Several disturbing trends exist among most minority groups in higher education. Their college participation and persistence rates and their average academic performance are lower than those of nonminorities. When we add to this the under-representation in the hard sciences and in graduate education the picture appears increasingly grave (Olivas, 1986; Porter, 1990). These trends have led some researchers to suggest that among minorities educational behaviors are shaped by factors other than those affecting white students (e.g., Allen, 1988; Tracey & Sedlacek, 1984, 1985, 1987). Such considerations as a sense of alienation from the campus and exposure to discriminatory behaviors have gained increasing attention as potential factors that could account for differences in educational achievement between minorities and nonminorities (e.g., Allen, 1988; Fleming, 1984; Hurtado, 1992; Muñoz, 1986; Smedley, Myers, & Harrell, 1993; Smith, 1989).

Over the years there have been both conceptual and empirical attempts to examine the determinants of alienation on campus and the role these determinants play in the cognitive and affective development of minority students. In Fleming’s (1984) student developmental model, for instance, exposure to a climate of prejudice on campus is one of the most important factors impinging on the cognitive growth (i.e., academic achievement, critical thinking) and the affective development of minority students attending predominantly white institutions. Tracey and Sedlacek (1984, 1985, 1987) have advanced models that regard racist experiences in college along with other noncognitive variables (i.e., self-concept, self-confidence, understanding racism and the ability to cope with it) as being more important for predicting academic performance and persistence in college for minority students than such cognitive factors as academic ability and study habits. Suen (1983) and Loo and Rolison (1986) have advanced propositions focusing on the lack of congruence between the minority student and the institu-
tion; they stress the effect that feelings of prejudice and alienation have on decisions to persist in college. Hurtado (1992), on the other hand, has argued that the incidence of campus racial conflicts can be traced back to the racial climate that permeates the relations between minority and nonminority students, faculty, and administrators.

Alienation among minorities, usually defined as noninvolvement with or estrangement from the institution brought on by a sense of meaningless- ness and powerlessness, has been addressed by two approaches. The first builds upon Student-Institution Fit models (Spady, 1970; Tinto, 1994). A second, more recent, approach has introduced transactional models of stresses and coping behaviors (Muñoz, 1986; Prillerman, Myers, & Smedley, 1989; Smedley, Myers & Harrell, 1993).

Advocates of the Student-Institution Fit perspective regard alienation as the manifestation of maladjustment or lack of fit between the minority student and the institution (e.g., Loo & Rolison, 1986; Smith, 1989; Thompson & Fretz, 1991). Feelings of not belonging and unpleasantness at an institution are some of the elements commonly mentioned as comprising alienation from the institution (e.g., Madrid, 1988; Muñoz, 1986; Smith, 1989). Proponents of this view regard the institution as having two dimensions: an academic dimension (made up of formal relationships with faculty and academic staff and cognitive growth) and a social dimension (including relationships with other students and informal interactions with faculty and academic staff). Students are alienated when they are unable to adjust or fit into either of these two dimensions. Also implicit in this view is the notion that part of this maladjustment can be traced back to intolerance. When members of an institution do not accept the values and ways of behaving associated with a particular subculture on campus, members of this subculture view this as lack of tolerance (Murguía, Padilla, & Pavel, 1991; Smith, 1989). This intolerance establishes a climate of racial prejudice and discrimination that permeates the interactions of minority students with the overall student and faculty community, leading the students to harbor feelings of not belonging to and unpleasantness at an institution (Hurtado, 1992; Loo & Rolison, 1986; Smith, 1989). In sum, this approach regards alienation as a three-stage process: intolerance leads to perceptions of prejudice and discrimination, which give rise to feelings of alienation (Intolerance → Perceptions of Prejudice & Discrimination → Feelings of Alienation).

Despite conceptual progress and increasing research, scholars have been rather inconsistent in how they conceptualize and measure students' experiences of and perceptions of prejudice and discrimination. Measures of this construct have included: a) indicators of adjustment problems with curriculum, support services, faculty, peers and academic staff (Allen, 1988; Fleming, 1984; Nettles, Thoerry, & Gosman, 1986); b) the lack of congruence between the minority student and the institution (Loo & Rolison, 1986; Suen, 1983); c) global measures assessing racial tensions, perceived
ability to communicate with students from other ethnic backgrounds, and degree of trust between minorities and campus administrators (Hurtado, 1992); and d) ability for understanding and coping with racism (Tracey & Sedlacek, 1987). Although the literature implies that perceptions of prejudice and discrimination are the bases of separate but interrelated experiences with different realms of an institution (e.g., Smith, 1989, 1992), substantive research has treated this construct as unidimensional (e.g., Hurtado, 1992; Nettles, Thoeny & Gosman, 1986). Moreover, the link between perceptions of prejudice and discrimination formed by college experiences and subsequent feelings of alienation, although suspected, remains to be documented. Research up to now has focused on examining the relationship between prejudice or discrimination and outcomes such as academic performance (e.g., Nettles, 1988; Nettles et al., 1986) and persistence (e.g., Arboña & Novy, 1990). The assumption that feelings of alienation and their determinants vary as a function of the student’s ethnicity also remains to be established empirically.

