

The Role of Perceptions of Prejudice and Discrimination on the Adjustment of Minority Students to College

College participation by minority students declined in the middle 1980s following a period of sustained growth [21]. This trend was particularly evident among African Americans and Hispanics [46] who exhibited both the lowest participation rates as well as the highest propensity to drop out from college. Porter's [45] analyses of the high-school senior class of 1980, for instance, revealed that Hispanic college students were 13 percent more prone to withdraw from college than were white students, whereas African American college students were 22 percent more likely to drop out than their white counterparts over a six-year period. These low persistence rates (even over extended periods of enrollment in college) are particularly troublesome from a policy perspective given the relationship that the attainment of a bachelor's degree has on subsequent occupational and economic attainment [44].

Several reasons have been advanced to account for these trends. Hauser and Anderson [21] explored the extent to which declines in college participation rates could be attributed to changes in college aspira-

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tions as well as to changes in high-school completion rates among African Americans. After analyzing college aspiration trends for both minorities and nonminorities over a period of thirty years and taking into account high-school completion rates and indicators of socioeconomic status, Hauser and Anderson could not find support for this hypothesis. Other researchers have speculated that the decline could be attributed to changes in the composition of federal assistance and to patterns of financing higher education exhibited by minority students. Porter [45] noted that declines in minorities' college participation rates correlated with the growth of student loans at the expense of grants. Olivas [41], Mortenson and Wu [31], and Mortenson [30] observed that African American and Hispanic students were less willing to go into debt to finance their college education than were white students. Moreover, Ekstrom [19] helped to establish and test the proposition that students willing to go into debt to finance their education were more likely to enroll and persist in college.

An alternative explanation to the role of finances in the persistence process has stressed the influence of academic preparation for college. Tinto [56] argued that overall differences in persistence rates between minorities and nonminorities were primarily due to differences in their academic preparedness rather than differences in their socioeconomic backgrounds. Tinto further contended that these ability differences arise from prior educational experiences at the elementary and secondary educational levels which tend to favor the educational achievement of nonminorities relative to minorities. Some degree of support has been given to this hypothesis. St. John, Kirshstein, and Noell [50], for instance, reported that the effects of ethnicity disappeared once academic preparation for college was taken into account for the high-school class of 1980.

The proposition that a lack of adjustment to predominantly white institutions and that perceptions of prejudice (racial climate) may lower the quality of college experiences of minority students has emerged as a competing explanation for the differences in persistence rates between minority and nonminority college students [for example, 1, 18, 23, 24, 28, 34, 35, 36, 53]. Fleming [18], in particular, has argued that adjustment problems with the curriculum, lack of support services, financial problems and the nature of interpersonal relationships with faculty, peers and academic staff are some of the experiences that negatively impact minority students attending predominantly white institutions. Likewise, Tracey and Sedlacek [57, 58, 59] have contended that non-cognitive factors (that is, self-concept, an understanding of racism, and

the ability to cope with it) play a more critical role in shaping academic performance in college and persistence decisions among minority students than do cognitive factors such as academic ability and study habits. Suen [53] and Loo and Rolison [28] highlighted the role of congruency between the minority student and his or her institution while stressing the influence of feelings of prejudice and alienation on decisions to persist in college. As a whole, some degree of support has been found for these propositions.

On the other hand, Arbona and Novy [3] failed to provide support for Tracey and Sedlacek's [57, 58, 59] suppositions that noncognitive dimensions were predictive of college grades and persistence for African American and Hispanic students. Furthermore, they reported that cognitive variables predicted persistence among Hispanics in opposition to Tracey and Sedlacek's presumptions. In the same vein, Nettles, Thoeny, and Gosman [36] found that both cognitive and noncognitive factors explained college academic performance for a sample of African American and white students attending thirty eastern and southern institutions. Nettles et al. found that size and the ethnic composition of the institution, aspirations toward a college degree, academic preparation for college, study habits, a student's satisfaction with peers, academic integration with the institution, and feelings of discrimination were factors that affected college academic performance for both African American and white students. Nettles et al. also noted that although the intensity of the effects of cognitive and affective factors varied when the analyses were desegregated by ethnicity, the pattern of effects itself was remarkably similar for both minorities and nonminorities.

Several limitations must be observed in the studies investigating the role of perceptions of prejudice-discrimination on persistence decisions. Most of the research designs have been mainly descriptive and cross-sectional in nature; they either stress the extent to which perceptions of prejudice correlate with noncognitive factors or the extent to which students surveyed recall negative experiences at predominantly white institutions. The underlying assumption has been that such perceptions predicted their persistence. With few exceptions [for example, 3, 18, 28, 53], little evidence has been found concerning the predictive validity of these perceptions in relation to persistence. Lack of controls for relevant cognitive variables and college-related factors may also pose restrictions as to the internal validity of the findings. In those few instances where models of college persistence were used [for example, 35, 36, 42] studies have focused on outcomes other than persistence deci-

sions, while the process linking perceptions of prejudice-discrimination with campus environmental factors remains to be brought into account. Longitudinal research designs that systematically assess the extent to which perceptions of prejudice affect the persistence process based on sound models of student departure are still needed.

The purpose of this study was to document the role that perceptions of prejudice and discrimination play within a theoretically based model of college persistence [7, 14, 15, 38, 56] among minority and nonminority students. In particular, this study sought to (1) assess the direct and indirect effects of perceptions of prejudice-discrimination on persistence decisions, academic performance in college, commitment to the institution, educational aspirations, academic and intellectual development, academic experiences, and social integration while taking into account the process that linked these factors to one another and (2) determine the extent to which the role of perceptions of prejudice-discrimination differs in the college process for minorities and nonminorities.

The Model

Figure 1 displays a structural model of persistence and the hypothesized interactions that perceptions of discrimination and prejudice play in the process. The model's perspective on the collegiate process was derived from several conceptual frameworks seeking to explain how students adjust to college. College-related constructs and presumed linkages followed propositions based on the Student Attrition Model

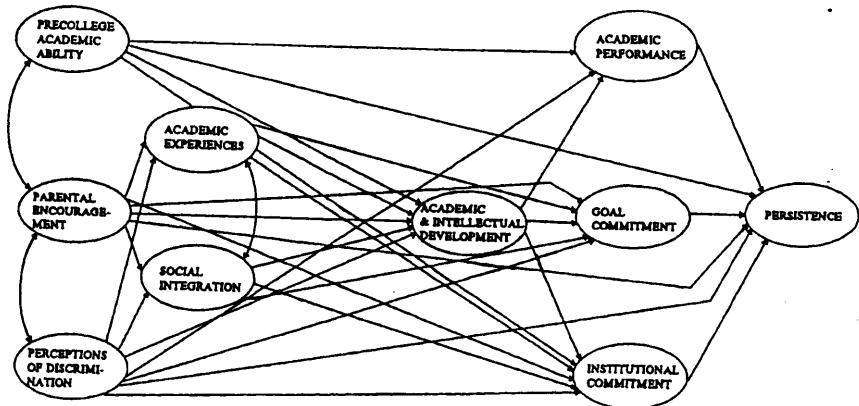


FIG. 1. Hypothesized Causal Model

[7, 8, 9, 10, 11], the Student Integration Model [56], results documenting the convergence between these two models [14], and a resultant integrated model [15].

