their community because giving back was not considered. Additionally, there was not consideration of the extent to which family or community supports persistence, except Gloria & Kurpius (2005). Students' desires to "give back" as a component of tribal community factors and family support were essential findings to college persistence in all of the qualitative literature. Each of these factors could have been difficult to measure with the samples these researchers used. Therefore, the quantitative literature hardly reports any evidence that desire to give back, general tribal community support, and family support influence persistence, whereas the qualitative literature does. These differences in findings may be due to the sampling techniques as well, a further explanation is under limitations.

Overall, minority and AI/AN student postsecondary persistence theories receive more support in recent studies. There remains a need for better quantifiable measures of difficult constructs, such as culture and desire of AI/AN to give back to their community.

Furthermore, there is yet to be an examination looking at how these different persistence theories may interact or be combined to create a model of AI/AN postsecondary persistence. As a first step to address this gap, Figure 1 provides a conceptual model that examines the future of AI/AN postsecondary persistence by combining these theories and empirical literature.

The model allows researchers to examine varying aspects of AI/AN persistence according to the extant literature and leading theoretical paradigms. As discussed, a substantial factor in predicting AI/AN persistence theories is family. The conflicting results show the family can be a negative and positive factor in persistence. However, the AI/AN Millennium Falcon persistence model proposes that Native American students will persist based on community factors (i.e., desire to give back, and cultural support) moderated by family support. In other words, family alone does not predict persistence, and it is also important to consider tribal community support more broadly. Institutional support is also related to community support based on theory (Windchief & Joseph, 2015) that proposes institutions can create an extension of tribal community support through American Indian support services. Creating a home away from home at institutions of higher education extends the reach of community support and redefines how researchers will look at institutional integration (Tachine, Cabrera, & Yellow Bird, 2016).

Limitations

Validity and Reliability

The majority of the studies in this review were qualitative, as opposed to quantitative to generalize to a larger population. Additionally, no studies used experimental or quasi-experimental designs to establish stronger internal validity. Further, quantitative studies were restricted to correlational designs and convenience samples, making it difficult to indicate cause and effect relationships between persistence factors and AI/AN experiences. The reliance on small sample sizes is likely due to the relatively small AI/AN student populations from a particular institution or particular region, thus limiting external validity (e.g., Shadish, Cook, & Campbell, 2003). One notable exception is Marroquín and McCoach (2014), who used a large, national AI/AN convenience sample and were able to establish valid measures based on internal structure and reliability (American Educational Research Association, 2014). Additionally, studies from national databases often have limitations to external validity (or generalizability from small to larger samples) because of misclassification (incorrectly marking ethnicity) of AI/AN identity (Chen, & DesJardins, 2010; Chen & St. John, 2011; Ishitani, 2006; Lopez & Marley, in press; Marroquín & McCoach, 2014; Patterson et al., 2014; Patterson et al., 2017; Pavel & Padilla, 1993; Tierney, 2007).

Sampling. In most cases, the samples in the qualitative literature were intentional in their approach to finding participants. For example, Flynn et al. (2012) interviewed participants who were from or raised on a reservation for a significant amount of their childhood and adolescence. Other studies used a similar approach by only including

participants who grew up in AI/AN reservation communities or "border towns" (e.g., Guillory & Wolverton, 2008; Huffman, 2003; Shotton et al., 2007) or selecting participants who were enrolled in federally recognized tribes (Waterman, 2007; Waterman, 2012).

In comparison, the quantitative literature was less methodical in their approach to sampling. The majority of the samples in the quantitative literature use students' self-identification, and no attempt was made to verify if the participants were of AI/AN ethnicity (e.g., "What is your tribal affiliation?). The use of self-identification is problematic as policies or evidence from these studies has threats to external validity. The one exception to the quantitative literature is Marroquín & McCoach (2014) who collected their sample by asking participants to identify tribal affiliations, and if they were from a rural, urban or reservation area.

Future research seeking to increase external validity should collect samples according to Indigenous Data Collection outlined in the following chapter. The sampling technique uses tribal creation stories and cultural practices to provide a sampling frame. The sampling technique provides a larger population of AI/AN college students especially important to quantitative analysis and gaining appropriate statistical power for empirical investigations. Finally, the sampling technique allows researchers to measure difficult constructs, such as culture, that vary across the 573 tribal nations (Indian Affairs, 2018).

Measures. In some cases, the measures from the quantitative research were vague. For example, researchers often asked participants to describe the extent to which

they agree with statements such as “I rely on my family for emotional support” without necessarily defining what is “emotional support,” (Gloria & Kurpius, 2001). However, follow up questions such as, “I rely on family when I am confused or frustrated with academic material,” may be a more informative measure of family support. Furthermore, measures of identity are consistently lacking and require further refining.

Due to the lack of research using the degree to which AI/AN students identify as AI/AN as a factor in persistence, the understanding of factors influencing AI/AN student postsecondary persistence is still somewhat limited. Identity, as a component of culture, falls under the tribal community support factor. Studies conducted thus far have done well in exploring factors influencing AI/AN persistence but have yet to test how these factors influence AI/AN students based on their degree of AI/AN identity. Some of the qualitative studies made an effort to select participants from reservations, or who had strong connections to the reservations (Flynn et al., 2012; Huffman, 2003). Another researcher made an effort to use tribal affiliation to determine AI/AN status (Makomenaw, 2014). However, there has yet to be a combination of AI/AN location, blood quantum, and the measure of tribal connection in quantitative studies with strong external validity. Huffman (2003) identified some of these factors as influencing AI/AN persistence when using reservation connection as a determinant in persistence. It could be that if you are lower percentage of blood quantum that you are less likely to live on the reservation and find family or community obligations interfering with academic performance.

Also, humor is an important aspect of AI/AN identity that researchers have yet to fully incorporate to measure identity in college students (Deloria, 1969). AI/AN humor is worth considering because it is a part of AI/AN identity used as a means of communicating in arduous discussions, healing, coping with tragedies, and regulating behavior (Bletzer, Yuan, Koss, Polacca, Eaves, & Goldman, 2011; Dean, 2003; Garrett & Garrett, 1994; Garrett, Garett, Torres-Rivera, Wilbur, & Roberts-Wilbur, 2005; Gruber, 2008; Johansen, 2003; Lancaster, 1966; Landes, 1937; Lopez, 2015). AI/AN humor can manifest in different facades but frequently is present as parody, teasing, exaggeration, and puns (Basso 1979; Garrett & Garrett, 1994; Lincoln, 1993; Lopez, 2015; Trechter, 2001; Wallace, 1953). Researchers should consider including additional measures of identity using AI/AN humor (i.e., rating the following joke, "One time the tribe canceled our Easter egg hunt because all the powdered eggs blew away.") to see how humor indirectly influences persistence. Finally, future research should seek to identify how these factors associate with persistence accounting for the degree that students identify being of AI/AN ethnicity.

Conclusion

Past studies of AI/AN postsecondary persistence provide practical suggestions of how to increase persistence, including expanding American Indian support services, opportunities for academic support, positive student to faculty interactions and mentoring, and adopting policies that support cultural obligations (such as ceremonies or funerals) that require students to miss class. Also, having events that family can attend is vital to increasing persistence, as many AI/AN students indicated family helped with

their academic success (HeavyRunner & DeCelles, 2002). While several of these recommendations have been made based on the evidence from the studies in the review, AI/AN still struggle from devastating persistence rates. The continuing disparities in persistence lead me to believe that there are other factors, precisely the degree to which college students identify with being AI/AN and desire to give back that require more extensive examination. Future researchers and scholars should carefully look at their sampling and measurement techniques using the proposed model to gain a holistic understanding of AI/AN postsecondary persistence.

CHAPTER 3

VALIDATING THE SCALE OF NATIVE AMERICANS GIVING BACK

An instrument specifically designed to measure Native American postsecondary persistence does not exist. The closest scale located to measuring Native American persistence is the North American Indigenous College Students Inventory (NAICSI) (Marroquín & McCoach, 2014). The NAICSI examines Indigenous college students but focuses on predicting GPA. Furthermore, the NAICSI does not include a measure of giving back, and researchers validated it using a convenience sample of Native American students. Using the instrument to predict persistence would increase the likelihood of construct and external validity limitations. Although the NAICSI has relevant variables to correlate with GPA, there is a need to construct a scale that can predict Native American persistence addressing small samples and examines relevant variables (i.e., giving back).

The majority of postsecondary research with Native Americans lack quality datasets that lend to quantitative research. For that reason, a substantial portion of research studies in Indigenous communities use qualitative methods. Additionally, substantial limitations exist in government data due to small samples, and lack of culturally relevant variables that further constrain Native American data (Lopez & Marley, in press). Other datasets maintained by institutions also tend to have data with small Native American samples and lack relevant variables creating data that are inconsistent, irrelevant, poor quality, and produced/used within an environment of mistrust (Rainie, Schultz, Briggs, Riggs, & Palmanteer-Holder, 2017). Rainie et al. (2017) recommend tribal nations use community-based, tribal nation-driven data

collection to inform policy decisions and resource allocation, but not enough tribes are engaging in data collection. The suggestion for tribal nations to develop their data collection is vital because federal data are not representative of Native Americans in the United States, and likely to exclude Native Americans from smaller tribes. Excluding tribes is detrimental because tribes are sovereign nations. A single larger tribe cannot represent the majority of tribes solely because they are larger. Using larger tribes to represent the majority of tribes is problematic because each nation has their own government and associated policies.

Furthermore, the lack of quality quantitative postsecondary education data prevents researchers from engaging in rigorous quantitative investigations of American Indian/ Alaska Natives (AI/AN) students. The weak set of research is evident by the studies that exclude Native American samples to create statistically sound research (see Byun, Irvin & Meece, 2012; Pong, 1998; Sun, 1998; Titus, 2006). Lopez & Marley (in press) indicated that these challenges expose too many statistical limitations to make valid inferences about AI/AN populations (Pavel, Skinner, Farris, Cahalan, Tippeconnic, & Stein, 1998).

Four of the major challenges related to data with Native American samples are the self-identification of Native American identity, small sample sizes, generalizability, and lack of relevant variables. If researchers include AI/AN samples, one of the most consistent problems in those datasets are that the small samples result in bias findings and inaccuracies due to misclassification from self-identifying AI/AN participants (Aud, Wilkinson-Flicker, Kristapovich, Rathbun, Wang, & Zhang, 2013). Self-identification of

Native American heritage is in the American Community Survey, United States Census, institutional datasets, and all of the federally managed postsecondary datasets (Rodriguez-Lonebear, 2016). Walter and Andersen (2013) critique federal data because self-identification does not always reflect how Indigenous people identify and the correlation to federal government initiatives. One of the difficulties is that participants who identified as Indigenous in one year may not identify as Indigenous in later years (Feir, & Hancock, 2016). Secondly, researchers using these datasets must rely on small and non-representative samples, despite the assumption that government and institution datasets will yield generalizable findings (Wine, Bryan, & Siegel, 2014). Thirdly, generalizability is a limitation because there are 573 AI/AN federally recognized tribes and numerous state-recognized tribes within the boundaries of the United States (Indian Affairs, 2018). Unfortunately, most of the data available from government and institutional datasets does not capture the nuances that exist between these tribes (Lopez & Marley, in press). Due to all the limitations in these datasets, there is a need to collect accurate survey data that lends itself to quantitative analyses on AI/AN students because we have some of the lowest persistence rates among ethnic groups in the United States.

Therefore, to appropriately test the AI/AN Millennium Falcon Persistence Model it is essential to construct a dataset that addresses small samples with relevant variables (Chapter 2; Lopez, 2017a). The purpose of this study is to provide a framework for collecting data, and establish construct validity of an instrument designed to test the model. In the following section, I describe an alternative sampling technique based on an

Indigenous quantitative methodology that can remedy limitations found in national and institutional datasets to help Indigenous students and nations.

Indigenous Data Collection

Indigenous methodologies center on researchers using Indigenous positionality and viewpoints to research with and within tribal communities that privilege the tribal community's voice(s) to support the community (Battiste, 2011; Louis, 2007, Windchief, Polacek, Munson, Ulrich, & Cummins, 2017). Furthermore, Wilson (2008) states scholars researching Indigenous communities must engage in a relational building because it "… is an important aspect of ethical Indigenous research," (p.40) that also requires researchers to form mutually respectful relationships within the communities they are researching. Walter and Andersen (2013) characterize Indigenous quantitative methodology as "methodologies within which the practices and the processes of the research are conceived and framed through an Indigenous standpoint" (p. 83). They further state that Indigenous methodology requires that scholars use a culturally sensitive statistical research lens. Researchers need to reflect on their own identities that indicate whom they represent and position their journey to the research (Kovach, 2010).

Indigenous Quantitative Methodologies

There are two main underpinnings of Indigenous quantitative methodology: (1) to create statistical data from an Indigenous lens that privileges Native American voices, rejects dominant mainstream value systems and refuses deficit approaches as a starting point in research; and (2) challenges statistical practice within Indigenous nations by exposing the view from which traditional quantitative research operates in Indigenous

communities (Snowshoe, Crooks, Tremblay, Craig, & Hinson, 2015; Walter & Andersen, 2013). There is a need for external scholars to help Indigenous nations with research to help build the capacity of tribes, but this must be done in a respectful manner. Snowshoe et al. (2015) suggests researchers engage in the complex authority structures, recognize the complexity of the traditional elder engagement process, utilize culturally competent partners as mediators of the tribal partnership process, take an Indigenous approach that works in the community for the research design, anticipate a longer timeframe for the community engagement process, select culturally appropriate data collection methods, and commit significant time and resources to scale development. The first step in this process is to recognize ones' own beliefs as a quantitative scholar.

If researchers do not recognize their beliefs during the research process, the influence of biases magnifies, rather than minimizes, the influence of personal beliefs on research practice. Nonetheless, fundamental quantitative researchers often feel uncomfortable considering personal biases because it imposes subjectivity. Furthermore, despite attempts quantitative scholars take to increase objectivity and scientific validity, the research is not without prejudice. The scales and constructs quantitative scholars measure are a product of what the researcher or funder views as essential (Rodriquez-Lonebear, 2016; Walter & Andersen, 2013; Zuberi & Bonilla-Silva, 2008). A connection between data and the subjugation of Native Americans and federal policies such as extermination and assimilation (see Echo-hawk, 2010) causes some Indigenous people to reject research; especially when research disconnects from Indigenous communities (Rodriguez-Lonebear, 2016; Walter & Andersen, 2013; Zuberi & Bonilla-Silva, 2008).

