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## Diverse College Students' Cultural Background and College Persistence

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# Diverse College Students' Cultural Background and College Retention

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*Tinto (1975) created a college persistence model emphasizing institutional academic and social integration that continues to guide U.S. postsecondary retention strategies. This longitudinal study followed 584 first-year college students from diverse backgrounds, testing for group differences in the relationship that Tinto's key constructs have on college persistence over time for U.S.-White, U.S.-minority, and immigrant-origin groups. We found significant positive associations between academic integration and intention to persist for all ethnic groups, but group differences in social integration and intention to persist. Additionally, intention to persist was a significant predictor of actual persistence for all groups, suggesting predictive power overall.*

*Keywords: college persistence, academic integration, social integration, minority*

Population trends among ethnic groups in the United States continue to shift dramatically, such that non-White populations will collectively outnumber the White population by 2028 (U.S. Census Bureau, 2020). Postsecondary education enrollment and persistence trends are not keeping pace with these ethnic population shifts, particularly U.S.-origin Black, U.S.-origin Latino, and some immigrant-origin populations, despite concerted institutional efforts to narrow the achievement gap between White and non-White student populations (Camera, 2015; Iacovino & James, 2016; Seidman, 2018). These concerning disparities reinforce the urgency to continue efforts to better identify potential predictors and group differences impacting the retention of college students of color (Molock & Parchem, 2021).

Tinto created a college persistence model that continues to guide U.S. postsecondary strategies to recruit and retain students, emphasizing institutional academic and social integration as the crucial components necessary for intention to persist in the institution (Seidman, 2005a; Tinto, 1975, 2013). However, the desire and need for institutional integration may not be the same for non-White students, particularly due to potential differences in the ongoing family and community relationships that may remain stable into emerging adulthood (Morley, 2003). Tinto's model has been criticized for its inconsistent and inconclusive empirical studies with non-White students, and researchers continue to explore potential background characteristics that may explain divergent outcomes (Guiffrida, 2006).

This study contributed to the college student retention literature in two ways. First, we split the non-White participants in our analysis by immigrant-origin and U.S.-origin minority status. If students of color populations are homogenized in college retention data analysis, important differences may be overlooked, particularly due to differences in ongoing family connections that may be maintained longer by immigrant-origin students than U.S.-origin minority or U.S.-White students (Hurtado & Carter, 1997). Second, we used longitudinal retention data to observe group differences in intention to persist on actual persistence over four academic years. Most college retention literature focuses on first-to-second-year retention rates; however, previous studies have suggested minority student populations may continue to have different retention trajectories than their White colleagues in subsequent years (Morley, 2003). By moving beyond first-to-second-year persistence data, we were able to test whether intention to persist predicted persistence differently for immigrant-origin, U.S.-origin minority, and U.S.-origin White students over time. Measuring these potential differences may be helpful in applying Tinto's integrative model to diverse student populations.

## Literature Review

### TINTO'S MODEL OF COLLEGE PERSISTENCE

Tinto's model (1975) has been the primary theory underlying the development of postsecondary retention strategies for almost 50 years, suggesting institutional academic and social integration as the primary predictors of student persistence (Seidman, 2005b). Institutional academic integration refers to students' incorporation into the academic structures and demands of the institution (e.g., grades, class attendance, and intellectual development). Similarly, institutional social integration requires incorporation into the social structure of the institution, such as clubs, student organizations, or Greek life (Braxton & Lee, 2005; Nora, 1993).

According to the model, the strength of institutional academic and social integration on campus results in a stronger institutional commitment and

subsequent institutional intention to persist (Berger & Lyon, 2005; Braxton & Lee, 2005). Tinto's model placed the students' background characteristics (i.e., family background, socioeconomic status, precollege educational experiences) as individual characteristics that lead into the academic system where institutional academic and social integration then predicted dropout decisions. However, because studies involving integrative behaviors and attitudes among diverse student populations have shown mixed results, research involving minority populations is theoretically crucial in determining the generalizability of Tinto's model in this changing U.S. demographic context (Rendón et al., 2000; Tauriac & Liem, 2012).

### **CRITICISM OF TINTO'S MODEL**

The overarching criticism of Tinto's model, particularly for non-White student populations, is that the framework is not designed for ethnic minority students who may not desire to adapt to the institution's culture (Tierney, 1992). Tinto's model is based on an assimilation/acculturation framework (student-institution interaction) and presumes some degree of biculturalism. A degree of shared values or norms between the majority and minority cultures is considered necessary for integration and, therefore, assumes some degree of assimilation on the part of the minority student to integrate successfully (de Anda, 1984). Therefore, exploring additional variables may be crucial to better predicting the necessity of institutional academic and social integration and should be explored moving forward.

Revisions of Tinto's model have also failed to make a distinction between a psychological sense of integration (e.g., sense of belonging) and a behavioral measure of integration (e.g., involvement in activities; Hurtado & Carter, 1997). Student's involvement in activities and the actual psychological sense of inclusion or belonging are important to differentiate, and researchers have attempted to tease apart interactions in social and academic systems and the subjective sense of integration (Braxton & Lien, 2000; Hurtado & Carter, 1997; Kerby, 2015). For example, some studies have found that social activities intended to improve social integration have resulted in significant positive outcomes (in institutional integration and persistence) for White students but not Latino students (Nora & Cabrera, 1996). They concluded that participation in conventional campus activities might not result in similar integration for White and Latino students.

