Do I Stay or Do I Leave? Factors Influencing Native American College Freshman Retention

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Although college enrollment has increased for under-represented minorities, retention and graduation rates continue to lag behind non-minority peers. This study investigates the applicability of empirically validated retention predictors to Native American (i.e., American Indian/Alaskan Native) college student retention. Self-reported data collection began in week four of the fall semester from first time, full time freshman. Out of eleven predictors, fall GPA, institutional commitment, homesickness, academic self-efficacy, and social integration predicted whether or not Native American students returned the fall following their freshman year. Unexpectedly, students' reporting greater social integration and self-efficacy were less likely to return the following fall. Results emphasize the importance of examining cultural influences on college retention.

Keywords: college success, retention, under-represented minority, Native American, undergraduates

Introduction

Finishing college has many possible benefits. At the peak of the Great Recession, college graduates were much less likely to be unemployed, 4.7%, vs. nearly 15% for those without a college degree (Hout & Cumberworth, 2012). A college degree also brings higher wages (Baum & Ma, 2007; Pascarella & Terenzini, 2005). Compared to those with a high school diploma, individuals with a bachelor's degree earn $32,000 more annually and are 3.5 times less likely to experience poverty (Trostel, 2015).

Although equitable access to higher education has been a chief concern of colleges and universities for decades, racial and ethnic disparities in degree attainment remain. Under-represented minority students are more likely to drop out of college (de Bray et al., 2019) and are less likely to graduate from college (Shapiro et al., 2017), than their nonminority peers. Representing less than 1% of college students (Ginder & Kelly-Reid, 2013; de Bray et al., 2019), Native Americans (i.e., American Indians and Alaska Natives) are the most underrepresented racial/ethnic group at colleges and universities in the United States. Although Native American college enrollment increased by 29% between 2000 and 2010 (from 139,000 to 179,000), the gains were lost when enrollment dropped by 28% (to 129,000) in 2016. In addition to representing a smaller proportion of college students, graduation rates remain lowest for Native Americans. Compared to other undergraduates enrolled at 4-year postsecondary institutions, Native Americans lag behind Asian (74%), White (64%), Hispanic (54%), and Black (40%) students with 39% of first-time, full-time Native American graduating in 6 years (de Bray et al., 2019).

College dropout influences graduation rates, thus persistence of Native American students is a priority at postsecondary institutions. In a 2005 study of first-time, full-time enrolled students, only 39% of Native American students graduated in four years compared to 60% of White students (Knapp et al., 2012). More recently, Ifill and colleagues (2016) reported 23% of Native Americans were still enrolled at a 4-year institution after 3 years compared to 39% of the entire sample. Why has the retention rate for Native American college students remained so low?

College Retention

According to Tinto (1975, 1987, 1993), experiences in the first year of college are key because this is the time when campus social and academic integration are most likely to influence initial commitment goals to persist and attain a degree. During the freshman year, initial commitment goals are modified as the student interacts with campus academic and social systems. More socially and academically integrated students reaffirm their initial commitments and are more likely to persist and graduate, conversely the lack of integration decreases commitment and increases the chances of a departure decision. In support of these hypotheses, college persistence has been linked to social integration (Berger, 1997; Strayhorn, 2012; Woosley & Miller, 2009), academic integration (Wortman & Napoli, 1996; Pascarella & Terenzini, 1997; Pickering et al., 1992; Strauss & Volkwein, 2004; Woosley & Miller, 2009), homesickness (Sun & Hagedorn, 2016) and institutional commitment (Berger & Milem, 1999; Bowman et al., 2019; Cabrera et al., 1993; Credé & Niehorster, 2012; Robbins et al., 2004; Savage et al., 2019) by several researchers.

Traditional measures of academic performance predict college retention. Student departure decisions are associated with high school academic performance (Adelman, 1999); however early college academic performance may be an even better predictor of college success. The higher a student's first-year GPA, the less likely the student is to drop out of college (Ishitani & DesJardins, 2002; Mayhew et al., 2016; Pascarella & Terenzini, 1991, 2005). Other studies (e.g. Kern et al., 1998; Robbins et al., 2004) have shown a positive link between productive study habits and cumulative GPA and college persistence. Empirical attention has also been focused on motivation and socio-emotional characteristics

(referred to by sociologists and economists as "non-cognitive" factors or "soft skills").