Mainstream educational research continues to ignore Indigenous youth and adults, because of low sample sizes that make "statistically significant" inferences difficult (Shotton, Lowe, & Waterman, 2013; Sumida Huaman, Martin, & Chosa, 2016; Walter & Anderson, 2013). Additionally, other data limitations found in data tell bias narratives controlled by dominant cultures to constrain the understanding of Native Americans.

Walter and Anderson (2013) state that statistical analyses, "speak a 'truth' about the communities on which they shine their statistical light" (Walter & Anderson, 2013, p. 9). For example, we do not measure success based on how White people can play rez ball. One, because most White people would not know what rez ball is (maybe you are wondering what rez ball is right now) and secondly White people would not know the rules (or lack of rules). The dominant narratives often speak of high rates of suicide, diabetes, alcoholism, drug abuse to define Native American populations. So Indigenous researchers must advocate for tribal nations and researchers to gather our data to change a deficit research approach that plagues Native populations from mostly non-Native researchers.

However, many Indigenous people and Indigenous nations still have confidence that quantitative research and methods can support Indigenous people, as long as researchers using those methods in Indigenous environments understand how quantitative methods have harmed and overlooked our communities (Rodriguez-Lonebear, 2016; Shotton, Waterman, & Lowe, 2013). The confidence of Indigenous nations increases when Indigenous scholars research with tribal communities. Furthermore, an Indigenous quantitative methodology is not possible without tribal community research partnerships

central to the research design (Snowshoe et al., 2015). Tribal community research partnerships are integral because they decrease the likelihood of potentially harmful quantitative approaches to research within Indigenous nations. Furthermore, tribes are so diverse that the data available may not include members from smaller tribes. In other words, given the Navajo tribe is so large, it is likely to have more members of their nation in the sample. Whereas members from smaller nations, like my own Quechan, may not have any members in the sample. So, the likelihood the results extend across tribal nations decreases significantly. One suggestion is for tribes to collect their data, but even then, smaller tribes will have difficulty finding enough participants to produce statistically significant findings.

Approaches to Indigenous Data Collection

Tribes that collect their data will likely create new ways to support tribal education policies and funding for their respective tribal members. Indigenous data collection may be a better service to support their respective communities and students. Researchers and tribes can provide the sampling frame for their data by Indigenous knowledge such as creation stories. This method of data collection would address limitations from small samples from smaller tribes. Tribes would maintain their data, but Indigenous data collection relies on smaller tribes working together to develop measures and instruments and combine and share data sources. If tribes or researchers wait on national datasets to solve issues with limited sampling of Native American populations, they will likely die before it happens. The practice implies researchers work with tribes to collect data in a respectful and manner that is representative of the tribal nation.

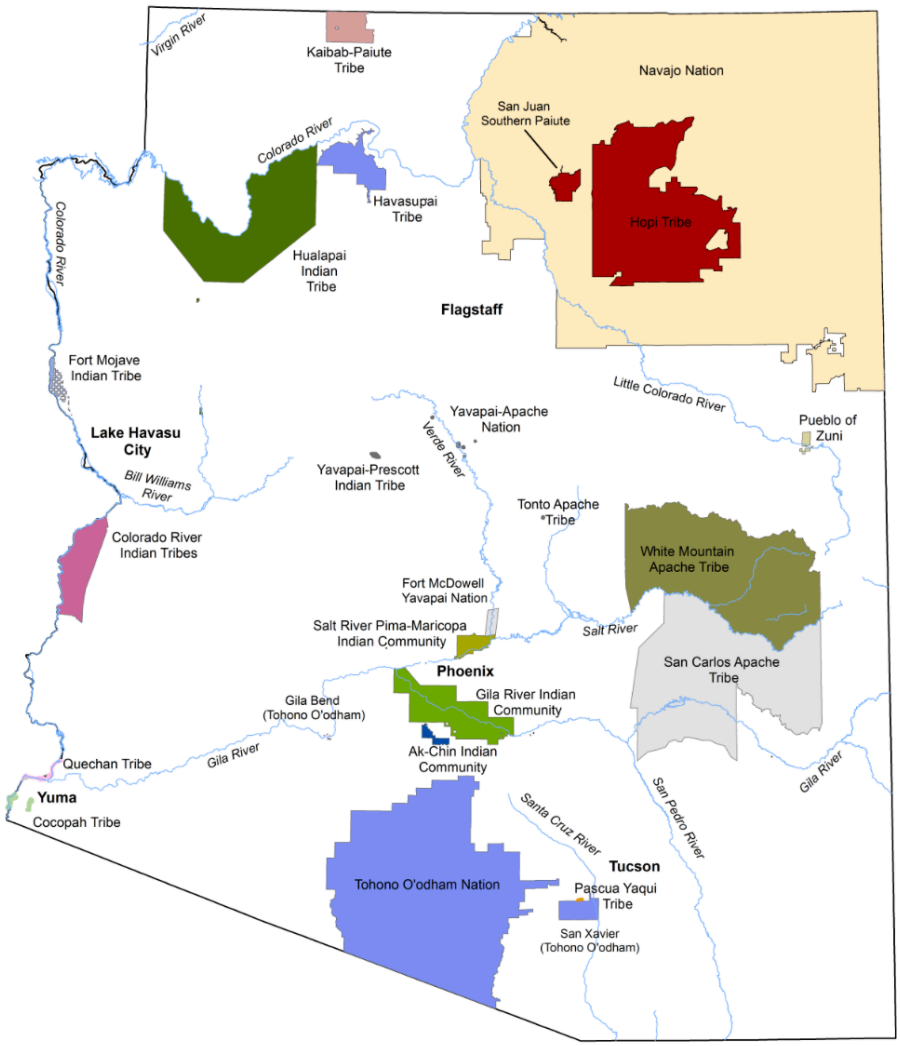
Often neighboring tribes share similar creation stories, that make it more feasible to collect data to produce large enough samples for statistical analysis. For example, the tribes along the Colorado River belong to the Yuman linguistic family and share similar creation stories, songs, language, and ceremonies. It is beneficial for these tribes to collect data jointly and examine constructs influencing education outcomes for their tribes that would otherwise be impossible because of small sample sizes. Another reason for tribal nations to collect data is they often have an essential role in promoting or impeding the education of their students. Tribes control their education policies and collecting their data would support the capacity to inform individual tribal education policies related to academic achievement. In the following paragraphs I expand on how collecting data by creation stories can address some limitations found in larger datasets. I begin the section with the creation story, descriptions of two similar tribes and how data collection with these tribes can address these limitations.

Creation Story

According to Quechan oral history, the Quechan, Maricopa, Cocopah, and Kumeyaay people were created together at the beginning of life. Eventually, the creator took us from the sacred mountain ‘Avíi Kwa’amée, and taught the people the proper way to live in the world. When we came down from this mountain, our tribes went their separate ways. We lived our separate lives through the centuries, sometimes fighting each other and at other times banding together to raid the cavalry. In current times, we work together to maintain our traditions through our creation stories, and cremation ceremony. Moreover, although we are indeed different nations, we come from the same place and it

presents a possibility of reframing how researchers collect and analyze data from Indigenous communities.

Figure 2. Tribal Homelands in Arizona (Inter-Tribal Council of Arizona, 2011)



Notes: Retrieved March 19, 2018, from http://itcaonline.com/?page_id=16

Quechan tribe. According to our traditions, we were created and occupied our land base since time immemorial. In English, Quechan (pronounced Kwat'san) means "those who Descended." It is a short version of Xaam Kwat'san meaning "those who descended by means of water." As our water is a focal point of our life and culture, it is

essential to know the reverence that our tribe has for water from the beginning of our creation story. The telling of our creation story is typically over four days, and therefore I refrain from telling the entirety of our story here. However, our creation story is very profoundly rooted in our cremation ceremony that is one of the cornerstones of our culture today. During this ceremony, a wake is held with traditional songs and ends with the cremation of our deceased relatives. It is a cultural tradition that our tribe has been able to preserve through European colonization.

The Quechan reservation in Fort Yuma, CA resides along both sides of the Colorado River near Yuma, AZ stretching for about 44,000 square acres in bordering Arizona, California, and Mexico (see figure 2.). Most of our economic development is from two casinos, a hotel that mostly winter visitors patron and from agricultural lands leased to non-tribal farmers. One of the elements that connect us to other tribes is our language. The Quechan language belongs to the Yuman language family, with three major branches: River, Pai, and Delta-California. The Quechan language belongs to the River branch of the Yuman languages. Our language and creation story ties us to several tribes in our surrounding areas, but especially to the Cocopah who live across the Colorado River and speak the Delta California dialect of the Yuman language family. For more demographic information on the tribes see Table 1.

Cocopah tribe. The Cocopah people called themselves Xawil Kunywavaei, "Those Who Live on the River." The traditional home of the Cocopah is near the Colorado River delta, where many members currently reside but also traditionally included northwestern Mexico. Their creation story, like ours, involves supernatural

Table 1. Tribal Demographics

	Tribe	
Demographics	Quechan	Cocopah
Reservation Population	~2,200	~800
Total Population	~3,800	~1,100
Poverty	37%	32%
Established Reservation	1884	1917

Notes: Arizona Rural Policy Institute, 2010a; Arizona Rural Policy Institute 2010b)

beings living under the waters that emerged to create the world. Similar to our Quechan creation story, theirs currently serves as a cornerstone of their culture through their cremation ceremony. Like the Quechans, the Cocopah cremate their dead with their possessions. Relatives often cut off their hair in mourning, a practice rooted in our creation story and life along the Colorado River.

Today the Cocopah reservation is near Somerton, AZ located on about 1700 acres of land in the low-lying desert close to Yuma, AZ bounded by the Colorado River. Most of the economic development comes from their casino, conference center, hotel, speedway, family fun center, RV resort, golf courses, and some agriculture similar to Quechans.

The similarities between the tribes' present opportunities to collect data that can address small samples and include relevant variables. After gaining permission from both tribes, I was able to gather data on the same items to construct a sufficient sample for statistical analyses. The responses to the same items afforded me the opportunity to address the small sample sizes that plague most datasets. Furthermore, working with the

cultural departments and higher education directors, I was able to develop a few items to measure cultural identity that are more relevant than in national datasets (i.e., "I participate in cremation ceremonies"). Although there are more finite protocols that could indicate cultural identity in the cremation ceremony, it was important to myself and to the communities to respect the sacredness of the ceremonies by not exposing the intricacies. The samples from these two tribes were gathered to test the Scale of Native Americans Giving Back (SNAG).

Challenges with Indigenous Data Collection

Particular attention should be paid to addressing Native American identity wholly. In most governmental and institutionally managed datasets Native Americans are self-identified, but it is crucial to remember that they may indeed not be AI/AN. Brayboy (2005) wrote,

> This call for self-identification influences the way that colleges and universities examine issues of identification in the admissions process and may push for stricter ways of determining whether or not potential students and faculty members are committing ‘‘ethnic fraud," (p. 434).

Tribal nations measure tribal citizenship through blood quantum. Blood quantum represents the percentage of your blood that traces your bloodline to a particular Indigenous nation. A tribal citizen holds a threshold of tribal blood, expressed as a fractional amount (i.e., 1/2). Measuring Native American identity by blood quantum is a debated topic among tribal citizens, tribal nations, and researchers because blood quantum derived from an adopted rule of English common law differentiating between

whole and half relatives in the distribution of inheritances (Spruhan, 2006). The European immigrants fleeing Europe to the United States adopted this concept to define the legal status of Native American ancestry. The Indian Reorganization Act reaffirmed the use of blood quantum, when tribal governments adopted blood quantum to determine their tribal citizens (Lomayesva, 1999).

When conducting Indigenous Data Collection, therefore, it could be destructive to continually use a self-identified measure of AI/AN identity due to ethnic fraud. The data collection is naturally mitigated because tribes have a list of who is enrolled and not. However, I also understand the debate between cultural AI/AN and identity based on blood quantum. Often Native Americans are not enrolled because they do not meet an arbitrary blood quantum threshold. Rather than determine who and who is not AI/AN, I believe that a scale on Native American identity would provide a more accurate measure of AI/AN identity. The development of the scale uses Robert K. Thomas' discussion of identity with questions related to language, land, history, and kinship. Although I know this attempt at measuring AI/AN identity is undoubtedly flawed, it is the better than using merely a self-identified measure that tends to produce bias results due to ethnic fraud or exclude non-enrolled Native Americans due to a colonialist construct. In the following section is a description of the persistence model and I will follow with how I utilize Indigenous Data Collection to test the model.

AI/AN Millennium Falcon Persistence Model

The development of the AI/AN Millennium Falcon persistence model is from five postsecondary persistence theories including: the family education model (HeavyRunner,

2002), AI/AN college student retention strategies (Guillory, 2008), AI/AN nation-building (Brayboy, 2012), AI/AN home going (Waterman,2012) and Indigenous claiming of education (Windchief & Joseph, 2015). Each of theories outlined in the previous chapter demonstrates the importance to examining AI/AN postsecondary persistence.

More specifically, one significant strength of AI/AN persistence theories is the emphasis on family as a major factor in AI/AN postsecondary persistence. The family provides cultural support (Guillory, 2008; Waterman, 2012), motivation (Brayboy et al., 2012), and students often need a connection to their family for support (Waterman, 2012). Windchief and Joseph (2015) theorized that if a college campus were able to create an AI/AN community on campus, AI/AN students would more likely persist. Extending the AI/AN community is extending the family to college campuses, as AI/AN student support services often help integrate AI/AN students into the college community while helping maintain student cultural identity. The use of student support services (Windchief & Joseph, 2015) and AI/AN faculty mentorship (Waterman, 2007) redefine college integration according to Tinto's (1975) original model because now colleges are integrating into the needs of AI/AN students. However, there is a need to develop and analyze these theories further. In the following section is a description of the operationalization of four constructs from the AI/AN Millennium Falcon Model.