The present model proposes that the experiences of the student at his or her institution are reflected in two domains: a social domain, encompassing experiences with other students, and an academic domain, reflecting experiences with faculty and academic staff. To the extent that these experiences enhance the affective and cognitive development of the student, the model posits that students undergo academic and intellectual development, feel more committed to attaining a college degree, and are more committed to their institutions. Commitments to the institution are also expected to be enhanced by the extent that the student perceives the institution as instrumental in the attainment of such valued outcomes [56]. Gains made in the academic and intellectual development of the student, on the other hand, are expected to exert a positive influence on three major outcomes: academic performance, commitments to the institution, and commitment toward college completion. If students attain these outcomes they are more likely to continue attending their institutions [56]. Based on theoretical frameworks by Tinto [56] and Bean and Metzner [9], the model also presupposes that academic experiences and social integration are not independent of one another; positive experiences in one domain are seen as conducive of positive experiences in the other domain. Support for this interrelationship is provided by Stage [52], Cabrera, Castañeda, Nora, and Hengstler [14], and Cabrera, Nora, and Castañeda [15].

The model further hypothesizes that precollege academic ability has a direct influence on college academic performance, academic and intellectual development, and persistence decisions. It is believed that precollege academic abilities not only impact on the potential to do college work but also on the motivation to engage in such work. Accordingly, the model postulates that precollege abilities subsequently affect a student's performance and his or her academic and intellectual development while attending the institution. The model incorporates the hypothesis that precollege ability has a direct effect on persistence and that this variable has a stronger effect for minorities than it does for nonminorities. This hypothesis is consistent with Tinto's [56] proposition that preparation for college may be particularly critical for persistence decisions among minority students.

The model regards parental encouragement as facilitating the transition of the student to college. Moreover, it is believed that parental encouragement exerts a positive influence on a student's educational aspir-

ations and on her or his decision to persist in college. These hypothesized relationships are consistent with several college persistence models [for example, 7, 8, 9, 10, 11, 15, 37], the occupational attainment literature [46] and recent research [14, 15, 37, 38]. The model also posits that parental support and encouragement may be associated with precollege academic ability. Research on occupational attainment has indicated that parental encouragement tends to vary as a function of the student's ability [22].

Perceptions of prejudice-discrimination are expected to have a direct effect on persistence decisions, while affecting a student's academic performance and his or her social and academic experiences at the institution. Moreover, these perceptions are seen to lessen commitments to both the institution and to the goal of college completion. These hypotheses are consistent with several perspectives regarding the nature of the maladjustment of minority students at predominantly white institutions [for example, 18, 23, 24, 28, 47, 48, 49, 54]. In Fleming's [18] student developmental model, for instance, exposure to prejudice and discrimination on campus is viewed as one of the most important factors impinging on the cognitive growth (that is, academic performance, critical thinking) and the affective development of minority students. Models by Tracey and Sedlacek [57, 58, 59], Suen [53], and Loo and Rolison [28] regard racist experiences in college as one of the main explanatory variables accounting for differences in persistence and academic performance between minorities and nonminorities. Smith [48, 49], building on Astin's [4] involvement postulates, argues that perceptions of prejudice-discrimination operate on the cognitive and affective development of minorities by discouraging the minority student from becoming involved with faculty, students, and campus organization. As a result of this isolation, the minority student is seen as being deprived of the opportunity to learn new skills and concepts. A transactional model by Smedley, Myers, and Harrell [47] regards experiences of racism and discrimination on campus as a psychological and sociocultural stressor which can lead to the maladjustment of the minority student at the institution. Like other stressors, experiences of racism and alienation are seen as being associated with psychological distress and poor academic performance. Unlike other stressors, however, experiences of racism are considered unique in that they: (1) heighten feelings of not belonging at the institution and (2) compound or augment negative effects associated with other stressors.

Methodology

Sample

The study population was drawn from the fall 1990 entering freshman class at a major public, commuter, predominantly white, doctoral-granting midwestern institution. Only first-time freshmen who were U.S. citizens or permanent residents were selected. Two main considerations guided the selection of the sample. As noted by Mow and Nettles [32], minority students are more likely to attend predominately white institutions and are more predisposed to experience prejudice and discrimination at these institutions. Moreover, research indicates that the freshman year is most critical in shaping persistence decisions [5, 44, 56]. This trend was observed at the study institution where the highest attrition rates were found between the end of the first academic year and the beginning of the second academic year.

In April 1991, sample members were mailed a questionnaire consisting of 114 items. Student college transcripts were accessed to identify ACT, end of spring grade point averages, and academic status at the beginning of the 1991 fall semester. An initial survey and a follow-up yielded usable surveys for 831 students, or 52 percent of the target population. The composition of the sample was 0.1 percent Native American, 10.7 percent African American, 21.5 percent Asian American, 17.2 percent Hispanic, and 50.4 percent white. Comparisons between the sample and the total freshman population with regard to college persistence for fall 1991, academic ability, and gender indicated that the sample was representative of the population. However, the sample slightly overestimated the proportion of Hispanics (17.2 percent versus 12.5 percent), and slightly underestimated the proportion of African Americans (10.7 percent versus 13 percent), and Asian Americans (21.5 percent versus 24.5 percent).

Constructs and Measures

The student survey consisted of items drawn or adapted from instruments developed by Pascarella and Terenzini [43], Nettles and associates [35, 36], Tracey and Sedlacek [59], Bean and associates [7, 8, 9, 10], Cabrera, Castañeda, Nora, and Hengstler [14], Cabrera and Nora [16], Nora and Cabrera [39], Nora [37], Nora, Attinasi, and Matonak [38] to measure: (1) Perceptions of Prejudice-Discrimination, (2) Parental Encouragement, (3) Academic Experiences, (4) Social Inte-

gration, (5) Academic and Intellectual Development, (6) Goal Commitment, and (7) Institutional Commitment. Selection of these items and scales was based on research documenting their validity and reliability. To avoid method variance, the items measuring perceptions of prejudice and discrimination were randomly distributed in the survey. Following recommendations by Jöreskog [25] a series of exploratory and confirmatory factor analyses were conducted to guide the selection of items and development of scales.¹ Thirty-nine items were retained as a result of this process [see Appendix A].