Non-cognitive Factors and Retention

In a meta-analysis, Robbins and colleagues (2004) examined the contribution of psychosocial factors in predicting cumulative grade point average and retention. Academic goals (i.e., commitment to attaining a college degree and value of college education), academic self-efficacy (i.e., self-evaluation of ability to succeed in academics) and academic-related skills (i.e., time management, study skills and habits, problem-solving and coping strategies, and communication skills) emerged as the strongest predictors of retention. The best predictors of first year college GPA were academic self-efficacy (see also Richardson et al., 2012) and achievement motivation (i.e., motivation to achieve success, enjoyment of challenges, drive to work for academic success). They argue for the integration of motivation (Eccles & Wigfield, 2002; Harackiewicz, et al., 2002) and educational persistence theories (Tinto, 1975, 1987) to understand freshman college retention.

Academic self-efficacy and social integration play a prominent role in the college success literature, but are these noncognitive factors relevant for Native American college success? Building on Bandura's (1977, 1986) concept of self-efficacy, academic self-efficacy refers to peoples' domain specific belief in their to ability to succeed at academic tasks and education goals (Pajares, 1996; Zimmerman, 2000). As discussed earlier, academic self-efficacy robustly predicts college grades and retention (Richardson et al, 2012; Robbins et al., 2004), but race/ethnicity were not considered in the meta-analyses due to insufficient data. Some evidence links academic self-efficacy to college success for minorities. In a sample of immigrant and minority college freshman, Zajacova and colleagues (2005) reported academic self-efficacy a stronger predictor of first year GPA and college retention than perceived college stress. However, the sample did not include Native American students.

Two empirical studies specifically focused on Native American academic self-efficacy and persistence intentions. Gloria and Robinson Kurpius (2001) found that higher academic self-efficacy was associated with decreased nonpersistence intentions at a large predominantly White university. Similarly, Thompson and colleagues (2013) reported a positive link between self-efficacy for coping with educational barriers and persistence intentions. Participants in both these studies ranged from freshman to seniors and the intention to persistence, rather than actual persistence behavior, was the outcome of interest. Thus, the question remains, does academic self-efficacy predict Native American freshman retention decisions?

Like academic self-efficacy, social integration, or belonging, has been emphasized in the college success literature. The connection between a sense of belonging and college success (Allen et al., 2008; Berger, 1997; Hausmann et al., 2007; Hoffman et al., 2002, Hurtado & Carter, 1997; Rhee, 2008) sparked interest in understanding the role of colleges and universities in fostering a sense of belonging. For example, positive relationships with faculty and peers (Baumeister & Leary, 1995, Hurtado & Carter, 1997; Strayhorn et al., 2016), and freshman learning communities (Hoffman et al., 2002) promote social integration within campus communities.

Walton and Cohen (2007) observed that some socially stigmatized minorities question whether they belong or fit in the college context. To address this concern, they developed a brief psychological intervention to promote a sense of belonging in African American students (Walton & Cohen, 2011). Unlike students in the control group, African American students randomly assigned to the belonging intervention did not report declines in belonging and they also experienced other positive outcomes (e.g., more time studying, more frequent communication with professors and GPA improvement). The study did not evaluate student retention as an outcome.

Other brief interventions aimed at increasing belonging yielded mixed retention results. White and Black college students participated in a simple belonging intervention (Hausmann et al., 2007). Although White students' sense of belonging and retention improved, African American students' belonging and retention were unaffected by the intervention. Another brief social belonging intervention (Patterson Silver Wolf et al., 2019) focused on the retention of community college freshman (53% minority, primarily Black) enrolled in the fall semester. Students participating in the belonging intervention were 17.4% more likely to return for the spring semester than those in the control condition. Fall to fall retention was not reported.

While social integration interventions show promise for White, and some underrepresented minorities, the picture is less clear for Native Americans. The University of New Mexico implemented the Native American Studies Academic Retention and Intervention Project (Belgarde & Lore, 2003) to improve Native American retention rates. Social integration was encouraged and measured by frequency and types of services received though the intervention project and other Native student services on campus. Although Native American students who used the retention project services completed more cumulative credit hours than non-participants, no difference was found between participants and non-participants in stopping out for at least one semester. Strayhorn (2012) proposed that lacking a sense of belonging leads some students to depart from college prior to degree completion, but the relevance for Native American retention is unclear.

