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# Friendships and Retention at a Historically Black University: A Quantitative Case Study

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## **Keywords**

Friends, historically Black university, persistence, retention



## FRIENDSHIPS AND RETENTION AT A HISTORICALLY BLACK UNIVERSITY: A QUANTITATIVE CASE STUDY

Mondrail Myrick, John A. Gipson Jr., and Donald Mitchell Jr.

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### **Abstract**

The retention and graduation rates of underrepresented minority, first-generation and low-income college students persist as problems in U.S. higher education. While researchers have documented the ways in which minority-serving institutions have been successful in serving these students, little is known about how friendships influence retention at these institutions. This study examines retention factors of first-year students who began college with close friends at a historically Black university. The researchers used exploratory factor analysis and binary logistic regressions to determine the factors and significance. In addition, the researchers used linear structural relations to estimate hypothesized causal models. Results of the study indicate students who started college with close friends were less academically prepared and persisted at comparable rates. In addition, social expectations and social confidence were determined as beneficial factors when comparing students who started with close friends to students who started without close friends.

*Keywords: Friends, historically Black university, persistence, retention*

### **Introduction**

In recent years, scholars have increased the amount of attention given to psychosocial factors related to student retention. While academic preparation and performance are indicators of student success, students do not operate in a vacuum. Factors like sense of belonging, personal resilience, attitude, self-confidence, and willingness to ask for help, supply a psychosocial context for cognitive factors, creating circumstances that add to a student's desire to stay or to leave an institution (Astin, 1984; Kuh et al., 2005; Pascarella & Terenzini, 2005; Tinto, 1975, 1993). The purpose of this manuscript is to clarify one aspect of the many interpersonal factors associated with first-year student retention at a historically Black university and the outcomes associated with friendships. Within this study, the authors examine whether first-year students with close friends who attend the same institution are more likely to remain in college than those who do not have close friends at the institution.

### **College Student Retention**

Early models of student retention build upon Durkheim's (1951) proposition on suicide, in which he noted that when a person has friendships, he or she is less likely to commit suicide. Expanding on Durkheim's model, Spady (1971) focused on the role of social structure in student

retention. Later, Tinto's (1975) model of student attrition, also borrowing heavily from Durkheim's model, focused on the roles of pre-college background, and social and academic integration. In relation to social integration, Tinto argued peer-group and faculty interactions are most influential during the college experience. Bean's (1985) model of student departure weighed heavily on behavioral indicators and notes that students' perceptions of an institution shape their interaction with the institution and influence students' satisfaction with and persistence at the institution.

Building upon prior models and extensive research, Guiffrida (2006) presented a culturally inclusive theory of student retention to account for the increasing diversity in higher education. Guiffrida grouped academic performance and faculty/staff interactions under the umbrella of academic systems. Furthermore, he grouped extracurricular activities and peer group interaction within university social systems; it is important to note that utilizing the term *peer group* denotes the importance of interactions within groups where racial identification, among other identifiers, result in similar life experiences. Guiffrida also incorporated home social systems, which included friends and family, as a third realm where students of color must remain connected in order to persist to graduation. Lastly, Guiffrida replaced the term *integration* with *connection* stating that:

integration implies that students must become socialized into the dominant culture of the institution while abandoning their former cultures, but connection recognizes students' subjective sense of relatedness without implying the need to break ties with one's former community. (p. 457)

Guiffrida's model points to the importance of relationships and non-cognitive factors that effect college students.

Many scholars have increased the attention given to psychosocial factors that play a role in a student's decision to persist (e.g., D. Allen & Nora, 1995; D. Allen, 1999; Bean & Vesper, 1990), while other scholars have called for a focus on psychosocial factors of retention and graduation (e.g., Davidson & Beck, 2006; Parker, Duffy, Wood, Bond & Hogan, 2005). For example, Dennis, Phinney, and Chuateco (2005) note the psychological aspect of academic success is essential when serving a majority of first-generation, minority students. Further, Bean and Eaton (2001) theorize psychological processes prompt students to drop out of college. Comparatively, David Allen and Bir (2011) examined the importance of academic confidence on academic performance for students in learning communities. In addition, David Allen and Myrick (2010) found that social and academic confidence is important intrapersonal factors in a student's motivation to persist.