Hurtado and Carter (1997) followed 287 Latino participants to test the ease of transition, hostile climate, and sense of belonging. They found that the assumption that separation, or "breaking away," was needed to transition and integrate into college was not accurate for Latino students. Social and community-based activities that maintained a connection to off-campus communities were more important for Latino students than their White colleagues. Even when college event participation increased

over the academic years, the sense of institutional belonging did not. In other words, the separation assumption was not supported, while ongoing interdependence with family was supported. However, in a study with Hispanic and White students enrolled in a community college, Nora and Rendón (1990) found a strong relationship between the academic and social environment of the college and high institutional commitment. These different outcomes may be explained by differences in residential versus commuter campuses, but they also demonstrate the difficulty in integration research among minority populations.

In spite of concerns, Tinto's model continues to strongly influence current university programs whose purposes involve recruiting and retaining minority student populations. Researchers and educators agree there is a need to continue the work, in theory and practice, as means to facilitate minority student retention to degree completion (Seidman, 2005b).

### **IMMIGRANT-ORIGIN AND U.S.-ORIGIN MINORITY GROUP DIFFERENCES**

All types of institutional integration do not appear to impact intention to persist and actual persistence similarly, especially among different ethnic groups. While the literature consistently demonstrated the importance of academic integration on student persistence, regardless of ethnicity or immigration status, social integration may not have the same amount of power in predicting intention to persist for all students (Kim, 2009). Researchers have been interested in testing whether the universal need to belong is associated with the need for institutional social belonging in facilitating academic performance and academic persistence, particularly among minority students (Baumeister & Leary, 1995; Kalsner & Pistole, 2003; Silver Wolf et al., 2017; Stebleton et al., 2010; Walton & Cohen, 2007, 2011).

The tendency for immigrant-origin and interdependent-cultured (versus independent) college students to continue to maintain strong bonds with family and group memberships outside college may impact their need for institutional social belonging as a means to facilitate persistence (Fuligni et al., 2002; Killian & Hegtvedt, 2010; Tseng, 2004). Harker (2001) found that first-generation immigrant adolescents had less depression and higher levels of well-being than second-generation immigrants or native-born adolescents. Harker attributed the higher levels of well-being to parental supervision, lack of parent-child conflict, religious practices, and social support, oftentimes associated with immigrant families. Tseng (2004) studied family interdependence and academic adjustment in college students from Asian Pacific, Latino, African/Afro-Caribbean, and European backgrounds. Across all groups, she found greater family obligation attitudes to result in greater academic motivation, although greater behavioral demands detracted from academic achievement.



Therefore, although academic achievement research has often focused on the negative correlation between increased family demands/responsibilities and academic performance, a positive correlation between family bonds and academic performance is beginning to emerge in the literature, particularly for immigrant-origin students.

During emerging adulthood, most middle-class European-American families encourage increased autonomy and independence, while ethnic minority and immigrant-origin students are expected to maintain their culture of origin interdependence (Arnett, 2000). Immigrant families, in particular, generally highly value academic achievements, hard work, and high expectations for their children, which have been found to result in higher academic motivations and educational attainment overall (Fuligni, 2001; Obradovic et al., 2013; Tseng, 2004). Immigrant-origin Asian college students report spending more time with their family, providing more assistance with household chores, and serving as “cultural brokers” for the family (i.e., helping with language and financial duties) more often than European American or Asian American students. Despite these added responsibilities, immigrant-origin Asian college students maintained higher levels of academic achievement than either group (Obradovic et al., 2013). DeVries et al. (2019) found Latino college students who reported higher involvement in household chores and sibling caregiving also reported higher levels of family closeness. Similarly, the same students also increased earned credits and higher grade point averages over time. White students reporting similar levels of family-of-origin responsibilities did not have similar improvements in college achievement.

Tauriac and Liem (2012) tested for group differences with 101 immigrant-origin and U.S.-origin Black students, focusing on academic and social integration constructs central to Tinto’s model. They did not find academic or social integration to predict college persistence for either group but did find social integration to predict academic integration. They also found academic integration and socioeconomic status to predict college persistence for U.S.-origin Black students but not for immigrant-origin Black students. They suggested future research avoid homogenizing samples of Black students because distinct associations between academic and social integration and subsequent intention to persist emerged in their analysis. These data suggest group differences in the relationship between ongoing family connection and social integration leading to academic performance and persistence over time and warrant further consideration.

## **BEYOND FIRST-TO-SECOND-YEAR RETENTION**

The first year of college is crucial to ongoing college persistence, with 24.9% of students in public or private four-year institutions dropping out by the beginning of their second year of college (National Center for Education Statistics, 2016). These

numbers vary based on the type of institution and precollege requirements, but the retention patterns are similar. Tinto's model provided an integration framework that addressed institutional concerns about early dropout decisions, which may explain its continued saliency (Seidman, 2005a; Tinto, 2013). For example, Tinto focused on prioritizing institutional academic and social integration as early as possible (i.e., during move-in for residential students and within the first week of the semester for commuter students; DeBerard et al., 2004; Woosley & Shepler, 2011). As an unintended consequence, retention research testing academic and social integration's association with intention to persist and subsequent retention beyond the first year is underrepresented in the literature, even more so for minority populations (Beil et al., 2000; Tauriac & Liem, 2012).