Purpose of the Present Study

Identification of factors associated with college success, of which retention is a basic component, stems from studies of mostly White participants. Do the empirical findings hold true for Native Americans? Or should institutions heed the warnings of critics (Rendon et al., 2000) that current theories of retention have gaps when applied to minority populations? Several scholars argue that the traditional models of student persistence may not apply to nonwhite students (Hurtado & Carter, 1997; Nora & Cabrera, 1996; Tierney, 1992). For example, Tinto's (1987) initial assertion that students must "break away" from past associations and traditions to become integrated into the college's social and academic realms has been replaced with the understanding that

continued connection to family and community is crucial for NativeAmerican student college persistence (Guillory & Wolverton, 2008; HeavyRunner & DeCelles, 2002; Jackson et al., 2003; Tierney, 1992; Waterman, 2012).

Historically the rate of empirical publications focused on ethnic minorities has lagged well behind those focused on majority White populations (Nagayama Hall & Maramba, 2001; Hartmann et al., 2013). This is especially true for Native Americans as their small numbers at postsecondary institutions limits, and often omits, their representation in college success research (Fryberg & Stephens, 2010; Shotton et al., 2013). Thus, empirical research remains largely silent regarding factors that predict Native American college retention (see review, Lopez, 2018). Our goal is to examine whether retention predictors identified in the existing retention literature apply to Native American freshman, the time when college departure is greatest at 4-year institutions (Chen 2012; Ishitani 2006).

Method

Participants. Four weeks into the fall semester of 2013 and 2014, all enrolled, first-time full time freshmen at a public liberal arts college in the southwest were asked to participate in a first-year student web-based survey (MAP-Works; Making Achievement Possible). Out of 498 Native American freshman, 355 (71%) completed the survey. Of these students 56% were female and 34% were first generation mirroring the demographic characteristics of all first-time full time Native American freshmen.

Measures.

The five MAP-Works scales below were created from Likert-type items with a one to seven response scale (see Woosley & Jones, 2011). All individual scale items, along with scale Cronbach's alphas, are included in Table 1. Table 2 contains descriptive statistics and correlations.

Institutional Commitment. Commitment to the institution was assessed by three items (e.g., "To what degree do you intend to come back to this institution for the next academic year?") based on a response scale of 1 = "Not at All" to 7 = "Extremely".

Time Management. Participants responded to the prompt "To what degree are you the kind of person who:" for three items assessing time management (e.g., plans out your time) with scale anchors of 1 = "Not at All" to 7 = "Extremely".

Academic Skills. Participants responded to the prompt, "To what degree are you the kind of person who:" for four Likert-type items assessing academic skills (e.g., attends class) on a scale ranging from one to seven (1 = "Not at All" to 7 = "Always").

Academic Self-Efficacy. Academic self-efficacy was assessed by the prompt "To what degree are you certain that you can:" for three items (e.g., "do well on all problems and tasks assigned in your courses"). The response scale (1 = "Not at all certain" to 7 = "Absolutely certain").

Homesickness. Distress related to leaving home was assessed by four items (e.g, "To what degree do you think about going home all the time?"). Participants responded to Likert-type items on a scale ranging from one to seven: 1 = "Extremely" to 7 = "Not at All". For analytical interpretive clarity, the scale was reverse scored so that high scores indicated a greater degree of homesickness (i.e., 1 = "Not at All" to 7 = "Extremely").

Social Integration. Participants responded to three items (e.g., "Overall, to what degree do you belong here?") on a scale ranging from one to seven: (1 = "Not at All" to 7 = "Extremely") to assess belonging perceptions.

Academic Integration. Participants responded to four items (e.g., Overall, to what degree are you keeping current with your academic work?) on a scale ranging from one to seven (1 = "Not at All" to 7 = "Extremely").

Additional data, including fall to fall retention, was collected from institutional records.

Fall to Fall Retention. The outcome variable, the decision to stay or leave the institution, was a dichotomous measure of whether the student was enrolled the fall after their freshman year (0 = no, 1 = yes).

Sociodemographic. Analyses included gender (0 = male, 1 = female) and first generation status (0 = no, 1 = yes).