Institutional persistence. The dependent variable for the present study consisted of a measure of institutional persistence. This measure was dichotomous in nature. Students who reenrolled in fall 1991 were coded as "1" ($n = 702$). Those who voluntarily withdrew between the end of the spring 1991 semester and the beginning of the fall 1991 semester were classified as "0" ($n = 129$).

Perceptions of prejudice-discrimination. Perceptions of prejudice-discrimination are composed of three highly interrelated dimensions: (a) perceptions of racial/climate on campus, (2) perceptions of discriminatory attitudes held by faculty and staff, and (3) in-class discriminatory experiences. This conceptualization is consistent with research findings by Cabrera and Nora [16] where perceptions of discrimination-prejudice were found to underline three highly interrelated dimensions. Campus Climate is a composite of four items assessing the extent the student: (a) witnessed the use of discriminatory gestures or words directed toward minorities, (b) felt there was a general atmosphere of prejudice on campus, (c) encountered racism while attending the institution, and (d) heard negative words toward people of his/her own race. The second scale, discriminatory attitudes held by faculty and staff, reflected the extent to which the student perceived that faculty and academic staff harbored feelings of prejudice toward minorities. The third dimension, in-class experiences, was made up of a single item reflecting the extent to which the student felt that he or she had been singled out in class and treated differently than other students. Information on the scales' content and construct validity is provided in Cabrera and Nora [16].

Precollege academic ability. ACT scores, drawn from college transcripts, were used to measure this construct.

Parental encouragement. This construct was measured via a composite of three items assessing the extent to which the student felt that his or her family: (a) approved of the institution the student was attending, (b) provided encouragement to continue attending the institution, and

(c) provided motivational support to get a college degree. These three items were adapted from Bean and associates [9, 10, 11], Cabrera et al. [14, 15], Nora [37], and Nora, Attinasi, and Matonak [38].

Academic experiences with faculty and academic staff. Faculty & Academic Staff Concern for Students and Interactions with Faculty and Academic Staff provided multiple indicators of this construct. These two scales were adopted from similar scales developed by Pascarella and Terenzini [43]. Modifications were made to also reflect student interactions with academic staff who handles academic matters and plays a key role in the academic and intellectual development of the student. Support for the use of these scales is provided by Nettles, Thoeny, and Gosman [36]. These researchers reported that measures gauging students' perceptions regarding the quality of their interactions with faculty and the extent that they felt faculty were concerned for their academic development were more predictive of academic performance for both African Americans and whites than measures assessing the actual frequency of interaction between faculty and the student. Both exploratory and confirmatory factor analyses indicated that the nine items loaded into two separate yet related dimensions.²

Social integration. A single scale (Interactions with Peers) developed by Pascarella and Terenzini [43] was employed to provide a measure of the social involvement of students at their respective institutions. This scale consisted of nine items measuring overall satisfaction with the social life of the student at campus, an easiness in making friends, and the influence such relationships had on the intellectual growth of the student [see 43]. Evidence of the predictive validity of this scale can be found in Bers and Smith [12], and in Cabrera, Castañeda, Nora, and Hengstler [14], among others.

Academic and intellectual development. A composite of three items drawn from Pascarella and Terenzini's [43] Academic and Intellectual Development Scale provided a measure of the construct. These items assessed the extent to which the student was: (a) satisfied with his/her intellectual development, (b) felt that academic experiences had a positive influence on his or her intellectual growth, and (c) was satisfied with his or her academic experiences at the institution.

Goal commitment. Two multiple indicators (degree completion and program completion) were used to provide a measure of the latent construct. Degree completion, a composite of two items, assessed the importance that the completion of a college degree had for the student. Program completion, a single item, assessed the extent to which the completion of the program of studies itself was important. The items

were extracted and adapted from work by Pascarella and Terenzini [43]. Support for the use of these items as measures of goal commitment can be found in Cabrera, Castañeda, Nora, and Hengstler [14].

Institutional commitment. Two measures of institutional commitment were used in testing the quantitative model. Certainty of institutional choice (a composite of two items) and an item assessing a student's degree of belonging at the institution were used as manifest variables for the latent construct. These items were selected from survey instruments by Bean and associates [9, 10, 11] and Pascarella and Terenzini [43]. Nora and Cabrera [39] found these measures to be among the most reliable representations of the construct with loadings ranging from 0.78 to 0.94.

All items were measured via a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Scale scores were based on averages across respective items. Negatively worded items were recoded for consistency with other items in corresponding scales. Table 1 displays summary statistics and reliabilities for minorities and nonminorities, respectively.

TABLE 1
Differences in Precollege Ability, Attitudes, Motivations, and Behaviors among Minority and Nonminority Students.

Construct	Minorities			Nonminorities			t-values
	Mean	SD	Cronbach	Mean	SD	Cronbach	
Perceptions of prejudice & discrimination			0.850			0.836	
Campus climate	2.77	0.92	0.828	2.33	0.95	0.791	6.79**
Faculty behavior	2.51	0.86	—	2.05	0.89	—	7.49**
In-class experiences	2.16	0.93	—	1.96	0.97	—	2.93**
Parental encouragement	4.25	0.69	0.735	4.22	0.66	0.662	0.65
Academic ability	18.54	4.55	—	21.96	4.25	—	-11.15**
Academic experiences							
Concerned faculty & staff	3.46	0.69	0.796	3.51	0.69	0.775	-1.07
Interactions with faculty & staff	3.22	0.69	0.835	3.01	0.75	0.853	4.03**
Social integration	3.50	0.76	0.871	3.37	0.88	0.902	2.30**
Academic & intellectual development	3.62	0.78	0.815	3.55	0.80	0.826	1.19
College academic performance	3.42	0.69	—	3.62	0.68	—	-4.11**
Goal commitment			0.631			0.765	
Degree completion	4.80	0.41	—	4.75	0.55	—	1.68
Program completion	4.61	0.61	—	4.34	0.90	—	4.98**
Institutional commitment			0.862			0.923	
Certainty of choice	3.64	0.92	—	3.38	1.09	—	3.72**
Sense of belonging	3.49	0.99	—	3.27	1.10	—	2.99**

* $p < 0.05$. ** $p < 0.01$.

