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Unequal Treatment and Program Satisfaction Among Students of European and Chinese Origin

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ABSTRACT

A four year panel study at an ethnically diverse commuter university examines the relationships among assessments of professor performance, GPA, academic program satisfaction, and perceptions of equal treatment of students of varying ethno-racial origins. Repeated analyses of variance indicate that although the first three of these variables do not clearly divide on the basis of ethno-racial origin, non-European origin students are more likely than those of European origin to perceive that not all students are treated equally. Analyses of relationships among variables within and between years indicates that the factors explaining the program satisfaction of students of European origin are different than those explaining satisfaction of Chinese origin students. For the former, it is likely that certain personality characteristics play a key role; for the latter, perceptions of equal treatment of students are more important.

RÉSUMÉ

Un panel d'une durée de quatre ans, constitué dans une université non-résidentielle fréquentée par des étudiantes et étudiants d'origines ethniques diverses, nous a permis d'examiner les relations entre les variables suivantes : la perception de la performance des enseignants,

la moyenne générale, la satisfaction à l'égard du programme d'études et la perception d'un traitement égal de tous (peu importe l'origine ethnique). Des analyses de variance répétées indiquent que les trois premières de ces variables ne créent pas de distinctions claires sur la base de l'origine ethnique. Par contre, les étudiantes et étudiants d'origine autre qu'européenne sont plus susceptibles que ceux d'origine européenne de percevoir que tous ne sont pas traités également. De plus, l'analyse des relations entre variables au cours d'une même année et entre différentes années indique que les facteurs expliquant la satisfaction des étudiantes et étudiants d'origine européenne sont différents de ceux qui expliquent la satisfaction de ceux d'origine chinoise. Pour les premiers, il semble que certaines caractéristiques associées à la personnalité jouent un rôle; pour les seconds, il est plus important de percevoir que tous les étudiantes et étudiants sont traités également.

INTRODUCTION

Many economically advantaged countries, including Canada, are experiencing large scale immigration from less economically privileged parts of the world. In Toronto, Montreal, and Vancouver, Canada's largest cities, immigrants comprise 44%, 18%, and 38% of the population (Justus, 2004). In contrast to earlier decades, in which most immigrants to Canada in general, and Toronto in particular, were of European descent, at the turn of the current century, most immigrants to Toronto were from China, India, Pakistan, Philippines, Sri Lanka, Hong Kong, Iran, Russia, South Korea, and Jamaica. In Toronto, the largest single group of these immigrants (17%) was from China (p. 43).

According to the 2001 census, in Toronto, among individuals of Chinese origin aged 25 to 34, 43.7% had completed at least one university degree. The figure for all Torontonians was only 31.5% (Ornstein, 2006). Although not all of these individuals would have acquired their university credentials in Canada, the numbers nonetheless suggest a commitment to higher education among individuals of Chinese origin in Metropolitan Toronto. In addition to Canadian citizens of Chinese origin, Toronto universities also host international Chinese students. Although precise figures for the Toronto area are unavailable, in 2004-05, 17,600 international Chinese students enrolled in Canadian universities. Overall, international students now make up 7.4% of Canadian university enrolees (University Enrolment, 2006).

In view of the changing demographic composition of Canadian society, universities in general, and those in Toronto in particular, increasingly recognize that it is necessary put in place processes that will ensure the recruitment of students from diverse backgrounds, and the development of programs to meet the needs of such students. For example, at the University of Toronto it

is recognized that the recruitment of students from a diversity of backgrounds requires that, "our recruitment process. . . be sensitive to the needs and interests of those whom we are attempting to recruit" (Neuman, 2003). After making a commitment to student diversity, the academic plan of York University specifies as one of its goals the, "improving support for students in need of additional support, and students for whom English and French are second languages" (The senate of York University academic plan: Academic priorities 2005-2010, 2005). After making a similar commitment to diversity Ryerson University recognizes that, "there may be many implications for program design and delivery, particularly related to factors such as learning styles and English language familiarity" (Learning together: An academic plan for Ryerson University, 2003). Given the commitments to diversity embodied in academic plans such as the foregoing, it is essential to determine if the actual experiences, and satisfaction with these experiences, are consistent with the intent of academic plans. As a result, the current research focuses student satisfaction with academic programs.

Research indicates that student satisfaction is related to grades, academic and social involvement in college/university (Astin, 1993; Bean & Bradley, 1986; Pennington, Zvonkovic, & Wilson, 1989) and to other aspects of the student experience inside and outside of the academy (Benjamin, 1994; Benjamin & Hollings, 1995, 1997). Where they are a numerical minority, the satisfaction of non-White students is frequently lower than that of Whites[1] (Jenkins, 2001; Outcalt & Skewes-Cox, 2002; Sedlacek, Helm, & Prieto, 1997). With this possibility in mind, this study has two foci: a) changes in program satisfaction between first and fourth years for students of various ethno-racial origins; and b) the extent to which an integration of various models of the relationship between academic achievement and teaching effectiveness contributes to an understanding of program satisfaction for students of European and Chinese origins at a Canadian university.

