

College Student Retention on a Racially Diverse Campus: A Theoretically Guided Reality Check

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Abstract

Theoretically grounded in Tinto's model of retention and Braxton and colleagues' revisions, this study is designed to examine the applicability of the integration model to students of different racial backgrounds. Results from a sample of full-time undergraduate students at a research-intensive university suggest that (a) academic and social integrations function differently to the persistence of Black and White students, (b) financial pressure was the most consistent impediment to college retention for all students, and (c) institutional control over academic quality is critical to student retention. In addition, results show that students of different racial backgrounds do not differ significantly in their reported intention to drop out. Implications for policy and planning are discussed.

Keywords

college student retention, racial diversity, financial pressure, academic quality

Introduction

Recent emphasis on college completion (<http://www.completecollege.org>) has focused much attention on student retention. Despite the strong attention,

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rates of baccalaureate degree completion have remained fairly steady over the past decade at about 56% (NCES Digest of Educational Statistics, 2014). Loss of students prior to completion is especially hard as institutions invest scarce resources to recruit and admit students. Institutional leaders and faculty members alike seek to engage students in postsecondary study in order to help increase human capital and build a strong workforce. Achieving these goals requires the success of all students who matriculate, including those from disadvantaged backgrounds.

Within the past four decades, a large volume of literature on student departure from college has amassed. Described as an *ill-structured* problem (Braxton & Mundy, 2001) that defies a single solution and as a *puzzle* that is of interest to scholars and practitioners (Braxton, Hirschy, & McLendon, 2004), there are a variety of theoretical discussions that attempt to explain the phenomenon. Tinto's prominent theory points to the combination of student characteristics and institutional services and culture that affect student departure prior to graduation. Braxton, Sullivan, and Johnson (1997) Braxton, 2000; (Braxton et al., 2013) found evidence for 7 of the Tinto's 13 propositions, affirming the importance of attention to student interactions with faculty, engagement in campus activities, and provision of support services for students throughout their college years.

In the meantime, there is a growing yet still diffuse literature on retention for underrepresented racial minorities (URM; e.g., Astin & Oseguera, 2005; Hurtado & Carter, 1997; Kraemer, 1997; Nora, Attinasi, & Matonak, 1990; Nora & Cabrera, 1996). Although Eimers and Pike (1997) found similar predictors of persistence for their sample of White and minority college freshmen, others (e.g., Tierney, 1992) suggest that factors that are influential on student departure may work differently for students with different background characteristics. Still, in practice, many college officials assume that issues related to the retention of URM students are similar to those of majority students and that retention theories created for majority populations may equally apply to non-majority groups (Rendón, Jalomo, & Nora, 2004; Torres, 2006), despite warnings against potential misuse of theories and research that do not pertain to minority populations (Tanaka, 2002).

Given this background, our study seeks to examine whether there are systematic differences in the factors that contribute to departure for students of different racial subgroups based on the retention model by Tinto and the later revisions put forth by Braxton et al. (2004) and Braxton and Hirschy (2005). We hope this study can offer better knowledge about the retention of URM students, particularly Black/African American (hereafter referred to as Black) students and provide insight into how and where program or policy revisions may be required in order to lower the rates of voluntary dropout of college students.

Literature and Theoretical Frameworks Guiding This Study

Student retention has been one of the most widely studied areas in higher education in the last four decades (e.g., Braxton & Hirschy, 2005; Cabrera, Castenada, Nora, & Hengstler, 1992; Donhardt, 2013; Meeuwisse, Severiens, & Born, 2010; Pascarella & Terenzini, 1977, 1980, 2005; Tinto, 2006). A variety of attrition behaviors have been identified, including temporary stop-out, transfer to another institution, and voluntary withdrawal. With a goal of improving completion rates, the primary focus of academic research on departure has focused on the factors leading to voluntary withdrawal or dropout. Initially, dropout was seen as the behavioral consequence of individual attributes, motivation, and skills on the student side (Tinto, 1982). Resulting from years of debates and considerable theoretical advancements, a heightened focus on the role of institutions in increasing student retention now exists (Braxton, Sullivan, & Johnson, 1997; Eaton & Bean, 1995; Tinto, 1993, 2006).

Tinto's Theory of Student Departure

The best-known theoretical framework on college student retention is Tinto's integration model (Tinto, 1975, 1987, 1993). Tinto, 1975, 1987, 1993) views voluntary student departure as a process that occurs over a period of time due to the meanings that the student ascribes to his or her interactions with the academic and social dimensions of the college or university. Tinto (1975) purports that the student's individual characteristics (including individual attributes, family background, and high school experiences) directly influence the student's commitments to the institution, the goal of graduation, and, ultimately, the departure decision. Tinto frames academic and social integration as necessary. Academic integration represents a student's compliance with the normative academic values of the institution, such as attending classes and earning passing grades. Social integration involves the extent to which there is congruency between the student and the college or university's social systems. When the student perceives congruence with the institution's attitudes, values, beliefs, and norms of social communities, social integration has been achieved.

Tinto's original theory (1975) was later extended and revised (Tinto, 1993) to distinguish formal and informal forms of integration. Briefly, academic integration manifests itself through academic achievement (formal academic integration) and interaction with the faculty (informal academic integration). Social integration refers to extracurricular activities (formal social integration) and contact with peers (informal social integration). In particular, Tinto suggested that student academic integration may be better encouraged through institutional control over teaching quality, such as having more experienced and

accessible faculty members teach key first-year courses and organizing classes to be more amenable for personal contact (e.g., smaller units) between students and faculty members (Tinto, 1982, 2006; see also Ehrenberg & Zhang, 2005; Umbach & Wawrzynski, 2005). Throughout such revisions and suggestions, Tinto's model has maintained that a certain level of academic and social integration is required of students who wish to persist in college and to graduate successfully (Tinto, 1993).

Critiques of Tinto's Model

Myriad studies have empirically tested Tinto's model and provided evidence to support the importance of academic and social interactions to college student retention (e.g., Hurtado et al., 2007; Meeuwisse et al., 2010; Pascarella & Terenzini, 1977, 1980; Tinto, 1982, 2006). In the meantime, the dominant application of Tinto's model in empirical research has also been attracting critiques. One shortcoming is the model's failure to address the role of finance and other factors external to the institution's immediate environment. As a matter of fact, a number of studies have focused on economic factors' influence on voluntary student withdrawal (Andrieu & St. John, 1993; St. John, 1991) and the interaction of finances with other factors (Cabrera, Nora, & Castenada, 1992; St. John, Paulsen, & Starkey, 1996). These findings provide evidence for the importance of financial factors to student degree completion.