Literature

The review of the literature found that family support, institutional support, community, and academic performance were the predominant factors influencing college persistence for AI/AN students at two and four-year colleges. A comprehensive review is

in chapter 2, but here is a short review of the literature. Family support appears to be both a positive (Bass & Harrington, 2014; Gloria & Kurpius, 2001; Pavel & Padilla, 1993; Guillory, 2009) and negative factor (Dodd, Garcia, Meccage, & Nelson, 1995; Jackson & Smith, 2001; Tate and Schwartz, 1993; Waterman, 2012) in college persistence. As some students expressed the encouragement from family to continue through postsecondary challenges, but other students expressed academic interference due to family obligations. Institutional support was found to be a significant factor as well. Some students' report that institutions with AI/AN student support services helped them acculturate to the university (Marroquín & McCoach, 2014). On the contrary, students who attended universities without AI/AN student support services reported much more difficulty adjusting to college life. Community impacted the majority of AI/AN students in all the studies.

Noteworthy is the desire of AI/AN Students to "give back," to their communities (Drywater-Whitekiller, 2010; Guillory, 2009; Guillory & Wolverton, 2008) that served as a motivation for AI/AN students to persist through college. In some cases (Waterman, 2012) students reported that going home for funerals or ceremonies interfered with academics, but these students were still able to complete college. It is inevitable that most students will face some challenges going through college, but AI/AN students' communities did not seem to be a barrier. Academic readiness and performance was the last major factor influencing AI/AN persistence in college. There were high reports of students indicating they felt unprepared for the academic rigor of university courses. Some evidence (Huffman, 2003) suggests that the location of their k-12 schooling could

predict academic unpreparedness. Using the theories and literature, I asked the following research question.

Research Question

How can researchers operationalize AI/AN Millennium Falcon Persistence Model in social scientific studies of AI/AN students?

Instrument Development

To provide validity evidence based on test content (Shadish, Cook, & Campbell, 2002) and utilize Indigenous quantitative methodologies (Walter & Andersen, 2013) the instrument items came from community feedback, higher education directors, my experience working in postsecondary education, conversations with Indigenous scholars, feedback from experts, informal interviews and from an exhaustive literature review on Native American postsecondary persistence. The instrument used to measure the AI/AN Millennium Falcon Persistence Model (AMFPM) is the Scale of Native Americans Giving Back (SNAG). The instrument was specifically designed for this research, as there is not an instrument constructed that attempts to test the AI/AN Millennium Falcon Persistence Model.

After I developed the scale, I piloted the measures to refine the instrument. I disseminated the web-based instrument using surveymonkey.com. One of the strengths of a web-based instrument is that participants are more likely to be truthful than in face to face administered survey. One of the drawbacks is that it limits the respondents to those who have access to computers and other technology, that may cause an unrepresentative sample.

In the spring of 2017, a pilot study was conducted to provide initial tests of reliability, construct validity, and internal validity. The participants for the pilot study includes current and previous AI/AN undergraduate students from the past ten years that completed at least one semester of college. The pilot survey convenience sample excluded Cocopah and Quechan participants and requested information through social media outlets (i.e. Facebook group pages such "American Indian Student Support Services." There were 147 completed responses to the survey with an average age of twenty-five.

The pilot factor analysis identified factor loadings for the constructs measured from AI/AN students at local universities (see Table 2.). Participants' responses to thirty items were subjected to an exploratory factor analysis (EFA) using principal axis factoring and a promax rotation. Both Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy indicated the data were appropriate for EFA with Bartlett's test chi-square = 1632.19 and $p < .001$ and the KMO = .759. The EFA was set to extract four hypothesized factors. The rotated scales were then interpreted with variables with loadings higher than .30 and loading on a single factor retained.

The four-factor solution accounted for 45.22% of the variance in the items. The factors all had eigenvalues greater than 1.748, which meets Kaiser's criteria for factor selection. There were two split loadings; ("Tribal members [other than family] asked about my academic progress in college" and "I often ate commodity food growing up.") Five of the items did not load or did not load onto the appropriate construct (My tribal community paid for my college tuition; I often went home to get support from my tribal

community; I know my tribe's creation story; I participated in community gatherings before coming to college [i.e., Indian Days]; I often ate commodity food growing up). All four scales had acceptable score reliability for empirical research with Cronbach's αs ≥ .7.

Table 2. Exploratory Factor Analysis (pilot study)

		Factor			
		Giving Back	Tribal Family Support	Identity	Institutional Support
1.	I currently volunteer with an American Indian community other than my own.	.603			
2.	I help organize community events (i.e. Indian Days, Pow Wows, Community dinners, etc.).	.503			
3.	I notice positive change in the tribal members that I encourage.	.646			
4.	I pray for my tribal community.	.565			
5.	I participated in community gatherings before coming to college (i.e. Indian Days).		.527		
6.	If possible, I always try to buy from tribal businesses.	.622			
7.	I planned on using my education to help my tribe.	.581			
8.	I strongly wanted to "give back" to the tribal community I am an enrolled member of.	.470			
9.	I try to go back to my tribal homeland as much as I can.	.397			
10.	I often ate commodity food growing up.		-.323	.370	
11.	My family supported my decision to attend college.		.607		
12.	My family talked about college homework with me.		.381		
13.	My family checked up on me while at college.		.582		
14.	My family does not have high expectations for me.		.489		
15.	My tribal community paid for my college tuition.			.376	
16.	I often went home to get support from my tribal community.		.479	.343	
17.	Tribal members (other than family) asked about my academic progress in college.		.479		
18.	My tribal community is proud of me for enrolling into college.		.574		
19.	Before coming to college, I had knowledge of my tribal language.			.676	
20.	I can speak my tribe's language.			.637	
21.	I have a close relationship with my tribal relatives.			.635	
22.	I participated in tribal ceremonies prior to attending college (e.g. cremation ceremony).			.564	
23.	I know my tribe's creation story.				
24.	I spent most of my life on the reservation.			.834	
25.	My instructors were respectful of students.				.839
26.	My professors respected my views as an American Indian in course discussions.				.789
27.	My professors supported me if I needed to attend a cultural event (e.g. ceremony, funeral) during class time.				.628
28.	My interactions with faculty outside of the classroom were negative.				.671
29.	My academic advisor ensured I took all required courses for my degree.				.383
30.	College interferes with my traditional values.				.327
	Cronbach's Alpha	.782	.664	.788	.761

I kept three of the five items (My tribal community paid for my college tuition; I often went home to get support from my tribal community; I participated in community gatherings before coming to college [i.e., Indian Days]) that loaded onto the incorrect construct because I felt that the literature and instrument feedback was strong enough to keep the items in the analysis. For the final instrument I changed, "I know my tribe's creation story" to "I know my tribe's history," to broaden the item. I changed the, "I often ate commodity food growing up," to "One time the tribe canceled our Easter egg hunt, because all the powdered eggs blew away," to use inside Native humor as a measure of tribal connection.

Final Survey Instrument

Following Indigenous quantitative methodologies, I emphasize the communities' voices by intentionally asking for guidance from tribal councils and tribal education directors for feedback on the instrument. I included their feedback in the items and aligned the goals of the survey with the goals of each respective higher education department. Relationships were key in this process. I reached out to the higher education department directors before I approached the tribal councils to get an idea about their needs and if they were interested in the study. The purpose of the relationships was to emphasize the communities' voices in the development of the instrument. Once I received their interest, I moved forward with creating a proposal and survey to pilot. I obtained written support from each tribe to conduct the research. The final instrument begins with a short introduction and statement that indicates that by completing the survey the participant agrees to the terms of the study but may opt from the study at any

time. On average, the final instrument took fifteen minutes to complete. To establish trust with the respondent (Dillman, 2007), I identified myself as a member of Quechan Tribe, included Arizona State University's letterhead, and identified the partnership between the Cocopah and Quechan tribes. Additionally, the introduction explains the importance of the respondents' answers in the questionnaire to improve universities and colleges working with Cocopah and Quechan students. After the introduction, the survey contains three major sections. In the first section are qualifying questions to ensure that participants are Quechan or Cocopah students. The second section asks questions measuring constructs related to family tribal support, institutional support, cultural identity, and academic achievement. In the second section, the items use a Likert scale from strongly agree to disagree strongly. Finally, the third section asks fundamental demographic questions.

Institutional Review Board

The institutional review board (IRB) is an important process when working with Indigenous communities, and approval is dependent on healthy relationships. The following is a description of the IRB process with the Quechan and Cocopah nations. On November 22, 2016, I requested to be on the Quechan tribe's work session on December 1, 2016 (see Appendix J). I presented my research before the Quechan council on December 1, 2016, and received verbal support. However, due to unforeseen circumstances with the tribal election the following week, my request was tabled. After a few months of contact, and waiting, I was informed that I could request a letter of support

from the higher education department. On February 15, 2017, I requested a letter of support and received the letter of support on February 27, 2017 (see Appendix G).

On November 21, 2016, I requested to be put on the Cocopah tribe's work session agenda for December 9, 2016 (see Appendix I). The work session was canceled, and the tribe mentioned they would likely reschedule my proposal presentation for January 13th, 2017. However, on January 4th, 2017 the Cocopah tribe denied my proposal via email with no formal explanation. I respectfully requested a reason, and they kindly responded and let me know the tribe typically does not allow research. The tribal secretary mentioned I could request reconsideration. I previously had interaction with the Vice Chairman, so I messaged the Vice Chairman on January 13, 2017. I missed a call from Vice Chairman Begaye on January 25, 2017, and promptly returned the call late that day. Eventually, I was able to have a phone conversation with the Vice Chairman on February 6, 2017. After further explanation of my research and his understanding of my family and relationships, he verbally gave support of my research. My interaction with the tribes and IRB process further indicate that relationships are important to researching in Indigenous communities. The vice chairman asked the Cocopah education director to write a letter of support, that I promptly received on February 16, 2017 (see Appendix F).

After I received both tribe's letters of support, Arizona State University's IRB examined my research proposal and approved this study. Participants were informed that there were no obligations to fill out the survey and that they could opt out of the study at any time. The information on the study was given on the online link before the survey, that also describes the purpose of this study. Participants were given contact information

to ask any questions about the study and given an opportunity to provide an email address if they wanted to see the outcomes of the study. The IRB was approved on March 3, 2017 (see Appendix H).

Data Collection

I collected data from Cocopah and Quechan college students to validate the Scale of Native Americans Giving Back. The web-based instrument used surveymonkey.com and was developed from the reviewed theory and literature, and expert feedback. The population for this study includes current and previous Cocopah and Quechan college students that have completed at least one semester of college. There were 400 possible participants according to the tribal higher education departments. However, addresses were only available to 200 participants, to whom I sent an introduction letter (see Appendix A), a postcard with a link to the survey (see Appendix B), a third follow-up using email (see Appendix C) and a final email requesting participation (see Appendix D). There was two week inbetween followups, and nineteen of the addresses were undeliverable. To maximize Cocopah and Quechan student participation, I utilized social media (see Appendix E) outlets (i.e. Facebook group pages such "Let's stay Kwa-nected.") and gave participants an option to provide their email address to enter a raffle for a chance to win one of four fifty-dollar Amazon give cards (Dillman, 2007). There were 145 responses to the survey giving a response rate of 73% compared to typical response rates for online surveys, such as the 18% response rate from the Strategic National Arts Alumni Project.

The research incorporates Indigenous quantitative methodologies through creating statistical data that privileges Quechan and Cocopah voices and challenges traditional sampling among Native Americans by using creation stories to provide a sampling frame. Furthermore, the incorporation of constructs such as "giving back," and "cultural identity," allow researchers to challenge dominant mainstream value systems, such as persistence and college GPA. GPA and persistence are consistently used as measures of Native American success but having scales of student desire to give back, and their identity allows researchers to examine how college factors predict different success factors among tribal nations. Nonetheless, this research still somewhat operates in dominant mainstream value systems because it uses GPA and college persistence as measures of success.

Results

For the factor analysis, I used listwise deletion (n=28) for all cases missing critical information, resulting in an analytical sample of 117. While relatively small, this sample meets the suggested criteria for exploratory factor analysis (Field, 2013). Of the complete responses, the mean age is thirty-six, 74% are females and 26% are males. 72% of the sample is Quechan, 15% are Cocopah, and 13% are from both tribes. The average high school GPA is between 2.6 and 3.0. The mean college GPA is between 3.1 and 3.5. 77% of the participants went to a two-year college, and 23% went to a four-year college (see table 3.).

There are few limitations to the sample. The first limitation is the increased likelihood of nonresponse because of the delivery of a web-based instrument to a census

sample. The sample of Quechan and Cocopah was a census, to ensure a large enough sample for analysis. The limitation may also create non-response bias, for users who are more inclined to take surveys and have access to a computer or refuse to take the survey (Daniel, 2011). The second limitation is the substantial overrepresentation of women in the sample (Daniel, 2011). While 74% of survey respondents in this study are female, nationally 61% of AI/AN undergraduate students are female (NCES, 2016). Females are also more likely to respond to survey research than males (Dillman, 2007).

Table 3. Tribal Demographics (factor analysis)

	Quechan	Cocopah	Quechan & Cocopah	Total
Female	58%	14%	2%	74%
Male	12%	3%	11%	26%
2-year college	58%	12%	7%	77%
4-year college	12%	5%	6%	23%
	Minimum	Maximum	Mean	Standard Deviation
Age	18	68	36	11.43
High school GPA	2.0 or below	4.1 or above	2.6-3.0	1.16
College GPA	2.1-2.5	4.1 or above	3.1-3.5	1.03

Nonetheless, the data in this study are from a severely underrepresented group that often is overlooked by other Native American nations. Given the difficult collection of this data, the uniqueness of the data, and the historical mistrust of researchers in

Indigenous communities; the data that was created to analyze Quechan and Cocopah postsecondary persistence is extremely valuable. From this sample, I conducted the exploratory factor analysis.