BACKGROUND

Although research conducted in the United States on the experiences and outcomes of non-European origin students provides a useful orientation to the study of similar phenomena in Canada, it is important to point out that there are differences between the populations of the two countries. First, the United States is home to more visible minorities than Canada (25% and 10% of the populations respectively). Second, in the United States Blacks and Hispanics comprise the largest non-White groups (11% and 9% of the population). In Canada individuals of Chinese origin are the largest non-white group (3% of the population). Third, in Canada, members of visible non-European origin groups (21% of whom have university degrees) are more educated than White Canadians (13% have university degrees). Fourth, in both the United States and Canada the number of Blacks with university degrees is low (15% and 11% respectively) and the numbers of individuals of Chinese origin with degrees is high (approximately 42% in the United States and 23% in Canada) (Newburger

& Curry, 2000).

Consistent with the relatively low numbers of Blacks and Hispanics in the United States who report having at least a bachelor's degree, research shows the following: low levels of post-secondary retention for the same groups (CSRDE, 2001); that the grades of White and Asian origin students are higher than those of Blacks and Hispanics (Horn, Peter, Rooney, & Malizio, 2002); and that African Americans are more dissatisfied with certain aspects of their campus experiences than members of other groups (Malaney, 1998). In general, racial diversity on campus has been found to contribute to the realization of desired outcomes, such as intellectual development, for all students (Astin, 1993; Chang, 1999; Hu & Kuh, 2001; Hurtado, 1999). There are, however, dissenting voices (Rothman, Lipset, & Nevitte, 2003).

Unfortunately, with a few exceptions, there is little research in Canada on the experiences of different ethno-racial groups in universities. One study shows that at one university the first year retention rates for students of Chinese and other non-European origins are highest (84%), followed by students of South Asian (81%), European (79%) origins and Blacks (77%) (Grayson, 1998). Other studies of the same sample indicate that highest first year grades are achieved by students of European origin followed by students with South Asian background (Grayson, 1995), and that students of Chinese origin (particularly female students) are less healthy than others (Grayson, 1997). There are, however, a handful of studies that focus on primarily non-White international students.

One finding of these studies is that international students have difficulty in making friends in the host university (Antonio, 1989; Mickle, 1985). Similarly, a national study of international students studying in Canada found that the three areas in which students had problems were making friends with Canadian students, performing in courses that required mathematics, and getting involved in campus activities (Walker, 1999).

Research shows that there may be negative psychosocial aspects of the international student experience. For example, a study of Malay students at the University of Waterloo found that those who had few Canadian friends, or who spent little time with Canadians, had higher levels of stress than other Malay students (Berry & Kostovcik, 1983). Similarly, a study conducted at Queen's University found that Asian students who were isolated had more personal problems than those who interacted with Canadians (Chataway & Berry, 1989).

In many instances, a relative lack of involvement of international students in formal and informal activities in the university is related to their lack of facility in English. Not having English language proficiency means that students have difficulty in understanding much of the content of their courses as well as learning the norms of their host country through interaction with their peers. Although it may be thought that maintaining contacts with fellow nationals may help offset some of the negative effects of limited interaction with individuals from the host country, in a study of students at the University of Windsor, it was discovered that that international students who spent consider-

able amounts of time with other international students reported more distress, anxiety, and depression than other international students (Antonio, 1989). It can be hypothesized that students such as these are minimally exposed to situations that would assist them in learning norms of the host society. Comparable results have been reported in American studies of international students with relatively low levels of English proficiency (Chen, 1990; Fradd & Weismantel, 1989; Perrucci & Hu, 1995).

When examining the experiences of international students, it is important to keep in mind that despite some common problems associated with studying in a foreign country, the experiences of international students are not uniform. For example, it was found that at the University of Guelph African students were more confident with their English skills than Asian students (Heikinheimo & Shute, 1986). In addition, the experiences of international students may vary from one university to the next. By way of example, Hong Kong students studying at York University were found to be less stressed than Hong Kong students at the University of Toronto (Mickle, 1985). It is also important to note that the experiences of male and female international students may differ. In an examination of Hong Kong students studying at the University of Waterloo researchers found that although there were no differences in the distress symptoms of male Canadian students and male Hong Kong students studying in Canada, female students from Hong Kong reported more distress symptoms than Canadian female students (Dyal & Chan, 1985).

In addition to problems of adjustment, international students frequently report difficulty in dealing with discrimination. One study showed that most international students studying at the University of Guelph believed that there was racial discrimination (Heikinheimo & Shute, 1986). In a national study of East Indian students in Canada a researcher discovered that most students experienced discrimination, particularly in housing (Chandra, 1974). Although discrimination is in itself an unpleasant experience, it has additional consequences. In a study of Hong Kong students at York and the University of Toronto Mickle (1985) found that perceptions of discrimination were negatively related to adaptation.