Academic Performance. High school GPA and college fall semester GPA were based on a standard 4-point grade point average.

Social Integration. Participants responded to three items (e.g., "Overall, to what degree do you belong here?") on a scale ranging from one to seven: (1 = "Not at All" to 7 = "Extremely") to assess belonging perceptions.

Table 1. *Scales and Alphas*

Scale	Items	α
Institutional Commitment	To what degree are you committed to completing a degree/certificate/ licensure at this institution? To what degree do you intend to come back to this institution for the: Spring term? The next academic year?	.758
Time Management	To what degree are you the kind of person who: Plans out your time Makes "to-do lists" Balances time between classes and other activities (work, student activities, etc.)	.631
Academic skills	To what degree are you the kind of person who: Attends class Takes good notes in class Turns in required homework assignments Spends sufficient study time to earn good grades	.761
Self-Efficacy	To what degree are you certain that you can: Do well on all problems and tasks assigned in your courses Do well in your hardest course Persevere on class projects even when there are challenges	.893
Homesickness	To what degree do you: Regret leaving home to go to school Think about going home all the time Feel an obligation to be at home Feel that attending college is pulling you away from your community at home	.845
Social Integration	Overall, to what degree: Do you belong here Are you fitting in Are you satisfied with your social life on campus	.866
Academic Integration	Overall, to what degree are you: Keeping current with your academic work Motivated to complete your academic work Learning Satisfied with your academic life on campus	.853

Table 2. *Means, Standard deviations, and Intercorrelations*

	Variable	M/%	SD	1	2	3	4	5	6	7	8	9
1	High School GPA	3.15	0.45									
2	Fall Semester GPA	2.08	1.07	.31**								
3	Institutional Commitment	6.13	1.05	-.03	.04							
4	Time Management	4.88	1.27	.18**	.24**	.15**						
5	Academic Skills	5.97	0.77	.19**	.23**	.20**	.47**					
6	Self-Efficacy	5.18	1.11	.05	.11*	.27**	.32**	.43**				
7	Homesickness	2.44	1.43	-.03	-.13*	-.29**	-.06	-.11*	-.18**			
8	Social Integration	5.20	1.37	.02	-.03	.34**	.23**	.29**	.33**	-.25**		
9	Academic Integration	5.59	1.06	.15**	.18**	.30**	.43**	.61**	.52**	-22**	.46**	
10	First Generation +	34%		-.07	-.04	-.01	-.02	.03	.01	.08	-.001	-.02
11	Female +	56%		.17**	.14**	.05	.18**	.17***	-.08	.07	-.02	.08
12	Fall to Fall Retention +	53%		.21**	.51**	.23**	.13*	.11*	-.05	-.18**	-.04	.07

Note: * *p* < .05, ** *p* < .01, + point-biserial correlation coefficients (r_{pb})

Results

Just over one half (52%) of the students returned the fall following their freshman year. As expected (see Table 2), high school GPA, fall semester GPA, institutional commitment, time management, academic skills were positively correlated with fall to fall retention (r = .21, .51, .23, .13 and .11, respectively) and greater homesickness was associated with leaving college (r = -.18). Self-efficacy, social integration and academic integration were not associated with retention.

Table 3, Model 1, presents the results of a simultaneous multiple logistic regression (unstandardized logistic coefficients) regressing fall to fall retention onto three pre-entry characteristics and the seven MAP-Works scales. Institutional commitment (b = .67, p < .001), homesickness (b = -.27, p < .01), academic self-efficacy (b = -.39, p < .01), high school GPA (b = 1.06, p < .001), and social integration (b = -.27, p < .01) were the strongest predictors of fall to fall retention. First generation status (b = -.14, p > .10), gender (b = -.11, p >.10), academic skills (b = .14, p >.10) and time management (b = .19, p >.10) were not significant predictors of retention.