Exploratory Factor Analysis

I used an exploratory factor analysis (EFA) on the 117 participants' who responded to thirty items. The EFA was set to extract four hypothesized factors. The interpretation of rotated scales was with variables loadings greater than .30 and loading on a single factor retained. The four-factor solution accounted for 43% of the total variance (the spread of data) in the items. The eigenvalues represent the variance explained by each particular factor. The factors all had eigenvalues greater than 1.973, which meets Kaiser's criteria for factor selection. There was one split loading under the identity construct ("I have a close relationship with my tribal relatives") that also loaded onto the tribal family support construct. I did not remove the item, due to the item loading higher on the identity construct compared to the tribal family support construct. The other constructs, giving back and institutional support factor items loaded onto the appropriate factor (see table 4.). All four of the scales had acceptable levels of internal reliability for empirical research (i.e., Cronbach's alpha > 0.7).

Table 4. SNAG Exploratory Factor Analysis

		Factor			
		Giving Back	Tribal Family Support	Identity	Institutional Support
1.	I notice positive change in the tribal members that I encourage.	.423			
2.	I help organize community events (i.e. Indian Days, Pow Wows, Community dinners, etc.).	.422			
3.	I currently volunteer with an American Indian community other than my own.	.497			
4.	If possible, I always try to buy from tribal businesses.	.763			
5.	I pray for my tribal community.	.562			
6.	I try to visit my tribal homeland as much as possible.	.534			
7.	I participated in community gatherings before coming to college (i.e. Indian Days).	.454			
8.	I planned on using my education to help my tribe.	.494			
9.	I strongly wanted to "give back" to the tribal community I am an enrolled member of.	.458			
10.	One time the tribe cancelled our Easter egg hunt, because all the powdered eggs blew away.	.314			
11.	My family supported my decision to attend college.		.465		
12.	My family checked up on me while at college.		.602		
13.	My family talked about college with me.		.556		
14.	My family does not have high expectations for me.		.541		
15.	My tribal community paid for the majority of my college tuition.		.510		
16.	I often went home to get support from my tribal community.		.537		
17.	Tribal members (other than family) asked about my academic progress in college.		.519		
18.	My tribal community is proud of me for enrolling into college.		.485		
19.	I have a close relationship with my tribal relatives.		.315	.523	
20.	Before coming to college, I had knowledge of my tribal language.			.739	
21.	I can speak my tribe's language.			.762	
22.	I participated in tribal ceremonies prior to attending college (e.g. cremation ceremony)			.449	
23.	I know my tribe's history.			.470	
24.	I spent most of my life of my tribal homelands			.543	
25.	My instructors were respectful of students.				.794
26.	My academic advisor ensured I took all required courses for my degree.				.365
27.	My professors respected my views as an American Indian in course discussions.				.756
28.	My professors supported me if I needed to attend a cultural event (e.g. ceremony, funeral) during class time.				.585
29.	My interactions with faculty outside of the classroom were negative.				.723
30.	College interferes with my traditional values.				.418
	Cronbach's Alpha	.744	.751	.753	.748

Notes: Exploratory Factor Analysis. Principal Axis Factoring. Promax rotation. Three of the items were reverse coded; My family does not have high expectations for me, was reverse coded (Fam4), My interactions with faculty outside of the classroom were negative (Faculty4), College interferes with my traditional values (Institution1). Bartlett's test $X^2 = 1407.49$ and $p < .001$, KMO = .668.

Discussion

The purpose of this study is to develop a psychometric instrument that measures factors that influence AI/AN postsecondary persistence according to the AI/AN Millennium Falcon Persistence Model. The study provides construct validity, reliability, and an empirically based future model of Native American postsecondary persistence. The exploratory factor analysis confirmed that all four of the original AI/AN Millennium Falcon Persistence Model factors (family, tribal, academic, institutional) were, in fact, latent variables captured by the SNAG. However, the analysis revealed that two of the factors merged (family and tribal support). Due to the sample being from smaller tribes, one possible reason for the blended factors is due to Native Americans from smaller tribes tend to be distant relatives to everyone in the tribe, blurring lines between family and tribe. Furthermore, the desire to give back and tribal identity emerged as separate constructs. The final scale that emerged in this study consists of five components of postsecondary persistence, as opposed to only four.

Implications for Theory

The validity and reliability of the SNAG indicate that it can accurately and consistently yield reliable scales for the constructs giving back, tribal cultural identity, and forms of support among Native American college students. The exploratory factor analysis using data from Cocopah and Quechan students attending community college and universities (77% attended community college, 23% attend four-year colleges) show that the five factors can extend across institutional type, (the fifth factor is academic

performance measured by high school grade point average). Meaning, while the persistence of Native American students varies between students at community colleges and universities, the SNAG can accurately and consistently utilize the same instrument to test persistence. Furthermore, the results of the exploratory factor analysis and the revised model from that analysis reveal factors of postsecondary persistence that otherwise may have remained unexamined. The evidence provides a multifaceted understanding of postsecondary persistence for AI/AN students compared to mainstream models. The two most significant findings that emerged from developing an instrument to test the model is that giving back and cultural identity are separate constructs from tribal community support. Meaning that these three constructs are different from one another.

The factor loadings of the giving back scale items show that giving back is a construct that researchers should measure separately from tribal community support. Brayboy et al. (2012) posit that persistence rates increase for AI/AN students when the pursuit of education is with a determination to serve a broader community as opposed to oneself. Giving back or serving ones' tribal community is often an expectation and goal after graduation for Native American students (Brayboy, Solyom, & Castagno, 2014). Guillory and Wolverton (2008) and Guillory (2009) measured giving back by describing giving back as a student's desire to help the community. Drywater-Whitekiller (2010) provided further evidence by defining giving back according to Native American student statements on helping their tribes through their fields of education (i.e., health care, rehabilitation, environmental pollution, a museum to ensure the correct tribal history, and so forth). The factors loadings for the items such as; "I planned on using my education to

help my tribe," and "I help organize community events," support giving back according to Brayboy et al. (2012).

The second factor that separated from the original model construct, tribal community support, is cultural identity. Waterman's (2012) home going theory argues that cultural factors can predict persistence. Furthermore, HeavyRunner and DeCelles (2002) and Windchief and Joseph (2015) theories reiterate the need for Native American students to maintain cultural connections. Special activities and AI/AN student organizations can help students maintain their identities as they begin their educational careers in a new location (Dodd, Garcia, Meccage, & Nelson, 1995; Drywater-Whitekiller, 2010; Waterman, 2007). The activities and student organizations are imperative because they reinforce culture and help maintain cultural identity tied to one's community, which factors into college persistence (Huffman, 2001; Jackson & Smith, 2001; Ness, 2002; Reyes, 2000; Waterman & Lindley, 2013). In essence, the degree to which Native American college students maintain their cultural identity, the more likely they are to persist. I made a inferential link to persistence by generating items to measure cultural identity adapted from Robert K. Thomas' (1990) peoplehood paradigm on language, kinship, history, and land include items such as; "I participated in tribal ceremonies prior to attending college," and "I have a close relationship with my tribal relatives." The cultural identity items support the definition of cultural identity from Robert K. Thomas that argues tribal identity is the extent to which one relates to their tribe's language, kinship, history, and land.

The emergence of these two latent variables are consistent with research that finds the desire to give back, and cultural identity affects postsecondary persistence for Native Americans students. Future theory and studies on postsecondary persistence must consider including variables to measure giving back and cultural identity to enhance the internal validity of studies through statistical controls (Lopez & Marley, in press; Shadish et al., 2002). The emergence of these two factors, and the associated theories and empirical evidence further exemplify the validity and reliability of the SNAG can accurately and consistently measure factors related to persistence among Native American college students.

Implications for Current Practice

Although Indigenous data collection would improve the understanding of Indigenous communities. However, the burden to collect data is put on the tribe or Indigenous researcher whereas other ethnicities do not have too collect reliable data. Governments will then be less likely to collect the data essential to Indigenous communities as they do for other people groups. The lack of data is problematic, but the suggestion for oversampling has been made since the early 1990s but has yet to come to fruition (Pavel & Padilla, 1993). Indigenous people have been waiting for culturally relevant variables and measures of educational achievement since the Merriam Report in 1928 (Merriam, 1928). Native Americans have been waiting to have mediocre government collected data for the past 90 years, and the chances of the data becoming available within the next decade are unlikely. Given the need for tribes to make data-driven decisions that inform nation-building, tribes must collect data while continually

putting pressure on the governments to collect data. At the very least, governments should give resources to build that capacity of tribes to collect data. Although those in power and dominant perspectives will likely question the legitimacy or validity of tribal datasets, tribes will have statistically sound data to inform their decisions.

As a result of limitations found in governmental and institutional data (see Lopez & Marley, in press), a few tribal nations started data initiatives for data sovereignty. Data sovereignty is the right and capacity of tribes to develop data collection processes and analysis to influence the collection of data by external entities (Rodriquez-Lonebear, 2016) but still encounter data limitations. Nonetheless, tribal nations are entitled to self-determination because they are sovereign nations. Self-determination and sovereignty relate to the right of tribes and their citizens to self-govern and maintain the trust relationship between federal government and Native nations (Brayboy et al., 2012; Cornell & Kalt, 2010). By exerting data sovereignty, tribes are building the capacity of their tribe for nation-building. Tribal nation-building refers to building the capacity and community of one's tribe (Brayboy et al., 2014; Reyes, 2016), and the data in government and institutional datasets have too many limitations to help with nation-building.

Through collecting data by creation stories, researchers have an opportunity to work with a more comprehensive dataset that will increase the power of a study and allow researchers to obtain a larger sample from an identified population. The larger identifiable sample will increase both external validity and statistical-conclusion validity (ability to draw appropriate conclusions). The continued use and misuse of federal data to

examine Indigenous populations without regard for Indigenous quantitative methodology exemplify the need for researchers to reexamine the collection of data. Current practice should consider collecting data from Indigenous data collection that acknowledges tribal culture, such as creation stories, in survey samples and subsequently give credibility to Indigenous knowledge and Indigenous voices.

Implications for Future Research

The scale examined in this study provides several opportunities for researchers to investigate Native American postsecondary persistence and its related concepts. First, future research could examine the AMFPM and the influence on postsecondary persistence among diverse groups of Native American students. Especially among smaller tribal nations because the evidence found in this study was from smaller tribes. Before using the Indigenous Data Collection outlined in this chapter, most smaller nations have been severely underrepresented in Native American postsecondary research. The scale and data collection allow researchers to explore the intricacies of smaller tribes while providing appropriate validity evidence. Although this study found that postsecondary persistence is measured comparably in students from two different tribes along the Colorado River, further examination among other tribes would indicate if students have similar factors that will strengthen the validity of the presented scale. Researchers could use the scale to explore the similarities and differences in various Native American populations to understand the AMFPM and how Native American postsecondary persistence operates in Native students' lives. Some questions researchers could consider are: Are there any significant differences between Native American tribes

and the construct validity on the SNAG? Are there any significant differences between students' place of birth or childhood upbringing (i.e., reservation vs. urban, state vs. federal recognition, or larger vs. smaller tribes) in postsecondary persistence using the SNAG? Can other variables be predicted by Native American postsecondary persistence?

Secondly, using the scale future research could examine Native American students desire to give back and the influence on postsecondary persistence. Additionally, researchers could examine specific questions exploring any significant differences among tribes and reservation or urban locations. While some students may be less committed to their community, it may not necessarily mean that they persist at higher rates. Furthermore, the desire to give back is an emergent theme of qualitative literature, but never a factor in in quantitative persistence studies, mostly due to the lack of available measures (Lopez, 2017). Future research should also seek to test giving back when examining postsecondary persistence, as the construct has only emerged in this quantitative study.

There are a few other recommendations researchers should take into consideration. Researchers should consider attempts to develop additional items to measure the cultural identity subscale according to criteria of each respective tribal nation, and subsequently, provide construct validity through factor analyses. Furthermore, in this study, I use an exploratory factor analysis because the model and very few quantitative studies exist that examine postsecondary persistence using AI/AN postsecondary persistence theory. Not to mention this is the first operationalization of the AMFPM using the SNAG. This exploratory factor analysis creates the foundation for

confirmatory factor analysis with a larger sample of tribes that live along the Colorado River. Using college student participants to test the AMFPM is the next step for research on postsecondary persistence. The literature, items development, and analysis in this study justify a confirmatory factor analysis for future research.

Conclusion

As institutions increasingly question their approach to retention and value of diverse student populations, it is critical that higher education faculty and administrators examine AI/AN postsecondary persistence through alternative models grounded in empirically sound research such as the AMFPM and SNAG. The model introduces two new constructs (The desire to give back and tribal identity) not examined in mainstream theories, such as Tinto (1975) or Bean (1980). In the end, the development of a reliable and valid instrument (the SNAG) to examine AI/AN postsecondary persistence within both two-year and four-year institutions builds the capacity for scholars and practitioners to reexamine AI/AN postsecondary persistence and provide effective interventions that increase student persistence in higher education.

CHAPTER 4

PERSISTING FOR NATION-BUILDING

College degrees matter. Carnevale, Cheah, and Hanson (2015) used the American Community Survey and found that the lifetime wages on average increase by a million dollars across their careers in comparison to those with a high school diploma. A college degree is even more critical for Native Americans, as young college graduates have higher unemployment rates than their White peers (Kroeger & Gould, 2017). Furthermore, 32% of single-race Native Americans lived in poverty as compared to 14% of non-Natives (Native Nations Institute, 2016). However, arguably the most crucial reason college degrees matter to Native American communities is because degrees are integral to nation-building.

Nation-building refers to a tribe's pursuit to increase their capacity to self-determine and self-govern, for sustainable communities and economic development (Native Nations Institute, 2018; Hosmer & Nesper, 2013). Nation-building is an autonomous community increasing their legal, political, cultural, economic, health, nutrition, spiritual, education capacity through sovereignty and self-determination (Brayboy et al., 2012). Nation-building is "directly linked to sovereignty and self-determination" (Brayboy et al., 2012, p. 13). Self-determination and sovereignty relate to the right of tribes and their citizens to self-govern and maintain the trust relationship between federal government and Native nations (Brayboy et al., 2012; Cornell & Kalt, 2010). Simply, tribal nation-building is about building capacity and community (Brayboy et al., 2014; Reyes, 2016). Nation-building should matter to institutions of higher

education committed to retention, because nation-building is giving back, and "giving back is nation-building," (Reyes, 2016, p. 249).