Factors leading to first-year dropout decisions may be different than factors leading to dropout decisions in future years. For example, Ishitani (2016) studied data from 7,571 first-year students (71.6% White, 9.2% Black American, 8.6% Hispanic, 5.9% Asian, and 4.7% multi-race) in both public and private four-year institutions, explicitly testing academic and social integration for first- and second-year students. Ishitani found academic integration had a positive, significant effect on first-year persistence, such that students reporting higher levels of academic integration were 12.8% less likely to drop out. Notably, only academic integration was significant, not social integration, and the effect of academic integration only surfaced for first-to-second-year persistence, not second-to-third. DeVries et al. (2020) found similar results when comparing 122 U.S.-origin and 87 immigrant-origin students on academic integration, social integration, and intention to persist. Once again, only academic integration was a significant predictor of institutional intent to persist for both groups.

Tauriac and Liem's (2012) study (that split U.S.-Black and immigrant-origin Black students) also recognized the importance of testing the associations between social support or social integration and academic integration beyond the first academic year. They used a three-wave longitudinal method and path analysis to observe patterns of change over time. Divergent outcomes between groups were consistent with previous literature (42% retention over four years; 68% immigrant-origin over four years), but they found immigrant generational status to have an indirect rather than a direct effect on college persistence over time. Furthermore, they unexpectedly did not find academic integration to predict actual persistence.

## Current Study

We proposed testing a portion of Tinto's model, specifically the associations among the three primary constructs—institutional academic integration, institutional social integration, and intention to persist—to extend current literature in two ways. First, we split participants into three groups, immigrant-minority, U.S.-origin minority,

and U.S.-origin White populations, allowing us to observe group differences that may have been missed in existing college persistence literature. Second, we extended our analysis to include students' intention to persist and actual persistence at the institution over eight semesters, testing potential group differences beyond the first-to-second-year data. Specifically, we made the following predictions:

## **HYPOTHESIS 1**

- a. We hypothesized institutional academic integration would positively predict intention to persist overall.
- b. However, we predicted group differences in institutional social integration leading to intention to persist for U.S.-White and U.S.-minority students compared to immigrant-origin students. Strong ethnic identity, interdependence, and ongoing family relationships may lessen the felt need for social integration for immigrant-minority students making social integration less important for persistence (Alba & Nee, 1997; Fuligni, 2007). In contrast, independent U.S.-White and U.S.-origin minority students may desire new social connections at the university rather than maintaining and being supported by existing family connections.

## **HYPOTHESIS 2**

- a. We hypothesized that intention to persist would predict actual persistence for all groups (Garriott et al., 2017).
- b. However, we predicted group differences in the indirect effects of intention to persist on the associations between institutional social integration and academic integration on change over time and persistence overall (Morley, 2003).

## **Method**

### **PARTICIPANTS**

This study was conducted at a four-year, public, primarily commuter, Midwestern university whose student population is similar to the surrounding community and public-school pipelines (city ethnicity: White 75.5 %, ethnic minority 24.5 %; institutional ethnicity: 69.9 % White, 31.1 % ethnic minority; 87 % commuter; "International Studies Academic Advising," 2019; U.S. Census Bureau, 2021). All first-year seminar faculty (28 sections) included a survey as an assignment in their common syllabus; however, students were given the option of completing an alternative assignment of equal rigor via the course Blackboard platform. The survey was designed to measure students' initial attachment to the university as they began their first year of college. Informed consent was secured prior to participation. Out of the 672 students enrolled in the first-year seminar, 584 completed the first questionnaire at Time 1 (T1): male  $n = 249$  (age  $M = 18.69$ ,  $SD = 1.31$ ), female  $n = 325$  (age  $M = 18.83$ ,  $SD = 0.71$ ), other  $n = 2$  (age  $M = 18.60$ ,  $SD = 0.55$ ), gender non-report  $n = 8$ .



Participants reporting both parents' birth country or father's birth country outside of the United States were categorized as immigrant-origin ( $n = 150, 26.2\%$ ). Once immigrant-origin participants were identified, the remaining participants were categorized by ethnicity. White participants were grouped as U.S.-White students ( $n = 336, 58.7\%$ ), and all remaining ethnicities were classified as U.S.-minority participants ( $n = 86, 15.0\%$ ). Participants with missing ethnicity data were excluded from the group analysis ( $n = 12$ ). This was considered excellent ethnic variability, given the student enrollment and community ethnic demographics.

Of those who participated at T1, 516 re-enrolled in the spring semester (88.36% retention rate), 255 of whom completed the Time 2 (T2) survey (49.41 % response rate). Ethnic group splits for T2 were U.S.-White,  $n = 146$  (57.25 %); U.S.-origin minority,  $n = 35$  (13.73 %); immigrant-origin minority  $n = 73$  (28.63%), missing  $n = 1$  (0.01%); (male  $n = 96$ , female,  $n = 158$ , other  $n = 1$ ). Once again, this was considered an acceptable response rate and group variability. The final sample was comprised of these 255 participants.

## PROCEDURE AND MEASURES

Students voluntarily participated in the first survey (T1) of the study, providing comprehensive background characteristics within two weeks of the start of their first semester of college. One week before spring semester finals, students who completed the questionnaire at T1 were contacted again and asked to complete a short questionnaire measuring their current institutional integration and college persistence commitment (T2). This was the last direct contact with participants. Re-enrollment data over eight semesters (i.e., actual persistence) were provided by the office of institutional effectiveness.