Researchers have used Durkheim's (1951) proposition and Tinto's (1975) model of student attrition to explain higher retention rates for students in learning communities and socially integrated groups, implying that these experiences create or reinforce friendships. Yet, these implications raise additional questions. Researchers have not yet clarified what roles friendships play in learning communities. For instance, it is unclear whether learning communities are equally effective if learning community members do not form friendships with their peers in the community. Studying friendships on their own, outside of the learning community model may be more meaningful in understanding the background social aspects of student retention. Within this paper we bring focus to friendships for students at a historically Black university. Historically Black Colleges and Universities (HBCUs) are institutions "whose principal mission was and is the education of [B]lack Americans, [and] was accredited and was established before 1964" (UNCF, 2013, para. 1).

### **College Experiences of African Americans**

Extant literature is mixed regarding whether African American students should maintain relationships with friends and family from home or separate such ties to best assist in persistence to graduation. Tinto (1993) asserted that students of color “may frequently be forced to at least partially reject membership in communities that have been part of their upbringing... Individuals who seek to retain past friendships while attending college may find the transition to college especially problematic” (p. 62). Nevertheless, Guiffrida (2004) found that many high-achieving African American students viewed family and friends from home as assets during college, however, some participants noted these relationships can act as liabilities as well. Similarly, Winkle-Wagner (2009) found that African American women consistently struggle with maintaining past relationships or breaking such ties. In comparison, Strayhorn (2008) found no association between supportive relationships and GPA during college for African American male students. It is important to note that the previously mentioned studies did not investigate the effect of attending college with a close friend.

Researchers have found that as grade point average (GPA) increases one is more likely to persist to graduation (e.g., Hu & St. John, 2001; Nora, Cabrera, Hagehorn & Pascarella, 1996; Nora, Barlow, & Crisp, 2005). Researchers have also found that African American students possess lower college GPAs compared to members of other subpopulations (e.g., U.S. Department of Education, 2012; Fischer, 2007). Researchers suggest low GPAs may be due to being academically underprepared for college (ACT, 2011; Thomas et al., 2007); interacting with members outside of the college community (Guiffrida, 2004; Fischer, 2007); and from over-involvement in social organizations (Guiffrida, 2004; Mitchell, 2012). Nevertheless, researchers have also found that peer support plays a critical role in the success of African American students within higher education (e.g., Booker, 2007; Dennis, Phinney, & Chuateco, 2005; Harper, 2006).

Considering the unique needs of first-generation college students is also salient since Choy (2001) found that African Americans are more likely than any other population to possess first-generation status. For example, Fischer (2007) found that 30% of all African American students were first-generation college students in her study. These findings are concerning because Choy found first-generation students to be twice as likely to leave college, less academically prepared, more likely to be employed for longer hours, and less likely to receive family support compared to non-first-generation students. Given HBCUs serve a greater number of African American and first-generation college students, exploring friendships at HBCUs could prove beneficial to understanding retention outcomes associated with friendships for populations that are less likely to persist in college.

### **Historically Black Colleges and Universities**

According to Lattuca and Stark (2011), American colonial higher education was established to serve White students from wealthy backgrounds since the founding of Harvard in 1636. Only a handful of small HBCUs existed in the North prior to the Civil War, and African Americans were largely excluded from major colleges and universities (Thelin & Gasman, 2011). The Morrill Land Grant Act of 1890 expanded educational access for African American students by providing funding for HBCUs throughout the South; such HBCUs established by the Morrill Act had few curricular offerings and primarily educated students through agricultural training programs (Thelin & Gasman, 2011). Yet, HBCUs began to pave the way for educational opportunity and social mobility for African Americans (Mitchell, 2013).

According to Gasman (2010), HBCUs continue to educate and serve students from historically underrepresented and underserved populations (i.e., first-generation, low-income, racial/ethnic minorities). Scholars have noted the positive effects of HBCU attendance on student engagement and involvement, faculty-student relationships, social support and integration, and academic achievement (W. Allen, 1992; Fleming, 1984; Gasman, 2010, Harper, 2013; Kimbrough & Hutcheson, 1998; Pascarella & Terenzini, 2005; Patton, Bridges, & Flowers, 2011). While these findings add to the literature regarding factors influencing college outcomes at HBCUs, there is still a gap in the literature in regards to outcomes associated with friendships at these institutions.

### Research Questions

The present study focused on the friendships first-year college students brought with them to an institution, using the basic concept of Durkheim's (1951) proposition and examined persistence at an HBCU. Although this research is based on the assumptions that student involvement encourages positive outcomes (Astin 1984; Tinto 1993), it reframes the focus from an institutional framework and highlights an individuals' social integration in regards to friendships. The purpose of the present study was to identify and compare retention factors of first-year college students with close friends to first-year college students without close friends at an HBCU. In investigating the retention factors, two specific questions were addressed:

- (a) Are there significant differences between students who begin college with close friends and students that start college without close friends?
- (b) Is there a difference in the significant retention factors of students who begin college with close friends and students that start college without close friends?