Another limitation of Tinto's model is the insufficient consideration of differences in the educational experiences of students from different backgrounds (Braxton et al., 1997; Tinto, 1982). This shortcoming has attracted more debate, given that the student's cultural origins as well as the ability to understand and become involved in the campus culture are critical for persistence (Kuh & Love, 2000). In particular, whether Tinto's model can be used to efficiently guide the retention of URM students has been a topic of research and debate.

Revisions to Tinto's Model

Researchers have proposed refined theoretical models from sociological, economic, and psychological perspectives. Among them, Braxton et al. (2004) presented revisions to Tinto's model by placing social integration as the pivotal factor in retention. Their revisions purport that student characteristics (e.g., gender, race/ethnicity, socioeconomic status (SES), academic ability, high school preparation, and self-efficacy) shape initial commitments to attaining a degree and to the institution. The student's commitment to the institution in turn influences the student's perceptions of several institutional dimensions, including the institution's commitment to the welfare of students, support from faculty and staff, and the potential for social interaction with peers. In their revisions, ability to pay is regarded more as a factor to reduce social

barriers and ease integration than as a financial measure. Instead of academic integration, Braxton's revision highlights the critical role of the institution in providing quality teaching, academic advising, and other functions to encourage student engagement.

Differences Between the Retention of Majority and Minority Students

A number of studies point to differences in persistence rates between majority and minority students, and some researchers have begun to explore how aspects of identifying with a minority race or ethnicity may contribute to the departure puzzle. The findings suggest that retention rates of Black students are consistently lower than that of majority students (Leppel, 2002); Latinas/Latinos are among the least likely racial and ethnic groups to complete a bachelor's degree (Astin & Oseguera, 2005; Berkner, He, & Cattaldi, 2002); Black students typically have lower levels of knowledge about college, how to apply, and have fewer resources to pay for college (D'Augelli & Hersberger, 1993). Furthermore, Black students who are enrolled in a predominantly White campus may feel out of place, not having a strong social support network (Harper & Quaye, 2007; Pike & Kuh, 2006). Park (2012) purports that the challenged racial climate at traditionally White institution affects Black students' cross-racial interactions as well as overall academic success.

URMs are more likely from low socioeconomic backgrounds and those who perceive financial constraints may fail to experience social integration (Braxton et al., 2004). Their lower degree of social integration may, in turn, lead to lower commitment to the institution. Because URM students typically have lower academic ability scores and may hold perceptions of stereotype threat (Contreras, 2005; Steele & Aronson, 1995), they are more likely to have negative outcomes with regard to academic tasks, regardless of individual levels of aptitude. Even with strong academic backgrounds, variables such as cultural and social isolation, negative stereotypes, low expectations from teachers and peers, and nonsupportive educational environment can still affect URMs' academic performance and persistence decisions (Oseguera, Locks, & Vega, 2009).

Research Questions

Extant literature has supported the general patterns that student's high school experience, family context, and personal traits influence persistence in college (Donhardt, 2013; Tinto, 2006; Wells, Seifert, & Saunders, 2013; Wolniak, Mayhew, & Engberg, 2012). For instance, the process of degree attainment differs substantially for students of different genders and racial backgrounds (Murguia, Padilla, & Pavel, 1991; Nora & Cabrera, 1996; Tinto, 1982). Also, SES, academic performance, cognitive skills, motivation, self-efficacy, and active learning behaviors are all positively related to student persistence (Braxton et al., 2000; Choy & Bobbitt, 2000; Freeman, Alston, & Winborne,

2008; Wolniak et al., 2012). Consistent with such findings, first generation status and low parental income appear to be related to a higher likelihood of withdrawal (Hurtado & Carter, 1997; Tinto, 2006; Wolniak et al., 2012).

Although demographic and other external forces do indeed affect student retention, the focus of this study is student experience in the academic institution. Our rationale is that, as much as precollege and personal characteristics influence student persistence in college, institutional officials have little immediate control over students' private lives or prior experiences. A more realistic approach is to identify and focus on matters that are under the college administrators' influence. Therefore, using a sample of full-time undergraduate students at one public research university in the Southeast region of the United States, this study examines factors that contribute to student retention and whether they function differently for students in different racial subgroups. Specific research questions are as follows:

1. What are the major dimensions/factors that students report about their college experience?
2. What factors contribute to student intent to depart from the university?
3. Do the contributing factors function differently with regard to retention for students of racial minorities, particularly Black students, when compared to majority students?

Method and Participants

Participants

The participants for this study were 735 students who completed an online survey that was sent to all full-time undergraduate students at an urban public university. This university is classified as a research-extensive institution by Carnegie classification and has a higher percentage of Black students than the national average. In Table 1, the sample of this study is compared to the target population in terms of gender, race, and class. Due to their higher numbers and propensity to respond to surveys (Porter & Whitcomb, 2005; Sax, Gilmartin, & Bryant, 2003), it is not surprising that more females responded to the survey than their male peers. Nonetheless, the distributions by racial background and class levels in the sample are fairly close to those in the full-time undergraduate population. It is also clear that this institution has a substantially higher percentage of Black and first-generation students than the national averages. Further analysis of the sample responses shows that roughly 66% of the participants are 22 years of age or younger, 13.5% are in the age range of 23 to 25, and 20.5% are above 25, in comparison to the population (university) distribution of 60.0%, 18.9%, and 21.1%, respectively. Additional information by race/ethnicity is presented in Table 3.

Table 1. Sample/Population Comparisons on Demographic Distributions.

		Sample (%)	Population (%)	National statistics (%) ^a
Gender	Male	28.4	41.7	43.8
	Female	71.6	58.3	56.2
Race	White	56.7	53.6	61.6
	Black	30.4	32.4	13.6
	Other minorities	12.9	14.0	24.8
Class	Freshman	26.0	21.2	24.3
	Sophomore	19.7	21.3	20.3
	Junior	24.0	24.7	18.9
	Senior	30.3	32.8	34.2
First generation	Yes	35.8	37.0	25.9
Total		735	11,265	

^aInformation about the distribution at the national level is retrieved from the National Center for Educational Statistics at <http://nces.ed.gov/> based on the 2011–2012 statistics.