**Covariates.** Gender and socioeconomic status (SES) were included as covariates in the study. Gender was self-reported (detailed above). Meanwhile, SES was derived from self-reported family income across six ranges (\$0–\$20,000, \$20,001–\$40,000, \$40,001–\$60,000, \$60,001–\$100,000, \$100,001–\$250,000, \$250,001 or more). It is worth noting that there were significant group differences in reported SES ( $F[2, 244] = 40.09, p < .001$ ), with White participants reporting the highest values ( $M = 3.95, SD = 1.32$ ), followed by US-origin minorities ( $M = 3.30, SD = 1.45$ ) and immigrant-origin participants ( $M = 2.30, SD = 1.09$ ).

**Institutional Academic Integration.** Six items adapted by Tauriac and Liem (2012) for immigrant-origin and U.S.-origin Blacks were used to assess academic integration. The measure included items that assessed whether students felt academically successful and enjoyed their schoolwork, such as “I am satisfied with the level I am achieving academically.” Items were answered on a scale of 1 (*not at all true*) to 4 (*very*

true). Alpha coefficients for Tauriac and Liam's scale ranged between .77 and .95 in their two timepoint methods of data collection.

**Institutional Social Integration** was measured using nine items from the University Attachment Scale (France et al., 2010) and four items from the On-campus Social Support Scale (Tauriac & Liem, 2012). Institutional social integration item responses were provided on a 4-point scale, 1 (*not at all accurate*) to 4 (*extremely accurate*), and included items such as: "How accurate would it be to describe you as a typical XXX student?" Alpha coefficients for the University Attachment Scale ranged between .71 to .87.

Institutional Intention to Persist was measured with four items using a 4-point Likert scale, ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). One item, "I will obtain a bachelor's degree from XXX," was adapted from a previous study (Morrow & Ackermann, 2012). We developed three additional items, including "I will enroll next semester at XXX." The alpha coefficient for the institutional intention to persist scale was .78.

**Actual Persistence.** Institutional data were provided by the Office of Institutional Effectiveness for each semester, including semester credits earned, overall credits earned, and grade point average (GPA). For the current paper, enrollment over the course of eight semesters (specifically from Fall 2016 to Spring 2020) was used as a dependent variable and as an index of academic persistence.

## ANALYSIS

To assess change over time, the longitudinal data were tested for both linear and curvilinear effects using multilevel modeling with the intercept set at the last data point, facilitating the goal of differentiating persistence between people at the end of the study. Differences from fall to spring of each academic year were also included, but these effects were set as fixed (i.e., assumed to be the same across individuals), given that these were not the central focus of the current paper. Overall, this approach addressed non-independence within groups and individuals inherent in longitudinal research (Garson, 2013; Tabachnick & Fidell, 2013). Additionally, the analyses provided extracted individual values for the linear, curvilinear change over time, and persistence through eight semesters. These extracted persistence scores were used for hypothesis testing.

The main hypotheses centered around two gaps in the current college persistence literature: change over time in persistence and group differences. Structural equation modeling with multi-group comparisons was used to test these. Broadly speaking, our hypothesized model tested Tinto's three key constructs (institutional academic

integration, social integration, and intention to persist) and extended the model to include actual college persistence. This allowed us to test the potential mediating effect of intention to persist (again, measured at T2) on the effects of both social and academic integration on changes over time in persistence across each group. Only statistically significant effects ( $\alpha = .05$ ) that improved the model (based on a  $\Delta\chi^2$  test) and led to a proportional reduction in prediction error ( $PRPE > 1\%$ ) were interpreted (Kline, 2016).

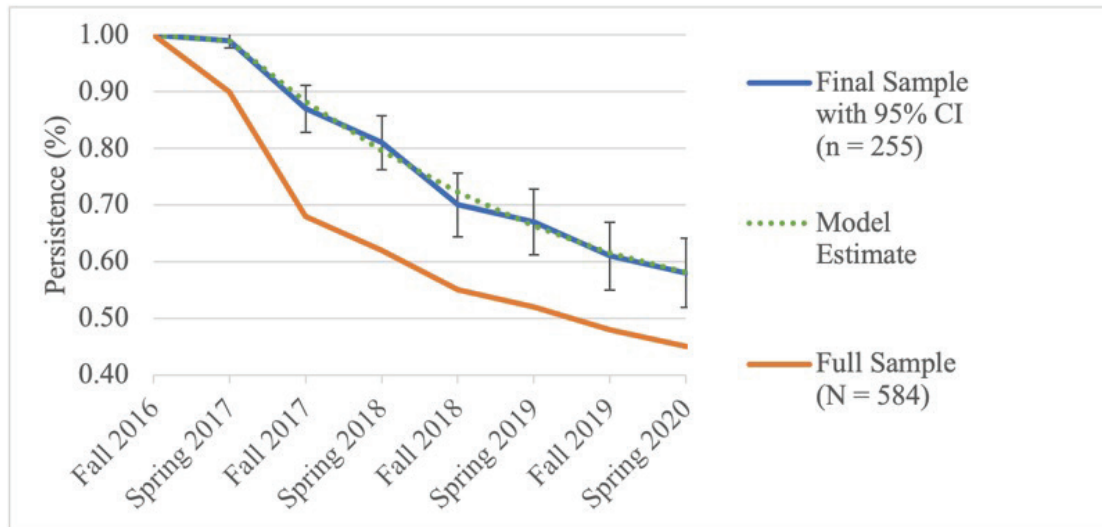
## Results

### MEASUREMENT MODEL FOR CHANGE IN PERSISTENCE

Multilevel modeling using HLM (Version 7.3.21901.3; Raudenbush & Byrk, 2002) allowed us to analyze the change over time in persistence. The unconditional model with no predictors revealed that 40.77% of the variability in persistence was at the within-individual level, and the remaining 59.23% was at the between-individual level. This reflected a significant proportion of variability ( $\chi^2[254] = 2449.89, p < .05$ ), justifying the analytic approach.