### Hypothesized Model

A model derived from a combination of David Allen (1999), David Allen and Bir (2011), Tinto (1986), and Bean and Vesper (1990) studies was applied in this study to ensure theoretically sound underpinnings. The hypothesized model (see Figure A1) assumed that background variables influence confidence, expectations, performance, and persistence. The model borrows Tinto's (1993) ideas of pre-college background variables and subsequent academic and social integration lead to persistence. It also follows David Allen and Bir's (2011) hypothesized model that highlights external factors, confidence, and student commitment. In sum, this model relies heavily on psychosocial factors.

### Method

This study used four years of cohort data from a mid-sized, public HBCU located in the Southeastern United States. The sampled students were first-year, full-time students, all of whom were U.S. citizens. The grand cohort size, which included the years 2007, 2008, 2009, and 2010, was 2,802 students. By using multiple years, the study minimized a single-year focus limitation (Allen & Bir, 2011). The total number of students who met the criteria and were sampled was 2,676. Survey data were collected from the *Beginning College Survey of Student Engagement* (BCSSE; Center for Postsecondary Research, Indiana University, 2007). This survey collects information about a student's expectation, confidence, and pre-college engagement. The institution's BCSSE response rate was 70%. Students were surveyed during first-year orientation, which happened before their first semester of enrollment. The first-year persistence rate for the overall student population was 71%. Sixty-two percent (62%) of the

students were female and approximately 85% were African-American. There were no significant differences in the overall population and the sampled students.

**Background.** A total of six background variables were used: *gender, high school grade point average (GPA), high school attendance, Scholastic Aptitude Test (SAT) scores, financial support, and parents' educational background.* Gender, high school GPA, and SAT were taken from the student data file. Financial support and parents' educational background were taken from the BCSSE.

**Constructs.** Academic and social confidences were used to capture confidence in the model. They were both composites of six BCSSE items. *Academic confidence* was measured from 1 (not at all certain) to 6 (very certain). *Social confidence* was measured from 1 (not at all prepared) to 6 (very prepared). Academic and social expectations were used for the expectation constructs in the model. *Academic expectations* were composites of seven BCSSE items, measuring from 1 (never) to 4 (very often). *Social expectations* were composed of 3 items, ranging from 1 (never) to 4 (very often). *Social support* is a composite of four BCSSE items, ranging from 1 (not important) to 6 (very important; Center for Postsecondary Research, Indiana University, 2007).

**Academic performance.** *Academic performance* was measured by the students' grade-point averages after their first term of enrollment. These data were compiled from the students' institutional data files. *Retention* was determined by a student's re-enrollment status the following fall semester. The binary variable was coded as 1 (re-enrolled) and 0 (dropped out).

### Data Analysis

The BCSSE constructs were based on national averages and were not specific to HBCUs and were not used to capture information about student retention. Structural equation modeling was used to estimate constructs specifically for the institution used in the study. Allen and Bir's (2011) technique for model estimation was employed. The first step consisted of the researchers generating exploratory factor analysis to estimate the factors using *Statistical Product and Service Solutions (SPSS)*. Second, the researchers used linear structural relations to form the hypothesized causal model estimates for both groups: students with close friends and students without close friends.

The first stage of the structural equation modeling was estimated before dividing the sample into two groups. The exploratory factor analysis used 83 of the 108 items from the BCSSE. Self-reported high school grades, test scores and demographic items were eliminated and reduced the number of items since the official data were already obtained through the student data file. Maximum likelihood factoring (MLF) was used as the extraction method. Multivariate normality was assumed given the large data set and MLF promax rotation method was employed (D. Allen, 1999). Each factor had at least three items to contribute to the variance; factors are considered weak if they have less than three items (Kim & Mueller, 1978). Out of the 83 items subject to the EFA, 30 items were used in the factors. Six factors were extracted, explaining 32% of the weighted variance. Reliability of these factors ranged from 0.813 to 0.887. Each item correlated at least .60 with the factors. The factors were academic expectation, academic confidence, social confidence, social support, financial support, and social

In the second step, the hypothesized causal model was estimated for both groups. Structural equation modeling was used in estimation and an asymptotic variance-covariance matrix was estimated using LISREL (Jöreskog & Sörbom, 2005). A structural model was

estimated and analyzed using a weighted least squares procedure for the ordinal and categorical data. Multivariate and binary logistics regressions were also analyzed using SPSS.