Data Analyses

As recommended by Jöreskog [25], Anderson and Gerbing [2], and Castañeda [17], a two-step structural equation modeling procedure was employed in estimating parameters. In the first stage, exploratory and confirmatory factor analyses were used to estimate the measurement model prior to testing the structural model. This step permitted the identification of the most reliable and valid set of items for each corresponding construct under consideration. In the subsequent stage, the hypothesized casual model was estimated for both minority and nonminority students. Disaggregation of the model by minority group, although desirable, was not methodologically possible. PRELIS requires specific sample sizes to compute the polyserial-polychoric correlation matrices and asymptotic variance covariance matrices [see 27]. A sample size of 360 needed for each minority subgroup fell below the required threshold.³

Given the dichotomous nature of the dependent variable (persistence), PRELIS 2.02 [26, 27] was employed to compute the polyserial-polychoric correlations. Following recommendations by Jöreskog and Sörbom [26, 27] the PRELIS program was also used to assess the extent to which violations to the assumption of multivariate distribution were present in the data. To correct for these violations, the asymptotic variance-covariance matrix was estimated and used in the estimation of the structural model. LISREL 8.02 [27], via a weighted least square (WLS) solution, was used to estimate the structural model. Jöreskog and Sörbom [27] recommend using the WLS solution, for it provides better estimates of the Chi-square goodness-of-fit measures and standard errors whenever categorical data are involved and departures from normality are observed.

Several indicators were used to judge the goodness of fit of the model. These included the chi-square,⁴ the Goodness of Fit Index (GFI), the Adjusted Goodness of Fit Index (AGFI),⁵ the Root Mean Square Residual (RMR),⁶ and the type-2 Normed Fit Index⁷ [13, 33]. Assessment of the goodness-of-fit of the model was also guided by a careful examination of standardized residuals, Q-plots of standardized residuals, modification indices, and individual parameter estimates. See Nora and Cabrera [40] for a review of the indices used. Because the model hypothesized directional effects among the constructs, one tailed *t*-tests were employed for assessing the statistical significance of the structural paths.

Results

Reliability coefficients for both minorities and nonminorities indicated a high degree of consistency among the seven prejudice-discrimina-

tion items used in the study. The Cronbach for the seven prejudice-discrimination items were 0.85 and 0.84 for minorities and nonminorities, respectively (see Table 1).

Differences in students' attitudes, motivations, behaviors, and performance measures are displayed in Table 1. On the average, minorities were more likely to perceive a discriminatory campus climate, sensed more prejudice on the part of faculty and staff, and were more prone to report negative in-class experiences than were whites (see Table 1). Table 1 also indicates that minorities entered the institution with slightly lower academic abilities than did whites. Minorities' academic performance at the end of the freshman year was slightly lower than that of whites. On the other hand, minorities were more likely to report positive interactions with faculty and staff, were more satisfied with their interactions with peers, more committed to complete their program of study, and felt more committed to the institution than whites. Both groups of students reported similar levels of encouragement and support from their parents and analogous levels of academic and intellectual growth while attending college (see Table 1).

Tables 2 through 8 report the structural coefficients associated to testing the model in both minorities and nonminorities. The chi-square of the model for minorities was 162.43 ($df = 70$; $p = 0.000$), 278.64 ($df = 71$; $p = 0.000$) for nonminorities. Goodness-of-fit indices (GFI) for both minorities and nonminorities were 0.98 and 0.97, adjusted goodness-of-fit indices (AGFI) 0.96 and 0.95, incremental fit indices (NFI2s) 0.98 and 0.97, and root mean square residuals (RMR) 0.093 and 0.092, respectively. Although the chi-square results lend no support for the model, the remainder of the measures of goodness of fit for the quantitative model were found to be significant. Measures of the goodness of fit for both minorities and nonminorities were further supported by the stem leaf plots and the Q-plots of standardized residuals.

Academic Experiences with Faculty and Academic Staff

The first structural equation in the quantitative model for both groups examined the effects of encouragement and support from family and perceptions of prejudice and discrimination on measures of Academic Experiences with Faculty and Academic Staff (see Table 2).

Minorities. Both parental encouragement ($\gamma = 0.44$) and perceptions of discrimination ($\gamma = -0.22$) exerted significant direct effects on academic experiences (see Table 2). The most important variable affecting the academic experiences of minority students was parental encouragement followed by perceptions of prejudice and discrimination. As hypothesized, minority students who received more support

TABLE 2
Direct, Indirect, and Total Effects on Academic Experiences with Faculty and Academic Staff

Construct:	Minority Students			Nonminority Students		
	Direct	Indirect	Total	Direct	Indirect	Total
1. Precollege acad. ability	—	—	—	—	—	—
2. Parental encouragement	0.44**	—	0.44**	0.22*	—	0.22*
3. Perceptions of prejudice	-0.22**	—	-0.22**	-0.16*	—	-0.16*
4. Academic experiences	—	—	—	—	—	—
5. Social integration	—	—	—	—	—	—
6. Academic & intell. develop.	—	—	—	—	—	—
7. GPA	—	—	—	—	—	—
8. Goal commitment	—	—	—	—	—	—
9. Inst. commitment	—	—	—	—	—	—
	$R^2 = 0.27$			$R^2 = 0.08$		

* $p < 0.05$. ** $p < 0.01$.

and encouragement to attend college from their parents were more likely to have positive academic experiences with faculty and academic staff during their first year in college. Minority students who perceived less levels of discrimination in the classroom and on the campus were also more likely to have positive experiences with faculty and academic staff. Parental encouragement and perceptions of prejudice and discrimination accounted for 27 percent of the variance in minorities' Academic Experiences ($R^2 = 0.27$).

Nonminorities. Similar findings were found for nonminority students with regard to academic experiences. Again, the most important variable affecting nonminority academic experiences was encouragement from parents followed by perceptions of prejudice and discrimination. However, only 8 percent of the variance in nonminorities' Academic Experiences was explained by both factors ($R^2 = 0.08$).

Social Integration

The second structural equation examined the effects of parental encouragement and perceptions of prejudice and discrimination on measures of social integration (see Table 3). Both support and encouragement from parents and perceptions of discrimination in the classroom and on campus were found to have significant direct effects on social integration. Gammas for parental encouragement were 0.44 for minority students and 0.35 for nonminorities. Gammas for perceptions of discriminatory behavior were -0.21 and -0.17, respectively. Twenty-six percent of the variance in social integration was explained for minorities, whereas 15 percent of the variance was explained for nonminorities (see Table 3).

TABLE 3
Direct, Indirect, and Total Effects on Social Integration

Construct:	Minority Students			Nonminority Students		
	Direct	Indirect	Total	Direct	Indirect	Total
1. Precollege acad. ability	—	—	—	—	—	—
2. Parental encouragement	0.44**	—	0.44**	0.35*	—	0.35*
3. Perceptions of prejudice	-0.21**	—	-0.21**	-0.17*	—	-0.17*
4. Academic experiences	—	—	—	—	—	—
5. Social integration	—	—	—	—	—	—
6. Academic & intell. develop.	—	—	—	—	—	—
7. GPA	—	—	—	—	—	—
8. Goal commitment	—	—	—	—	—	—
9. Inst. commitment	—	—	—	—	—	—
	$R^2 = 0.26$			$R^2 = 0.15$		

* $p < 0.05$. ** $p < 0.01$.