Instrument

The data were collected through an online survey that consisted of a total of 64 multiple-choice and open-ended questions. The first 13 questions queried respondents about their personal information, such as gender, racial background, age group, class level, major, and college grade point average (GPA). Following the demographic portion of the questionnaire, 44 multiple choice statements were provided to measure the academic and social experiences of the respondents at their undergraduate institution as well as their financial support and pressure (e.g., student loan, financial aids, work/employment, etc.). Among them were three questions about persistence: “I have seriously considered dropping out of college;” “I have seriously considered changing my major;” and “I may drop out of college if there are good-paying jobs available.” The development of the items was guided by theoretical considerations; several items were modified versions of questions from empirically tested questionnaires, such as the survey used by Beekhoven, de Jong, and van Hout (2002)¹ and the National Survey of Student Engagement.²

At the end, seven open-ended questions were provided for respondents to share further input about their experiences, expectations, and suggestions regarding institutional factors that may aid their success in degree completion. For the purpose of this study, only data from the multiple-choice items were used to answer the research questions.

Procedures

The online survey was pilot tested with a class of undergraduate students in the institution. With the permission of the instructor, the students were encouraged to complete the online survey and provide comments on individual questions. Once the survey was finalized based on the input from the pilot group, an invitation e-mail was sent to all 11,265 undergraduate students who were enrolled full time during the fall of 2014. The e-mail briefly introduced the purpose, the sponsor, and the researchers of the study before a link to the online survey hosted at a university-partnered commercial site was provided. It was made clear that response to the survey was completely voluntary, no personal identifiable information would be collected, and all participants were guaranteed confidentiality. Respondents were also informed that a donation of \$300 would be made to a local Children's Hospital for the first 300 completed surveys as a token of appreciation. Two e-mail reminders were sent weekly following the initial invitation.

There were approximately 850 students who started the survey, but individuals who left more than half of the questions unanswered were considered incomplete and subsequently removed. As a result, this study consisted of 735 respondents with a response rate of 6%. The response rate was not ideal but produced a sufficiently large sample for this study. Also, the low response rate may be remediated by the comparable makeups between the sample and the population, as discussed previously. The final sample had a minimal amount (roughly 3–5 for most questions) of missing data.

Data Analyses

Two steps were taken in the statistical analysis to adequately answer the research questions. First, an exploratory factor analysis (EFA) was conducted to examine the structure of the multiple-choice questions and to identify factors underlying students' college experience. Principle components extraction was used along with VARIMAX rotation; the items were clustered based on the factor on which they loaded the highest. Second, multiple regression with block entry was used to determine whether the identified factors worked differently in the retention of undergraduate students of different racial backgrounds, particularly Black and White students.

Results

EFA of the Multiple Choices Questions

Respondents' answers to the 41 multiple-choice questions, excluding three questions on the types and approximate amount of financial supports, were analyzed with an EFA. A total of nine underlying factors were identified with eigenvalues greater than 1; the factor loadings of individual questions are presented in Table 2. The first factor, with seven questions in this cluster, clearly indicates

Table 2. Items and Their Loadings on the Identified Factors.

Questions	Factors								
	1	2	3	4	5	6	7	8	9
16 I am satisfied with my social life on campus	0.722	0.257	-0.114	-0.015	-0.022	0.155	-0.123	0.135	-0.059
9 I have plenty of contact with fellow students outside the classroom	0.774	0.068	-0.044	-0.023	0.180	0.135	0.007	-0.046	-0.012
6 It is easy for me to make new friends on campus	0.776	0.105	-0.051	-0.011	0.127	0.174	-0.067	-0.005	0.086
7 I am satisfied with the relations I have with my peers	0.782	0.189	-0.150	-0.046	0.038	0.030	-0.154	0.049	0.019
5 I have plenty of friends among my fellow students	0.796	0.101	-0.071	-0.112	0.135	0.143	-0.044	-0.075	0.053
4 I find it difficult to get in touch with other students in my academic area	-0.496	-0.083	0.361	0.162	-0.112	0.183	0.235	0.044	0.020
19 My social life on campus influences my intellectual growth	0.443	0.305	-0.013	-0.070	0.083	0.287	0.178	-0.224	0.028

(continued)

Table 2. Continued

Questions	Factors								
	1	2	3	4	5	6	7	8	9
21 I like to learn new things in my courses	0.043	0.676	-0.073	0.044	0.092	-0.204	-0.039	-0.024	0.176
22 Generally speaking, I have fun studying	-0.013	0.552	0.191	0.100	0.356	-0.035	-0.264	0.070	-0.079
23 I am satisfied with my academic development at this university	0.231	0.651	-0.195	-0.093	0.159	0.063	-0.153	0.082	0.065
20 I find my courses to be generally interesting	0.069	0.736	-0.223	-0.014	0.115	-0.026	-0.049	-0.077	0.037
1 My academic program is of good quality	0.149	0.602	-0.343	-0.077	-0.040	0.140	-0.028	-0.092	-0.090
18 I find everyday enjoyable at my university	0.391	0.592	-0.077	0.027	-0.070	0.161	-0.221	0.005	-0.123
15 I like the atmosphere in my academic program	0.328	0.565	-0.395	-0.044	0.046	0.024	-0.047	-0.041	-0.054
17 The atmosphere at the university which I attend is good	0.438	0.524	-0.230	-0.006	-0.122	0.176	-0.102	0.094	-0.106
24 I have opportunities to get involved in research projects that are related to my major	0.218	0.392	-0.138	-0.114	0.290	0.000	0.121	0.055	0.047
12 I am generally dissatisfied with the access I have to faculty members	-0.065	-0.166	0.724	0.066	-0.076	0.140	0.164	-0.050	-0.011

(continued)

Table 2. Continued

Questions	Factors								
	1	2	3	4	5	6	7	8	9
13 I have found the academic advising offered to students to be insufficient	-0.081	-0.137	0.664	0.105	0.002	-0.008	0.052	0.046	0.056
3 The teaching skills of my instructors are generally poor	0.070	-0.394	0.566	0.130	-0.049	0.002	0.140	0.167	0.196
2 The class sizes of the courses I have attended were too large	-0.057	-0.019	0.560	0.116	0.042	-0.056	0.085	0.139	-0.091
10 I am satisfied with my interactions with faculty members	0.224	0.407	-0.465	-0.038	0.205	0.025	-0.082	0.455	0.107
14 I have access to faculty members for discussion and to receive advice	0.214	0.355	-0.566	-0.087	0.191	-0.035	-0.029	0.267	0.063
11 It is easy to interact with instructors and advisors	0.185	0.328	-0.605	-0.049	0.225	-0.080	-0.061	0.422	0.113
39 I struggle to pay tuition every semester	-0.046	-0.103	0.091	0.812	-0.007	0.059	0.221	0.028	-0.084
40 I have to work over 20 hours a week in order to fund my college education	-0.036	-0.025	0.073	0.809	0.024	-0.009	0.087	-0.023	0.023
38 Financial pressure is distracting me from my college coursework	-0.050	0.009	0.137	0.787	-0.018	0.025	0.195	0.003	0.013

(continued)