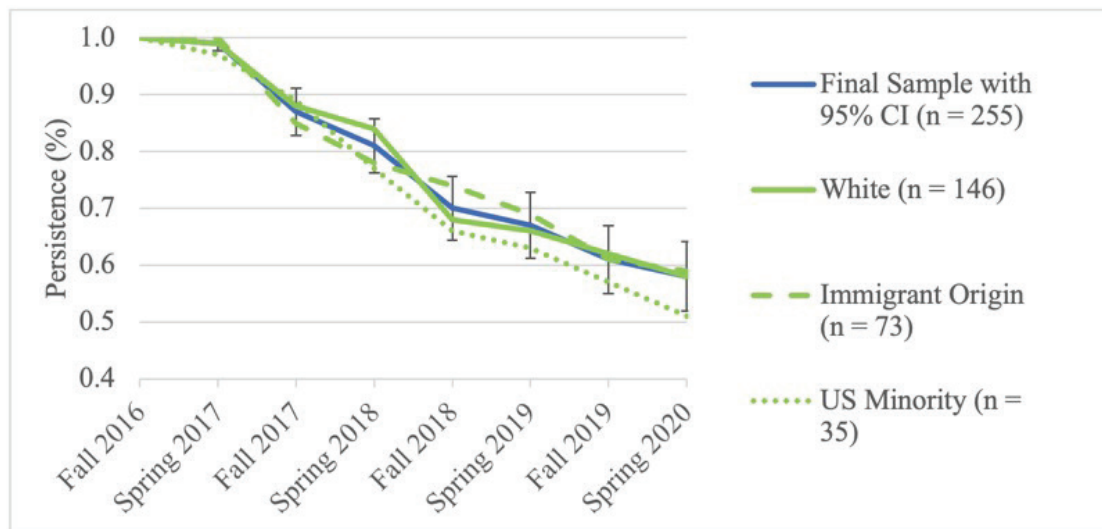
Change over time was tested using a model that included linear and curvilinear change across each semester (again from Fall 2016 through Spring 2020), in addition to the changes from fall to spring. This model was a significant improvement compared to the unconditional model ( $\Delta\chi^2[5] = 545.83, p < .05$ ), reducing prediction error by 56.25%. The resulting model showed that persistence decreased overall ( $b = -.027, S.E. = .013, t[254] = -2.016, p < .05$ ) and tapered off later on ( $b = .007, S.E. = .003, t[254] = 2.350, p < .05$ ). Persistence was also higher in spring than fall semesters ( $b = .010, S.E. = .005, t[254] = 2.141, p < .05$ ). Figure 1 illustrates the model estimate persistence rates whereas Figure 2 shows the differences across the ethnic groups.

**Figure 1.** Persistence percentages across the samples (with HLM model estimates).



Note. The full range of the y-axis has been truncated to highlight group differences.

**Figure 2.** Persistence percentages across the ethnic groups (with final sample).



Note. The full range of the y-axis has been truncated to highlight group differences.

The final model indicated that the between-individual variability in persistence at the end of the study (i.e., the intercept) for the linear and curvilinear change over time was significant ( $\chi^2[253] = 419.83-1988.44, p < .05$ ). In other words, individuals differed in how their persistence changed over time and in persistence after eight semesters. Individual model estimates for the linear and curvilinear change over time, as well as the intercept, were then extracted and used for the remaining analyses. Table 1 includes the correlations between the study variables, including means and standard deviations.

**Table 1. Zero-Order Correlations Between the Study Variables, With Means and Standard Deviations**

|  | 1.     | 2.    | 3.    | 4.     | 5.     | 6.     | 7.    | 8.    |
|--|--------|-------|-------|--------|--------|--------|-------|-------|
| 1. Gender                                  | –      | < .01 | < .01 | < –.01 | .03    | –.02   | –.03  | .06   |
| 2. SES                                     | < .01  | –     | –.03  | –.10   | .11    | .02    | .04   | .02   |
| 3. Linear change<br>in persistence         | < .01  | –.03  | –     | .76*   | –.16*  | –.03   | .00   | –.06  |
| 4. Curvilinear change<br>in persistence    | < –.01 | –.10  | .76*  | –      | –.63*  | < –.01 | –.02  | –.03  |
| 5. Persistence at end<br>(i.e., intercept) | .03    | .11   | –.16* | –.63*  | –      | .25*   | –.14* | .37*  |
| 6. Academic integration<br>(centered)      | –.02   | .02   | –.03  | < –.01 | .25*   | –      | –.65* | .53*  |
| 7. Social integration<br>(centered)        | –.03   | .04   | .00   | –.02   | –.14*  | –.65*  | –     | –.43* |
| 8. Intention to persist<br>(centered)      | .06    | .02   | –.06  | –.03   | .37*   | .53*   | –.43* | –     |
| Minimum                                    | 1.00   | 1.00  | –.36  | –.07   | < –.01 | –2.20  | –1.05 | –2.52 |
| Maximum                                    | 2.00   | 6.00  | 0.27  | 0.06   | 0.95   | 0.80   | 1.80  | 0.48  |
| Mean                                       | 1.62   | 3.38  | –.03  | < .01  | .58    | .00    | .00   | .00   |
| S.D.                                       | 0.49   | 1.47  | 0.09  | 0.02   | 0.44   | 0.61   | 0.56  | 0.79  |

\* $p < .05$ .