PURPOSE OF THE STUDY

The purpose of this study is not only to establish the dimensionality of perceptions of prejudice and discrimination among different ethnic groups (Whites, Hispanics, African-Americans, Asian-Americans) but also to test the interrelationship between the different factor structures associated with each group and students’ sense of alienation from their institution. Figure 1 displays our model, which embodies both the measurement and the structural model, and which we hypothesize as applicable to both minority and nonminority students. The measurement model views perceptions of prejudice and discrimination (PPD) as comprised of three interrelated components: (1) Campus Racial/Ethnic Climate, (2) Prejudiced Attitudes Held by Faculty and Staff, and (3) In-Class Discriminatory Experiences. The model also presumes that each PPD factor is made up of a unique set of prejudice-discriminatory experiences; a total of 8 prejudice-discrimination indicators, labeled X1 through X8 (see measurement section), are hypothesized to represent the three PPD factors. On the other hand, the structural model presumes that each PPD factor has a positive and a direct effect on Alienation; that is, the higher the PPD in a given dimension, the higher the degree of alienation.

 METHODOLOGY

Construct validation

Schwab’s (1980) recommendations on the proper sequencing for construct validation were followed in substantiating the proposition that perceptions of prejudice and discrimination (PPD) are conducive of feel-

ings of alienation (PPD → Feelings of Alienation). Accordingly, the first step sought to document the extent to which the indicators or items themselves were valid indicators of the corresponding construct they were purported to measure. The next step involved examining the degree of independence (orthogonality) among the 3 constructs comprising perceptions of prejudice and discrimination. Finally, the extent to which each PPD component affected feelings of alienation across each ethnic group was examined.

Subjects

The study population was drawn from the fall 1990 entering freshman class at a major public, commuter and predominantly white doctoral granting midwestern institution. Only first-time freshmen who were either U.S. citizens or permanent residents were included in the final sample. At the end of the freshman year (April 1991) students were mailed a question-
naire consisting of 72 items. To avoid method variance, items measuring perceptions of prejudice, discrimination, and alienation were randomly distributed in the survey.

An initial survey and a follow up yielded usable surveys for 879 students, or 52 percent of the target population. The composition of the sample was 10.7 percent African-American, 21.6 percent Asian-American, 17.2 percent Hispanic and 50.5 percent white. Student college transcripts were used to identify high school academic performance, SAT and ACT scores, gender, ethnicity, cumulative grade point averages and enrollment status at the beginning of the 1991 fall semester. Comparisons between the sample and the population in terms of college persistence to the fall of 1991, academic ability indicators, and gender indicated that the sample was representative of the target population. However, the sample slightly overestimates the proportion of Hispanics (17.2% versus 12.5%) at the institution and slightly underestimates African-Americans (10.7% versus 12.5%), and Asian-Americans (21.6% versus 25%).

Constructs and Measures

Construct definition, item selection, and development of the baseline model (see Figure 1) were guided by themes that emerged from a series of focused interviews with students at Arizona State University2 (Morrison Institute, 1991). A content analysis of these themes suggested that perceptions of discrimination and prejudice could be represented by three dimensions: 1) Racial/Ethnic Climate on Campus, 2) Prejudiced Attitudes of Faculty and Staff, and 3) In-Class Discriminatory Experiences. These themes guided both item development for the survey and the selection and adaptation of items from other survey instruments (Loo & Rolison, 1986; Nettles, Thoeny, & Gosman, 1986; Thompson & Fretz, 1991; Tracey & Sedlacek, 1984, 1985). Discussions with the focus groups also led to the hypothesized correlations correlations among the three PPD dimensions as illustrated in Figure 1. It was observed that whenever students recalled critical incidents in a given PPD dimension they were also prone to evoke experiences with the other two domains.

Campus Racial/Ethnic Climate. This dimension represents a global perception of prejudice and discrimination based on race and ethnicity. The main characteristic of this dimension rests on students having witnessed the use of discriminatory words, gestures and behaviors on campus and in the classroom. Accordingly, measures included: "I have observed discriminatory words, behaviors or gestures directed at minority students as this institution" (X1), "I feel there is a general atmosphere of prejudice among students" (X2), "I have encountered racism while attending this institution" (X3), and "I have heard negative words about people of my own race or ethnicity while attending classes" (X4).

Prejudiced Attitudes of Faculty and Staff. This dimension reflects students' perceptions that faculty and college administrators harbor feelings of
prejudice toward minorities. The measures included: "I feel there is a general atmosphere of prejudice among faculty at this institution" (X5) and "I feel there is a general atmosphere of prejudice among academic staff at this institution" (X6).

**In-Class Discriminatory Experiences.** This dimension embodies experiences in the classroom manifested through having been discouraged from participating in class discussions and being singled out in class. Measures of in-class discriminatory behaviors included: "I have been discouraged from participating in class discussions" (X7) and "I have been singled out in class and treated differently than other students" (X8).

**Alienation.** The literature suggests that maladjustment to college on the part of minorities is primarily manifested by feelings of not belonging at the institution coupled with feelings that regard the experience of being a student at the institution as unpleasant (cf. Madrid, 1988; Muñoz, 1986; Suen, 1983; Smith 1989). Two items were used to measure this construct: "Being a student at this institution is a pleasant experience" (Y1) and "I feel I belong at this institution" (Y2). These items were identified from Bean (1982), Pascorella and Terenzini (1991) and Nora and Cabrera (1993).

All 10 items were measured using Likert scales ranging from 5 (strongly agree) to 1 (strongly disagree). The two positively worded alienation items were recoded to maintain consistency with items measuring PPD (i.e., for Y1 and Y2, strongly agree = 1, strongly disagree = 5).