### **Limitations**

Although this research uses four years of cohort data, it is focused on a single institution. To get a clearer picture of the students' choice to persist, a representative sample from more institutions should be used. It also uses self-reported survey data that asks students to explain how they felt in the past. Some students may not be able to answer questions accurately about past feelings. These limitations should be taken into consideration when understanding the results. Nevertheless, the present study serves as an early indicator of the relationship between friendships and academic outcomes at an HBCU.

### **Results**

The primary purpose of this study was to identify and compare retention factors of first-year college students with close friends to first-year college students without close friends. Table B1 illustrates the thirteen measures used in the research. There were seven background variables (gender, high school GPA, high school attendance, SAT combined, financial support, and parents' education); two confidence factors (academic confidence and social confidence); three initial commitment factors (academic expectation, social expectations and social support); one student effort variable (academic performance); and, one student outcome variable (persistence). Factor analysis was used to determine the significant factors, as illustrated in Table C1. Reliability coefficients indicated consistency among the factors. Cronbach alphas ranged from 0.81 to 0.89. Table D1 displays the summary statistics of students without friends and students with friends; it also displays that there were significant differences in five of the thirteen measures. None of the variables were considered highly correlated, as illustrated in the correlation matrix in Table D2; highly correlated variables are variables higher than 0.8 (Franzblau, 1958). Students without friends maintained statistically significant higher first term GPAs (academic performance), SAT scores, and high school GPAs, but did not have statistically significant higher persistence rates. In sum, they were more academically prepared, but academic preparation yielded no statistically significant difference in their persistence.

### **Students without Friends**

Table D3 summarizes the structural equation model and examines the dependent and independent variables in the model for students without close friends. It tests the significance of all variables in the hypothesized model.

Four factors had significant influences on persistence: academic performance, high school attendance, social confidence, and social expectation. Academic performance, which is a student's first term GPA, had a positive influence on persistence for students without close friends attending. High school attendance had a negative influence, which means the more days of school a student missed; the more likely it is the student would drop out of college. Social confidence and social expectations also had negative effects on persistence for students without close friends. This model explained 17% of the variance in persistence for student without friends.

Two factors were statistically significant in explaining first term academic performance: high school GPA and financial support. The two factors both had positive influences for



students without close friends that will attend the same institution. These factors explained 22% of the variance in academic performance.

### **Students with Friends**

Table D4 displays the parameter estimates and the significance for each independent variable regressed on the dependent variables in the model for students with close friends and summarizes the structural equation model.

Three factors were statistically significant in persistence for students with friends attending the same institution: academic performance, financial support, and high school attendance. Academic performance and financial support had positive influences on persistence. High school attendance negatively influenced persistence. Hence, the more likely it was for a student to miss a day of high school, the more likely it was they would dropout of college. These factors explained 23% of the variance in persistence.

Three of the eleven factors were statistically significant in explaining academic performance. Those factors were high school GPA, high school attendance, and social expectations. High school GPA and social expectations had positive influences on academic performance for students with close friends. High school attendance had a negative influence on persistence. These factors explained 20% of the variance in academic performance for students with friends.

To summarize, students with close friends began college less academically prepared, however, they did not have statistically significant lower persistence rates. Social expectations played opposite roles on students with friends and students without friends; social expectations were positive in determining academic performance for students with friends, but negative for students without friends in determining persistence. Figure E1 depicts the statistically significant factors for both groups.

### **Discussion**

This study identified retention factors of first-year college students at an HBCU. More specifically, the study compared first-year students who began college with close friends to first-year college students who do not have close friends. First-year students without close friends had better SAT scores, academic performance, high school attendance and high school GPAs, all at statistically significant levels. Yet, while students without friends were more academically prepared than students with close friends, we found no statistically significant difference in persistence rates. Further, exploring the descriptive data, students with friends who were less academically prepared persisted at a slightly higher rate. These findings are inconsistent with existing literature which highlights the more academically prepared a student is, the more likely they will persist (e.g., Pascarella & Terenzini, 2005; Tinto, 1975, 1993).

While several scholars have documented the importance of social integration on college campuses for African Americans, particularly in cultural organizations (e.g., Guiffrida, 2004; Harper, 2013; Mitchell, 2012; Patton, Bridges, & Flowers, 2011), outcomes associated with friendships remain unclear. Given the findings within this study are inconsistent with previous literature, more studies exploring educational outcomes associated with friendships are warranted. In addition, because historically underrepresented populations (i.e., African Americans, first-generation college, low-income) are overrepresented at HBCUs, future studies exploring educational outcomes associated with friendships might prove useful for other

institutions that serve historically underrepresented populations (e.g., community colleges, minority-serving institutions<sup>1</sup>).