Although in Canada a limited amount of research has been carried out on students of different ethno-racial origins, there is a considerable American literature on the same subject relevant to the current undertaking. Studies show that Hispanic and particularly Black students are likely to perceive prejudice and hostility on predominantly White campuses, to feel alienated from their universities, and to experience stress that can be attributed to their numerical minority status (Hurtado, 1992; Loo & Rolison, 1986; Nora & Cabrera, 1996; Patterson Jr, Sedlacek, & Perry, 1984); however, an increasing amount of evidence indicates that discrimination has differential effects on academic achievement and satisfaction. For example, one study of a large commuter university found no relationship between perceptions of discrimination and GPA (Nora & Cabrera, 1996). In a study comparing Black students in historically Black colleges and

universities (HBCU) to Black students in historically White colleges and universities (HWCU), after the application of the appropriate controls, no differences were found in self-reported academic, writing, and math ability (Kim, 2002). As it is reasonable to assume some discrimination in HWCUs, it is evident that such discrimination does not retard the development of the skills under discussion. In another study of Black students in a large university, after the imposition of the appropriate controls, it was found that differences in GPA were not related to perceptions of discrimination (Jenkins, 2001).

Although the impact of discrimination on measures such as GPA has received some study, less attention has been paid to the relationship between discrimination and satisfaction (Jenkins, 2001). Overall, a number of studies suggest that while discrimination may have limited consequence for GPA, it does affect satisfaction. For example, comparisons of Black students in HBCUs to those in HWCUs have found that, all else being equal, satisfaction is higher in the former (in which, among other things, there is no discrimination) than in the latter (in which there is at least some discrimination) (Outcalt & Skewes-Cox, 2002). In a single institution study it was found that for all racial groups satisfaction was related to perceptions of equal treatment by students and faculty (i.e., the absence of discrimination) (Sedlacek et al., 1997). Among Black students in a predominantly White university it was discovered that feelings of dissatisfaction were related to perceptions of discrimination (Jenkins, 2001). Consistent with findings such as these, research has also shown that for Blacks the proportion of African Americans on campus has a direct positive effect on satisfaction (Bonous-Hammarth & Boatsman, 1996).

CONCEPTUAL FRAMEWORK[2]

Although they were not developed specifically to understand program satisfaction, there are three general models relevant to the current study that focus on the relationship between teaching and grades that can be extended to include program satisfaction (Grayson, 2004). In the "grading leniency bias model" it is assumed that students who get high grades give high ratings to the performance of their professors on teaching evaluations (Cashin, 1995; Marsh, 1995). By extension, if high grades result in positive teaching evaluations, they could also lead to satisfaction with academic programs. Within this model, instructors who give unwarrantedly high grades would receive unwarrantedly high teaching evaluations. Similarly, students are likely to be satisfied with academic programs in which they get high grades. Because of the possibility that grades influence assessments of professors, teaching evaluations are viewed as potentially biased.

The "teaching effectiveness model" assumes that students who learn more get high grades and give high evaluations to their instructors (Cashin, 1995; Marsh & Dunkin, 1992). By extension, they also could be more satisfied than other students with their academic programs. Within this model, teaching evaluations are viewed as valid measures of teaching.

In the "student characteristics model" it is postulated that certain student characteristics, like high motivation, result in greater learning and, as a result, high evaluations of teacher performance (Cashin, 1995; Howard & Maxwell, 1980; Marsh, 1995). In addition to student motivation, reasons for taking the course and expected grades are among student characteristics that can affect teaching evaluations. In general, higher ratings are given by students taking courses out of general interest or as an elective. Relatively low ratings are received in courses taken as a major requirement or in fulfillment of general education requirements. Although there are exceptions, studies have found that a student's age and gender have no affect on teaching evaluations (Cashin, 1995).

Again by extension, it is likely that students with certain characteristics are more likely than others to be satisfied with their academic programs. Although some researchers have concluded that personality has little impact on student ratings (Abrami, Perry, & Leventhal, 1982), and others have found personality to explain relatively little of the variance in student satisfaction (Witt & Handal, 1984), personality has been related to satisfaction with relatively unstructured course contexts. Students most satisfied with an unstructured learning environment are relatively forceful, persevering, dependable, conscientious, adaptable, and curious (Strom & Hocevar, 1982). Among students enrolled in telecourses it has been found that those most satisfied with instruction are "mature and humble, yet venturesome and outgoing" (Biner et al., 1997, p. 29).

Although student-centered inquiries reveal inconclusive connections between personality and teaching evaluations and student satisfaction, research into the link between personality and job satisfaction has yielded findings that might be applicable to student satisfaction with various aspects of the university experience (Grayson, 2004). For example, one study found that "core evaluations" of the self have effects on job satisfaction that are independent of the objective nature of the job. In essence, some people put the best light on their jobs, independent of the objective nature of their work conditions, whereas other individuals do the reverse. It is reasoned that people who believe they are worthy and who are capable of coping with life's problems bring a "positive frame" to their daily lives, including their jobs, whereas those viewing themselves as unworthy apply a "negative frame" to the same situations. The personality characteristics contributing most to positive evaluations of the environment are self-esteem and self-efficacy (Judge, Kluger, Locke, & Durham, 1998). Other research has shown that "negative affectivity" can have implications for expressions of job satisfaction (Abraham, 1999).