Table 2. Continued

Questions	Factors								
	1	2	3	4	5	6	7	8	9
37 I have financial support from my family members for completing my college degree	0.118	-0.052	-0.120	-0.594	0.039	0.031	0.335	0.055	0.006
28 I discuss ideas from readings or class materials with faculty outside of class	0.119	0.113	-0.103	0.028	0.799	0.193	-0.080	0.065	-0.031
29 I interact with faculty outside of the classroom concerning coursework	0.034	0.099	-0.123	0.020	0.737	0.219	-0.063	0.111	0.003
27 I discuss ideas from readings or class materials with other students outside of class	0.383	0.125	-0.004	-0.035	0.587	0.115	0.121	-0.250	0.017
26 I work with other students on school work outside of class	0.483	0.044	0.016	-0.063	0.512	0.156	0.149	-0.311	-0.031
25 I participate in organized academic activities with peers (e.g., study groups)	0.466	0.175	0.017	-0.062	0.431	0.099	0.050	-0.287	0.013
30 I participate in events sponsored by a fraternity or sorority	0.187	-0.091	-0.009	-0.047	0.002	0.728	0.045	-0.016	0.043
31 I participate in residence hall activities	0.095	-0.005	-0.008	-0.008	0.169	0.718	0.044	0.060	-0.080
32 I participate in social or cultural events hosted by groups	0.123	0.029	0.026	0.068	0.278	0.711	0.071	-0.029	-0.036

(continued)

Table 2. Continued

Questions	Factors								
	1	2	3	4	5	6	7	8	9
reflecting my own cultural heritage									
33 I participate in community service activities	0.154	0.113	0.094	0.057	0.095	0.654	0.001	-0.088	0.186
34 I have seriously considered dropping out of college	-0.174	-0.118	0.150	0.265	0.076	-0.012	0.703	0.000	-0.127
35 I have seriously considered changing my major	-0.086	-0.142	0.172	-0.006	-0.105	0.164	0.599	0.045	0.056
41 I may drop out of college if there are good-paying jobs available	-0.073	-0.146	0.263	0.354	0.064	0.021	0.536	0.099	-0.033
8 I do not like to interact with my fellow students	-0.213	-0.105	0.199	-0.041	-0.108	-0.027	0.252	0.616	-0.172
36 It is important for me to complete my degree within 6 or fewer years	0.019	0.026	-0.021	-0.047	-0.031	0.080	-0.050	-0.069	0.901
Cronbach's alpha	.743	.834	.821	.766	.791	.741	.642	N/A	N/A

students' social interaction with peers on campus. Nine questions clustered in the second factor, which appears to be a combination of student evaluation of their learning environment and intellectual growth. All seven questions loaded on Factor 3 are related to institutional control over academic quality, such as having more experienced and accessible faculty members and organizing classes to be more amenable for personal contact between students and faculty members (Tinto, 1982, 2006; see also Ehrenberg & Zhang, 2005; Umbach & Wawrzynski, 2005). The four questions loaded on Factor 4 address student financial pressure, which was negatively related to their ability to pay for college education. Factor 5 consisted of questions about informal academic engagement. The four questions for Factor 6 were related to student participation in organized social activities on campus, which was different from their social interactions with peers as measured by Factor 1. The three questions in Factor 7 were concerned with different aspects of student persistence. The last two factors, 8 and 9, each had only one question. Factor 8 related to student psychosocial readiness for social engagement (Braxton et al., 2013), whereas the last factor was clearly related to students' personal commitment to degree attainment.

Altogether, the nine extracted factors accounted for 60% of total variance. As shown at the bottom of Table 2, all multi-item factors except Factor 7 had Cronbach's alpha greater than .74, indicating good internal consistency. The three items in Factor 7 had a Cronbach's alpha = .642, which is reasonable, given that the items measured conceptually different aspects of potential departure; to focus on voluntary departure from college in this study, we used only Question 34 to quantify drop-out intention in the subsequent analyses.

Regression Analyses of Racial Differences in College Retention

As there is underlying continuity for the 5-point Likert-type scale answers to Question 34, "I have seriously considered dropping out of college," we used ordinary least square (OLS) block-entry regression to examine factors contributing to student drop-out intention. With Question 34 being the dependent variable, demographic background measures were entered in the first block as control variables, including gender, first-generation status, and student's total number of "yes" answers to whether he or she had work study, loan, grant, and fee waivers, which was used as a proxy measure of SES. In the second block, factor scores measuring college experiences were entered along with class level and cumulative GPA. For each respondent, his or her responses to items belonging to the same factor were aggregated to be the factor scores. The factor scores were calculated for all the respondents for the above identified factors after reverse coding of questions 4, 10, 11, 14, and 37. All but Factor 7 were included in the models as independent variables with one minor modification: Factor 2 is divided into Factors 2a (Questions 21–23—intellectual growth) and 2b

(Questions 1, 15, 17, 18, 20, and 24—learning environment) to aid better interpretation. Descriptive information about the variables is provided in Table 3.

Three regression models of identical structure were constructed, one for White students ($n=415$), the second for Black students ($n=225$), and the last for all other racial minorities (ORM; $n=95$). It is important to note that the Asian American students ($n=29$) in our sample are grouped in *other minorities* because they are not comparable with their White counterparts on a number of academic attributes; for instance, they are more likely to be first-generation college goers (46.4% vs. 32.7% for White) and have a cumulative GPA lower than 3.0 (29.6% vs. 20.9% for White). The three separate models made it possible to examine the specific factors that were influential to student departure intention in different racial groups and to identify potential racial differences in student retention.

The comparisons were mainly between Black and White students; due to limited sample size, the model for ORM is provided for reference purposes only. The full models are shown in Table 4. The only factor that consistently influenced the departure intention of all students regardless of racial background was the ability to pay for college education ($b=0.053$, $p=.001$ for White, $b=0.067$, $p=.008$ for Black, and $b=0.071$, $p=.044$ for ORM). Students experiencing greater financial difficulty reported stronger likelihood to drop out. Distinctive patterns were identified in the regression models showing how other factors are related to persistence for Black and White students. For White students, better academic performance, as measured by self-reported cumulative GPA, significantly reduced their departure intention ($b=-.203$, $p=.005$). Even though the same pattern held for ORM students ($b=-0.250$, $p=.079$), it is clearly absent for Black students ($b=-0.097$, $p=.27$). The intention to drop out also grew stronger for White students as they matriculated from freshman to upper class levels ($b=0.108$, $p=.029$), but this relationship between class and persistence is not observed for racial minorities.