**DATA ANALYSIS**

Structural equation modeling via LISREL 8 (Joreskog & Sorbom, 1993) was employed in testing the "true dimensionality" of PPD and in assessing the effect of each PPD subconstruct on the outcome measures of alienation. A covariance matrix was used in the data analysis to estimate parameters for both the measurement and structural models through a maximum likelihood solution. We selected the LISREL standardized solutions to report estimates.

A two-stage strategy was utilized to examine the construct validity of PPD. As suggested in the measurement literature (e.g., Anderson & Gerbing, 1988; Castañeda, 1993; Joreskog, 1993; Schwab, 1980) confirmatory factor analyses (CFA) were conducted to document the measurement properties of each of the 10 indicators employed to measure the four constructs in the model (see Figure 1). This technique was also employed to assess the degree of interdependency among the components of PPD. In the second stage, the effect of each of the PPD components on the construct Alienation was examined via structural equation modeling.

Several goodness of fit indicators were used in the selection of models. These included the $X^2$ statistic, the $X^2/df$ ratio, the Goodness of Fit Index (GFI), The Adjusted Goodness of Fit Index (AGFI), and the Root Mean Square Residual (RMR). These indicators assessed how well the
covariances produced in the estimation of the model reproduced sample covariances. The incremental fit index or NFI2, also called DELTA2 (see Bollen, 1989), was used to help in assessing the fit of a given model compared to an alternative or baseline model. To the extent that the difference in the fit function is large relative to the fit function of the null model, the NFI2 will approach one, indicating that most of the sample correlation matrix has been accounted for. Model selection was also guided by a careful examination of the overall pattern suggested by measures of goodness of fit coupled with an examination of standardized residuals, Q-plots of residuals, modification indices and individual parameter estimates.

RESULTS

Reliability

Reliability coefficients for the total sample and for each subgroup in the study indicated a high degree of internal consistency among the eight prejudice-discrimination items used in the confirmatory factor analysis. For the entire student sample, the alpha coefficient for the eight items was .84. The alpha coefficients for African-Americans, Asian-Americans, Hispanics and whites were also consistently high (.87, .83, .83 and .82, respectively).

Feelings of Alienation and Perceptions of Discrimination and Prejudice by Ethnicity

Prior to testing our model (see Figure 1) for each ethnic group we considered it important to examine the extent to which there was evidence that ethnicity itself was a factor in accounting for differences in feelings of Alienation and in Perceptions of Prejudice and Discrimination (PPD). A series of F-tests and t-tests confirmed the need to conduct separate analyses by ethnic group.

Results indicated that scores on PPD and on Alienation were not independent of ethnicity (for PPD, $F = 23.07, df = 3, p < .001$; for Alienation, $F = 21.207, df=3, p<.001$). However, we also found that the degree of association varied as a function of the attitude and the feeling under consideration. Ethnicity accounted for about 8% (adjusted $R^2 = .08$) of the observed variance among the eight prejudice-discrimination items. Ethnicity explained 3% (adjusted $R^2 = .03$) of the variance observed on the two feelings of alienation items. In sum, findings suggest that there is much more variance among different ethnic groups regarding PPD than there is when feelings of alienation is the focus of analysis. Perceptions of Prejudice and Discrimination. A series of t-tests (see Table 1) verified that perceptions of prejudice and discrimination among minorities were significantly different from those of nonminorities. As shown in column 1 in Table 1, African-Americans,
Asian-Americans and Hispanics were significantly more likely to perceive more prejudices and discrimination (PPD) at campus than did whites. The highest levels of PPD were found for African-Americans, followed by Asian-Americans and Hispanics (see Mean column in Table 1). Among minorities, the only significant differences noted was that between African-Americans and Hispanics. On average, African-Americans experienced more prejudice and discriminations than did Hispanics ($t = -2.6$, $p < .05$). No significant differences in PPD were found between African-Americans and Asian-Americans ($t = -1.7$, $p > .05$) or between Asian-Americans and Hispanics ($t = -1.5$, $p > .05$).

A similar pattern emerges when comparisons are broken down for each of the three PPD dimensions (see Table 2). Consistently, each minority group perceived more negative experiences than did whites. Among minorities, African-Americans, as a whole, experienced more prejudice and discrimination than did Hispanics in all dimensions except In-Class Experiences. In this dimension, African-Americans, Hispanics and Asian-Americans all equally felt isolated from class discussion and singled out in class.

**Alienation.** Differences in attitudes related to alienation were also found among the different ethnic groups (see Table 3). Whites evinced the most alienation, Hispanics the least, with African-Americans and Asian-Americans in between. Surprisingly, no significant differences in alienation were found between white and African-American students. Both groups displayed a high degree of alienation from their institution. Statistically significant differences, however, were found between whites and Asian-Americans ($t = -2.22$, $p < .05$) and between whites and Hispanics ($t = -4.7$, $p < .05$). Among minorities, there were significant differences in alienation between Asian-Americans and African-Americans ($t = -5.5$, $p > .05$). However, there were significant differences between Hispanics and the other two minority ethnic groups (see row 4 in Table 3). Hispanics were less alienated than all three groups.
TABLE 2
Differences Between Ethnic Groups (t-statistics) on Each (PPD) Dimension