Giving back is a construct that researchers found to influence college persistence (Drywater-Whitekiller, 2010; Guillory, 2009; Huffman, 2011). At the center of nation-building is the desire of tribes and members of those tribes to build the capacity and community of their respective nations. The desire of Indigenous people to give back to their community underpins the motivation behind nation-building. If giving back predicts persistence among Native Americans, and giving back is nation-building, then desire to contribute to nation-building will predict persistence of Native Americans. The purpose of this study is to examine how Native American student giving back, as an element of nation-building, influences postsecondary persistence (measured by 1st to 2nd semester/year persistence and college GPA) among Cocopah and Quechan students.

Operationalizing Giving Back

Using previous literature, interviews, expert and community feedback, I measured giving back by the following items:

1. I notice positive change in the tribal members that I encourage.
2. I help organize community events (i.e. Indian Days, Pow Wows, Community dinners, etc.).
3. I currently volunteer with an American Indian community other than my own.
4. If possible, I always try to buy from tribal businesses.
5. I pray for my tribal community.
6. I try to visit my tribal homeland as much as possible.
7. I participated in community gatherings before coming to college (i.e. Indian Days).
8. I planned on using my education to help my tribe.
9. I strongly wanted to "give back" to the tribal community I am an enrolled member of.

10. One time the tribe cancelled our Easter egg hunt because all the powdered eggs blew away.

The literature, and operationalization of giving back lead to the following research question: *How does student determination to serve a larger AI/AN community relate to academic achievement (measured by college GPA) and 1st to 2nd semester/year persistence among Cocopah and Quechan students?*

"Giving Back" through College Education

Postsecondary education success is a "necessary element of successful nation-building" (Brayboy et al., 2012, p.27). The researchers theorized that persistence rates increase for AI/AN students when the pursuit of education is with a determination to serve a broader community as opposed to oneself. The notion of giving back, where AI/AN students' desire to give back or serve their community is often an expectation for AI/AN students and often a goal after graduation (Brayboy, Solyom, & Castagno, 2014; Huffman, 2011; Shield, 2004). Native Americans give to build that capacity of other tribal citizens. Those tribal members then continue the cycle and give to others (Brayboy et al., 2012). In short, the theory proposes the relationship between student commitment to their community and level to which institutional support that commitment, predicts persistence.

For example, obtaining a college degree to teach at a tribal language program is nation-building (Reyes, 2016). Brayboy et al. (2014) highlighted a Native education graduate who said about his community, "I will help them because that's what we do." Other researchers, such as Waterman and Lindley (2012), used nation-building through higher education theory and found that thirty-seven Haudenosaunee and sixteen Northern

Arapaho women wanted to give back to their communities evident by their pursuit of education for their broader community. These women wanted to work for their communities after graduation and serve as role models. Although not extensive, some qualitative researchers found giving back and the positive relationship to persistence, but an examination of giving back and the relationship to persistence is yet be examined quantitatively among smaller tribal nations. The purpose of this research is to operationalize giving back and quantitatively examine the relationship between giving back and postsecondary persistence among two smaller tribal nations for nation-building. In the following paragraphs is a description of the research that found relationships between giving back and postsecondary persistence among Native Americans.

AI/AN students' desires to, "give back" was a personal motivation to persist through college for their respective communities (Reyes, 2016). For example, some AI/AN students wanted to finish college to be a role model for their community (Guillory, 2009; Montgomery, Miville, Winterowd, Jeffries, & Baysden, 2000), create a better life for their children, or make their parent(s) proud (Bass, 2014). Guillory and Wolverton (2008) and Guillory (2009) investigations of persistence factors and barriers to degree completion for AI/AN college students revealed "giving back," (measured by student's desire to help community) as a primary factor influencing their persistence. Drywater-Whitekiller (2010) and Huffman (2011) provided further evidence by documenting AI/AN student's desire to "give back," when students gave statements related to helping the tribe through their respective fields, such as health care, rehabilitation, environmental pollution, museum to ensure the correct tribal history, and

so forth. One reason students often want to "give back" to their community is that they feel like their community needs help and will benefit through their education (Makomenaw, 2014; Waterman & Lindley, 2013). Brayboy, Solyom, and Castagno (2015) further supported these claims in their investigation of findings from a survey on experiences and success of AI/ANs in higher education. They found that AI/AN students who are more self-centered fair better in universities, but AI/AN students who focus on their communities as their motivation for college completion, are more often successful than those individuals who focus on themselves. The items such as; "I planned on using my education to help my tribe," and "I help organize community events," support giving back according to Brayboy et al. (2012). Overall giving back influences students' worldviews, their pathway, feeling support, need to support other Native students, desire to build and nurture relationships, stay connected to homelands, and leave behind a legacy (Reyes, 2016).

Methods

I collected data using the Indigenous data collection technique from Cocopah and Quechan college students. I performed regression analyses that test the AI/AN Millennium Falcon Persistence Model (AMFPM) using the Scale of Native Americans Giving back (SNAG). The SNAG is a web-based instrument utilizing surveymonkey.com and was developed from the reviewed theory and literature, and expert feedback. The population for this study included current and previous Cocopah and Quechan college students that have completed at least one semester of college. There were four hundred possible participants according to the tribal higher education departments. However,

addresses were only available to two hundred participants, whom I sent an introduction letter, a postcard with a link to the survey, and two more mail follow-ups. Nineteen of the addresses were undeliverable. To maximize participation, I utilized social media outlets (i.e. Facebook group pages such "Let's stay Kwa-nected.") to recruit more Cocopah and Quechan college students for the survey.

There were 145 responses to the survey giving a response rate of 73%. I imputed all missing data and found that the imputed results on student desire to give back were consistent with the findings in this section. However, I excluded thirty-four cases that were missing the dependent variable (1st to 2nd-year persistence) based on Von Hippel's (2007) analysis that indicates imputed dependent variables can add unnecessary noise to estimates. I conducted Little's (1986) missing completely at random test and found non-statistically significant results, indicating that the data were missing completely at random. Due to the data missing completely at random, it acceptable to use listwise deletion of missing data (Schlomer, Bauman, & Card, 2010). In addition to the missing persistence outcome variables, I listwise deleted gender information (four cases) and one case missing items on the giving back construct (one case). I deleted three outlier cases on the first regression model predicting first to second-semester retention, and one outlier case on the second logistic regression model based on studentized residuals greater than two. Leaving a total sample of 102, meeting the suggested criteria for regression analyses (Field, 2013). I imputed data using the series mean for high school GPA (fourteen cases), college GPA (twenty cases) and age (one case). Mother educational attainment (four cases) utilized imputation using linear trend at the point. Three of the items were reverse

coded; My family does not have high expectations for me, was reverse coded (Fam4), My interactions with faculty outside of the classroom were negative (Faculty4), College interferes with my traditional values (Institution1).

Of the complete responses, 82% are females, and 18% are males. 70% of the participants are from the Quechan tribe, 17% are from the Cocopah tribe, and 13% identified as being from both tribes (see Table 5.). The average age of the participants is thirty-six, and 22% went to a four-year college, and 78% went to a two-year college.

Table 5. Tribal Demographics (regression analysis)

	Quechan	Cocopah	Quechan & Cocopah	Total
Female	57%	14%	11%	82%
Male	13%	3%	2%	18%
2-year college	58%	12%	8%	78%
4-year college	13%	4%	5%	22%
	Minimum	Maximum	Mean	Standard Deviation
Age	18	68	36	1.73
High school GPA	2.0 or below	4.1 or above	2.6-3.0	1.05
College GPA	2.1-2.5	4.1 or above	3.1-3.5	.93

The average high school GPA is between 2.6 and 3.0. The average college GPA is between 3.1 and 3.5. From this sample, I conducted the logistic regression analyses.

Survey Design Limitations

As with all research, there are several limitations to this design according to Shadish, Cook, and Campbell (2002) external and internal validity. The first limitation is external validity that diminishes due to a census sample the increases the likelihood of nonresponse. The census sample may create non-response bias, for users who are more inclined to take surveys and have access to a computer or refuse to take the survey (Daniel, 2011). Furthermore, there is a substantial overrepresentation of women in the sample; While 82% of survey respondents in this study are female, nationally 61% of AI/AN undergraduate students are female (NCES, 2016). Females are also more likely to respond to survey research than males (Dillman, 2007). Furthermore, the sample of Quechan and Cocopah was a census, to ensure a large enough sample.

The second limitation is internal validity. The nature of this study uses statistical controls as opposed to experimental designs that have substantially stronger internal validity. Additionally, the research design uses cross-sectional data that makes it difficult to determine causality.

Findings

I conducted regression analyses to determine whether tribal family support, institutional support, tribal identity, giving back to the community, high school GPA, mother educational attainment, gender, age, type of college and American Indian support services could predict persistence and college GPA. I tested the assumptions and found no violations of the two logistic regression models including (a) noncollinearity, (b) linearity, and (c) independence of errors. Additionally, I tested the assumptions of the

multiple regression prior to analysis, and there were no violations to (a) linearity, (b) normality, (c) independence, (d) homogeneity of variance, or (e) multicollinearity. In reviewing for outliers and influential points, I took the studentized residuals greater than 2.0. There were four outliers on the logistic regression models, leaving a final sample of 102

Regression Analyses

I conducted two logistic regression models to determine if 1st to 2nd year/semester persistence could be predicted and also a multiple regression analysis predicting college GPA. I present only the first logistic model predicting 1st to 2nd-year persistence in table 6. The creation of the four factors were from composite scores utilizing respondent answers on the survey. Model 1 tests whether giving back, institutional support, tribal family support, identity, academic performance (high school grade point average), college type (4-year college) and student background could predict 1st to 2nd-year persistence. The table below (see Table 6.) presents the results of the model including the odds ratios, statistical significance, and standard errors. The results suggest that the predictors, as a set, reliably distinguished between Cocopah and Quechan students who will persist from their 1st to 2nd year of college. Of the predictors examined in the model, giving back, gender (female), high school GPA, and American Indian support services were statistically significant.

Table 6. also presents the statistical significance, unstandardized regression coefficients, and standard errors for the multiple linear regression model. The model tests whether the independent variables (family support, institutional support, tribal identity,

Table 6. Predicting Native American Postsecondary Achievement

	1st to 2nd Year Persistence			*College GPA*	
Variable	*Odds Ratio*	*SE*	*Wald Statistic*	*B*	*SE B*
Desire to Give Back	1.115**	.048	5.231	.034**	.015
Family Tribal Support	1.025	.046	.293	-.021	.015
Cultural Identity	0.914	.066	1.822	-.015	.020
Institutional Support	0.943	.075	0.606	.031	.024
Female	0.093**	.935	6.421	-.031	.219
High School GPA	1.673**	.246	4.373	.392***	.080
Age	0.910	.147	0.415	.059	.049
Mother's Education (i.e., AA, BA)	1.285	.195	1.651	-.021	.062
AI/AN Support Services	2.809*	.549	3.542	-.158	.175
4-year College	.945	.659	.007	-.538**	.215

*Notes: * p < .05 (one-tailed test); ** p < .05 (two-tailed test); *** p < .01 (two-tailed test). The logistic model showed good model fit evident by non-statistically significant results on the Hosmer-Lemeshow test, X^2 (n=102), df=8, p=.171, and small and medium effect size indices when interpreted using Cohen (1992) (Cox and Snell R^2=.230, Nagelkerke R^2= .311). I also examined persistence from student 1st to 2nd semester persistence, and found tribal support (Wald=3.993, df=1, p<.05), mother's education (Wald=4.429, df=1, p<.05) and identity (Wald= 4.179, df=1, p<.05) were statistically significant predicting 1st to 2nd semester persistence.*

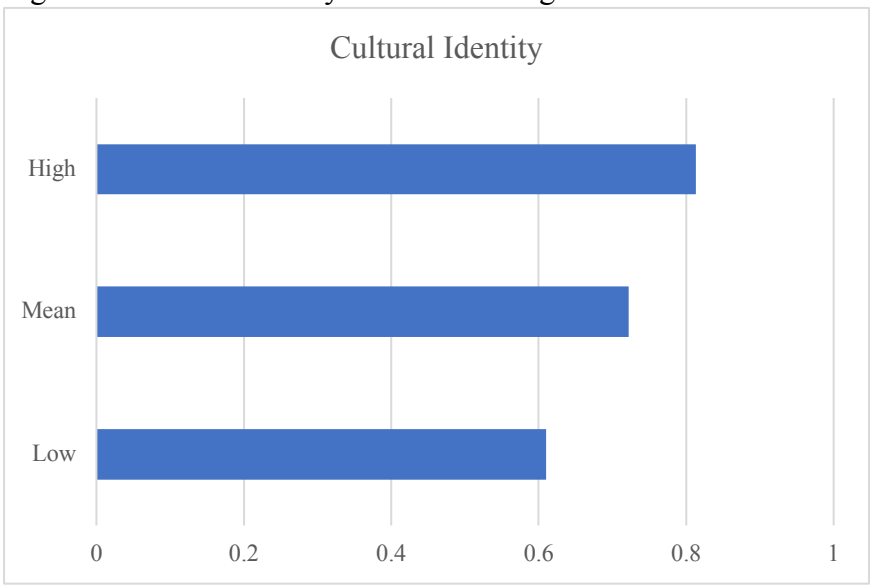
giving back to the community, high school GPA, mother educational attainment, American Indian support service, type of college, gender and age) could predict College GPA (dependent variable). Of the predictors examined in the model, desire to give back, high school GPA, and going to a four-year college were statistically significant predictors of college GPA. Multiple R^2 indicates that approximately 31% of the variation in college

GPA was predicted by the independent variables which is a medium size effect according to Cohen (1988). Furthermore, a posthoc power analysis was conducted and found the estimated power to predict multiple R^2 is at .99, meaning the high statistical power decreases the probability of making a Type II error (concluding there is no effect when there is one).