White students reported that a more enjoyable learning environment reduced their likelihood of degree incompleteness ($b=-0.060$, $p=.023$), whereas the responses from minority students including Blacks indicated that it was the institutional commitment to academic quality provided in the form of better teaching, reasonable-sized classes, and easy access to faculty members for advice, which significantly and substantially reduced their departure intentions ($b=-0.069$, $p=.009$ for Black; $b=0.093$, $p=.004$ for ORM). Also, two critical retention factors were unique to Black students. First, a strong personal commitment to completing undergraduate education on time was associated with a significantly lower intention to drop out ($b=0.241$, $p=.012$); second, an individual's lack of psychosocial willingness for social engagement was significantly detrimental to college persistence ($b=-0.240$, $p=.018$). Interestingly, higher levels of informal academic engagement with peers and faculty outside of the classroom were related to an increased likelihood of departure for White students ($b=0.066$, $p=.008$).

Table 3. Descriptive Information About Variables in the Regression Models.

	White		Black		Other minorities		
	Male (n = 123)	Female (n = 292)	Male (n = 58)	Female (n = 167)	Male (n = 28)	Female (n = 67)	Total (n = 735)
Mean (standard deviation)							
Factor 1	21.64 (4.84)	22.53 (4.99)	23.10 (4.49)	21.71 (5.33)	24.00 (4.41)	22.88 (4.63)	22.31 (4.99)
Factor 2a	10.78 (2.18)	11.32 (1.99)	10.94 (1.99)	10.89 (2.13)	11.78 (2.08)	11.12 (1.74)	11.10 (2.04)
Factor 2b	20.63 (5.96)	22.40 (4.34)	21.69 (5.89)	22.11 (5.18)	23.46 (4.90)	21.90 (4.39)	21.97 (5.02)
Factor 3	16.15 (5.67)	15.34 (5.01)	15.86 (5.49)	15.62 (4.57)	15.43 (4.74)	16.34 (4.26)	15.69 (5.01)
Factor 4	11.54 (4.55)	11.14 (4.42)	10.81 (3.62)	12.03 (3.95)	12.27 (3.68)	11.00 (3.69)	11.42 (4.20)
Factor 5	10.93 (3.22)	10.83 (3.20)	12.56 (3.93)	11.03 (3.51)	11.81 (3.74)	11.02 (2.86)	11.07 (3.37)
Factor 6	5.70 (2.14)	6.04 (2.25)	7.83 (3.43)	6.69 (2.70)	7.19 (2.86)	6.58 (2.33)	6.36 (2.53)
Factor 8	2.22 (.91)	2.21 (1.03)	2.09 (.80)	2.22 (1.07)	1.79 (.96)	2.05 (.87)	2.18 (.99)
Factor 9	4.49 (.82)	4.56 (.85)	4.49 (.89)	4.50 (.95)	4.69 (.68)	4.53 (.66)	4.53 (.85)
Intention to drop out	2.20 (1.41)	1.91 (1.29)	2.08 (1.34)	2.26 (1.39)	1.81 (1.27)	2.27 (1.18)	2.08 (1.33)

(continued)

Table 3. Continued

	White		Black		Other minorities		Total (n = 735)
	Male (n = 123)	Female (n = 292)	Male (n = 58)	Female (n = 167)	Male (n = 28)	Female (n = 67)	
Percentage							
White			Black		Other minorities		Total
First generation	32.5		38.2		42.4		35.5
Class level							
Freshman	26.6		23.7		28.4		26.0
Sophomore	21.1		17.9		17.9		19.7
Junior	22.1		25.4		29.5		24.0
Senior	30.2		33.0		24.2		30.3
Cumulative GPA							
Below 2.0	0.7		3.6				1.5
2.0–2.49	5.5		14.3		5.4		8.2
2.50–2.99	14.6		37.9		22.6		22.7
3.0–3.49	36.4		29.5		39.8		34.7
3.50–4.0	42.8		14.7		32.3		32.9

Table 4. Regression Models of Racial Differences in Factors Influencing Drop-out Intention.

	White ($R^2 = .218$)			Black ($R^2 = .213$)			Other minorities ($R^2 = .462$)		
	<i>b</i>	β	<i>p</i>	<i>b</i>	β	<i>p</i>	<i>b</i>	β	<i>p</i>
Constant	3.672		.000	0.113		.925	1.501		.416
Block #1	$\Delta R^2 = .020$ ($F = 2.505, p = .059$)			$\Delta R^2 = .007$ ($F = .492, p = .688$)			$\Delta R^2 = .045$ ($F = 1.298, p = .281$)		
Gender (<i>male</i> = 0, <i>female</i> = 1)	-0.037	-0.013	.791	0.129	0.041	.541	0.374	0.139	.162
First generation college student	0.164	0.057	.239	-0.020	-0.007	.917	0.300	0.121	.201
SES proxy	-0.031	-0.020	.710	-0.029	-0.017	.792	-0.025	-0.016	.877
Block #2	$\Delta R^2 = .198$ ($F = 8.552, p < .001$)			$\Delta R^2 = .206$ ($F = 4.599, p < .001$)			$\Delta R^2 = .417$ ($F = 5.071, p < .001$)		
Class level	0.122	0.108	.029	-0.003	-0.002	.975	-0.032	-0.029	.760
Cumulative GPA	-0.203	-0.139	.005	-0.097	-0.072	.270	-0.250	-0.174	.079
Factor 1: Peer interaction	-0.035	-0.121	.063	0.023	0.086	.328	-0.053	-0.194	.114
Factor 2a: Intellectual growth	-0.062	-0.094	.142	-0.019	-0.028	.739	-0.052	-0.077	.521
Factor 2b: Learning environment	-0.060	-0.171	.023	0.018	0.054	.607	0.016	0.048	.739
Factor 3: Academic quality	0.017	0.061	.310	-0.069	-0.234	.009	-0.093	-0.331	.004
Factor 4: Ability to pay	0.053	0.178	.001	0.067	0.191	.008	0.071	0.216	.044
Factor 5: Informal academic engagement	0.066	0.152	.008	0.007	0.019	.838	-0.027	-0.068	.585
Factor 6: Participation in campus events	0.029	0.048	.362	0.021	0.045	.575	0.092	0.188	.094
Factor 8: Psychosocial engagement	-0.102	-0.064	.175	-0.240	-0.163	.018	-0.170	-0.093	.339
Factor 9: Goal commitment to completion	0.098	0.073	.159	0.241	0.177	.012	0.116	0.081	.407

Note. GPA = grade point average; SES = socioeconomic status; ORM = other racial minorities. Due to small sample size, $\alpha = .10$ is used for the ORM model.