In view of the research on the relationship between personality and job satisfaction, it is reasonable to postulate that students with a positive frame would be more inclined to give positive evaluations to their professors, and be more satisfied than others with various aspects of the university experience, than students with a negative frame. In essence, all else being equal, because of their personalities, some students would be more positive about their professors, and more satisfied with their university experiences, than other students.

Consistent with the student characteristics model, in the current context the above possibilities mean that we can reasonably expect some students to consistently rate the classroom performance of their professors, and their program satisfaction, in a relatively positive way. Others will consistently do the opposite. If this is a valid assumption, it can be expected that assessments of professors' performance would be good predictors of performance in future years. Similarly, program satisfaction in one year would predict satisfaction in later years.

Prior research (Grayson, 2004) on which the current study builds supports these assumptions. In this research it was determined that neither the grading leniency nor teaching effectiveness models explained student satisfaction. Instead, the best fit for the data was provided by a model *combining* the assumptions of the grading leniency bias and student characteristics models. The hypothesized relationships among variables in the combined models as they relate to student satisfaction in the study are outlined in Diagram 1.

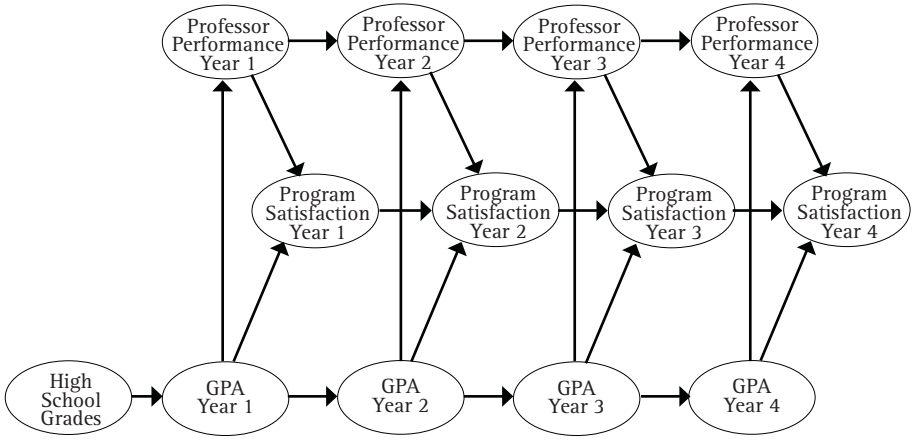


Diagram 1. Hypothesized Model of the Relationship Among Program Satisfaction, Professor Performance and GPA Over Four Years of Study

The rationale for the relationships in the diagram is as follows. There is considerable research demonstrating that high school performance is a good predictor of first year grades (Fleming, 2002; Grayson, 1996). In addition, in Ontario, research shows that the variance in first year grades explained by high school grades is as high as the variance explained in some studies in the United States by both high school grades and the results of standardized tests, such as SATs. In turn, grades in early years of university are good predictors of grades in later years (Grayson, 1996). As a result of findings such as these, in

the proposed model, it was hypothesized that across four years of study, previous grades would predict future grades. Consistent with the grading leniency bias model, within each year, it also was expected that grades would predict both evaluations of professors' classroom performance and overall program satisfaction. The higher the grades, the more favourable the assessment of professors' performance and the higher the program satisfaction. As in a commuter university (like the one in which the study was conducted) the classroom is the arena in which students most directly experience the benefits and shortcomings of their overall academic programs (Tinto, 1997), it was also expected that positive evaluations of professors' performance in the classroom would predict program satisfaction.

In the teaching effectiveness model it was postulated that high calibre classroom performance by professors (i.e., effective teaching) would result in both good grades and, by extension, high levels of satisfaction with academic programs. As a result, the model expressing these possibilities would be exactly the same as depicted in Diagram 1 with the exception that the direction of the path in each year from GPA to professor performance would be reversed.

In a previous study the above models were applied to students in the faculties of Arts and Pure and Applied Science at York University (Grayson, 2004). Two major conclusions were reached. First, in contrast to the assumptions of both the student leniency bias and the teaching effectiveness models, little support existed for the ideas that positive assessments of professor performance were a reflection of grades or that grades were a result of good teaching. Instead, likely because of certain personality characteristics, some students were more inclined than others to put a positive light on their experiences and to give high ratings to their professors. This did not mean that professors were irrelevant to learning. It may have meant that even relatively poor instruction was sufficient for student learning. Second, although there may have been little relationship between professors' performance and GPA, it was clear that good teaching resulted in enhanced program satisfaction. In addition, good grades resulted in increased program satisfaction. As was the case for assessments of professor performance, however, it was argued that program satisfaction was most directly a result of certain personality characteristics that predisposed students to evaluate their experiences in a positive manner (Grayson, 2004).