A. Campus Ethnic/Racial Climate

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White</td>
<td>African-American</td>
<td>Asian-American</td>
<td>Hispanic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>-</td>
<td></td>
<td></td>
<td>2.33</td>
<td>0.95</td>
</tr>
<tr>
<td>2</td>
<td>6.41**</td>
<td>-</td>
<td></td>
<td></td>
<td>3.05</td>
<td>1.02</td>
</tr>
<tr>
<td>3</td>
<td>4.97**</td>
<td>-2.69**</td>
<td>-</td>
<td></td>
<td>2.73</td>
<td>0.81</td>
</tr>
<tr>
<td>4</td>
<td>3.41**</td>
<td>3.05**</td>
<td>-0.93</td>
<td>-</td>
<td>2.64</td>
<td>0.95</td>
</tr>
</tbody>
</table>

B. Prejudiced Faculty/Staff

<table>
<thead>
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<th>3</th>
<th>4</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>African-American</td>
<td>Asian-American</td>
<td>Hispanic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>-</td>
<td></td>
<td></td>
<td>2.05</td>
<td>0.89</td>
</tr>
<tr>
<td>2</td>
<td>6.24**</td>
<td>-</td>
<td></td>
<td></td>
<td>2.71</td>
<td>0.94</td>
</tr>
<tr>
<td>3</td>
<td>6.61**</td>
<td>-1.35</td>
<td>-</td>
<td></td>
<td>2.56</td>
<td>0.77</td>
</tr>
<tr>
<td>4</td>
<td>3.22**</td>
<td>-3.14**</td>
<td>-2.54*</td>
<td>-</td>
<td>2.33</td>
<td>0.86</td>
</tr>
</tbody>
</table>

C. In-Class Experiences

<table>
<thead>
<tr>
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<th>3</th>
<th>4</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White</td>
<td>African-American</td>
<td>Asian-American</td>
<td>Hispanic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>-</td>
<td></td>
<td></td>
<td>2.03</td>
<td>0.70</td>
</tr>
<tr>
<td>2</td>
<td>1.96*</td>
<td>-</td>
<td></td>
<td></td>
<td>2.20</td>
<td>0.81</td>
</tr>
<tr>
<td>3</td>
<td>4.36**</td>
<td>1.15</td>
<td>-</td>
<td></td>
<td>2.31</td>
<td>0.72</td>
</tr>
<tr>
<td>4</td>
<td>3.00**</td>
<td>0.46</td>
<td>-0.69</td>
<td>-</td>
<td>2.25</td>
<td>0.85</td>
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</table>

*p < .05;  **p < .01
TABLE 3

Differences Between Ethnic Groups (t-statistics) on Feelings of Alienation

<table>
<thead>
<tr>
<th></th>
<th>1 White</th>
<th>2 African-American</th>
<th>3 Asian-American</th>
<th>4 Hispanic</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>-1.01</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2.71</td>
<td>1.01</td>
</tr>
<tr>
<td>3</td>
<td>-2.2*</td>
<td>-0.5</td>
<td>-</td>
<td>-</td>
<td>2.58</td>
<td>0.96</td>
</tr>
<tr>
<td>4</td>
<td>-4.7*</td>
<td>-2.6*</td>
<td>-2.6*</td>
<td>-</td>
<td>2.52</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.27</td>
<td>0.83</td>
</tr>
</tbody>
</table>

*p < .05  **p < .01

Perceptions of Prejudice and Discrimination and Feelings of Alienation

Figures 2 through 4 display both measurement results and the estimates of effects of each PPD dimension on feelings of alienation. To facilitate comparisons across groups, the figures report the estimates in standardized units. The measurement model reports the loadings associated to each of the 10 prejudice-discrimination and alienation items—X1 through X8, for PPD; and Y1 and Y2, for Alienation. The loading represents the extent to which the item itself measures or indexes the construct it purports to measure. Loadings of .45 or higher are usually considered to provide evidence that the item is a good indicator of the respective construct (see Bollen, 1989; Nora & Cabrera, in press; Vogt, 1993). In these figures, double arrowed lines indicate the degree of correlation among the constructs while single arrowed lines signify the effect of the representative PPD dimension on the construct Alienation. Significant effects are displayed by straight lines while broken lines represent hypothesized effects found not significant. Table 4 summarizes information on the different goodness of fit indicators associated with the testing of our model in each ethnic group. Table 5 summarizes the effects of each PPD dimension of Feelings of Alienation. This table also reports the proportion of variance explained in Feelings of Alienation by the PPD dimensions.

Minorities. All measures of goodness of fit for the measurement models for Asian-American, Hispanic, and African-American students provide empirical evidence of the construct validity of our hypothesized PPD three-factor structure (see Table 4). For all three minority samples, three separated but interrelated latent PPD subconstructs were identified: (1) Campus Racial/Ethnic Climate, (2) Perceived Prejudice of Faculty and Staff, and (3) In-Class Discriminatory Experiences (see Figures 2, 3 and 4). Although specific factor loadings and unique variances for the multiple indicators of the three constructs varied slightly from one minority group to
another, the hypothesized factor structure among the PPD dimensions was found to be consistent across the three nonminority groups. In each group, the items showed significant and high loadings with the respective construct indicating that indeed the items represented a valid manifestation of the corresponding construct (see Figures 2, 3 and 4). In the case of African-Americans, for instance, all four Campus Racial/Ethnic items (X1 through X4) were found to load highly in the respective construct. The same observation holds for Hispanics and for Asian-Americans.