According to the regression models, social interaction with peers on campus was not a significant factor in college retention for White and racial minority students. Also, first-generation college goers did not appear to have a higher likelihood to drop out. It is worth mentioning that being the real numeric minorities in this study, ORM students had a better chance of persisting if they found a sense of community through participation in activities hosted by fraternity/sorority, residency hall, or groups of their own cultural heritage (Factor 6, $b = 0.092$, $p = .094$). Finally, the regression models explained approximately the same amount of variance (21–22%) in intent for departure for White and Black students.

Discussion

Factors Underlying College Student Experiences

The results of the EFA confirmed that there are indeed two important and separate dimensions that contribute to students' integration in college: an academic (Factors 2a and 5, with college GPA as the indicator of formal academic integration) and a social dimension (Factors 1 and 6). In particular, and consistent with Tinto's differentiation between informal and formal dimensions of social integration, responses for students' interaction with peers appear to be different from their participation in group activities offered by campus organizations. Even though both peer interaction and group participation are considered to be social integration, they work differently in the process of college student retention.

Although Tinto's model is limited in its consideration of factors such as students' ability to pay for college education (Factor 4), commitment to degree completion (Factor 9), and psychological readiness for social engagement (Factor 8), these three factors are supported by Braxton et al.'s revisions (2004). In addition, the differences between learning environment (Factor 2b) and institutional control over academic quality (Factor 3) are also consistent with Braxton et al.'s theorization of institutional functions in student retention. First, students hold certain images and expectations about the institution they attend, and if the characteristics of the attending institution fulfilled their expectations for an enriching and supportive learning environment, students would have a positive evaluation of the institution and, therefore, a strong sense of institutional commitment. Second, control over academic quality is a more concrete demonstration of institutional commitment to student welfare. According to Braxton et al., academic advising, good teaching, and interactions with faculty all contribute to students' perceptions of institutional efforts placed on student growth and development. Thus, findings in this study provide empirical evidence for the distinctive natures of students' perceptions of the learning environment and academic quality and highlight the importance of institutional commitment to student welfare.

Influential Factors and Racial Differences in College Student Retention

In this study, responses indicated that financial pressure was the most consistent impediment to college retention for all students. This pattern is not surprising, given the drastic increase in college tuition in recent years (Baum & Ma, 2013; Farrell, 2003; Mumper & Freeman, 2005). It is worth noting that Braxton's interpretation of the ability to pay for college extends beyond monetary consideration; rather, it is a factor that helps to lower financial concerns and to ease student participation in social communities on campus. As such, the inclusion of financial pressure may partly contribute to the lack of statistically significant relationship between students' peer interaction and their intent to drop out.

The findings also indicate strong differences in the factors influencing retention for Black and White students. White students, as the majority group, were more concerned with an enjoyable learning environment, whereas Black students were strongly influenced by institutional commitment to academic quality. In other words, availability of faculty members for academic advising and support and academic programs that make personal contact between faculty and students more accessible would be more effective in increasing the likelihood of success for Black than White students. Despite the differences, response patterns for both groups highlight the role of the institution in improving student retention. Reducing class size, making faculty members more available for interacting with and advising students and improving teaching quality are practical and effective interventions that will contribute to student persistence. Institutional commitment to student welfare will naturally lead to the formulation of a supportive learning environment for all students and improve student retention in the long run.

In addition, findings herein prompt consideration that more involvement in informal academic activities, such as study groups and discussions outside of class, was associated with a higher level of drop-out intention for White students. This finding is inconsistent with Tinto's (1993) proposition. A possible explanation is that students with more academic engagement outside of class are more likely to be those who are challenged by the learning objectives and need to invest more time and effort to overcome such difficulties. In other words, the informal academic engagement is a complication of academic underperformance, which contributes greatly to degree incompleteness.

Further, better academic performance (i.e., cumulative GPA) significantly lowered the drop-out intention of White students. However, consistent with the findings by Strayhorn and Terrell (2007), academic engagement has a limited impact on retention for Black students. For them, it is the lack of psychosocial readiness for social engagement and of personal commitment to attaining a degree that significantly increased their intention to drop out. Given the

differences, institutional officials are expected to tailor the retention efforts to meet the specific needs of students of diverse backgrounds. For instance, academic units could establish a system that ensures every incoming freshman is assigned to a senior student of the same racial background to establish a mentee/mentor relationship. The main purpose of such a mentorship is to bridge the transition into a college environment, encourage new students to be more socially proactive, and help them stay connected with peers on campus. Also, institutional officials may wish to ensure sufficient funds are allocated for academic and support services. Student engagement through a variety of tutoring and extracurricular social events can assist in increasing students' academic and social self-efficacy. In addition, it may be beneficial for the institutional and academic units to make career counseling a regular component of academic advising. The goal commitment of individuals may be strengthened if students can be provided with information about the benefits of a college degree through career planning and counseling.

Last but not least, this study finds that students of different racial backgrounds did not differ significantly in their drop-out intention. One of the major contributors to the higher attrition rates of URM students, according to the extant literature, is their sense of social isolation in predominantly White institutions (Harper & Quaye, 2007; Park, 2012; Pike & Kuh, 2006). In this study, both Black ($p < .001$) and ORM ($p = .013$) students reported significantly higher levels of formal social engagement than their White peers, and all students reported comparable levels of psychological readiness for social interaction with peers. Note that the institution is unique in terms of its higher proportion of URM students (46.4%); in particular, 32.4% of the student population is Black, which is substantially higher than the national level (13.6%). Given the significance of psychological readiness to the persistence of Black students and formal social engagement to ORM, we speculate that the institution strives to offer a welcoming and supportive diversity culture as a result of the better representation of URM students on campus and a higher proportion of Black residents in its large urban location. Our speculation is supported by the evidence that Minority Affairs Programs as a branch office of Student Affairs invite minority students to attend the annual Minority Student Mixer in order to spread awareness of the different minority organizations and services. In 2008, a peer-mentoring program was initiated to better prepare minority students intellectually, socially, culturally for the transition to the college environment. Also, Minority Affairs in collaboration with other departments/offices on campus regularly assist freshmen students by connecting them to appropriate resources and enhancing their acclimation to the university. Black History Month and Hispanic Heritage Month are celebrated annually with organized activities on campus. As such, the reduced social isolation is partly responsible for the comparable persistence across racial groups.

Practical Implications

The unique contribution of this study is that the findings demonstrated how the same group of retention factors functioned differently for students of different racial backgrounds. The primary implications are that, first, interventions to improve teaching quality and student/faculty interactions should remain the focal point in retention efforts of undergraduate institutions. And second, even for studies and practical retention programs guided by empirically tested theories, sufficient consideration of differences in the educational experiences of students from different demographic backgrounds is required in order to make the theoretical framework more applicable for effectively addressing diversity issues in higher education (Braxton et al., 1997; Hurtado & Carter, 1997; Meeuwisse et al., 2010; Tinto, 1982, 1993). In particular, besides academic quality, the retention of Black students can be better improved through institutional interventions to provide accessible support and guidance from faculty, programs that encourage social engagement, and effective communications about the values associated with college degrees in occupational and economic outlook.