Table 3. *Results from Two Logistic Regressions Predicting Native American Freshman Fall to Fall Retention*

	Model 1		Model 2	
Variables	b	Odds Ratio	b	Odds Ratio
First Generation	-0.14	.87	-0.13	.88
Gender	-0.11	.89	0.05	1.05
High School GPA	1.06***	2.90	.60	1.82
Commitment	0.67***	1.94	.88***	2.42
Time Management	0.19	1.21	.14	1.15
Academic skills	0.14	1.15	-.02	.98
Self-Efficacy	-0.39**	.68	-.40**	.68
Homesickness	-0.27**	.77	-.21*	.81
Social integration	-0.32**	.73	-.29*	.75
Academic integration	0.04	1.04	-.08	.92
Fall Term GPA			1.20***	3.34
Model chi-square	67.87***		146.76***	
Cox & Snell R^2	.17		.34	
Nagelkerke R^2	.23		.45	

Notes. Unstandardized logistic coefficients. Model 1 includes pre-entry characteristics and fall semester predictors. Model 2 adds fall semester GPA. For First Generation, (0 = no, 1 = yes). For Gender, (0 = male, 1 = female). N=355. *p < .05 **p < .01 ***p < .001

Fall GPA was added to the logistic regression (see Table 3, Model 2) to evaluate the robustness of these effects. Fall GPA (b = 1.20, p < .001) predicted fall to fall retention and eliminated the contribution of high school GPA (b = .60, p > .05). Institutional commitment (b = .88, p < .001), homesickness (b = -.21, p < .05), academic self-efficacy (b = -.40, p < .01) and social integration (b = -.29, p < .05) remained significant predictors of retention. As in model 1, first generation status (b = -.13, p > .10), gender (b = .05, p >.10), academic skills (b = -.02, p >.10) and time management (b = .14, p >.10) did not predict fall to fall retention.

The odds ratio for fall to fall retention provides perspective on what the coefficients represent. A significant odds ratio greater than 1 indicates that as the predictor increases, the odds of the outcome occurring increase. Therefore, the odds ratio for institutional commitment (1.94 in Model 1, Table 3) indicates that the odds of students with higher commitment returning are 1.94 times higher than those of students with lower commitment. Conversely, a significant odds ratio with a value less than 1 indicates that as the predictor increases, the odds of the outcome (fall to fall retention) occurring decreases. Subtracting 1 from the ratio and multiplying by 100 gives the percent changes in the odds of the outcome variable having a value of 1. Students experiencing more homesickness (.77 in Model 1, Table 3) were 23%less likely to return than those reporting less homesickness. Surprisingly, students reporting greater social integration (.73 in Model 1, Table 3) were 27% less likely to return the following fall than those reporting lower social integration. In addition, students reporting higher academic self-efficacy (.68 in Model 1, Table 3) were 32% less likely to be retained the following fall than those with lower self-efficacy.

To investigate the unexpected negative effects of self-efficacy and social integration on retention, suppression effects were considered (MacKinnon, Krull & Lockwood, 2000). Potential suppressor variables were added one at a time to logistic regression models consisting of pre-entry characteristics (i.e., first generation status, gender and high school GPA) and the negative effect predictors (i.e., self-efficacy or social integration). Only institutional commitment acted as a suppressor magnifying the negative effect of social integration (b = -.24, p < .01) on retention (see Table 4, Model 2). The lack of interaction between social integration and institutional on retention in Model 3 (b = -.08, p > .10) suggests the suppression effect occurs at all levels of commitment.

Table 5 demonstrates the suppression effects of homesickness, academic integration, academic skills and commitment on self-efficacy. In model 1, self-efficacy does not influence retention (b = -.12, p > .10). In Models 2, 3, 4 and 5 homesickness, academic integration, academic skills and commitment act as a suppressor by increasing the magnitude of the relationship between self-efficacy and retention (b = -.23, p =.03, b = -.24, p =.04, b = -.22, p =.05,. b = -.28, p =.000, respectively). In Table 6 the non-significant interactions of the suppressor variables (i.e., homesickness, academic integration, academic skills, and institutional commitment) with self-efficacy demonstrate that the suppression effect on retention occurs at all levels of each of the suppressor variables.