Differences among the measurement models (three-factor structure models) for all three minority groups, however, were found among residuals associated with the items employed to measure the constructs (see Figures 2, 3, and 4). PPD three-factor structure models without correlated residuals were tested for both the Hispanic ad African-American models but were found to worsen measures of goodness of fit; consequently, the correlated
residual models, displayed in Figures 2 and 3, were kept as the best representation of how these groups viewed discrimination and prejudice at the institution. The African-American and Hispanic measurement models displayed correlated residuals but for different variables. In the Hispanic three-factor structure model significant correlated residuals were found between item X3 (“encountered racism”) and item X7 (“discouraged from participating”) (theta delta = .19) and between item X4 (“negative words”) and item X8 (“singled out in class”) (theta delta = .20). In the African-American measurement model correlated residuals were found between item X1 (“observed words/behaviors”) and item X3 (theta delta = .29) and between item X2 (“general atmosphere”) and item X8 (theta delta = -.21). These correlated residuals indicate that for the respective ethnic group the items are seen as sharing something in common. Unlike the cases of Hispanics and African-Americans, there were no correlated residuals among the items for the
Asian-American student population. That is, the items were perceived by this group as representing distinctive elements of prejudice and discrimination on campus.

The structural models tested the impact of the three dimensions of Perceptions of Prejudice and Discrimination (PPD) on Feelings of Alienation while documenting the degree of correlation among the three PPD constructs (see Tables 4 and 5 and Figures 2, 3, and 4). All measures of goodness of fit for the different structural models were found to be significant (see Table 3). As hypothesized, results indicated that minorities perceived the three PPD dimensions to be positively interrelated (see Figures 2, 3 and 4). That is, minority students who experienced a negative campus climate were also likely to have experienced in-class discriminatory practices and been exposed to prejudiced faculty and staff. The degree of association, however, was found to vary as a function of the particular minority group
TABLE 4
Measures of Goodness of Fit for Structural Models

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>$X^2$</th>
<th>$X^2$/df</th>
<th>GFI</th>
<th>AGFI</th>
<th>NFI2</th>
<th>RMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian-American</td>
<td>44.76</td>
<td>1.49</td>
<td>.95</td>
<td>.91</td>
<td>.97</td>
<td>.040</td>
</tr>
<tr>
<td>Hispanic</td>
<td>37.38</td>
<td>1.34</td>
<td>.95</td>
<td>.90</td>
<td>.98</td>
<td>.061</td>
</tr>
<tr>
<td>African-American</td>
<td>41.23</td>
<td>1.47</td>
<td>.94</td>
<td>.89</td>
<td>.98</td>
<td>.066</td>
</tr>
<tr>
<td>White</td>
<td>104.63</td>
<td>3.49</td>
<td>.98</td>
<td>.96</td>
<td>.97</td>
<td>.050</td>
</tr>
</tbody>
</table>

Note. $X^2$/df values less than 5.0 are regarded as indicative of good fit. GFI, AGFI and NFI2 values close to 1 indicate a good fit of the model. RMRs less than .10 indicate that the model generated a covariance matrix closely resembling the underlying population variance-covariance matrix (see Nora & Cabrera, in press).

TABLE 5
Effects (gammas) of each PPD Dimension on Alienation and $R^2$s for the Complete Model, by Race/Ethnic Group

<table>
<thead>
<tr>
<th>Dimension</th>
<th>1 (Climate)</th>
<th>2 Faculty/Staff Prejudice</th>
<th>3 In-Class Discrimination</th>
<th>Entire Model $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian-American</td>
<td>.04</td>
<td>-.24</td>
<td>.44*</td>
<td>.10</td>
</tr>
<tr>
<td>Hispanic</td>
<td>.30</td>
<td>-.49</td>
<td>.51*</td>
<td>.15</td>
</tr>
<tr>
<td>African-American</td>
<td>-.07</td>
<td>-.21</td>
<td>.61*</td>
<td>.22</td>
</tr>
<tr>
<td>White</td>
<td>-.29</td>
<td>NA</td>
<td>.39*</td>
<td>.07</td>
</tr>
</tbody>
</table>

*p < .05, one tailed.
NA: Not applicable.

Note: For whites, the prejudiced attitudes of faculty/staff component and the in-class discriminatory experiences component were found to converge into a single dimension.

and PPD component under consideration. The highest correlation was found among African-Americans between Campus Racial Climate experiences and perceptions of Prejudiced Attitudes of Faculty and Staff (.84, see Figure 2). The lowest correlation was found among Hispanics involving perceptions of Racial Climate and In-Class Discriminatory Experiences (.30, see Figure 3). Since correlations of .7 or higher are indicative of a single dimension (see Nora & Cabrera, 1993), alternative models collapsing highly correlated constructs were tested. However, no support was found for these alternative models.
For all three minority groups parameter estimates for two dimensions of
PPD (Campus Racial/Ethnic Climate and Prejudiced Faculty/Staff) were
found not to have a significant impact on Alienation (see Table 5 and Fig-
ures 2, 3, and 4). Effects for Campus Racial/Ethnic Climate for Asian-
-Americans, Hispanics, and African-Americans were .04, .30, and -.07,
respectively. Effects for Prejudiced Attitudes of Faculty/Staff for the three
minority groups in the study were -.24, -.49, and -.21, respectively. Only
the third PPD dimension, In-Class Discriminatory Experiences, had a sig-
nificant impact on Alienation. Effects of this construct on Alienation for the
two groups were .44, .51, and .61, respectively.

The total Coefficients of Determination, or $R^2$s, differed among the three
minority groups (see Table 5). For Asian-Americans the PPD
structural model explained an estimated 10 percent of the variance in stu-
dents’ sense of alienation on campus. For Hispanics, the Total Coefficient of
Determination was .15 (15%), 5% more than for Asian-Americans. PPD ex-
plained the most variance in African-American students’ feelings of Alien-
ation. For African-Americans the $R^2$ was .22, meaning that an estimated 22
percent of the variance in Alienation is explained by the hypothesized casu-
al model.