Finally, a critical question raised by this study is what higher education institutions can do to reduce students' financial pressure that has been identified as an impediment to retention regardless of race. Tuition hikes seem to be used as a way to keep budgeting balance by many institutions when state funding is reduced significantly in recent years. Unfortunately, empirical evidence suggested that increasing tuition transfers financial pressure to students and negatively impacts enrollment and retention. Financial policies of an institution could be particularly influential to minority student retention because they are more likely from low socioeconomic backgrounds (Braxton et al., 2004). Therefore, institutional administrators are challenged to identify additional funding sources, such as establishing partnerships with local employers to provide internship opportunities and scholarships to students and to strategically mobilize resources in order to offer more need-based financial assistance to individuals from low SES backgrounds.

Limitations

The sample for this study comes from an urban university in the Southeast, and we do not assume the findings can be generalized to a different population without further verification. Although data come from a single institution, its higher proportion of minority students made it an appropriate location in which to collect data for this inquiry. The low response rate is a common problem to online surveys; nonetheless, it casts doubt on the reliability of the findings. Additionally, the dependent variable, the self-reported intention to drop out of college, is ordinal in nature. However, given its underlying continuity, an OLS regression is more appropriate than multinomial logit regression and renders a more straightforward interpretation of the results. Also note that

the self-reported intention to drop out cannot be corroborated by official records on actual student incompletions due to the anonymous nature of data collection; however, evidence is available that suggests drop-out intention is the best predictor of voluntary departure from an institution (Bean, 1982). Finally, in this study, very limited consideration was given to preenrollment characteristics; future studies may wish to examine the predictive power of preenrollment, such as high school academic status, on college success for a URM population.

Conclusions

This study examined the experience and persistence of a racially diverse sample of college students based on Tinto's retention model (1993) and the revisions by Braxton et al. (2004). The findings confirmed the academic and social dimensions in student experience and supported the different functions of formal and informal academic and social integrations in student retention. Further, the results provided evidence that ability to pay for college education has become the dominant factor in student persistence. In summary, the study facilitates a better understanding about racial differences in retention needs and highlights the critical role of institutional commitment to academic quality in students' evaluations of their educational experiences and persistence to college completion.

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Notes

1. The e-mail address provided in the article (2002) is out of date, and the authors tried three different e-mail addresses based on a Google search but were unsuccessful to reach S. Beekhoven for a written permission regarding modification and reuse of the five survey items.
2. Permission was obtained to modify and use eight items for an older version of the National Survey of Student Engagement.

References

- Andrieu, S. C., & St. John, E. P. (1993). The influence of prices on graduate student persistence. *Research in Higher Education, 34*(4), 399–426.

- Astin, A. W., & Oseguera, L. (2005). *Degree attainment rates at American colleges and universities* (Revised ed.). Los Angeles: Higher Education Research Institute, UCLA.
- Baum, S., & Ma, J. (2013). *Trends in college pricing*. Washington, DC: The College Board.
- Bean, J. P. (1982). Conceptual models of student attrition: How theory can help the institutional researcher. In E. Pascarella (Ed.), *New directions for institutional research: Studying student attrition* (Vol. 36, pp. 17–33). San Francisco, CA: Jossey Bass.
- Beekhoven, S., de Jong, U., & van Hout, H. (2002). Explaining academic progress via combining concepts of integration theory and rational choice theory. *Research in Higher Education*, 43, 577–600.
- Berkner, L., He, S., & Cattaldi, E. F. (2002). *Descriptive summary of 1995–96 beginning postsecondary students: Six years later*. Washington, DC: National Center for Education Statistics.
- Braxton, J. (2000). *Reworking the student departure puzzle*. Nashville, TN: Vanderbilt University Press.
- Braxton, J. M., Doyle, W. R., Hartley, H. V. III, Hirschy, A. S., Jones, W. A., & McClendon, M. K. (2013). *Rethinking college student retention*. New York, NY: John Wiley.
- Braxton, J., & Hirschy, A. (2005). Theoretical developments in the study of college student departure. In A. Seidman (Ed.), *College student retention: Formula for student success*. Westport, CT: ACE/Praeger.
- Braxton, J. M., Hirschy, A. S., & McClendon, S. A. (2004). *Toward understanding and reducing college student departure*. ASHE-ERIC Higher Education Report, Vol. 30, no 3. San Francisco, CA: Jossey-Bass.
- Braxton, J. M., Milem, J. F., & Sullivan, A. S. (2000). The influence of active learning on the student departure process: Toward a revision of Tinto's theory. *The Journal of Higher Education*, 77, 569–590.
- Braxton, J. M., & Mundy, M. E. (2001). Powerful institutional levers to reduce college student departure. *Journal of College Student Retention*, 3(1), 91–117.
- Braxton, J. M., Sullivan, A. S., & Johnson, R. M. (1997). Appraising Tinto's theory of college departure. In J. Smart (Ed.), *Higher education: A handbook for theory and research* (pp. 107–164). New York, NY: Agathon Press.
- Cabrera, A. F., Castaneda, M. B., Nora, A., & Hengstler, D. (1992). The convergence between two theories of college persistence. *Journal of Higher Education*, 63, 143–164.
- Cabrera, A. F., Nora, A., & Castañeda, M. B. (1992). The role of finances in the persistence process: A structural model. *Research in Higher Education*, 33(5), 571–593.
- Choy, S., & Bobbitt, L. (2000). *Low-income students: Who they are and how they pay for their education*. National Center for Education Statistics, Statistical Analysis Report 2000-169. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.
- Contreras, F. (2005). Access, achievement, and social capital: Standardized exams and the Latino college-bound population. *Journal of Hispanic Higher Education*, 4(3), 197–214.
- D'Augelli, A. R., & Hersberger, S. L. (1993). African American undergraduates on a predominantly white campus: Academic factors, social networks, and campus climate. *Journal of Negro Education*, 62, 67–81.