## STRUCTURAL EQUATION MODELING

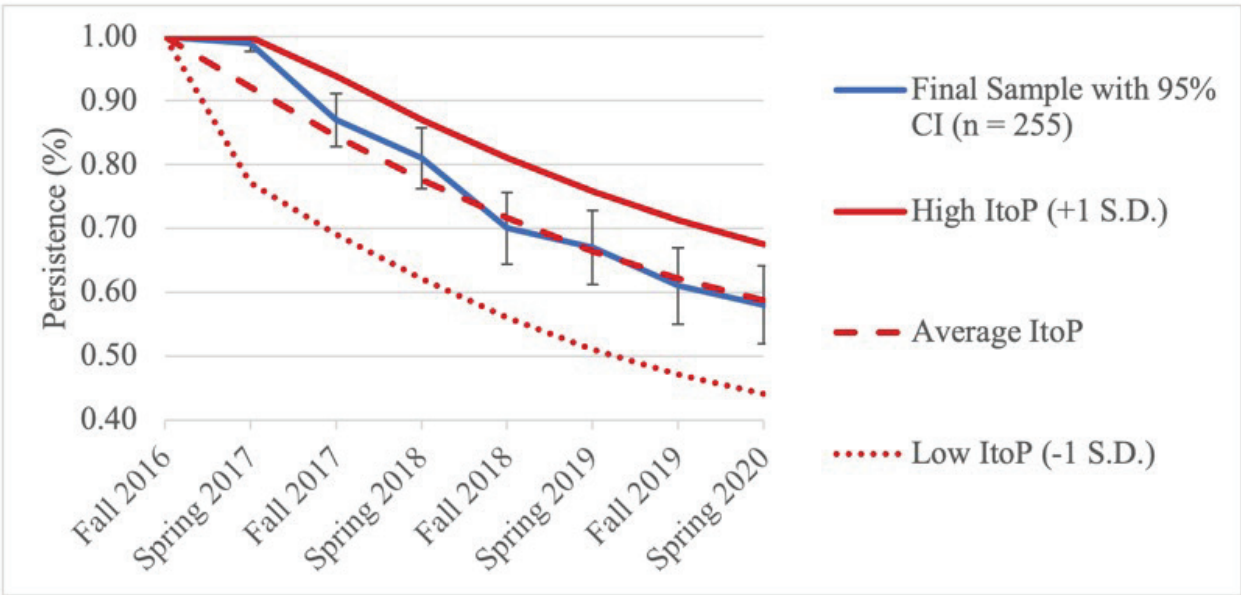
Structural equation modeling was used to test the full, conceptual model of academic integration and social integration on persistence's linear, curvilinear change over time, and intercept simultaneous to intention to persist while controlling for the effects of gender and SES on the outcomes. Not surprisingly, the outcomes were related in predictable directions. In addition, academic integration and social integration were negatively correlated to each other ( $r = -.65$ ,  $p < .05$ ). More importantly, as predicted in Hypothesis #1a, earlier academic integration was positively related to later intention to persist ( $b = 0.57$ ,  $\beta = .44$ ,  $z = 4.83$ ,  $p < .05$ ). However, social integration was not significantly related to intention to persist, above and beyond the effect of academic integration.

Moreover, greater intention to persist was associated with higher persistence at the end of the study (after eight semesters;  $b = 0.84$ ,  $\beta = .34$ ,  $z = 5.81$ ,  $p < .05$ ), supporting Hypothesis #2a (see Figure 3). Interestingly, there was also a significant indirect effect of intention to persist ( $\Delta b = 0.11$ ,  $\Delta \beta = .16$ ,  $z = 4.04$ ,  $p < .05$ ) on the association between