The second aspect of this study examined significant factors related to the persistence of the students included in the study. In examining persistence, high school attendance and academic performance were statistically significant for both students with and without friends. These findings are not surprising as academic preparation is positively correlated with persistence and graduation (Pascarella & Terenzini, 2005; Strayhorn, 2011). For first-year students without friends, social confidence and social expectations had negative influence on persistence. This finding may be explained by Tinto's (1975) retention model, as he states high academic integration does not mean a student will persist, as they have to be socially integrated as well. In examining academic performance, this study suggests that high school GPA is the only significant factor for both groups, which is consistent with existing research (e.g., Pascarella & Terenzini, 2005; Strayhorn, 2011).

Further, social expectations had a statistically significant positive influence on academic performance for students with friends, contrary to its negative influence on persistence for students without friends. Peer support is proven to play a critical role in the success of African American students within higher education (see Booker, 2007; Dennis, Phinney, & Chuateco, 2005; Harper, 2006). This study adds to existing literature by highlighting individual, existing friendships as a positive form of peer support.

### Implications for Future Research

We offer the following recommendations for future research. Qualitative studies exploring themes of student friendships might prove useful for researchers to investigate the quality of friendships and what types of friendship activities might matter. Second, multi-institutional studies may be useful in documenting more generalizable findings regarding the effects of friendships on the persistence of first-year students at HBCUs, or at colleges and universities in general. Finally, studies examining friendships that explicitly highlight other demographics (e.g., first-generation, low-income, race/ethnicity, disability, etc.) may prove useful as well. Given this study highlights a single institution, we are cautious about making any practical recommendations; however, given our findings, we do encourage HBCUs and higher education institutions to pay closer attention to the ways in which close friendships might effect educational outcomes on their campuses.

### Note

1. U.S. minority-serving institutions are "institutions of higher education enrolling populations with significant percentages of minority students, or that serve certain populations of minority students under various programs created by Congress" (U.S. Department of Education, n.d., para. 1).

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Appendix A

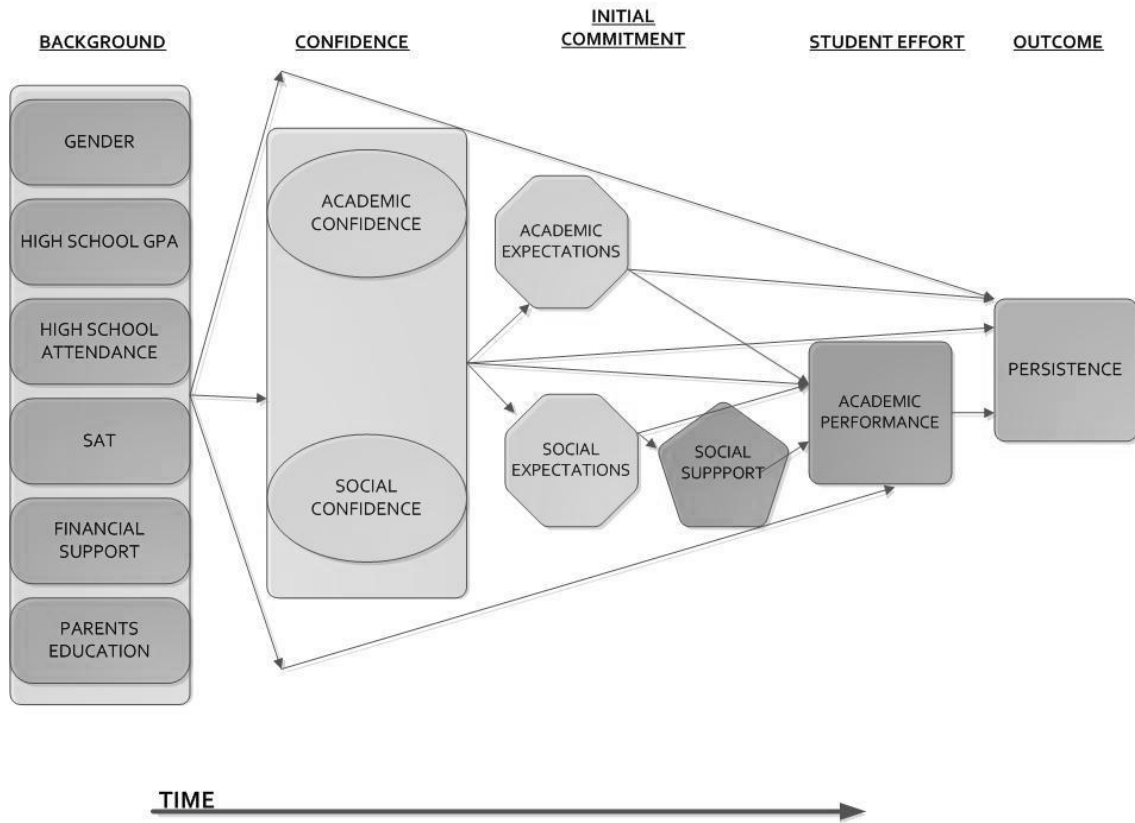


Figure A1. Hypothesized model.