In sum, the evidence is supportive for the model as both a valid representa-
tion of how minorities perceive the sources of discrimination and prejudice
at campus as well as a plausible explanation of how these sources affect their feelings of alienation. Of the three sources or dimensions of dis-
 crimination and prejudice, only In-Class Discriminatory Experiences was
found to exert a significant effect on feelings of Alienation. The fact that the
other two PPD components failed to exert a significant effect should not be
interpreted as indicative of their lack of a role to play on Alienation. It is like-
ly that Campus Racial/Ethnic Climate and perceptions of Prejudiced Atti-
tudes of Faculty/Staff exert an indirect impact on Alienation given the high
intercorrelation they maintain with In-Class Discriminatory Experiences.

Although the model was found to be significant in each of the three mi-
nority groups, evidence also seems to support the conclusion that the de-
gree of the effect of prejudice-discriminatory experiences varies as a
function of the particular minority group under consideration. Results ap-
ppear to suggest that among African-Americans feelings of Alienation are
more based on experiences of prejudice-discrimination than is the case for
Hispanics and Asian-Americans. This conclusion is based on two findings.
First, the model explained more variance in Alienation among African-
Americans than it did among Hispanics and Asian-Americans (22% vs. 15%
and 10%, respectively). Second, In-Class Discriminatory Experiences had a
higher effect on Alienation among African-Americans than among Hispanics
and Asian-Americans (.61 vs. .51 and .44).

Nonminorities. The three-factor structure model (see Figure 1), con-
firmed for all three minority groups, was tested for the nonminority student
population. The estimated correlation matrix among the PPD factors was
found to be nonpositive definite. This problem coupled with parameter estimates outside their permissible range (e.g., correlated factor estimates greater than 1.0) suggested that our hypothesized model was an inappropriate representation of perceptions of prejudiced-discrimination among whites. Our inspection of the LISREL estimates indicated that perceptions of prejudiced faculty/staff and in-class discriminatory experiences were highly correlated among whites. This finding led us to test alternative models in which the two constructs were regarded as one. Subsequent model testing led to the model reported in Figure 5. The goodness of fit indices for the model are disclosed in Table 4.

Results indicate that whites perceive discrimination and prejudice as falling into two dimensions: Campus Racial/Ethnic Climate and In-Class Discriminatory Experiences. Unlike minorities, whites perceive in-class discriminatory experiences and prejudice on the part of faculty and staff as embracing one single dimension of prejudice and discrimination on cam-
pus (see Figure 5). However, whites, as is the case among minorities, view these two dimensions as being highly intertwined. The correlation between these PPD components was .74.

Similar to the measurement models identified for African-Americans and Hispanics, for whites significant correlated residuals were found among specific items. These correlated residuals occurred between item X1 ("exposure to discriminatory behaviors") and item X5 ("general atmosphere of prejudice among faculty") (theta delta = -.11) and between item X8 ("singled out in class") and item X5 (theta delta = -.10). It is also interesting to note that item X2 ("encountered racism at the institution") was found to cross load in the two dimensions. This suggests that whites consider encountering racism at the institution as an event that characterizes both Campus Ethnic/Racial Climate and In-Class Discriminatory Experiences.

The total Coefficient of Determination for the structural model for the white sample was .07. Only 7% of the variance in Alienation was explained by the structural model. As in the case for minority students, only In-Class Discriminatory Experience was found to significantly affect Alienation (gamma=.39). While the model explained only 7% of the variance, all measures of goodness of fit for the hypothesized model were found to be acceptable (see Table 4). Although the measurement model is a valid model in identifying perceptions of prejudice and discrimination for white students, it is also important to note that these perceptions are not sufficient to explain the variance in whites students’ sense of alienation on campus. As already noted, perceptions of prejudice and discrimination accounted for a small percent of the variance on their alienation scores. White students’ dissatisfaction with their institution and their sense of not belonging on campus are to be found in factors other than experiences with prejudice and discrimination on campus.

**DISCUSSION**

Generalizations of this study’s results are to be approached with care. Findings are based on a single institution, located in a Midwestern state, and drawing on a particular period of time in the college lives of the students (the freshman year). However, the findings rest on sound methodological practices. Choosing a single institution as the source of data, as opposed to selecting multiple institutions, does control for several threats to the internal validity of the study’s findings. Students are more likely to have been exposed to similar conditions in terms of course requirements, faculty, academic staff and other institutional elements than they are when the sample comes from several institutions. The type of the institution under study also adds to the internal validity of the study. As noted by Mow and Nettles (1990), minority students are more likely to attend predominately white institutions and more prone to experience prejudice and discrimination when they attend this type of institution. Results are also
strengthened by the fact that data collection took place at the end of the freshman year. The literature consistently shows that the freshman year is the most critical one in the academic life of the college student (e.g., Astin, 1993; Pascarella & Terenzini, 1991; Tinto, 1994).