- Donhardt, G. L. (2013). The fourth-year experience: Impediments to degree completion. *Innovative Higher Education, 38*(3), 207–221.
- Eaton, S. B., & Bean, J. P. (1995). An approach/avoidance behavioral model of college student attrition. *Research in Higher Education, 36*(6), 617–645.
- Ehrenberg, R. G., & Zhang, L. (2005). Do tenured and tenure-track faculty matter? *Journal of Human Resources, 40*, 647–659.
- Eimers, M. T., & Pike, G. R. (1997). Minority and nonminority adjustment to college: Differences or similarities? *Research in Higher Education, 38*, 77–97.
- Farrell, E. F. (2003). Public-college tuition rise is largest in 3 decades. *Chronicle of Higher Education, 50*(10), A1–A35.
- Freeman, K. E., Alston, S. T., & Winborne, D. G. (2008). Do learning communities enhance the quality of students learning and motivation in STEM? *The Journal of Negro Education, 77*, 227–240.
- Harper, S., & Quaye, S. (2007). Student organizations as venues for Black identity expression and development among African American male student leaders. *Journal of College Student Development, 48*(2), 127–144.
- Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino college students' sense of belonging. *Sociology of Education, 70*, 324–345.
- Hurtado, S., Han, J. C., Sáenz, V. B., Espinosa, L. L., Cabreraand, N. L., & Cerna, O. S. (2007). Predicting transition and adjustment to college: Biomedical and behavioral science aspirants' and minority students' first year of college. *Research in Higher Education, 48*, 841–887.
- Kraemer, B. (1997). The academic and social integration of Hispanic students into college. *The Review of Higher Education, 20*(2), 163–179.
- Kuh, G., & Love, P. (2000). A cultural perspective on student departure. In J. Braxton (Ed.), *Reworking the student departure puzzle* (pp. 196–212). Nashville, TN: Vanderbilt University Press.
- Leppel, K. (2002). Similarities and differences in the college persistence of men and women. *The Review of Higher Education, 25*(4), 433–450.
- Meeuwisse, M., Severiens, S. E., & Born, M. P. (2010). Learning environment, interaction, sense of belonging and study success in ethnically diverse student groups. *Research in Higher Education, 51*, 528–545.
- Mumper, M., & Freeman, M. L. (2005). The causes and consequences of public tuition inflation. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (pp. 307–361). Dordrecht, Netherlands: Springer.
- Murguía, E., Padilla, R. V., & Pavel, M. (1991). Ethnicity and the concept of social integration in Tinto's model of institutional departure. *Journal of College Student Development, 32*, 433–439.
- National Center for Education Statistics. (2014). *Digest of educational statistics, 2014*. Washington, DC: Author.
- Nora, A., Attinasi, L. C., & Matonak, A. (1990). Testing qualitative indicators of pre-college factors in Tinto's attrition model. A community college student population. *Review of Higher Education, 13*(3), 337–356.
- Nora, A., & Cabrera, A. F. (1996). The role of perceptions of prejudice and discrimination on the adjustment of minority students to college. *Journal of Higher Education, 67*, 119–148.

- Oseguera, L., Locks, A., & Vega, I. (2009). Increasing Latina/o students' baccalaureate attainment: A focus on retention. *Journal of Hispanic Higher Education, 8*(0), 23–53.
- Park, J. (2012). "Man, this is hard": A case study of how race and religion affect cross-racial interaction for black students. *Review of Higher Education, 35*(4), 567–593.
- Pascarella, E., & Terenzini, P. T. (1977). Patterns of student-faculty informal interaction beyond the classroom and voluntary freshman attrition. *The Journal of Higher Education, 48*, 540–552.
- Pascarella, E. T., & Terenzini, P. T. (1980). Predicting freshman persistence and voluntary dropout decisions from a theoretical model. *Journal of Higher Education, 51*, 60–75.
- Pascarella, E., & Terenzini, P. (2005). *How college affects students*. San Francisco, CA: Jossey Bass.
- Pike, G. R., & Kuh, G. D. (2006). Relationships among structural diversity, informal peer interactions and perceptions of the campus environment. *Review of Higher Education, 29*, 425–450.
- Porter, S. R., & Whitcomb, M. E. (2005). Nonresponse in student surveys: The role of demographics, engagement and personality. *Research in Higher Education, 46*, 127–152.
- Rendón, L. I., Jalomo, R. E., & Nora, A. (2004). Theoretical considerations in the study of minority student retention in higher education. In J. Braxton (Ed.), *Reworking the student departure puzzle* (Rev. ed., pp. 127–156). Nashville, TN: Vanderbilt University Press.
- Sax, L. J., Gilmartin, S. K., & Bryant, A. N. (2003). Assessing response rates and non-response bias in web and paper surveys. *Research in Higher Education, 44*(4), 409–432.
- St. John, E. P. (1991). What really influences minority attendance? Sequential analyses of the high school and beyond sophomore cohort. *Research in Higher Education, 32*, 141–158.
- St. John, E. P., Paulsen, M. B., & Starkey, J. B. (1996). The nexus between college choice and persistence. *Research in Higher Education, 37*(2), 175–220.
- Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology, 69*(5), 797–811.
- Strayhorn, T., & Terrell, M. (2007). Mentoring and satisfaction for Black students. *Negro Education Review, 58*(1–2), 69–83.
- Tanaka, G. (2002). Higher education's self-reflexive turn toward an intercultural theory of student development. *The Journal of Higher Education, 73*, 263–296.
- Tierney, W. (1992). An anthropological analysis of student participation in college. *Journal of Higher Education, 63*, 603–618.
- Tinto, V. (1975). Dropouts from higher education: A theoretical synthesis of the recent literature. *A Review of Educational Research, 45*, 89–125.
- Tinto, V. (1982). Limits of theory and practice in student attrition. *Journal of Higher Education, 53*(6), 687–700.
- Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago, IL: The University of Chicago Press.
- Tinto, V. (1993). *Leaving college. Rethinking the causes and cures of student attrition* (2nd ed.). Chicago, IL: The University of Chicago Press.

- Tinto, V. (2006). Research and practice of student retention: What next? *Journal of College Student Retention: Research, Theory and Practice*, 8(1), 1–19.
- Torres, V. (2006). Bridging two worlds: Academia and Latina/o identity. In J. Castellanos, A. Gloria & M. Kamimura (Eds.), *The Latina/o pathway to the Ph.D.: Abriendo caminos* (pp. 135–147). Sterling, VA: Stylus.
- Umbach, P. D., & Wawrzynski, M. R. (2005). Faculty do matter: The role of college faculty in student learning and engagement. *Research in Higher Education*, 46(2), 153–184.
- Wells, R., Seifert, T., & Saunders, D. (2013). Gender and realized educational expectations: The roles of social origins and significant others. *Research in Higher Education*, 54, 599–626.
- Wolniak, G. C., Mayhew, M. J., & Engberg, M. E. (2012). Learning's weak link to persistence. *The Journal of Higher Education*, 83(6), 795–823.

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