Spotlight Analyses

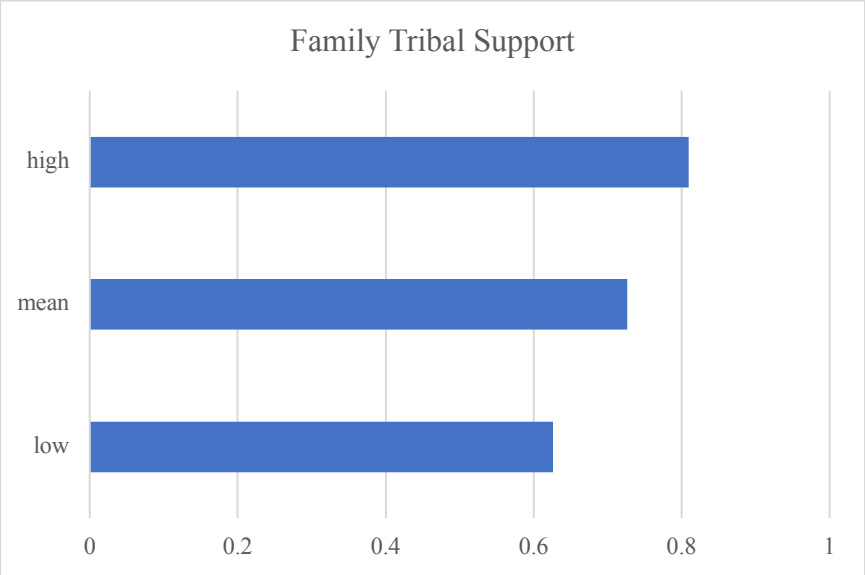
I conducted three spotlight analyses on the predictive margins of the desire to give back (1st to 2nd-year persistence), cultural identity (1st to 2nd-semester persistence), and tribal family support (1st to 2nd-semester persistence) constructs. The first spotlight analysis shows that if all respondents would have answered highly on the cultural identity factor (keeping the other factors as they happen to be), then the average persistence would have been 81%. Moreover, If all participants would have answered low on the Identity factor (keeping the other factors as they happen to be), then the average persistence would have been 61% (see figure 3.).

Figure 3. Cultural Identity Predictive Margins



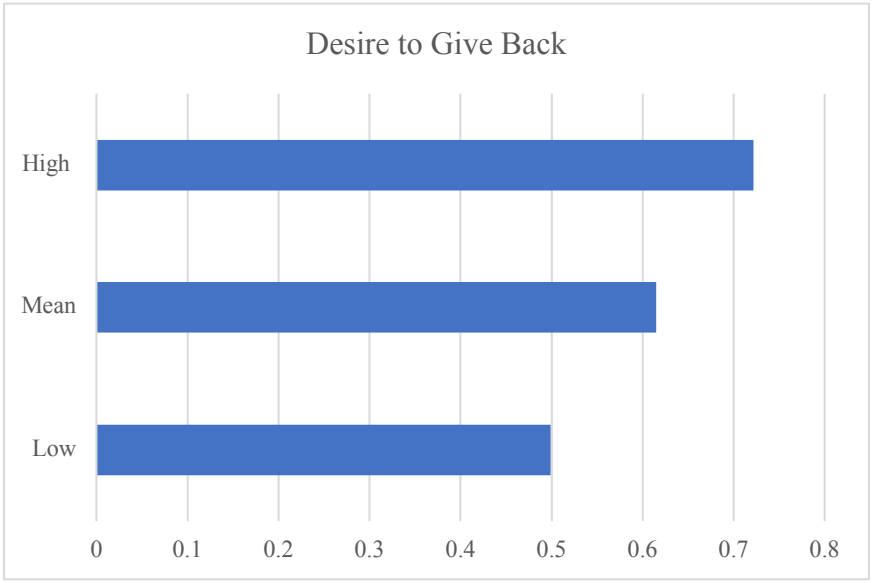
The second spotlight analysis shows that if all respondents would have answered highly on the family tribal support factor (keeping the other factors as they happen to be), then the average persistence would have been 81%. Moreover, if all participants would have answered low on the family/tribal support factor (keeping the other factors as they happen to be), then the average persistence would have been 63%.

Figure 4. Family Tribal Support Predictive Margins



The third spotlight analysis shows that if all respondents would have answered highly on the desire to give back factor (keeping the other factors as they happen to be), then the average persistence would have been 72%. Moreover, if all participants would have answered low on the desire to give back factor (keeping the other factors as they happen to be), then the average persistence would have been 50%.

Figure 5. Giving Back Predictive Margins



Discussion

The purpose of this study is to examine how Native American student giving back, as an element of nation-building influences postsecondary persistence (measured by 1st to 2nd semester/year persistence and college achievement) among Cocopah and Quechan students. Although the focus of the study provides evidence of the influence Native American student giving back has on persistence, the study additionally provides evidence that the AMFPM predicts Native American postsecondary persistence. The logistic regression confirmed that all five of the original AI/AN Millennium Falcon Persistence Model factors (family and tribal support, academic performance, institutional support, cultural identity, and giving back) predicted Native American postsecondary persistence. The sample was from smaller tribes, so one of the limitations is that the study may not generalize to different tribal nations. The findings that emerged from the study indicate five factors influence postsecondary persistence; these factors have implications

for theory, practice, and research. I will end this section with a brief discussion of anticipated ethical issues resulting from this analysis.

Implications for Theory

The five factors, based on AI/AN postsecondary persistence theories, indicate the AMFPM can predict persistence. Academic performance has routinely been a factor in Native American persistence (Guillory, 2009; Flynn et al., 2012; Jackson & Smith, 2001; Reyes, 2000; Waterman, 2007) and the evidence in this study supports those findings by showing that High School GPA predicts 1st to 2nd-year persistence. Although the institutional support composite variable was non-statistically significant, the dichotomous variable AI/AN student support services approached statistical significance. It is likely that with a larger sample the AI/AN student support services item would have been statistically significant. In the future, AI/AN student support services should be a part of the institutional support construct as a Likert scale item, given that institutions manage the AI/AN student support services. Third, tribal and family support predicts 1st to 2nd-semester persistence and the findings support previous literature that family and tribal community support are meaningful (Bass, 2014; Gloria & Kurpius, 2001; Pavel & Padilla, 1993; Guillory, 2009; Schmidtke, 2016). Fourth, cultural identity predicts 1st to 2nd-semester persistence. Previously, cultural identity emerged in the SNAG separate from tribal community support. Cultural identity, in this study, is linked to giving back because it relates to ones' self-identification to the tribe. The actual operationalization of this construct will likely differ from tribe to tribe, so researchers should adopt the scale items accordingly. Finally, giving back predicted 1st to 2nd-year persistence among

Cocopah and Quechan students. Future theory should continue to operationalize giving back according to the items used in this study.

Implications for Current Practice

Colleges have the opportunity and responsibility to reimagine their programs and interactions with Native Americans to align their institutional efforts with tribal aspirations for nation-building. The responsibility to align institutional efforts with tribal aspirations links to policies and the funding given to states by tribal nations. For example, in Arizona the Indian gaming tribes have given over half a billion dollars to the public education in Arizona (Arizona Indian Gaming Association, 2014). Not only do Native Americans give back to other Native Americans, but they also give back to non-Natives. One way to efficiently educate and build on the goals of Native nations is first to ask tribes what their institution can contribute to the efforts of a tribe's nation-building. After talking with tribes, institutions can then create programs oriented around nation-building. These types of higher education programs would benefit the Native community and student. The collaboration is essential, because often Native students indicate that it is difficult to integrate back into tribal communities because of their education, time and distance away from the tribe (Brayboy, 2005; Jackson et al., 2003). The collaboration would keep students connected to the tribe, which subsequently positively influences persistence. These types of programs must be determined to create capacity and resiliency among tribal nations.

Tribal nations and families have an opportunity to increase persistence among their respective Native students as well. Tribal and family support predicts first to

second-semester persistence. Meaning support from tribes and family is imperative in the first semester of college. Native students often report that going to college and being away from home for the first time is difficult because of the adjustment of being in a different culture (Gloria & Kurpius, 2001; Tate & Schwartz, 1993). Tribes and families, with the help of tribal higher education departments, can incorporate gift packages that help with students' sense of support.

Colleges and universities rely on academic tutoring and financial support to promote the retention of Native American college students. Those services still need to exist, but they have yet to make an impact on Native American persistence to close the gap between Native American and White students with bachelor's degrees. About 15% of Native Americans compared to 33% of White students age twenty-five or older have at least a bachelor's degree (NCES, 2016). Despite the use of academic tutoring and financial aid, the NCES data demonstrate that institutions must put in more effort to diversify their campuses with Native American students. Indigenous higher education researchers recommend that in addition to financial and academic support, institutions must begin to consider how Native American communities influence the persistence of Native American students (HeavyRunner & DeCelles, 2002; Waterman, 2012). AMFPM provides a lens institutions and practitioners can adopt to create innovative and overdue programming to increase the persistence of Native American college students.

The intended use of the AMFPM is to create and restructure institutional support programs to meet the needs of Native American students. The unit of analysis is focusing on the institution as opposed to the individual. Institutions must examine the factors that

influence Native American college students as a unique population outside the theories aimed at non-Native Americans. Our relationship with the United State government as nations within a nation, and the cultural distinction through maintaining our traditions demonstrate that our communities are in fact different and would not benefit from being measured according to mainstream models of postsecondary persistence. Ultimately the goal is to improve the retention and success of Native American college students, quite possibly through creating programs that meet a students' desire to give back and tribal needs. The AMFPM helps institutions create new programs by identifying how the current structure of institutional programs inadequately support Native American students and contribute to the widening gap of Native Americans persisting through higher education.

For example, an institution may find that Native American students are more likely to persist when their desire to give back is higher. In which case, institutions can develop programs with tribes that streamline students into educational fields that meet the needs of the tribe and fulfill the desire of Native American students to use their education to give back to their communities. If an institution finds that family support increases the likelihood of college persistence for Native Americans, they could hold family days on campus and have families experience their student's college days and campus resources. Additionally, an institution may find that Native American students are unable to identify financial resources, tutoring services, or other Native American peers that help connect students' culturally. The institution may restructure or develop support programs that emphasize individualized mentoring (Shotton et al., 2007). The AMFPM is promising

because it provides a more comprehensive approach to identify how institutions can support Native American students than through mainstream persistence models.

Implications for Future Research

There are four areas that future research should focus. First, future research should consider how to define giving back. In this study, I have given definitions based on literature, feedback, but after the initial development of this study, I inquired and received a working definition of giving back. N. Reyes (personal communication, February 10, 2018) based a working definition of giving back from her scholarly research as:

> For Indigenous college students and college graduates, giving back entails a process through which they utilize their unique talents, training, and networks with the intention of contributing to the well-being of their families, Native nations, and/or an Indigenous community writ large. It is not limited to any particular field of study or profession. Through giving back, Indigenous college students and college graduates engage in a reciprocal cycle, honoring previous generations and fortifying capacities for the self-determination, sovereignty, and survivance of future generations.

Further research should refine the definition of giving back through intentional research of giving back. The research on giving back would benefit researchers and institutions seeking to focus on nation-building that would improve student persistence. Secondly, future research should also focus on how Indigenous knowledge systems relate to giving back. Reyes (2016) indicates that giving back informs worldview, however, it

also could be that worldview from Indigenous knowledge systems, such as tribal warrior traditions, inform giving back. The Quechan and Cocopah have strong warrior societies, encompassing both men and women, focusing on selflessness and fighting for the greater good of the Native community. Future research should seek to explore the warrior tradition and the relation to giving back, to strengthen the credibility of Indigenous worldviews in academic research. Thirdly, future research should examine giving back to other tribes. There are 573 tribal nations, and it is likely that giving back is manifested differently among tribes. Finally, as programs develop to incorporate tribal efforts in nation-building, additional scholars need to explore how college programs or initiatives might influence giving back to Native students that subsequently influences postsecondary persistence.

Anticipated Ethical Issues in the Study

The most recent census found that seven out of ten AI/AN are living in Urban areas (Norris, Vines, & Hoeffel, 2012). Considering that the majority of AI/AN are living in the city, there are discourses around what it means to be Indian and what constitutes AI/AN education, which has brought researchers to ask what constitutes a real AI/AN. Is a real AI/AN born on the reservation? Are they of ¼ blood quantum? Do true AI/AN have strong AI/AN family relationships? Alternatively, do they have active community engagement with another AI/AN? The discussion of AI/AN identity is beyond the scope of this paper but briefly addressed.

Although I only sent recruitment materials to addresses provided by each respective tribal nation, the participants may vary in their definitions of AI/AN, because

tribal membership was recorded using self-identification. Readers need to remember that self-identified AI/ANs who enroll and graduate from college may indeed not be AI/AN. Nonetheless, the scale of cultural identity should help readers have a stronger understanding of the participants' Native American identity.

The tribes measure tribal citizenship by blood quantum. However, even measuring AI/AN identity by blood quantum is a controversial topic among tribal communities, researchers, politicians, and individuals interested in AI/AN communities. Blood quantum refers to the total percentage of your blood that traces your bloodline to a particular AI/AN community(ies). The concept of blood quantum confronts anyone interested in American Indian identity, and for federal recognition as AI/AN. In most cases a tribal member possesses a threshold amount of ancestral tribal blood, expressed as a fractional amount (i.e., ¼) for membership to a tribal nation. Using blood quantum is controversial because this is an adopted rule of English common law that distinguished between whole and half relatives in the distribution of inheritances (Spruhan, 2006). European immigrants in the United States used this concept of whole and half-blood divides to define a legal status for AI/AN identity. Through the Indian Reorganization Act, tribes reaffirmed the use of blood quantum when tribal governments adopted blood quantum to determine their tribal citizens (Lomayesva, 1999).

Conclusion

As institutions continue to refine their methods of student retention, it is imperative for higher education faculty and administrators to examine AI/AN postsecondary persistence and programs that account for AI/AN students' desire to give

back to the community. The findings introduce a newly operationalized concept (the desire to give back) that predicts persistence among Cocopah and Quechan students. The evidence from this research indicates that AI/AN postsecondary persistence within both two-year and four-year institutions can be predicted from student desire to give back. The findings should prompt researchers, practitioners, and administrators to reexamine and create programs that center on nation-building, that will simultaneously increase the persistence of Native American students and meet the needs of tribal nations.