While students' perceptions of prejudice and discrimination on campus have become the focus of much research, very little of this research has examined the underlying dimensionality of perceptions of prejudice-discrimination and the role each dimension has in predicting alienation on campus. This study advanced and tested a model that views experiences of discrimination-prejudice as falling into three separate but interrelated dimensions. This study also documented the effect that each discrimination-prejudice dimension has on feelings of alienation across four ethnic groups. In so doing, the study represents a marked departure from current research on determinants of among minority students. This study adhered to the orientation that suggests the use of several research paradigms for documenting the validity of constructs (e.g., Messick, 1989; Schwab, 1980). The content of the items, the dimensionality hypothesized, and the presumed interconnection among the components of the construct were all grounded in the students' perspectives. Validation strategies, on the other hand, were employed to document the validity and reliability of the items, the degree of interconnection among the PPD constructs and their validity in predicting alienation.

Minorities and nonminorities do perceive sources of discrimination and prejudice on campus differently. As in the story of the Eskimo who is able to distinguish among different colors and textures in snow, minorities may have more nuanced perceptions of the sources of discrimination. While nonminorities regard discriminatory attitudes held by faculty and staff and in-class discriminatory experiences as one, minorities perceive the same discriminatory behaviors and attitudes as falling into two separate yet interrelated dimensions. This suggests that nonminority students are less able to distinguish as many aspects of prejudice and discrimination as are minority students. We believe that personal experiences with discriminatory behaviors do not enter into perceptions of prejudice and discrimination for whites students as consistently as they do for Asian-Americans, Hispanics, and blacks. This belief is based on the significant differences found between white and minority students on both the overall scale measuring perceptions of prejudice and discrimination and on each PPD component (see Tables 1 and 2). Whites consistently reported lower perceptions of discrimination and prejudice on campus than did minorities. It is also believed that, because discriminatory behaviors are directed at minority students much more often than nonminorities, white students do not perceive a personal sense of being discriminated against. While white students do perceive that there is a discriminatory campus climate, they do not personally associate those behaviors with themselves.
Regardless of the ethnic group, In-Class Experiences was the only prejudice-discriminatory factor that affected feelings of Alienation. This finding is consistent with research on the effects of teaching climates on undergraduate growth and satisfaction. Volkwein (1991) and Volkwein and Carbone (1994) reported that the vitality of the classroom experiences is one of the institutional factors that contributes the most to a student’s growth, his/her gains in interpersonal skills, his/her educational goal aspirations and his/her commitment to the institution. What our study demonstrates is the negative effects that in-class-experiences may have when they turn awkward for the student. It is important to note, however, that the degree in the effect of In-Class Experiences does not vary according to the ethnic group under consideration. For minorities, particularly among African-Americans, a sense of not belonging at their institution and feeling extremely dissatisfied with their college lives is more related to perceived discrimination in the classroom and in their personal lives than it is for whites.

The results also revealed a rather startling fact: Whites displayed the highest level of alienation from the institution (see Table 3). Furthermore, this level of dissatisfaction was closest to that found among African-Americans. But the sources of alienation for each of these two groups appear to be different. Among African-Americans, perceptions of prejudice-discrimination accounted for three times as much of their feelings of alienation as they did for whites (22% vs. 7%). African-Americans were also found to experience more prejudice-discrimination than did whites on the overall scale measuring Perceptions of Prejudice and Discrimination (see Table 1) as well as on each of its three components (see Table 2). These two findings suggest that the causes of alienation among whites are to be found elsewhere. One source might be traced back to the efforts made by the institution to address diversity issues. A survey conducted at one of the institution's schools indicated that whites were resentful of what they perceived was an unfair access to institutional resources on the part of minority students. Another source might be disenchanted with the institution and with what the institution has to offer in terms of job opportunities and prestige. For instance, Mallette and Cabrera (1991) reported that lack of institutional commitment played a key role in transfer decisions among white students attending a doctoral-granting southern institution. Whatever the source might be, it is clear, however, that feelings of prejudice-discrimination play a small role in shaping white students' feelings of maladjustment with the institution.

This study has implications for enrollment management, curriculum, and faculty development. Smith (1992) regards data on students as a central indicator of how successful the institution is in recruiting, attracting and retaining a diverse student population. According to Smith (1992) a key element in this data is the extent to which it sheds light on how different campus groups differ in their institutional experiences. Our study can as-
sist in this effort by offering a reliable and valid instrument for monitoring a student's experiences with three realms of the institution.

Multicultural education has gained increasing recognition as a mechanism that fosters learning by exposing students to other cultures and ways of knowing (Banks, 1993). The results of this study suggest that multicultural education could also be expanded to stress how certain behaviors, attitudes, words, and gestures can have a chilling effect on the adjustment of minority students at the campus.

The findings may have even clearer implications for classroom management and instructional practices. Evidence was found that in-class discriminatory experiences for all ethnic groups, white included, contribute the most to student alienation. Unlike the other two PPD dimensions, in-class experiences are elements that are quite directly under the control of faculty members and the institution. Feelings of being singled out in class and discouraged from participating in class discussions can be reduced via improved instructional practices. For examples, pedagogies that reward student cooperation and collaboration in the classroom (i.e., cooperative education, group projects) could be very helpful in this regard.

Furthermore, institutions can monitor the quality of classroom experiences through faculty evaluation surveys. The information gathered can assist in faculty development. Rewards can be established for faculty who concern themselves with increasing the quality of the classroom experiences and improving support functions.

Our results underline the key importance of faculty classroom practices in implementing any campus diversity policy. Our results indicate that minorities can withstand a certain amount of prejudice and discrimination without becoming alienated—but only as long as discrimination does not emerge in the classroom. Minority students may be tougher than earlier research suggests. Minority students live in a society with a less-than-ideal racial/ethnic climate and may have much experience dealing with it. However, some kind of threshold appears to be reached when a general climate of prejudice manifests itself as specific acts of discrimination in the classroom.