Whereas in the former study analysis focused on differences between students in different faculties, in the current study attention focuses on a) an examination of the experiences of students of various ethno-racial origins over four years of study; b) an assessment of the degree to which the assumptions underlying the model in Diagram 1 are relevant to examinations of the satisfaction of students of European and Chinese origins.

Analysis will proceed in three steps. First, repeated analyses of variance will be employed to identify potential change in GPA, professor performance, and program satisfaction over four years of study and to determine if between group differences on these and other measures are statistically significant. Sec-

ond, in view of findings noted earlier that discrimination had negative consequences for satisfaction but not for the GPA of certain ethno-racial origin students, the model outlined in Diagram 1 will be modified to include the possible impacts of discrimination (operationalized as perceptions of equal treatment). The extended model outlined in Diagram 2 is the same as portrayed in Diagram 1 except for the possibilities that in every year perceptions of equal treatment of non-European origin students affect both GPA and program satisfaction, and that perceptions of discrimination in any one year are related to similar perceptions in the previous year. Third, because, as will be seen, large numbers of non-European origin students report English as a second language, a model was estimated in which English proficiency replaced perceptions of equal treatment in the model in Diagram 2. This procedure was followed because, as noted previously, many problems of adaptation of at least international students were related to their proficiency in English. As the prior application of the same model revealed that a model based on the combined assumptions of the grading leniency and student characteristics models provided the best fit for the data, in the current study, the teaching effectiveness model will not be tested.

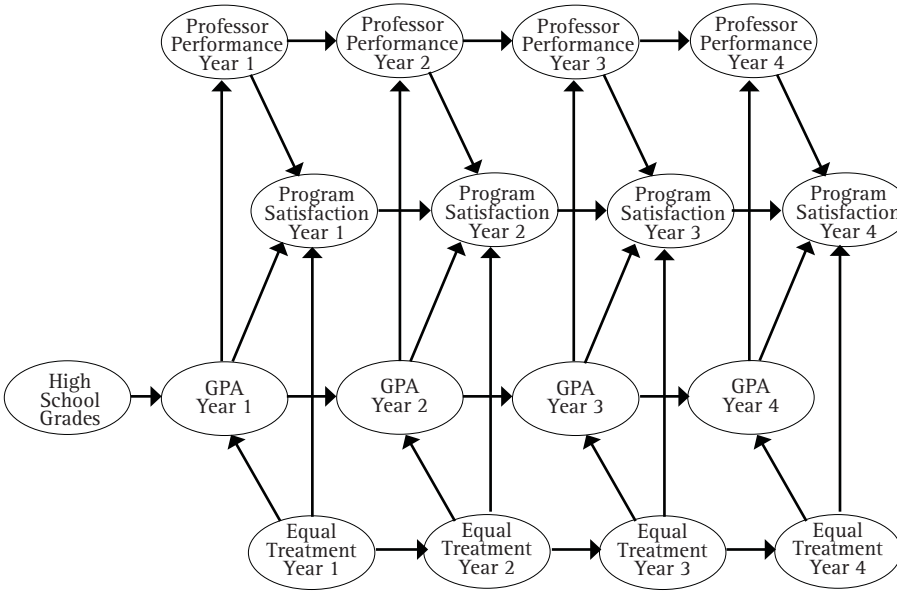


Diagram 2. Hypothesized Model of the Relationship Among Program Satisfaction, Professor Performance, GPA, and Perceptions of Equal Treatment Over Four Years of Study

METHOD

Participants

York University is a racially diverse comprehensive commuter university of approximately 45,000 students located in Toronto Canada. At the end of their first year of study in 1995, a mail out questionnaire was returned by a random sample of 1,865 students who had entered York directly from high school in 1994. These 1,865 students represented a response rate of 64%. Exactly the same questionnaire was mailed to this original group of respondents at the end of 1996, 1997, and 1998. By the final year, 513 students (or 28% of the original sample) had responded to each wave of the study. When adjustments are made for the fact that in the intervening years students had left the university either before or after degree completion, the 513 students who completed the final questionnaire represent 55% of those who had responded to the original survey and who were still enrolled in the university and eligible to participate (Grayson, 1999).

In a longitudinal study of this nature, this is an excellent retention rate (Dey, 1997). Of the final 513 who completed all phases of the study, twenty (4%) of students identified themselves as Black; 14 (3%) stated that their origins were South Asian; 54 (11%) were of Chinese origin; 43 (9%) reported other non-European origins; and 360 (73%) were of European origin.