CHAPTER 5

CONCLUSION

Native Americans students enroll and persist through postsecondary education at lower rates than any other ethnic group (NCES, 2016). However, there is a constrained amount of quantitative research that examines the achievement gap because of the lack of data. The available data and resulting analyses from federal and institutional datasets are insufficient statistically (Lopez & Marley, in press). Those statistical limitations create an asterisk phenomenon that leads to inappropriate solutions addressing the enrollment and persistence gap (Shotton et al., 2013; Waterman, Lowe & Shotton, 2018). Additionally, the collection of Native American samples in federal data are inconsistent, irrelevant and lack rigorous methods that could increase sample size (Rainie et al., 2017). Therefore, data and the resulting analyses needed to support research that could help understand the achievement gap for Native American students in higher education. Due to the statistical limitations that create the further marginalization and invisibility of Native Americans, this study sought to understand how the desire to serve a broader community influenced current and former Quechan and Cocopah undergraduate students' postsecondary persistence.

This study examines Cocopah and Quechan undergraduates and retrospectively analyzes their desire to serve a larger community and postsecondary persistence and found that when accurately measured, giving back correlates with the persistence for Quechan and Cocopah students. The study makes several contributions. First, this is the sole deliberate quantitative examination of Native American students' desire to give back

to their community and the influence on postsecondary persistence using a measure of giving back. Secondly, this study provides construct validity for the Scale of Native Americans Giving Back (SNAG) and operationalizes giving back as a construct. Thirdly, the study contributes to the limited quantitative literature base on AI/AN postsecondary persistence studies by testing the American Indian/ Alaska Native Millennium Falcon Postsecondary Persistence Model (AMFPM). Fourth, this study provides a framework for Indigenous data collection that resolves the limitations found in most datasets. Finally, the study provides evidence that Quechan and Cocopah students who want to give back to their community are more likely to persist.

The collection of data for this study supported the quantitative analysis that addresses the invisibility of Native Americans from the statistically limited data by using creation stories. Furthermore, by centering on creation stories this research reaffirms the importance of Indigenous knowledge in research. Furthermore, the collection of data answers calls to, "produce scholarship from an Indigenous perspective by our lived experiences, cultural values, and the embedded responsibility to address the needs of Indigenous people…" (Minthorn & Shotton, 2018, p.1). The data collection technique also addresses the limitations that result from small sample sizes. Through collecting a sample large enough to support quantitative analysis, I was able to examine the relationship between Quechan and Cocopah student desire to give back and academic achievement.

Native American students often enter postsecondary education as a means of giving back to a broader community. Researchers using qualitative methods found that

Native American students' desire to give back positively influences college persistence (Guillory, 2009). However, until now, there has been missing quantitative research examining AI/AN student desire to serve a broader community as Native American persistence factor. The measures and construct validity established in this study for the SNAG, create variables relevant to specific Indigenous nations that address the lack of pertinent variables in federal and institutional datasets. The SNAG additionally addresses the lack of appropriate variables by supporting cultural identity items (i.e., I participate in the cremation ceremony). By creating relevant variables, I was able to more accurately examine factors influencing college persistence when compared to available items in federal data. The opportunity allowed me to conclude that Cocopah and Quechan desire to give back positively correlates with persistence and college GPA.

I chose to use Cocopah and Quechan college students for several reasons. Primarily, I decided to sample Quechan and Cocopah students because flaws exist in the data collection among tribes in the United States. Most notably is that tribes are so diverse and disproportionately numbered, that the data available may not include members from smaller tribes such as the Quechan and Cocopah. The lack of data examining Native American students from smaller tribes may lead to results and policies that do not apply across tribal nations in Arizona.

The examination of factors influencing Native American postsecondary persistence leads to practical suggestions related to AI/AN support services, academic support, positive student to faculty interactions, increase mentoring opportunities, and have educational policies that support cultural obligations (such as ceremonies or

funerals) that influence postsecondary persistence. As institutions increasingly question their approach to retention, it is crucial that university personnel examine Native American postsecondary persistence through alternative models grounded in empirically sound research such as the AI/AN Millennium Falcon Persistence Model. The need to explore persistence through these models is because they introduce constructs (i.e., the desire to give back and tribal identity) not examined in mainstream theories, such as Tinto (1975) or Bean (1980). The development of this SNAG provides reliable and valid evidence that support the examination of AI/AN postsecondary persistence within both two-year and four-year institutions. The evidence may help build the capacity of institutions to provide effective interventions that increase student persistence in higher education. The findings also introduce a new concept (the desire to give back) that predicts persistence among Cocopah and Quechan students and possibly other Native American students.

A few of the limitations in this data are the uneven ratio of female and male students and the relatively small number of participants lending to more advanced statistical analysis (i.e., structural equation modeling). Nonetheless, this data is the first of its kind that quantitatively examines persistence among Cocopah and Quechan students. Data on Native American postsecondary persistence often use sampling methods that lead to focus on larger tribes and increase the likelihood of excluding smaller tribes. This data gives a voice to smaller tribes. Native American voices across the United States are collectively marginalized, but the sampling technique and subsequent data provide a voice for tribes that have marginalized voices within a marginalized group. Furthermore,

despite the low number participants the resulting analyses still found statistically significant relationships between the proposed variables. Finally, in the case of my Mother we can see that no matter the size of the tribe or the size of the sample, one Native person can make a difference.

My Mom decided at the age of twelve to change the legacy of our family. She went further in her education so that my siblings and I would not have her same childhood. Ultimately it was not just for us, but to help other Native American students serve their community. The desire to give back carried her through her undergraduate and graduate education, and her work teaching and training hundreds of teachers to give back to their communities. This research reinforces the theory embodied by my Mother that Native American students desire to give back positively influences postsecondary persistence.

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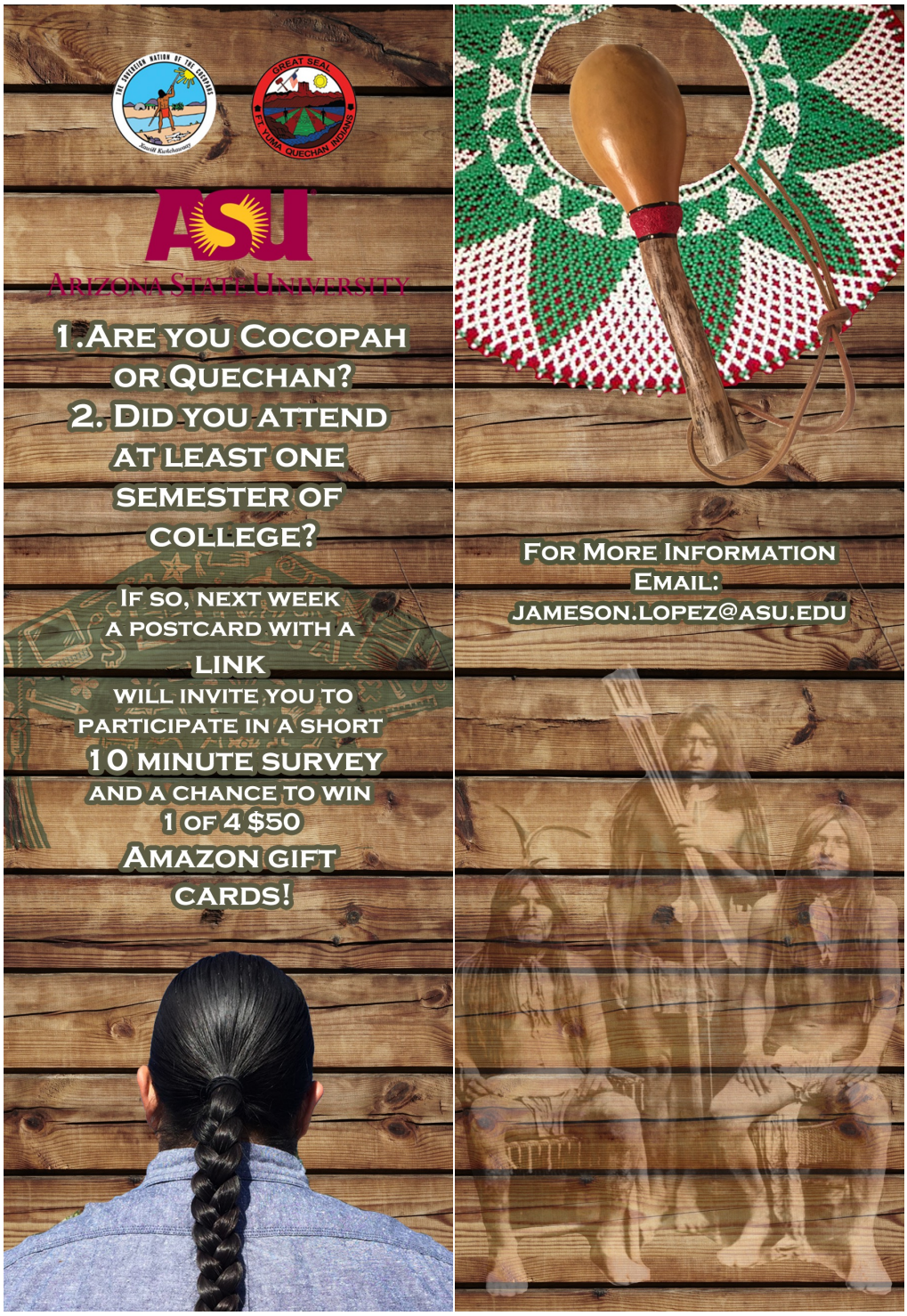
APPENDIX A

RECRUITMENT MATERIALS IN FIRST CONTACT MAIL


ASU
Arizona State University
1. Are you Cocopah or Quechan?
2. Did you attend at least one semester of college?
If so, next week a postcard with a
LINK
will invite you to participate in a short
10 minute survey
and a chance to win
1 of 4 $50
Amazon gift cards!
For More Information
Email:
jameson.lopez@asu.edu

ARIZONA STATE UNIVERSITY

Kamthat Muuvack

In a week you will receive an important postcard with a link to a survey, and as a current of former college student from the Cocopah or Quechan Nation, your participation is integral.

As a Quechan tribal member myself, and PhD candidate at Arizona State University under the direction of Dr. Bryan Brayboy, my purpose is to support the needs of Native American undergraduate students. Therefore, I am conducting a research study to investigate the factors influencing undergraduate college student success among Cocopah and Quechan students. With your help, by responding to these questions, we will have data to give to colleges and universities to improve their knowledge on how to work with students who come from tribes along the Colorado River.

For these reasons, the Quechan and Cocopah Higher Education departments, Arizona State University and myself are inviting you to participate in an upcoming survey. Please be on the look out for a postcard with a link to a survey that can be taken from a smart phone, computer, and/ or tablet.

Keep in mind, this research is extremely important as often times voices from smaller tribes within the United States are often diminished by larger tribes. So know that your answers to this survey will help address the lack of research examining factors that influence Cocopah and Quechan university/college achievement to fill that void.

The compiled results of the survey will be detailed and distributed to those providing an email address at the end of the survey. Furthermore, all participants who provide an email address will have an opportunity to win one of four $50 Amazon gift cards. Winners will be notified by email in the next few weeks when the survey is closed.

I know your time is extremely valuable, and I want to thank you again for your time. Please be on the look out for a postcard in the next week!

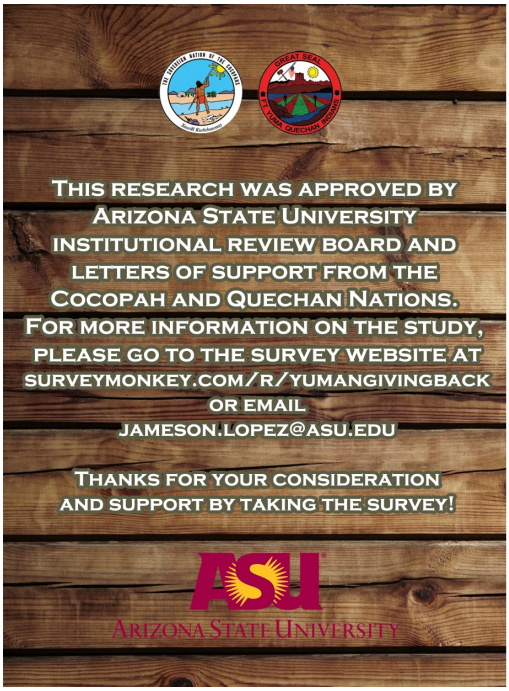
Respectfully,

Jameson D. Lopez (Quechan Veteran)
Arizona State University
Ph.D. Candidate (Educational Policy and Evaluation)

APPENDIX B

RECRUITMENT MATERIALS IN SECOND CONTACT MAIL


1. Are you Cocopah or Quechan?
2. Did you attend at least one semester of college?
If so, we would like to invite you to participate in a short 10 minute survey and a chance to win 1 of 4 $50
Amazon gift cards!
Please take the online survey at
www.surveymonkey.com/r/Yumangivingback
ASU
Arizona State University


This research was approved by Arizona State University institutional review board and letters of support from the Cocopah and Quechan Nations.
For more information on the study, please go to the survey website at surveymonkey.com/r/yumangivingback or email jameson.lopez@asu.edu
Thanks for your consideration and support by taking the survey!
ASU
Arizona State University

APPENDIX C

RECRUITMENT MATERIALS IN THIRD CONTACT EMAIL

ARIZONA STATE UNIVERSITY

About one week ago I sent a survey to you that talked about your experiences while attending a college or university. We still have not received enough responses to be able to answer the vital questions that will improve college and universities working with Cocopah and Quechan students.

The comments of people who have already responded include a wide variety of experiences while in college or university. Many have described their compelling stories while getting their education. We think the results are going to be very useful to university and colleges working with students from the Yuman tribes.

I am writing you again because of the importance that your survey has for helping to get accurate results. Although we sent surveys to all Cocopah and Quechan students who started college within the last ten years, we are still trying to get as many respondents as possible. At this time please consider taking the survey, if you have not yet already. If you have already taken the survey, I would like to say thank you and please consider asking other qualifying tribal members whom you know to take the survey.