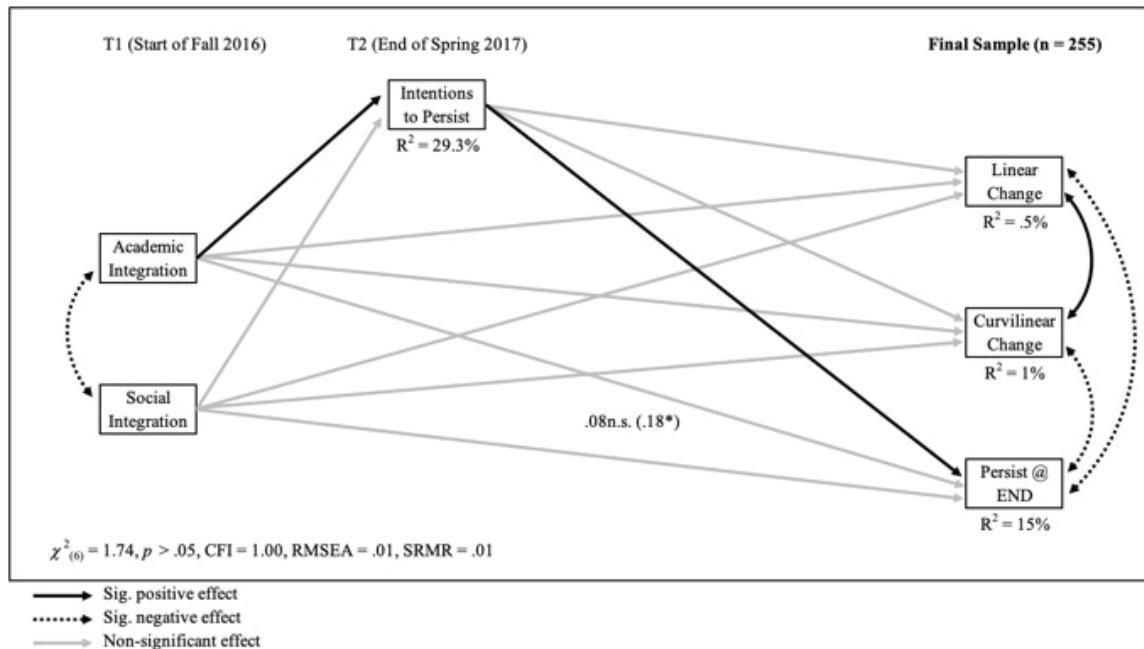
academic integration and the persistence intercept. In other words, higher academic integration was significantly positively related to persistence at the end of the study (before:  $b = 0.18, \beta = .25, z = 3.42, p < .05$ ), but the effect disappeared once accounting for the association to intention to persist (after:  $b = 0.08, \beta = .11, z = 1.38, p > .05$ ). Figure 4 illustrates the associations in the final sample, without the non-significant effects of the covariates (gender and SES). All told, the model accounted for 29.3% of the variability in intention to persist. For actual persistence, explaining .5% in the linear change, 1% in the curvilinear change, and 15% in the intercept. The resulting model was a good fit to the data ( $\chi^2[6] = 1.74, p > .05, CFI = 1.00, RMSEA = .01, SRMR = .01$ ).

**Figure 3.** Persistence over time as a function of intention to persist (ItoP).



*Note.* The full range of the y-axis has been truncated to highlight group differences.

**Figure 4.** *The structural equation model for the final sample including the mediating role of intention to persist on the effects of academic and social integration on extracted values for changes in persistence.*



Note. The non-significant effects of the covariates (gender and SES) were not illustrated for clarity).

## BETWEEN GROUP COMPARISONS

At this point, the model was split by ethnic groups, providing individual estimates of all of the associations among U.S.-White, U.S.-minority, and immigrant participants. To test for differences between the groups, each association was constrained in a stepwise manner to see if the model fit significantly worsened (using a chi-square test). Any constrained effect that significantly worsened the model was subsequently freed and allowed to vary in the final model.

Two effects significantly differed between the various groups. Namely, the correlation between social integration and academic integration was different among U.S.-minorities compared to U.S.-Whites and immigrants. Specifically, the negative relationship between social integration and academic integration was markedly weaker among U.S.-minorities ( $r = -.45, p < .05$ ) in contrast to immigrant-origin ( $r = -.73, p < .05$ ) and U.S.-Whites ( $r = -.63, p < .05$ ) participants.

More interestingly, the effect of academic integration on intention to persist differed between the three groups. Academic integration was the strongest predictor of intention to persist among immigrant-origin students ( $b = 0.95, \beta = .78, z = 4.51, p < .05$ ), weaker yet still significant among U.S.-Whites ( $b = 0.50, \beta = .37, z = 4.47, p < .05$ ), but not significant among U.S.-minorities ( $b = 0.32, \beta = .22, z = 1.31, p > .05$ ). Hypothesis #1b related to group differences in the effect of social integration

on intention to persist was not supported, given that there was no significant effect of social integration. Similarly, Hypothesis #2b, that there would differences in the indirect effect of intention to persist on the associations with either academic or social integration on change over time in persistence, was not supported.

The final model accounted for comparable amounts of variability in the linear change among U.S.-Whites (1%), immigrant-origin (.8%), and U.S.-minorities (.8%) and in the curvilinear change, 2.8%, 2.3%, and 3.1%, respectively. Meanwhile, for differences in persistence at the end of the study, the model accounted for 17.8% of the variability among White students, 13.2% among immigrant-origin students, and 10.3% among U.S.-minority students. The final model remained an acceptable fit to the data ( $\chi^2[56] = 42.43, p > .05, CFI = 1.00, RMSEA = .01, SRMR = .07$ ).

## Discussion

This study adds an important piece to the institutional integration puzzle by testing the primary integration constructs that have remained central to Tinto's model throughout multiple revisions (Braxton et al., 1997; Rendón et al., 2000). Several important findings emerged during the analysis that extended the retention literature for diverse college student populations.

First, academic integration was positively associated with intention to persist for all groups, which supported Hypothesis #1a and previous literature suggesting the need for academic integration in intention to persist (Elmers & Pike, 1997). However, the correlation between social integration and academic integration differed between groups. U.S.-minority groups had a weaker correlation between social integration and academic integration than U.S.-White and immigrant groups. This result was unexpected and potentially informative as to group differences between these integration constructs. Perhaps U.S.-minority groups are more likely to draw on different strategies, including community relationships, for social support than U.S.-White and immigrant groups.