Given that in all faculties with the exception of Arts for each wave of the study questionnaires were sent to *all* students who originally enrolled in the faculty in 1994, it was not possible to compare on-going survey participants to a broader base of students. Given the large size of Arts, however, it was possible to compare Arts students who had remained in the study to a sample of Arts students in general. When this was done, it was evident that on-going participants were similar to Arts students in general in terms of ethno-racial origin, sex, family income, number of completed credits, and GPA (Grayson, 1999, p. 48).

It is important to note that for large numbers of students English was a second language. Although only 5% of Black students reported that English was a second language, for students of Chinese origin the figure was 80%. Forty-three percent of South Asian students grew up in households speaking a language other than English as did 26% of other non-European and 25% of European origin students. In view of the large number of particularly Chinese origin students with English as a second language, the possible impact of inadequate English language skills on GPA and program satisfaction will be examined. As noted earlier, particularly among international students, lack of facility in English may hamper adaptation to the university.

In the following analyses, given the large number of parameters to be estimated in the models it was decided to restrict analyses to students in the two largest groups: European and Chinese origin. Although comparisons could have been made between those of European origin and all others, this practice would have concealed potential differences among non-European origin students.

Measures

Information on high school grades and grades for each year of study was obtained from administrative records and merged with survey data.

In the previous study on which this research builds (Grayson, 2004), satisfaction was measured by the question: "All things considered, how satisfied or dissatisfied are you with your academic program at York?" Response options ranged from 1 meaning very dissatisfied to 5 indicating very satisfied.[3] Students were also asked a series of questions focussing on satisfaction with various aspects of university life that were constructed into a scale. A comparison of the two measures revealed that utilization of the single measure of program satisfaction yielded better model fits than the scale measure (Grayson, 2004). As a result, in the current study, only analyses using the single measure are reported. (Although it will not be shown, utilization of the scale in the current study also resulted in a less parsimonious model than when the single measure was used.)

A review of the literature conducted for the prior study revealed that teaching effectiveness has been operationalized in many different ways. In the current study, as in the earlier one, questions focusing on exemplary performance by professors were derived from a study of students in which participants kept diaries of their first year experiences and participated in interviews with researchers. The aspects of classroom performance by professors that were identified as exemplary in this way were as follows: having adequate technical expertise with regard to teaching; having knowledge of subject matter; being responsive to the class; caring about students in the class; having a sense of humour; and being well organized (Benjamin, 1990). Students also were asked how many of the instructors in the courses in which they were currently enrolled had each of the foregoing characteristics. Using the total number of professors reported by the student as a base, a calculation was then made of the percentage of professors with each of the characteristics. An average professor performance score was then calculated.

Cronbach's alpha was calculated for professors' performance scores in each year of the study. In all cases, the value of alpha exceeded .90. The mean score of the six measures was used as an index of professor performance. A principal component analysis with varimax rotation of these six variables extracted one component explaining between 57% (year 2) and 61% (year 3) of the variance. The correlation between the associated factor score and the index was 1.00 for each year.

Perceptions of equal treatment were measured by a question in which students were asked how much they agreed with the statement: "Visible minority students were treated in the same way by professors, staff, and students as other students were treated." Response options ranged from 1 meaning strongly disagree to 5 meaning strongly agree.[4]

English literacy was measured by a series of questions in which students were asked if they agreed that they had no difficulty in speaking, reading, and

following a conversation in English. Response options ranged from 1 meaning strongly disagree to 5 indicating strong agreement. The mean of the three items constituted an "English literacy" index. Cronbach's alpha for the items ranged from .87 (years one and two) to .90 (year three). A principal component analysis with varimax rotation extracted one component explaining between 80% (year one) and 84% (year three) of the variance. Over the four years of the study, the lowest correlation between the associated factor score and the literary index was 0.99 (year one).

ANALYSIS

Change Over Time

Table 1 provides means and standard deviations for all students (not just those of European and Chinese origin) for professor performance, GPA, program satisfaction, perceptions of equal treatment over four years of study, and English literacy. Information is also provided on high school grades. Professor performance and high school grades are expressed in percentages. GPA has high and low values of 0 and 9 respectively. Using the single item measure, program satisfaction and perceptions of equal treatment range from 1 to a high of 5.

Table 1
Means and Standard Deviations for Variables in Analysis

		Year 1	Year 2	Year 3	Year 4
Professor Performance					
Mean		73.6	75.0	77.0	79.0
SD		17.1	16.7	17.1	17.5
GPA					
Mean		5.9	6.0	6.3	6.3
SD		1.5	1.5	1.3	1.5
Program Satisfaction					
Mean		3.9	3.8	3.7	3.7
SD		0.8	0.8	0.9	0.9
Equal Treatment					
Mean		4.1	4.0	4.1	4.2
SD		1.0	1.1	1.0	1.1
English Literacy					
Mean		4.7	4.7	4.8	4.8
SD		0.6	0.6	0.6	0.5
High School Grades					
Mean	80.3				
SD	6.3				