NOTES

1. An earlier version of this paper was presented at the 1993 Annual Meeting of the Association for the Study of Higher Education, Pittsburgh, Pennsylvania. Partial support for this study was provided by a SUNY-Albany faculty-in-aid grant given to the first author. Special thanks go to Dr. W. Paul Vogt for his invaluable comments and suggestions.

2. These focus groups took place during Spring 1989 among college students from different ethnic groups. Subjects were first asked to silently and independently write down factors they believed affected minority students the most in their interactions with faculty members, academic administrators and fellow students. Next, responses were serially recorded and discussed by the group so as to clarify meaning and to identify commonalities.

3. Muñoz, (1986) for instance, found that Chicano students reported feelings of not belonging as one of the most stressful experiences associated with attending predominantly white institutions.
4. CFA represents an improvement over exploratory factor analysis procedures (principal component factor analysis with varimax or oblique rotations) in that it allows the researcher to dictace constraints consistent with theoretically based hypothesized factor structures and to test statistically how well the covariances among the observed variables are explained given those theoretical constraints (Nora & Cabrera, in press; 1993).

5. The 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 in the model.

6. The RMR represents a measure of the average residuals when the covariances produced by the model are subtracted from the observed covariance matrix.

7. Nora and Cabrera (in press; 1993) warn against the use of a single indicator to select a particular model. Measures of goodness of fit have been found to be affected by factors other than substantive ones. The practice of relying on the \( x^2 \) statistic as the sole criterion of model selection has been questioned in view of the sensitivity of this test to sample size variations (e.g., Bollen, 1989). Moreover, it is possible to obtain small \( x^2 \) values with corresponding high \( p \)-values simply by increasing the number of parameters under estimation (see Gerbing & Anderson, 1993). Similar observations hold for all indicators of fit.

8. Although other indices are available to evaluate the fit of alternative models (e.g., normed fit index, Tucker-Lewis index, relative fit index), the incremental fit index (NFI2) has been found to be less sensitive to sample variations and to be more robust when sample sizes are below 200, as in the present study (Gerbing & Anderson, 1993).

9. A nonpositive definite matrix indicates a high degree of multicollinearity (lack of independence) among the variables (see Pedhazur, 1982). In structural modeling, a nonpositive matrix provides strong evidence against models that hypothesize independence among constructs.

10. A two-factor structure model with no correlated residuals was also tested. We rejected this model since we found it to reduce all measures of goodness of fit.

REFERENCES


ERRATUM


1. On page 387, 2nd paragraph, line # 4:
   
   It says:
   for instances,

   IT SHOULD SAY:
   for instance,

2. On page 390, Figure 1, line # 2:
   
   It says:
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   IT SHOULD SAY:
   Hypothesized

3. On page 393, 4th paragraph, line # 1:
   
   It says:
   Results indicted,

   IT SHOULD SAY:
   Results indicated,

4. On page 393, 4th paragraph, line # 2:
   
   It says:
   for PPD $F = 3.46$,

   IT SHOULD SAY:
   for PPD $F = 23.46$,
ERRATUM


5. On page 393, 4th paragraph, line # 8:

*It says:*

In sum, fundings

*IT SHOULD SAY:*

In sum, findings

6. On page 394, 1st paragraph, lines 7-9:

*It says:*

No significant differences in PPD were found between African-Americans and Hispanics (*t* = -1.5, *p* > .05) or between Asian-Americans and Hispanics (*t* = -1.5, *p* > .05).

*IT SHOULD SAY:*

No significant differences in PPD were found between African-Americans and Asian-Americans (*t* = -1.7, *p* > .05) and between Asian-Americans and Hispanics (*t* = -1.5, *p* > .05).

7. On page 394, 3th paragraph, lines 9-10:

*It says:*

Among minorities, there were significant differences in alienation between Asian-Americans and African-Americans (*t* = -0.5, *p* > .05).

*IT SHOULD SAY:*

Among minorities, there were no significant differences in alienation between Asian-Americans and African-Americans (*t* = -0.5, *p* > .05).
ERRATUM


8. On page 396, 1st paragraph, lines 12-13:

It says:

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IT SHOULD SAY:

single arrowed lines signify the effect of the respective PPD dimension

9. On page 397, 2nd paragraph, line 5:

It says:

for both the Hispanic and African-American models

IT SHOULD SAY:

for both the Hispanic and African-American models

10. On page 400, Table 5, line #1:

It says:

for each PPD Dimension

IT SHOULD SAY:

for each PPD Dimension

11. On page 401, 1st paragraph, lines 8-9:

It says:

In-Class Discriminatory Experiences, had a significant impact of Alienation.

IT SHOULD SAY:

In-Class Discriminatory Experiences, had a significant impact on Alienation.
ERRATUM


12. On page 401, 3th paragraph, line #4:

It says:

Of the three sources or dimensions or discrimination

IT SHOULD SAY:

Of the three sources or dimensions of discrimination

13. On page 406, 3th paragraph, line #8:

It says:

For examples,

IT SHOULD SAY:

For example,

14. On page 407, note # 4:

It says:

constraints Nora & Cabrera, in press; 1993).

IT SHOULD SAY:

constraints (Nora & Cabrera, in press; 1993).

15. On page 407, note # 5:

It says:

The AGFI differs from the FGI

IT SHOULD SAY:

The AGFI differs from the GFI