Table 4. *Results from Logistic Regressions Identifying Suppressor Variable for Social Integration Effect on Native American Freshman Fall to Fall Retention*

Variables	Model 1 b	Model 1 Odds Ratio	Model 2 b	Model 2 Odds Ratio	Model 3 b	Model 3 Odds Ratio
First Generation	.02	1.02	-.00	1.00	-.02	.98
Gender	-.22	.80	-.17	.84	-.18	.84
High School GPA	.96***	2.60	1.15***	3.15	1.16***	3.20
Social Integration	-.06	.94	-.24**	.79	-.32**	.73
Commitment			.67***	1.95	.67***	1.95
Social Integration x Commitment					-.08	.92
Model chi-square	17.70***		49.72***		50.25***	
Cox & Snell R^2	.05		.13		.13	
Nagelkerke R^2	.06		.17		.17	

Notes. Model 1 includes pre-entry characteristics and social integration. Model 2 adds institutional commitment. For First Generation, (0 = no, 1 = yes). For Gender, (0 = male, 1 = female). Model 1 and 2 used unstandardized logistic coefficients. Model 3 used standardized logistic coefficients. N=355. $^*p < .05$ $^{**}p < .01$ $^{***}p < .001$

Table 5. *Results from Five Logistic Regressions Identifying Suppressor Variables for the Negative Self-Efficacy Effect on Native American Freshman Fall to Fall Retention*

Variables	Model 1 b	Model 1 Odds Ratio	Model 2 b	Model 2 Odds Ratio	Model 3 b	Model 3 Odds Ratio	Model 4 b	Model 4 Odds Ratio	Model 5 b	Model 5 Odds Ratio
First Generation	.03	1.03	-.11	.90	.01	1.01	.03	1.03	.02	1.02
Gender	-.19	.83	-.25	.78	-.15	.86	-.12	.88	-.13	.88
High School GPA	1.03***	2.79	.99***	2.69	.94***	2.56	.95***	2.60	1.23***	3.42
Self-Efficacy	-.12	.89	-.23**	.80	-.24*	.79	-.22*	.80	-.28**	.76
Homesickness			-.31***	.73						
Academic Integration					.20	1.22				
Academic Skills							.30	1.35		
Commitment									.61***	1.84
Model chi-square	20.54***		33.58***		21.94***		24.32***		49.72***	
Cox & Snell R^2	.05		.09		.06		.06		.12	
Nagelkerke R^2	.07		.12		.08		.08		.16	

Notes. Unstandardized logistic coefficients. Model 1 includes pre-entry characteristics and self-efficacy. Model 2 adds homesickness. Model 3 adds academic integration. Model 4 adds academic skills. Model 5 adds institutional commitment. For First Generation, (0 = no, 1 = yes). For Gender, (0 = male, 1 = female). N=355. $^*p < .05$ $^{**}p < .01$ $^{***}p < .001$

Table 6. *Results from Four Logistic Regressions Testing Interaction Effects of Suppressor Variables with Self-Efficacy Effect on Native American Freshman Fall to Fall Retention*

Variables	Model 1 b	Model 1 Odds Ratio	Model 2 b	Model 2 Odds Ratio	Model 3 b	Model 3 Odds Ratio	Model 4 b	Model 4 Odds Ratio
First Generation	-.09	.91	.01	1.01	.02	1.02	.02	1.02
Gender	-.26	.77	-.16	.86	-.13	.88	-.13	.88
High School GPA	.99***	2.70	.94***	2.56	.93***	2.54	1.24***	3.46
Self-Efficacy	-.26*	.77	-.27*	.77	-.25*	.78	-.30**	.74
Homesickness	-.42***	.66						
Self-Efficacy x Homesickness	.08	1.08						
Academic Integration			.20	.13				
Self-Efficacy x Academic Integration			-.01	.90				
Academic Skills					.22	1.25		
Self-Efficacy x Academic Integration					-.16	.85		
Commitment							.67***	1.95
Self-Efficacy x Commitment							.08	1.08
Model chi-square	34.12***		26.43***		50.34***		50.34***	
Cox & Snell R^2	.09		.07		.12		.12	
Nagelkerke R^2	.12		.09		.17		.17	

Notes. standardized logistic coefficients. For First Generation, (0 = no, 1 = yes). For Gender, (0 = male, 1 = female). N=355. $^*p < .05$ $^{**}p < .01$ $^{***}p < .001$

Discussion

Building on a tradition of research on college retention, we investigated effects of retention predictors for Native American freshman. College grades, institutional commitment, and homesickness were better predictors of the decision to return to college than first generation status, gender, high school grades, academic integration or academic skills. Unexpectedly, students reporting greater social integration and academic self-efficacy were less likely to return than peers experiencing less social integration (i.e., belonging) and self-efficacy at the beginning of the semester.