Table data show that there is a monotonic increase in reported professor performance over the four years of study. In year one, students say that 73.6% of their professors display exemplary classroom behaviour. In year four the figure is 79.0%. It is important to note that for each year the standard deviation is 16% or 17% indicating considerable difference in assessments of professor performance. There is an irregular increase in GPA from 5.9 to 6.3, with a standard deviation between 1.3 and 1.5. Levels of program satisfaction are more or less the same across all years of study with a standard deviation of 0.8 or 0.9. Similarly, perceptions of equal treatment are more or less constant ranging from 4.1 in year one to 4.2 in year four. Standard deviations are either 1.0 or 1.1. The mean average English literacy score was virtually the same over the four years of study (ranging from 4.7 to 4.8) as was the standard deviation (0.5 to 0.6). Students entered university with an average high school grade of 80.3% with a standard deviation of 6.3%. A repeated analysis of variance (not shown) indicates that changes in reported professor performance, GPA, and program satisfaction are statistically significant; however, the minor changes in perceptions of equal treatment and English literacy are not statistically significant.

The relationship between ethno-racial origin and change in professor performance, GPA, program satisfaction, and perceptions of equal treatment is examined in Figures 1 to 4. As a first step in analysis, repeated analyses of variance were conducted to examine possible year of study X ethno-racial origin group X faculty interactions. (Note that because of space constraints results of the analyses of variance are not presented in tabular form and only the most important features of the analyses are reported.) Given that students of various ethno-racial origin backgrounds are not distributed equally across all faculties (for example, there are more students of Chinese origin in Pure and Applied Science than in Arts) it would be possible to mistake faculty effects in various measures for ethno-racial origin effects.

For professor performance, GPA, program satisfaction, perceptions of equal treatment, and English literacy, interactions among year of study, ethno-racial origin, and faculty were not statistically significant (not shown). Because of the small size of some of the ethno-racial origin groups it is important to note that in all cases power exceeded 0.9. As a result, we can be fairly confident that, for example, potential differences between Chinese origin and other students are not related to the possibility that relatively large numbers of Chinese origin students are in the Faculty of Pure and Applied Science.

As shown in Figure 1, there are considerable differences in assessments of professor performance by different groups. In all years excluding the second, Black students give the highest ratings of any group to their professors' performance. By contrast, in years one, two, and four the lowest assessments of professor performance are given by students of South Asian origin. In years one, two, and three the second lowest assessments are provided by students of Chinese origin. In year four, Chinese origin students give the lowest scores to their professors. When assessments are averaged over the four years of study,

Black students estimate that 81% of their professors perform well (i.e., are effective teachers). The figures for European origin, other non-European origin, Chinese origin, and South Asian origin students are 78%, 76%, 69%, and 66% respectively.

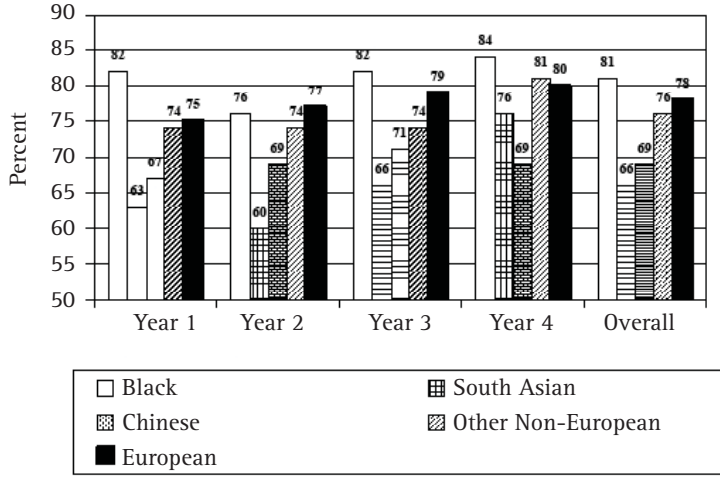


Figure 1: Professor Performance by Ethno-Racial Origin

Repeated analyses of variance indicate that changes for professor performance within ethno-racial groups over the four years of the study are statistically significant. Moreover, overall differences between ethno-racial groups are also statistically significant. Pairwise comparisons, however, indicate that differences among Blacks, students of European origin, and those of other non-European origin are not statistically significant. Similarly, differences between students of Chinese and South Asian origin are not statistically significant. By comparison, differences between, on the one hand, Blacks and European origin students, and, on the other hand, students of Chinese and South Asian background, are statistically significant. What this means is that assessments of professor performance do not neatly divide on the basis of European/non-European origin. Blacks have more in common with students of European origin than they do with those of Chinese or South Asian origin.

Information on yearly GPA adjusted for high school grades is presented in Figure 2. The data indicate considerable differences in achievement based on ethno-racial origin with the highest grades in all but the third year being achieved by students of South Asian origin. In all years, but the third (where they tie with Black students) the second highest achievers are students of European origin. In all years students with the lowest GPA are of Chinese origin. The position of Blacks and those of other non-European origin varies from year to year.