**Appendix B**

Table B1

*Listing and Definition of Variables*

<b>Variables</b>	<b>Source</b>	<b>Definition</b>
1. Persistence	Student Data File	1=Enrolled after 1 year, 0=Dropped
2. Academic Performance	Student Data File	First Semester GPA
3. Social Support	BCSSE	Composite of 4 items [Alpha = 0.855] 1=Not Important, 6=Very Important
4. Social Expectation	BCSSE	Composite of 3 items [Alpha = 0.818] 1=Never, 4=Very Often
5. Academic Expectation	BCSSE	Composite of 7 items [Alpha = 0.860] 1=Never, 4=Very Often
6. Academic Confidence	BCSSE	Composite of 6 items [Alpha =0.887] 1=Not at All Certain, 6=Very Certain
7. Social Confidence	BCSSE	Composite of 6 items [Alpha =0.874] 1=Not at All Prepared, 6=Very Prepared
8. HSGPA	Student Data File	High School GPA
9. SAT Combined	Student Data File	Combined SAT Score
10. HS Attendance	BCSSE	1=Never missed a day of school, 4=Very Often Missed School
11. Parents Education	BCSSE	Composite of mother and father's education
12. Financial Support	BCSSE	Composite of 4 items [Alpha =0.813] 1=None, 5=Nearly All
13. Gender	Student Data File	1= Male 2=Female
14. Friends Attend	BCSSE	1=None of your close friends will attend, 2=close friends will attend

## Appendix C

Table C1

*Exploratory Factor Analysis Results After Promax Rotation*

Factor	Question	Loading	Cronbach Alpha	Percent Variance
I. Academic Expectation	<i>During the coming school year, about how often do you expect to do each of the following?</i>			
	1 Work with other students on projects during class	0.64	0.86	14.01
	2 Make a class presentation	0.65		
	3 Discuss grades or assignments with an instructor	0.67		
	4 Ask questions in class or contribute to class discussions	0.67		
	5 Work on a paper or project that requires integrating ideas or information from various sources	0.67		
	6 Work with classmates outside of class to prepare class assignments	0.70		
	7 Put together ideas or concepts from different courses when completing assignments or during class discussions	0.73		
II. Academic Confidence	<i>During the coming school year, how certain are you that you will do the following?</i>			
	8 Study when there are other interesting things to do	0.67	0.89	5.48
	9 Stay positive, even when you do poorly on a test assignment	0.71		
	10 Participate regularly in course discussions, even when you don't feel like it	0.72		
	11 Ask instructors for help when you struggle with course assignments	0.77		
	12 Find additional information for course assignments when you don't understand the material	0.78		
	13 Finish something you have started when you encounter challenges	0.85		
III. Social Confidence	<i>How prepared are you to do the following in your academic work at this college?</i>			
	14 Use computing and information technology	0.61	0.87	4.08
	15 Work effectively with others	0.63		
	16 Learn effectively on your own	0.64		
	17 Write clearly and effectively	0.73		
	18 Speak clearly and effectively	0.76		
	19 Think critically and analytically	0.86		



IV. Social Support	<i>How important is it to you that your college or university provides each of the following?</i>			
20	Opportunities to attend campus events and activities	0.72	0.86	3.3
21	Opportunities to interact with students from different economic, social, and racial or ethnic backgrounds	0.74		
22	Assistance with coping with your non-academic responsibilities (work, family, etc.)	0.76		
23	Support to help you thrive socially	0.85		
V. Financial Support	<i>About how much of your college expenses this year will be provided by each of the following?</i>			
24	Scholarships and grants	0.64	0.81	2.71
25	Parents/family	0.67		
26	Self (work on-campus or off-campus, savings)	0.68		
27	Student loans	0.78		
VI. Social Expectation	<i>During the coming school year, about how often do you expect to do each of the following?</i>			
28	Have serious conversations with students of a different race or ethnicity than your own	0.75	0.82	2.46
29	Learn something that changes the way you understand an issue or idea	0.63		
30	Try to better understand someone else's views by imagining how an issue looks from his or her perspective	0.75		
Total Variance Explained				32.04

*Note.* Adapted from “Beginning College Survey of Student Engagement,” by The Center for Postsecondary Research, Indiana University, 2007, Bloomington, IN: Indiana University. Copyright 2007 by Indiana University.