Academic and Intellectual Development

The third structural equation tested the effects of prior academic ability, parental encouragement, perceptions of prejudice and discrimination, academic experiences, and social integration on the student's academic and intellectual development during the first year in college. Differences were found between minorities and nonminorities (see Table 4).

Minorities: Four factors were found to be significant in explaining the variance in academic and intellectual development for minority students. The largest effect was exerted by academic experiences with

TABLE 4
Direct, Indirect, and Total Effects on Academic and Intellectual Development

Construct:	Minority Students			Nonminority Students		
	Direct	Indirect	Total	Direct	Indirect	Total
1. Precollege acad. ability	0.05	—	0.05	-0.01	—	-0.01
2. Parental encouragement	0.21**	0.28**	0.49**	0.24*	0.22*	0.46*
3. Perceptions of prejudice	-0.12**	-0.13**	-0.25**	-0.04	-0.13*	-0.17*
4. Academic experiences	0.47**	—	0.47**	0.49*	—	0.49*
5. Social integration	0.15**	—	0.15**	0.31*	—	0.31*
6. Academic & intell. develop.	—	—	—	—	—	—
7. GPA	—	—	—	—	—	—
8. Goal commitment	—	—	—	—	—	—
9. Inst. commitment	—	—	—	—	—	—
	$R^2 = 0.57$			$R^2 = 0.65$		

* $p < 0.05$. ** $p < 0.01$.

faculty and staff ($\beta = 0.47$), followed by parental encouragement ($\gamma = 0.21$), social integration ($\beta = 0.15$), and perceptions of prejudice ($\gamma = -0.12$). Prior academic ability ($\gamma = 0.05$) did not have a direct effect on academic and intellectual development. Minority students who had more positive academic experiences and social integration and received support and encouragement to attend college from parents were more likely to experience academic and intellectual development during their first year in college. Moreover, minority students who perceived higher levels of discrimination on campus and in the classroom were less likely to experience academic and intellectual development. A little over half (57 percent) of the variance in academic and intellectual development was explained by the four factors.

Nonminorities: Only three of the five factors in the third structural equation were found to have significant direct effects on academic and intellectual development for nonminority students. The largest direct effect was found for academic experiences ($\beta = 0.49$) followed by social integration ($\beta = 0.31$) and parental encouragement ($\gamma = 0.24$). Both prior academic ability ($\gamma = -0.01$) and perceptions of prejudice ($\gamma = -0.04$) were found not to have any significant direct effects on measures of the student's academic and intellectual development in college. Nonminority students' academic and intellectual development was affected only by their academic experiences and social integration and by support received from parents. These factors accounted for 65 percent of the variance observed in nonminorities' academic and intellectual development ($R^2 = 0.65$).

Academic Performance (GPA)

The fourth structural equation in the model examined the effects of prior academic ability, perception of prejudice and discrimination, and Academic and Intellectual Development on college academic performance (GPA). One difference was found between minorities and nonminorities (see Table 5).

Minorities: Two factors were found to have positive direct effects on first-year cumulative grade point average. The most influential factor on students' academic achievement was exerted by prior academic ability ($\gamma = 0.39$) followed by academic and intellectual development ($\beta = 0.16$). Perceptions of prejudice and discrimination ($\gamma = -0.05$) were found not to have any direct effects on GPA. However, this factor was found to exert a significant total effect. The model explained 19 percent of the variance observed in minorities' GPA.

Nonminorities: Nonminority students' academic achievement or GPAs were more likely to be higher if the students entered college with

TABLE 5
Direct, Indirect, and Total Effects on GPA

Construct:	Minority Students			Nonminority Students		
	Direct	Indirect	Total	Direct	Indirect	Total
1. Precollege acad. ability	0.39**	0.01	0.39**	0.43*	0.00	0.43*
2. Parental encouragement	—	0.08**	0.08**	—	0.13*	0.13*
3. Perceptions of prejudice	-0.05	-0.04**	-0.09**	-0.10*	-0.05*	-0.15*
4. Academic experiences	—	0.08**	0.08**	—	0.14*	0.14*
5. Social integration	—	0.02**	0.02**	—	0.09*	0.09*
6. Academic & intell. develop.	0.16**	—	0.16**	0.28*	—	0.28*
7. GPA	—	—	—	—	—	—
8. Goal commitment	—	—	—	—	—	—
9. Inst. commitment	—	—	—	—	—	—
	$R^2 = 0.19$			$R^2 = 0.27$		

* $p < 0.05$. ** $p < 0.01$.

higher academic abilities ($\gamma = 0.43$) and experienced positive academic and intellectual development ($\beta = 0.28$) during their first year in college. Nonminorities who perceived discriminatory attitudes and behavior in the classroom and on campus ($\gamma = -0.1$) were less likely to achieve as much in contrast to those who perceived no discrimination on campus. The model explained 27 percent of the variance observed in nonminorities' GPA.

Goal Commitment

The fifth structural equation in the model examined the effect of parental encouragement, perceptions of prejudice and discrimination, academic experiences with faculty and staff, social integration, and academic and intellectual development on students' educational goal commitments. Differences in the direct effects from all five factors were found for minorities and nonminorities (see Table 6).

Minorities: Minority students' educational goal commitments were positively affected by the support and encouragement received from parents ($\gamma = 0.46$), by academic and intellectual development ($\beta = 0.14$), and by positive academic experiences during their first year in college ($\beta = 0.21$). The largest impact was exerted by parental encouragement. Perceptions of prejudice and discrimination were found to exert no direct, indirect, or total effects on this outcome. The total coefficient of determination (R^2) indicates that these factors explained 38 percent of the variance observed in minorities' goal commitment.