Second, social integration on intention to persist differed between groups, with a significant, negative association for the U.S.-White group. This finding failed to support Hypothesis #1b; however, group differences emerged such that non-White groups had no association between social integration and intention to persist. The negative association between social integration and intention to persist for U.S.-White students raises questions about previous studies' generalizability to the current generation of college students (Walton & Cohen, 2007, 2011). This finding may be important as colleges reevaluate the role of social integration for all students in remote learning. Social integration, as Tinto defined it, may need to be broadened if the intention is to measure the impact of varied social relationships and intention to persist. For

example, integrative social behaviors, such as increased alcohol consumption, social media use, or increased time watching streaming services or video games with peers, may strengthen social integration but simultaneously decrease intention to persist. Considering multiple social integration behaviors may also add insight into group differences, such that different cultures may socially integrate in different ways, leading to distinct outcomes. These results support the importance of taking a multi-dimensional approach when considering the social integration construct as well as testing Tinto's theory with students of different ethnic backgrounds in the 21st century and considering some of the challenges created by the COVID-19 pandemic.

Additionally, the retention of social relationships of non-White students outside of the institution and moving into emerging adulthood may better support academic pursuits while in college than institutional integration. Retention of existing community, family, or friendships may demonstrate the use of existing social capital for non-White students, many of whom are already used to adjusting to societal or institutional culture to succeed. In contrast, the expectation of making close friends at college may be more salient for U.S.-White students than U.S.-minority or immigrant students. It should be noted that this study was conducted at a metropolitan university, with many commuting students, potentially impacting the relationship that social integration had on intention to persist (Ishitani, 2016; Tauriac & Liem, 2012).

Finally, intention to persist predicted actual persistence for all groups (supporting Hypothesis #2a). By using longitudinal data, we were able to show the predictive power of intention to persist in institutional persistence. According to these data, if a student reported a high intention to persist by the end of their first semester, they were less likely to drop out, regardless of ethnicity or culture of origin, suggesting students' intentions very early in their academic career are indeed predictive of future dropout decisions. Nevertheless, we did not find support for Hypothesis #2b regarding differences in intention to persist across the groups.

## **Implications and Future Directions**

University student success specialists, particularly those focused on institutional strategies designed to facilitate persistence for diverse student populations, may want to consider the following suggestions as a result of this study. First, one-size-fits-all integration strategies for persistence may not be effective. This study reinforces previous literature that indicates group differences exist, such that the predictive power of institutional social integration on intention to persist is not the same across groups. Non-White student populations may not need to quickly socially integrate into the institution to improve their intention to persist and actual persistence. Common institutional strategies that prioritize early social integration into the institution may actually add pressure on students who have strong existing supportive relationships

(Guiffrida, 2006). Non-White students, particularly of immigrant origin or those with strong interdependent cultural orientations, may be better supported by focusing on academic integration, which is consistently the strongest predictor of intention to persist among all ethnic groups. By having an integrative, multi-dimensional approach between minority student populations (such as immigrant-origin and U.S.-origin minorities in this study), persistence outcomes may improve (Hao & Bonstead, 1998). For example, immigrant-origin parents may be motivated to direct their children toward independent strategies in order to succeed in the U.S. postsecondary culture while retaining their interdependent family values in other spheres of life (Cabrera & Padilla, 2004; Stephens et al., 2012). These studies illustrate the importance of approaching persistence programs that broker multiple strategies, including existing family-of-origin methods.

Second, the operational definition of and behavioral need for social integration, as U.S.-White administrators currently view it, may be different for non-White students. Connection, rather than social integration, may be a better way of viewing the needs of some ethnic groups. Making meaningful connections with supportive colleagues on campus may facilitate intention to persist more so than integration strategies that focus on integration into the institution itself for some students. Rather than focusing on integrating new students into the institution's identity (e.g., 'Husky's' or 'Wolverines'), campus professionals tasked with helping new students transition to college should affirm the value of maintaining connections to home and community, especially for student groups from different ethnic origins. Culture of origin similarities, unrelated to the institution itself, may provide the necessary support for students to persist.

Third, it is important to note that White students should not be homogenized either. Differences among rural, urban, commuter, and residential students, for example, may need to be teased apart in future studies. In this study, social integration did not positively predict intention to persist for White students. This could be explained because the sample was drawn from a primarily commuter campus where students' expectations for social integration may have been much lower.

Fourth, self-report intention to persist is the best predictor of actual persistence for all groups, not academic or social integration. Measuring a student's intent to persist may actually be the canary in the coal mine, such that it may best predict long-term persistence for all groups. Students, across groups, were quite accurate in predicting their own long-term enrollment. Therefore, if institutions identify students who report low intention to persist, they may be able to better structure interventions focusing on, for example, academic integration, such as tutoring, peer mentoring, and academic advising, specifically for those students who self-report being more likely to drop out.



Ultimately our data suggested institutions should prioritize persistence to graduation as the goal rather than institutional integration.

Finally, the inequitable impact of COVID-19 on non-White student populations further reinforced the need to better understand and implement retention strategies that consider group differences (Abdalla, 2021). Better understanding the role that intention to persist has in institutional persistence may have even greater importance as remote instruction may make it more difficult for academic and social integration to occur. As institutions are better able to understand differences in the roles that academic and social integration have within and between ethnic groups, different strategies could be leveraged to support groups differently.

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