**Appendix D**

Table D1

*Mean Comparison*

Variables	Without Friends N=642		With Friends N=1229		t
	Mean	S.D.	Mean	S.D.	
1. Persistence	0.72	0.45	0.74	0.44	-0.67
2. Academic Performance	2.63	0.98	2.35	1.01	**5.896
3. Social Support	4.79	1.04	4.85	0.99	-1.25
4. Social Expectation	2.59	1.21	2.38	1.11	**3.849
5. Academic Expectation	3.13	0.54	3.10	0.52	1.13
6. Academic Confidence	4.88	0.84	4.84	0.83	0.99
7. Social Confidence	4.51	0.96	4.54	0.92	-0.64
8. HSGPA	2.88	0.58	2.78	0.53	**3.996
9. SAT Combined	856.93	106.24	834.41	95.92	**4.644
10. HS Attendance	1.94	0.58	2.01	0.53	*-2.391
11. Parent's Education	2.17	0.99	2.21	1.20	-0.72
12. Financial Support	1.75	0.81	1.73	0.85	0.60
13. Gender	1.71	0.46	1.63	0.48	**3.114

p&lt;.05\* p&lt;.01\*\*

Table D2

*Correlations*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Persistence		0.300	0.005	0.065	0.023	0.031	0.077	0.076	0.040	0.150	0.023	0.005	0.033
2. Academic Performance	0.385		0.006	0.032	0.011	0.047	0.039	0.445	0.230	0.097	0.043	0.107	0.077
3. Social Support	0.028	0.037		0.092	0.324	0.390	0.314	0.004	0.056	0.029	0.051	0.007	0.086
4. Social Expectation	0.018	0.082	0.076		0.171	0.250	0.226	0.053	0.038	0.054	0.099	0.004	0.029
5. Academic Expectation	0.020	0.027	0.306	0.077		0.409	0.342	0.025	0.061	0.013	0.049	0.142	0.107
6. Academic Confidence	0.051	0.037	0.485	0.179	0.350		0.652	0.085	0.066	0.030	0.066	0.005	0.092
7. Social Confidence	0.033	0.019	0.377	0.143	0.237	0.661		0.092	0.125	0.021	0.085	0.063	0.076
8. HSGPA	0.104	0.440	0.071	0.045	0.010	0.065	0.018		0.473	0.088	0.039	0.061	0.113
9. SAT Combined	0.018	0.153	0.027	0.049	0.000	0.059	0.094	0.374		0.002	0.076	0.070	0.012
10. HS Attendance	0.091	0.083	0.040	0.033	0.026	0.059	0.001	0.045	0.047		0.015	0.031	0.100
11. Parents Education	0.004	0.033	0.032	0.024	0.037	0.041	0.060	0.009	0.022	0.019		0.107	0.033
12. Financial Support	0.074	0.048	0.009	0.037	0.067	0.009	0.072	0.079	0.028	0.007	0.069		0.049
13. Gender	0.023	0.138	0.175	0.032	0.081	0.144	0.109	0.201	0.075	0.035	0.019	0.001	

*Note.* Without friends above the diagonal; with friends below the diagonal.

Table D3

Parameter Estimates for Students Without Close Friends

Measures	Dependent Variables					
	Acad. Conf.	Social Conf.	Social Expect	Academic Expect	Academic Perform.	Persistence
Gender	0.143	0.132	0.113	0.077	0.067	0.157
HSGPA	0.083	0.061	0.156	-0.055	**0.72	-0.055
HS Attendance	-0.019	-0.005	0.119	-0.010	-0.117	** -0.444
SAT Combined	0.000	0.001	0.000	0.000	0.000	-0.002
Financial Support	-0.021	0.051	0.018	**0.093	*0.094	-0.065
Parents Education	0.043	0.062	*-0.100	0.008	0.019	-0.044
Academic Confidence			** -0.239	**0.205	0.006	0.028
Social Confidence			*-0.148	**0.077	-0.013	*-0.281
Academic Expectations					-0.044	-0.053
Social Expectations					-0.001	*-0.212
Social Support					0.016	0.041
Academic Performance						**0.717
Persistence						
Multiple R Squared	0.016	0.028	0.082	0.208	0.217	0.167