Nonminorities: Similar to minorities, parental encouragement ($\gamma = 0.20$) and academic and intellectual development ($\beta = 0.24$) were

TABLE 6
Direct, Indirect, and Total Effects on Goal Commitment

Construct:	Minority Students			Nonminority Students		
	Direct	Indirect	Total	Direct	Indirect	Total
1. Precollege acad. ability	—	0.01	0.01	—	0.00	0.00
2. Parental encouragement	0.46**	0.11**	0.56**	0.20*	0.10*	0.30*
3. Perceptions of prejudice	-0.00	-0.05	-0.05	-0.13*	-0.03*	-0.16*
4. Academic experiences	0.21*	0.06*	0.27**	-0.19	0.11*	-0.07
5. Social integration	-0.12	0.02	-0.10	0.09	0.07*	0.15*
6. Academic & intell. develop.	0.14**	—	0.14**	0.24*	—	0.24*
7. GPA	—	—	—	—	—	—
8. Goal commitment	—	—	—	—	—	—
9. Inst. commitment	—	—	—	—	—	—
	$R^2 = 0.38$			$R^2 = 0.16$		

* $p < 0.05$. ** $p < 0.01$.

found to have significant direct effects on nonminority students' goal commitments. Unlike minorities, however, measures of perceptions of prejudice and discrimination ($\gamma = -0.13$) were found to be significant in explaining goal commitment. Only social integration ($\beta = 0.09$) were not found to have a significant effect on goal commitments for nonminority students. The largest difference between the two groups was reflected in the structural path from perceptions of prejudice and discrimination to goal commitment. Nonminority students were likely to have their educational goal commitments negatively affected by perceptions of discrimination in the classroom and on campus. These factors accounted for 16 percent of the variance observed in nonminorities' goal commitment ($R^2 = 0.16$).

Institutional Commitment

The sixth structural equation in both models examined the effects of prior academic ability, parental encouragement, perceptions of prejudice and discrimination, academic experiences, social integration, and academic and intellectual development on institutional commitment. Differences on the impact of these variables on institutional commitment were found between minorities and nonminorities with regard to magnitude and directionality of the effects (see Table 7).

Minorities: The most important factor contributing to institutional commitment was found for academic experiences with faculty and academic staff ($\beta = 0.37$), followed by academic and intellectual development ($\beta = 0.29$) and parental encouragement ($\gamma = 0.21$). Perceptions of prejudice-discrimination were found to exert significant indirect

TABLE 7
Direct, Indirect, and Total Effects on Institutional Commitment

Construct:	Minority Students			Nonminority Students		
	Direct	Indirect	Total	Direct	Indirect	Total
1. Precollege acad. ability	-0.10	0.02	-0.09	-0.01	-0.01	-0.02
2. Parental encouragement	0.21**	0.34**	0.55**	0.32*	0.30*	0.62*
3. Perceptions of prejudice	-0.01	-0.17**	-0.18**	-0.04*	-0.12*	-0.16*
4. Academic experiences	0.37**	0.14**	0.51**	0.01	0.27*	0.28*
5. Social integration	0.07	0.04	0.11	0.13*	0.17*	0.29*
6. Academic & intell. develop.	0.29**	—	0.29**	0.55*	—	0.55*
7. GPA	—	—	—	—	—	—
8. Goal commitment	—	—	—	—	—	—
9. Inst. commitment	—	—	—	—	—	—
	$R^2 = 0.65$			$R^2 = 0.72$		

* $p < 0.05$. ** $p < 0.01$.

and total effects on the student's commitment to the institution. These factors explained 65 percent of the variance observed in minorities' institutional commitment ($R^2 = 0.65$).

Nonminorities: Only three (parental encouragement, social integration, and academic and intellectual development) of the six factors hypothesized to have direct effects on institutional commitment were found to be statistically significant. Similar to minorities, the largest effect was exerted by academic and intellectual development ($\beta = 0.55$) followed by parental encouragement ($\gamma = 0.32$), and social integration ($\beta = 0.13$). As in the case of minorities, perceptions of discrimination-prejudice were found to exert an indirect effect on a student's commitment to the institution. These factors in the structural equation explained 72 percent ($R^2 = 0.72$) of the variance in nonminorities' institutional commitment.

Persistence

The last structural equation tested the effects of prior academic ability, parental encouragement, perceptions of prejudice and discrimination, cumulative grade point averages, educational goal commitments, and commitment to their respective institution on actual persistence behavior. Prior academic ability, parental encouragement, and perceptions of discrimination were found not to exert a significant direct effect on persistence for either minorities or nonminorities. Differences in the impacts of these variables, however, were found (see Table 8).

Minorities: Only cumulative grade point average ($\beta = 0.62$) was found to have a significant direct effect on student persistence for mi-

TABLE 8
Direct, Indirect, and Total Effects on Persistence

Construct:	Minority Students			Nonminority Students		
	Direct	Indirect	Total	Direct	Indirect	Total
1. Precollege acad. ability	-0.10	0.23*	0.13	-0.10	0.09*	-0.01
2. Parental encouragement	0.09	0.08	0.18*	0.01	0.45*	0.46*
3. Perceptions of prejudice	-0.04	-0.08*	-0.12	0.01	-0.19*	-0.18*
4. Academic experiences	—	0.11	0.11	—	0.11*	0.11*
5. Social integration	—	0.05**	0.05**	—	0.23*	0.23*
6. Academic & intell. develop.	—	0.14*	0.14*	—	0.42*	0.42*
7. GPA	0.62*	—	0.62*	0.24*	—	0.24*
8. Goal commitment	-0.12	—	-0.12	0.54*	—	0.54*
9. Inst. commitment	0.19	—	0.19	0.41*	—	0.41*
.	$R^2 = 0.42$			$R^2 = 0.72$		

* $p < 0.05$. ** $p < 0.01$.

minority students. Parental encouragement, perceptions of prejudice, social integration, and academic and intellectual development were found to exert indirect effects. For minorities, these factors explained 42 percent ($R^2 = 0.42$) of the variance observed in persistence decisions.

Nonminorities: All three endogenous variables (cumulative grade point average, goal commitment, and institutional commitment) were found to have direct influences on student persistence for nonminorities. Very much like minorities, parental encouragement, perceptions of prejudice, academic experiences, social integration, and academic and intellectual development were found to exert an indirect effect. The model explained a total of 72 percent of the variance in nonminorities' persistence decisions.

Total Effects

The last column in Table 8 reports the total effects of all variables on persistence for both minority and nonminority students. For nonminorities, all factors with the exception of precollege academic ability were found to have significant total effects on withdrawal decisions. The largest total effect on persistence was exerted from goal commitment (total effect = 0.54). The second largest total effect on persistence was accounted for by parental encouragement (total effect = 0.46) followed by academic and intellectual development (total effect = 0.42), institutional commitment (total effect = 0.41), the student's grade point average (total effect = 0.24), social integration (total effect = 0.23), perceptions of prejudice (total effect = -0.18), and academic experiences (total effect = 0.11).

For minorities, however, only four (parental encouragement, social integration, academic and intellectual development, and grade point averages) of the nine variables hypothesized to have total effects on withdrawal decisions were found to be significant. The largest total effect was exerted by the student's academic achievement or cumulative grade point average (total effect = 0.62). The total effect was almost three times as large as that exerted by the second largest total effect in the model (total effect for parental encouragement = 0.18). Academic and intellectual development (total effect = 0.14) and social integration (total effect = 0.05) were found to affect student persistence significantly, but not to the same extent as support and encouragement received from parents and, specifically, from the student's academic performance or achievement.