Although we cannot rule out that transfer to another institution rather than drop out, other explanations for the negative effects of belonging and academic self-efficacy should be considered. For example, self-efficacy was assessed at the beginning of the semester prior to substantial academic performance feedback. Perhaps students had an inflated sense of academic self-efficacy based on high school academic experiences and those expectations were reset by actual academic performance feedback such as mid-term grades. In addition to tracking changes in self-efficacy during the academic year, future studies also need to assess whether departing students are dropping out, stopping out or transferring to another institution.

As with self-efficacy, students' sense of social belonging may have declined during the freshman year after the initial assessment. Even more concerning is the possibility that the early fall semester survey captured students' high expectation that they would belong. If this interpretation is correct, Native American freshman arrived expecting to belong, but didn't, then were less likely to be retained than those who arrived with a lower expectation of belonging.

It is also possible that a traditional model of belonging is inadequate to understand this group. In the vein of Nigrescence theory for Black identity (Cross, 1971), Native American freshman transitioning from a majority Native American environment (e.g., reservations, Native villages) to a majority white college campus may experiences events that change their understanding about their ethnicity and in turn affect their sense of campus belonging. For example, attending college may increase the challenge of living in two worlds (LaFromboise, Coleman, & Gerton, 1993) as they attempt to reconcile their cultural beliefs and values with the majority culture.

Native American culture emphasizes interdependency and responsibility for family, community and the collective welfare (DuBray, 1985; Garrett & Garrett, 1994; Garrett, 1995; Kasten, 1992; LaFromboise & Dizon, 2003) compared to the emphasis on personal self-oriented goals in mainstream culture (Markus & Kitayama, 1991). Students' who begin to question their belonging to the majority campus community may instead turn to similar peers limiting their exposure to the larger community. These students' may report a strong sense of belonging based on their close knit peer group rather than the larger campus community. A more differentiated view of belonging processes that might be at play for Native American students should be considered.

Cultural factors need to be added to the study of college retention, but not based on an assumption of homogeneous ethnic groups. For example, although family interdependency is

a strong Native American cultural value, individual students may vary substantially in the importance they place on family connections. Therefore, other dimensions, such as their ethnic identity and/or the degree of tradition emphasized in their family should be considered.

In terms of ethnic identity, Oyserman and colleagues (2003) report increased school engagement when minority youth felt they are part of both their in-group and the larger society, or when they are a member of an in-group that must overcome barriers to success in the larger society. Numerous studies report that a strong ethnic identity is associated with psychological and social well-being indicators as well as academic achievement (Arroyo & Zigler, 1995; Jones & Galliher, 2007; Moran, Fleming, Somervell, & Manson, 1999; Oyserman, Kemmelmeier, Fryberg, Brosh, & Hart-Johnson, 2003; Phinney & Alipuria, 1990; Wong, Eccles, & Sameroff, 2003). Ethnic identity should be considered in studies of college retention.

Another dimension potentially related to ethnic identity is goal orientation in different cultures. Evidence suggests under-represented minorities hold stronger other-focused goals than other groups. Communion, a trait emphasizing working with or helping others, is higher among ethnic minorities (Markus & Conner, 2013). Native American cultures especially emphasize helping members of their own communities (Brayboy et al., 2014; Fryberg & Markus, 2007; Smith, Cech, Metz, Huntoon & Moyer, 2014; Torres, 2009). If the motivation for earning a college degree is based on other-focused goals for some Native American students, investigating whether these students perceive their goals are being met should be addressed in the context of retention. A cultural value mismatch (i.e., when students do not perceive support for their other-focused goals on campus) could have detrimental effects on retention. Developing institutional interventions to address cultural mismatch issues could follow from this line of inquiry.

College and universities are often limited in addressing demographic variables linked to departure decisions because those factors are external to the institution. However, campus social integration is an important factor associated with student retention that the institution can do something about, interventions should address cultural mismatches to meet the needs of diverse populations. For students with strong ties to family and community, bridging the gap between the institution and family may be needed to support campus social integration. Institutions can also create a better person-environment fit by helping students with communal goals realize those goals in their courses and majors. In summary, improving retention for under-represented minorities begins with viewing these students through a cultural lens that may not always align with prevailing best practices to improve college retention based on majority populations.

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