p<.05\* p<.01\*\*

Table 6

*Parameter Estimates for Students With Close Friends*

Measures	Dependent Variables					
	Acad. Conf.	Social Conf.	Social Expect.	Academic Expect.	Academic Perform.	Persistence
Gender	**0.282	**0.277	0.1	0.048	0.095	-0.169
HSGPA	-0.032	** -0.155	0.132	-0.013	**0.796	-0.292
HS Attendance	*-0.105	-0.028	-0.104	-0.01	*-0.124	*-0.291
SAT Combined	*0.001	0.001	-0.001	0	0	-0.001
Financial Support	0.005	*0.077	0.051	*0.040	0.011	*0.192
Parents Education	0.037	*0.055	-0.017	0.008	0.028	-0.018
Academic Confidence			** -0.233	**0.231	0.018	0.115
Social Confidence			-0.051	-0.006	0.006	-0.02
Academic Expectations					0.044	-0.06
Social Expectations					*0.058	-0.027
Social Support					-0.022	0.054
Academic Performance						**0.98
Persistence						
Multiple R Squared	0.034	0.039	0.05	0.139	0.195	0.226

p&lt;.05\* p&lt;.01\*\*

Appendix E

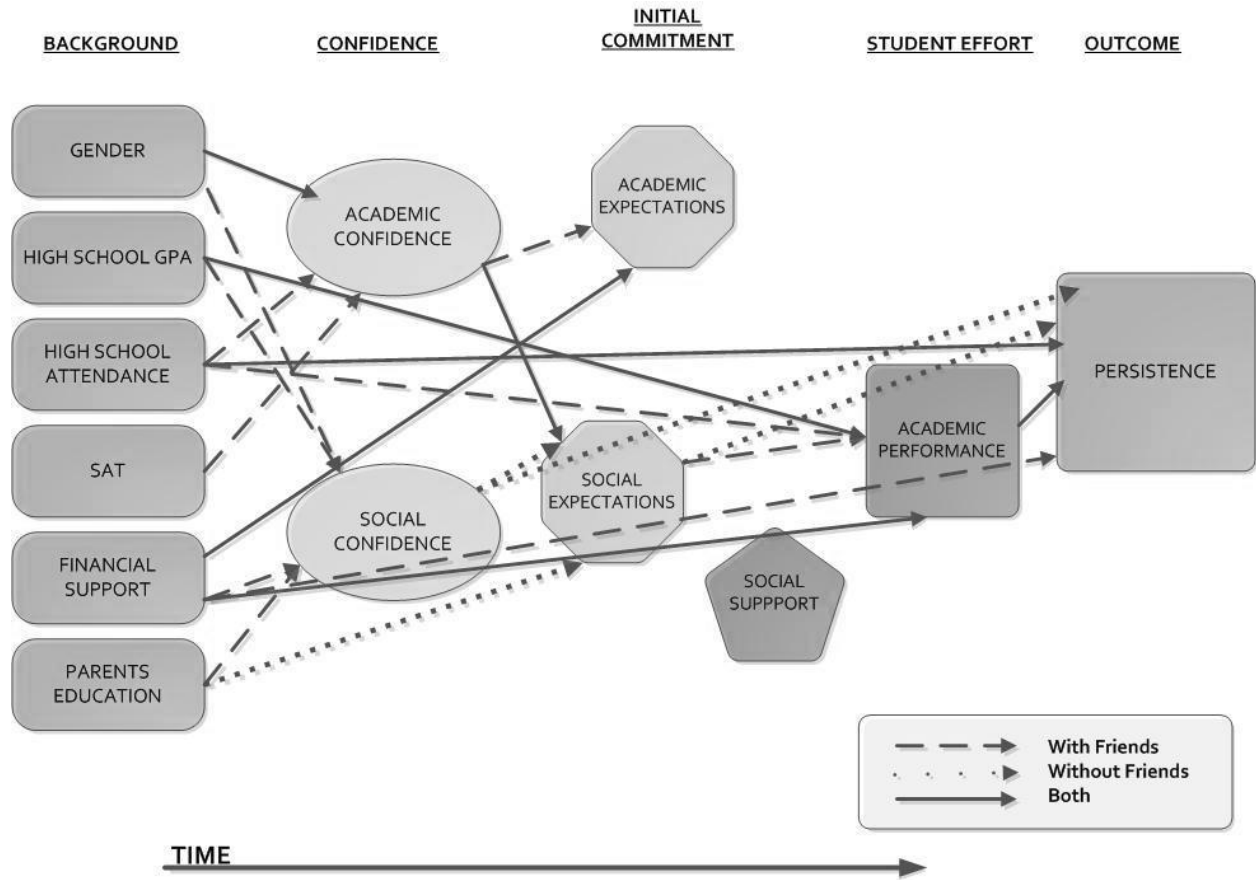


Figure E1. Significant factors of model.