Noncausal Relationships

Phi coefficients provide differential support for the hypothesized noncausal relationships between prior academic ability and parental encouragement and between parental encouragement and perceptions of discrimination for minorities and nonminorities. A statistically negative structural correlation between parental encouragement and prior academic ability (-0.09) was found among nonminorities. A statistically negative correlation between parental encouragement and perceptions of discrimination (-0.13) was found, but only among minorities. For nonminorities, higher levels of entering academic ability were associated with less parental encouragement. However, higher levels of parental support and encouragement were associated with higher levels of perceptions of prejudice and discrimination in the classroom and on campus for minority students.

The structural model revealed that academic experiences and social integration were interrelated for both student samples. The structural correlation between academic experiences and social integration was 0.39 for minorities and 0.29 for nonminorities. Although there is a relationship between academic experiences and social integration, as noted in the theoretical framework, that relationship is noncausal in nature.

Discussion

Generalizations from the results of this study are to be made with caution. Findings are based on a single institution located in the midwest and draw only on a particular period of time in the life of the college student (the freshman year). The findings, however, are methodologically sound in that studying students at a single institution as opposed

to multiple institutions controls for several threats to internal validity. Students are more likely to have been exposed to similar conditions with regard to course requirements, the faculty, and academic staff with whom they must interact, and with other institutional elements. Moreover, the type of institution under study also adds to issues related to internal validity. Mow and Nettles [32] note that minority students are more likely to attend predominately white institutions and are more prone to experience a racially sensitive climate when they attend this type of institution. Results are also strengthened by the fact that the data collection was undertaken at the end of the freshman year. The literature has consistently found that the freshman year is most critical in the academic life of the college student [for example 5, 44, 56].

Though it might have been highly desirable to test the model on separate minority groups, sample sizes for each ethnic group were not sufficiently large to estimate the polyserial-polychoric correlation matrix and the corresponding asymptotic covariance matrix needed for such an endeavor. Cabrera and Nora [16], however, have established that the structure underlying perceptions of discrimination and prejudice is fairly consistent among different minority groups. It therefore stands to reason that the model may also be stable across minority groups. It is suggested that future studies test the invariance of the model with larger sample sizes than the one available for the present study.

This study addressed several important assertions made regarding the nature of factors believed to play a critical role in the persistence process among minorities and nonminorities. These assertions fell into four major categories: (a) the influential nature of academic preparedness within the persistence process, (b) the extent to which separation from family and community facilitates a successful transition to college, (c) the role of perceptions of prejudice on the adjustment to college environments and on college-related outcomes, and (d) the extent to which existing models of college persistence are unique to nonminority students.

Tinto [56] asserts that variations in academic preparedness are one of the main explanatory variables that account for differences in persistence rates between minorities and nonminorities. Following this line of thought, one could expect that, among minorities, this factor would exert a stronger effect on social and academic adjustments to college, cognitive and affective collegiate outcomes, and persistence than it would among nonminorities. Though the results of this study support the notion that minorities, on the average, enter college with significantly lower academic readiness (see Table 1), no support was found to

the claim that this variable exerts a stronger effect among minorities than it does among whites. For both minorities and nonminorities precollege academic ability was found to play a significant role on their academic performance in college and an indirect effect on persistence (see Table 8).

A second major assertion, applying equally to both whites and minorities, is that successful adjustment to college must involve severing previous ties with family, friends, and past communities [56]. On the contrary, the findings from the present study indicate that such attachments to significant others are key for the successful transition of students to college. For both minorities and nonminorities alike, parental encouragement and support was found to exert a positive effect on the integration of students to college, on their academic and intellectual development, and on their academic performance and commitments—both to completing a college degree and to the institution itself (see Tables 2 through 8). Among both groups parental encouragement was found to exert a total effect on persistence decisions (see Table 8).

The third assertion is composed of two interrelated claims regarding the role of perceptions of prejudice-discrimination among minority and nonminority college students. The first component asserts that perceptions of prejudice-discrimination are present only among minority students [for example, 47]. The second argues that, among minorities, exposure to a climate of prejudice and discrimination has the effect of lessening their adjustment to the academic and social realms of the institution. This claim further presumes that a climate of racism and prejudice harms the cognitive and affective development of minority students [for example, 18, 23, 24, 57, 58, 59]. Furthermore, this claim also assumes that perceptions of prejudice and discrimination overshadow the role of cognitive factors (for example, academic ability) in affecting minority students' decisions to persist in college [57, 58, 59].

Mixed results were found for the proposition that perceptions of discrimination and prejudice are found only among minorities. Both minorities and nonminorities do perceive a negative campus climate, discriminatory attitudes held by faculty and staff, and report racially oriented in-class experiences (see Table 1). Yet, in each of these three measures, minorities reported higher perceptions of prejudice and discrimination than did whites (see Table 1).

Support was found for the proposition that perceptions of prejudice-discrimination negatively affects the adjustment of the minority student to the two realms of the college while damaging the cognitive and affective outcomes associated with college (see Tables 2–8). However,

results also suggest that perceptions of prejudice-discrimination do not have the overwhelming effect they are presumed to exert on the college persistence process among minority students. Performance in college, encouragement from parents, positive experiences with the academic and social realms of the institution, and other factors in the model are much more influential among minorities regardless of the outcomes measures under consideration (see Tables 2-8). One of the most startling results in testing the overall model on both minority and nonminority students was the finding that although minorities perceived more discrimination and prejudice than did the majority population (see Table 1), perceptions of discrimination were found to exert at most an indirect effect on their decisions to persist (see Table 8); yet, perceptions of prejudice and discrimination were found to have both total and indirect effects among the nonminority student population. It is believed that perhaps minorities have become more accustomed to discriminatory acts on campuses and that they have subsequently become more hardened to pressures that would otherwise push students away from persisting in college. For whites, these experiences may be so new that their exposure to them has a stronger effect on their persistence decisions.

The final assertion rests on the assumption that current conceptual models of college persistence are inappropriate for explaining persistence decisions among minorities and accounting for their collegiate experiences with the social and academic realms of the institution [for example, 55]. Under such an assertion, one would expect that current models of college persistence would fail to explain variation not only on persistence among minorities but also on their collegiate experiences and on such college-related outcomes as academic and intellectual development, academic performance, and institutional and goal commitments. One would further expect that the variables would fail to exert effects consistent with theory and that the pattern of interrelations among the variables would depart significantly from the one predicated by the model. None of these conditions were present in the study.