Thanks again for all your help and please follow the survey link if you would like to participate https://www.surveymonkey.com/r/YumanGivingBack

Respectfully,

Jameson D. Lopez (Quechan Veteran)
Arizona State University

APPENDIX D

RECRUITMENT MATERIALS IN FOURTH CONTACT EMAIL

ARIZONA STATE UNIVERSITY

Your Story Matters!

During the last month I have sent you several emails about an important research study I am conducting looking at the experiences of Cocopah and Quechan students in college.

The purpose is to understand Cocopah and Quechan students' experiences while attending college to improve university and college knowledge of how to work with students from our Colorado River tribes.

The study is drawing close to the end, and this is the last contact that will be made with tribal members who we think have not yet let their voice be heard.

I am sending this final contact by email because of our concern that people who have not responded may have had different experiences than those who have. Hearing from everyone in this from our tribes helps assure that the survey results are as accurate as possible.

We also want to assure you that your response to this study is voluntary, and if you prefer not to respond that's perfectly okay. But we would love to hear more about your experiences

Finally, I appreciate your willingness to consider our request as we conclude this effort to understand your college and/or university experience. Please follow the link if you wish to participate https://www.surveymonkey.com/r/YumanGivingBack . Again, thank you very much.

Respectfully,

Jameson D. Lopez (Quechan Veteran)
Arizona State University
Educational Policy and Evaluation, Ph.D. (Candidate)

APPENDIX E

RECRUITMENT MATERIALS FOR SOCIAL MEDIA


1.Are you Quechan or Cocopah?
2. Did you attend at least one semester of college?
If so, I would like to invite you to participate in a short 10 minute survey and a chance to win 1 of 4 $50
Amazon gift cards!
Please Sign up to participate in my dissertation survey.
A postcard with a link to the survey will be mailed in 2 weeks!
For more information
Email: Jamesonlopez24@hotmail.com
Arizona State University

APPENDIX F

COCOPAH TRIBE LETTER OF SUPPORT

THE COCOPAH INDIAN TRIBE

EDUCATION DEPARTMENT
Higher Education Office
14503 S. Veterans Drive
Somerton, Arizona 85350
Telephone: (928) 627-4973
Fax: (928) 627-4979
Email: cocoed@cocopah.com

February 16, 2017

Dear Jameson D. Lopez:

The Cocopah Tribe has reviewed the research proposal entitled "To Help Others Like Me: Yuman Postsecondary Achievement for Nation Building." The purpose of this study is to understand how desire to serve a larger community influences Cocopah and Quechan undergraduate students' academic achievement. On behalf of the Cocopah Indian Tribe, the Cocopah Education Department and its Higher Education Office agrees to collaborate with you and your dissertation co-chairs on the project.

We understand the researcher, Jameson D. Lopez under the supervision of his dissertation committee chairs Dr. Bryan Brayboy and Dr. Nathan Martin, is requesting the Cocopah Education Department support. We will support this research, at the researcher's request, by providing feedback on the survey instrument and helping recruit Cocopah students by sending a survey link to potential volunteer Cocopah participants. The Cocopah Education Department understands this research will recruit current and former Cocopah college students who live on and off the reservation through the Cocopah Higher Education Office.

We also understand that any data collected from the Cocopah students will be returned to the Cocopah Education Department at the end of the study. At which point it will be the Cocopah Indian Tribe's decision to either keep or destroy any of the record. The Cocopah Education Department is made aware that participation in this research is voluntary, and participants will have the right to refuse to participate without penalty or loss of benefits to which the students are otherwise entitled. The Cocopah Education Department is made aware that all participants will have a chance to enter a raffle to win one of four $50 Amazon gift cards.

APPENDIX G

QUECHAN TRIBE LETTER OF SUPPORT

QUECHAN INDIAN TRIBE
Higher Education /Vocational Training Department
P.O. Box 1899 Yuma, AZ 85366
PHONE: (760) 572-5268 FAX: (760)572-3069

Dear Jameson D. Lopez:

The Quechan Tribe has reviewed the research proposal entitled "To Help Others Like Me: Yuman Postsecondary Achievement for Nation Building." The purpose of this study is to understand how desire to serve a larger community influences Quechan and Cocopah undergraduate students' academic achievement. The Quechan higher education department agrees to collaborate with you and your dissertation co-chairs on the project.

We understand the researcher, Jameson D. Lopez under the supervision of his dissertation committee chairs Dr. Bryan Brayboy and Dr. Nathan Martin, is requesting the Quechan higher education department support. We will support this research, at the researcher's request, by providing feedback on the survey instrument and helping recruit Quechan students by emailing a survey link to potential volunteer Quechan participants. The Quechan higher education department understands this research will recruit current and former Quechan college students who live on and off the reservation through the Quechan higher education department and social media.

We also understand that any data collected from the Quechan students will be returned to the Quechan higher education department at the end of the study. At which point it will be the Quechan tribe's decision to either keep or destroy any of the record. The Quechan higher education department is made aware that participation in this research is voluntary, and participants will have the right to refuse to participate without penalty or loss of benefits to which the students are otherwise entitled. The Quechan higher education department is made aware that all participants will have a chance to enter a raffle to win one of four $50 Amazon gift cards. The Quechan higher education department understands that any data collected and results will be kept strictly confidential at all times, and results of this study may be used in reports, presentations, and publications. Finally, we understand that no data will be kept by researchers once the study has been completed

On behalf of the Quechan higher education department believes that you, Jameson D. Lopez, Dr. Bryan Brayboy, and Dr. Nathan Martin will prove to be responsible, reliable and advocate researchers for the Quechan students who attend college. We also believe the research will bring much needed perspective to college and university agencies working with Quechan students.

If we have any further questions about this research study we understand that we can reach you at jameson.lopez@asu.edu or (623)824-9218. We also understand that if we have any questions regarding the Institutional Review Board, we may contact Arizona State University Institutional Review Board, at (480)965-6788.

Sincerely,

Ora Lee Durand-Valisto

Ora Lee Durand-Valisto
Quechan Tribe Higher Education Director

APPENDIX H

INSTITUTIONAL REVIEW BOARD APPROVAL

EXEMPTION GRANTED

Bryan Brayboy
Social Transformation, School of (SST)
480/965-5327
Bryan.Brayboy@asu.edu

Dear Bryan Brayboy:

On 3/3/2017 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	To Help Others Like Me: Yuman Postsecondary Achievement for Nation Building
Investigator:	Bryan Brayboy
IRB ID:	STUDY00005334
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• Yuman Prenotification, Category: Recruitment Materials; • Lopez.pdf, Category: Other (to reflect anything not captured above); • Yuma Final Notice, Category: Recruitment Materials; • IRB 01March17 Updated Protocol, Category: IRB Protocol; • Pilot Invitation, Category: Recruitment Materials; • Yuma First Follow Up, Category: Recruitment Materials; • Yuman First Invitation, Category: Recruitment Materials; • 09FEB17 Revised Survey Instrument, Category: Consent Form; • Cocopah Tribe Letter of Support, Category: Off-site authorizations (school permission, other IRB approvals, Tribal permission etc); • Pilot 1st Follow Up, Category: Recruitment

APPENDIX I

REQUEST TO BE ON COCOPAH WORK SESSION

Jameson Lopez

2606 North 115th Drive• Avondale, AZ 85392• Phone: (623)824-9218 • E-Mail: jamesonlopez24@hotmail.com

Date: 21 November 2016

Lilia Tafoya
Cocopah Tribal Secretary
Cocopah Tribe
14515 S. Veterans Drive
Somerton, AZ 85350

Dear Cocopah Tribal Secretary:

This is a request to be on the Cocopah Tribal Council work session to present a research proposal on December 8, 2016.

Currently I am a 4th year Ph.D. student in educational policy and evaluation at Arizona State University. My research focuses on Native American enrollment, continuation, and graduation from college. What I have found through reading and researching the past few years is that there is a lack of education research that will help our tribes in the Yuman area and subsequently, our voice is often left out of studies.

One of the major reasons our voice is left out of education research is that researchers often consider tribes, like ours in the southwest, as being too small to generate statistical analysis. However, I would like to show how to generate proper statistical analysis to include our voice on factors influencing Native American college persistence. For that reason, I am proposing to conduct a research project that includes the Cocopah, and the Quechan. In doing so, I will be able to have enough participants to conduct statistical analysis looking at factors influencing college continuation and provide information to colleges and universities on how to work with Yuman college students.

I have attached a one-page information sheet on the proposal, and will include the larger 12-page proposal during the work session. I would sincerely appreciate if you, the Cocopah Tribal Secretary, would give a copy of this letter to our Cocopah Tribal Council. If the honorable council has any questions, please feel free to contact me at anytime at (623)824-9218 or email jamesonlopez24@hotmail.com. I greatly appreciate the consideration and I look forward to sharing more of this project with you on December 8th, 2016.

Sincerely,

Jameson David Lopez
Quechan Tribal Member (Veteran)
Ph.D. Student (Educational Policy and Evaluation)
Arizona State University

Enclosure: 1 page proposal

APPENDIX J

REQUEST TO BE ON QUECHAN WORK SESSION

Jameson Lopez

2606 North 115th Drive• Avondale, AZ 85392• Phone: (623)824-9218 • E-Mail: jamesonlopez24@hotmail.com

Date: 21 November 2016

Regina Escalanti
Quechan Tribal Secretary
Quechan Tribe
604 Picacho Rd
Winterhaven, CA 92283

Dear Quechan Tribal Secretary:

This is a request to be on the Quechan Tribal Council work session to present a research proposal on December 1, 2016.

Currently I am a 4th year Ph.D. student in educational policy and evaluation at Arizona State University. My research focuses on Native American enrollment, continuation, and graduation from college. What I have found through reading and researching the past few years is that there is a lack of education research that will help our tribe and our voice is often left out of studies.

One of the major reasons our voice is left out of education research is that researchers often consider tribes, like ours, as being too small to generate statistical analysis. However, I would like to show how to generate proper statistical analysis to include our voice on factors influencing Native American college persistence. For that reason, I am proposing to conduct a research project that includes our tribe, Quechan, and the Cocopah tribe. In doing so, I will be able to have enough participants to conduct statistical analysis looking at factors influencing college continuation.

I have attached a one-page information sheet on the proposal, and will include the larger 12-page proposal during the work session. I would appreciate if you, the Quechan Tribal Secretary, would give a copy of this letter to our Quechan Tribal Council. If the honorable council has any questions, please feel free to contact me at anytime at (623)824-9218 or email jamesonlopez24@hotmail.com. I greatly appreciate the consideration and look forward to sharing more of this project with you on December 1st, 2016.

Sincerely,

Jameson David Lopez
Quechan Tribal Member
Ph.D. Student (Educational Policy and Evaluation)
Arizona State University

Enclosure: 1 page proposal

APPENDIX K

WORK SESSION REQUESTS ENCLOSURE

Background of the Problem

American Indian/Alaska Native (AI/AN) students are enrolling and persisting through postsecondary education at lower rates than any other ethnic group. The National Center of Education Statistics indicated that of 18-year-olds who graduated high school in 2012, only 24% of AI/AN entered into postsecondary education compared to 48% of White students. However, one of the problematic issues with these statistics, is that they often do not include smaller tribes, such as the Cocopah and Quechan.

Purpose of the Study

The purpose of this study is to understand how desire to serve a larger community influences Quechan and Cocopah undergraduate students' academic achievement. This study will be a contribution to this field of study by providing a framework for culturally sustaining data collection and evidence of how to work Yuman college students. Culturally sustaining data collection is a contribution because, like in the case of the Yuman tribes, some tribes are too small to provide a large enough sample for statistical analysis important to identifying statistically significant relationships. This study will provide a solution to those statistical limitations.

Why the Study is Important

This study is important for several reasons. First, there is yet to be deliberate examination of Yuman students' desire to give back to their community and the influence on academic achievement using a measure of giving back. Secondly, this study provides a framework for culturally sustaining data collection. Finally, this study will improve university and college understanding of how to work with Yuman students.

Research Design

For this project, I propose to utilize a survey design. The general purpose of a survey design is to generalize these inferences, with limitations, to a larger population.

Population and Sample

The population for this study, with permission of tribal councils, includes a purposive sample of Yuman undergraduate students from the Quechan and Cocopah current and previous college enrollees.

Instrumentation

For this study I designed an instrument called the Nation Building Higher Education Scale (NBHES). The instrument was specifically designed for this research, as there is not an instrument available that attempts to test the nation building theory. This is a web-based instrument that will use surveymonkey.com to disseminate to participants. From my initial development of the instrument from the literature, I distributed it to experts in the postsecondary education (including tribal higher education authorities) for feedback. The survey is in the beginning form and will be ready to be distribution in the spring of 2017.

Data Collection

What I describe as culturally sustaining data collection is using traditionally similar tribes that currently have common demographic characteristics to sample from. I chose to use two tribes from traditionally Yuman tribes. The tribes that belong to the Yuman family languages share similar cultural traditions. However, as time has passed and United States government control was implemented, the tribes have demographically become difference. Due to demographic differences I use Cocopah and Quechan students from along the Colorado River because they share similar songs, language, ceremonies, and have maintained demographically similar characteristics. This is important, because often times when sample are taken from states with large tribes of AI/ANs, the larger tribes tend to subsume smaller tribes' voices. In addition, I am requesting some demographic information from the tribal higher education departments.

Tribes' Benefits

While participants will likely not directly benefit from supporting this study, the participation in the study will help tribal higher education departments, colleges and universities, faculty and staff develop culturally-sensitive and appropriately-rigorous postsecondary education services. The information that participants provide will be used to support fellow tribal members and/or AI/AN students to receive the best possible postsecondary education for their varying experiences. As a small incentive, for those who participate, they will have an opportunity to win one of four $50 Amazon gift cards (emailed). In the end, my hope is that enough of our communities will answer these questions and help strengthen the voices of our tribes.

APPENDIX L

CHAPTER 2 PUBLISHED PAPER

Lopez, J. D. (2017). Factors influencing American Indian and Alaska Native postsecondary persistence: AI/AN millennium falcon persistence model. *Research in Higher Education*, 1-20. https://doi.org/10.1007/s11162-017-9487-6