Overall, the findings indicate that the hypothesized causal model is valid in explaining the social and academic adjustments of both minorities and nonminorities in college and subsequent cognitive and affective outcomes including persistence. Of the 36 relationships hypothesized in the model, support was found for 26 (72 percent) of the interrelations among minorities and 31 (86 percent) for nonminorities. For minorities, the model explained twice as much variation on goal commitment and on academic experiences and social integration as compared to

whites (38 percent versus 16 percent, 27 percent versus 8 percent, and 26 percent versus 15 percent, respectively). With respect to outcomes such as academic and intellectual development, college academic performance, and institutional commitment, the model explained as much variance among whites as it did among minorities (65 percent versus 57 percent, 27 percent versus 19 percent, and 72 percent versus 65 percent, respectively). However, the proportion of hypothesized relationships found significant varied according to the dependent variable under consideration. While 56 percent of the factors believed to have an overall effect on minority student persistence were found not to be significant, the causal model accounted for 42 percent of the variance in this important outcome. This finding suggests that other more culturally sensitive factors (for example, family responsibilities, financial aid, working off-campus) may be needed in predicting persistence decisions for minorities. While other factors might be needed to explain why minorities choose to remain in college or to drop out, these factors do not include perceptions of prejudice and discrimination. Although minority students are the targets of racial discrimination on campus and in the classroom, the findings provide a testimony to the survival and adjustment of these students in predominantly white institutions. However, even though minority students are able to negate perceptions of discriminatory behavior specifically with the help of significant others in their lives, other culturally related environmental and institutional factors may collectively exert overwhelming negative influences on the persistence decisions of these students.

Notes

¹Confirmatory and exploratory results are available upon request.

²Matrices and results are available upon request.

³The formula to estimate the appropriate sample size needed for PRELIS is $1.5 * n * (n + 1)$ where n is the number of variables included in the model (15 in the present case). See Jöreskog and Sörbom [27].

⁴The practice of relying on the Chi-square as the sole criterion of model selection has been questioned in view of the sensitivity of this test to sample size variations [see 13, 29, 33]. Instead, the literature suggests that model selection be based on a careful examination of the overall pattern suggested by multiple measures of goodness of fit [for example, 13, 17, 26, 33, 40].

⁵The GFI and the AGFI are measures of the relative amount of variance and covariance that are jointly accounted for by the model under consideration. The AGFI differs from the GFI by adjusting for the degrees of freedom. Values close or above 0.90 signify a good fit [see 13, 40].

⁶The RMR represents a measure of the average residuals when the covariances or correlations produced by the model under consideration are subtracted from the observed covariance or correlation matrix. Values less than 0.10 indicate that the model yielded a close approximation of the data [see 40].

⁷The NFI-2 or incremental normed fit index [13] has been found to be less sensitive to sample variations [2, 33]. Values close to or above 0.9 signify that the model represents a plausible representation of how the variables are associated to one another [see 40].

APPENDIX A

Scale	Items
Campus climate	<p>I have observed discriminatory words, behaviors or gestures directed at minority students at <i>this institution</i>.*</p> <p>I feel there is a general atmosphere of prejudice among students.</p> <p>I have encountered racism while attending <i>this institution</i>.</p> <p>I have heard negative words about people of my own race or ethnicity while attending classes.</p>
Prejudiced attitudes of faculty & staff	<p>I feel there is a general atmosphere of prejudice among faculty at <i>this institution</i>.</p> <p>I feel there is a general atmosphere of prejudice among academic staff at <i>this institution</i>.</p>
In-class discriminatory experiences	<p>I have been singled out in class and treated differently than other students.</p>
Parental encouragement	<p>My family approves of my attending <i>this institution</i>.</p> <p>My family encourages me to continue attending <i>this institution</i>.</p> <p>My family encourages me to get a college degree.</p>
Concerned faculty & staff	<p>Most of the faculty members I have contact with are willing to spend time outside of class to discuss issues of interest and importance to students.</p> <p>Most of the faculty members I have had contact with are genuinely outstanding or superior teachers.</p> <p>Most faculty I have contact with are genuinely interested in teaching.</p> <p>Academic advisors or counselors at this institution are genuinely concerned about students.</p> <p>Most of the faculty members I have had contact with are genuinely interested in students.</p>
Informal interactions with faculty & staff	<p>I am satisfied with the opportunity to meet and interact informally with academic advisors and academic staff.</p> <p>I am satisfied with the opportunities to meet and interact informally with faculty members.</p> <p>My nonclassroom interacting with faculty, academic advisors, and college administrators have had a positive influence on my career goals and aspirations.</p> <p>My nonclassroom interacting with faculty, academic advisors and college administrators have had a positive influence on my intellectual growth and interest in ideas.</p> <p>Since enrolling at this institution, I have developed a close, personal relationship with at least one faculty member, academic advisor, or academic staff member.</p>

APPENDIX A (Continued)

Scale	Items
Interactions with peers	<p>My nonclassroom interacting with faculty, academic advisors and college administrators have had a positive influence on my personal growth, attitudes and aptitudes.</p> <p>It has been easy for me to meet and make friends with other students at <i>this institution</i>.</p> <p>Since enrolling at <i>this institution</i>, I have developed close personal relationships with other students.</p> <p>The student friendships I have developed at <i>this institution</i> have had a positive influence on my personal growth and interest in ideas.</p> <p>My interpersonal relationships with other students have had a positive influence on my personal growth, attitudes and values.</p> <p>Very few of the students I know at <i>this institution</i> would be willing to listen to me and help me if I had a personal problem.</p> <p>The student friendships I have developed have been personally satisfying.</p> <p>I am satisfied with my social life at <i>this institution</i>.</p> <p>Since coming to <i>this institution</i>, I have made friends with students quite different from me (e.g., different race or ethnic background, different religious beliefs, family background).</p> <p>I spend time socializing with friends in CCC or other campus buildings.</p>
Academic & intellectual development	<p>I am satisfied with the extent of my intellectual development since attending <i>this institution</i>.</p> <p>My academic experience has had a positive influence on my intellectual growth and interest in ideas.</p> <p>I am satisfied with my academic experience at <i>this institution</i>.</p>
Goal commitment	
Degree completion	It is important for me to get a college degree.
	It is important for me to graduate from college.
Program completion	It is important for me to finish my program of studies.
Institutional Commitment	<p>Certainty of choice</p> <p>I am certain <i>this institution</i> is the right choice for me.</p> <p>I am confident I made the right decision in choosing <i>this institution</i>.</p>
Belonging	I feel I belong at <i>this institution</i> .

* Because of confidentiality reasons the name of the institution was replaced with the generic term: *this institution*.

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