Overall, Figure 2 data show that highest grades are achieved by students of South Asian origin (6.5) followed by students of European background (6.1), other non-European students (6.0), Blacks (6.0), and students of Chinese origin (5.5).

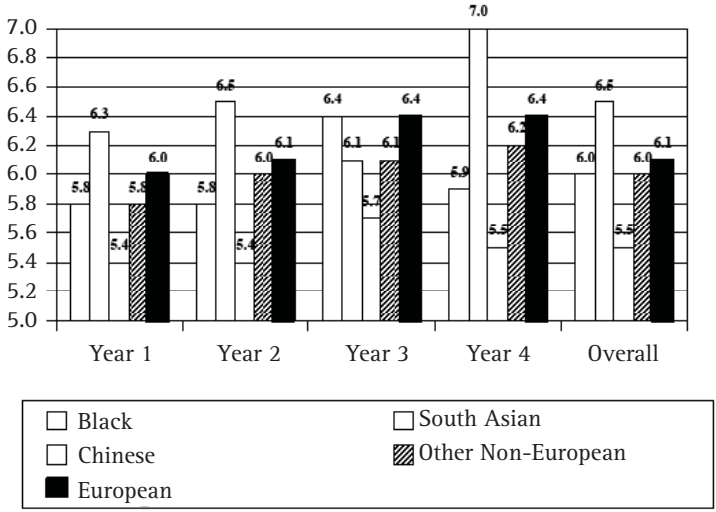


Figure 2: GPA by Ethno-Racial Origin Adjusted for High School Grades

Repeated analyses of variance indicate that yearly changes in GPA within groups are not statistically significant. By comparison, the overall ethno-racial group differences noted in Figure 2 are statistically significant. Despite this overall difference among groups, pairwise comparisons indicate that there are no statistically significant differences in GPA among Blacks, students of European, South Asian, and other non-European origin; however, differences between, on the one hand, Chinese origin students, and, on the other hand, South Asian and European origin students are statistically significant. Once again it seems clear that differences do not exist between non-European and European origin groups. For example, students of South Asian origin have more in common with students of European background and Blacks than they have with those of Chinese origin.

Information on program satisfaction by ethno-racial origin is summarized in Figure 3. In each year, students of European origin and Blacks express a high degree of program satisfaction. By comparison, after first year, in which differences in satisfaction are slight, South Asian origin students express relatively low satisfaction. Students of Chinese origin also report low satisfaction. The satisfaction of other non-European origin students is closer to that of European origin and Black students than it is to that of South Asian and Chinese origin students. Overall, data in Figure 3 indicate that students of European origin

(3.9) and Blacks (3.8) are most satisfied with their academic programs. Other non-European (3.7), Chinese (3.5), and South Asian (3.2) origin students are less satisfied with their programs.

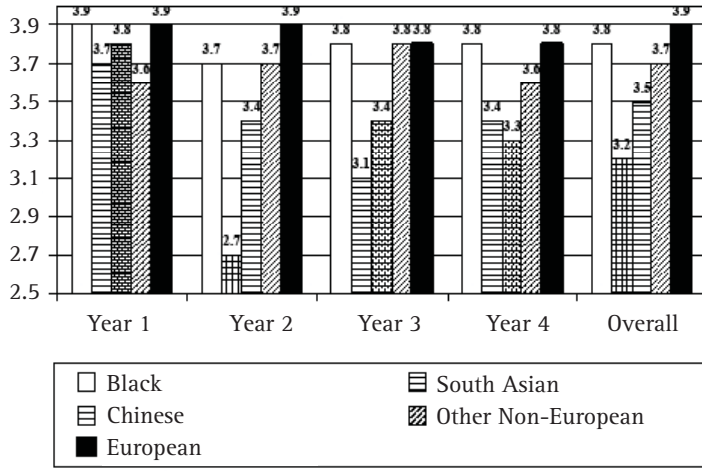


Figure 3: Program Satisfaction by Ethno-Racial Origin

A repeated analysis of variance indicates that within ethno-racial groups, year to year fluctuations in academic program satisfaction are not statistically significant; however, overall differences among groups are statistically significant. Despite overall differences, pairwise comparisons indicate that while differences between, on the one hand, students of European origin, and, on the other hand, Chinese and South Asian origin students are statistically significant, other combinations of comparisons are not statistically significant. These results show that for academic program satisfaction, as for professor performance and GPA, simple divisions cannot be made between European and non-European origin groups.

Information in Figure 4 on perceptions of equal treatment by students of different origins indicates that in each year of the study European background students were likely to believe that visible minorities were treated equally. In years one, two, and three other non-European origin students also believed that visible minority students were treated equally. In comparison, Black students, and those of Chinese and South Asian origin were less likely to believe that visible minority students were treated equally by professors, staff, and students. Over all four years of study, European origin (4.4) and other non-European origin (4.2) students were most likely to believe that visible minority students received equal treatment. By comparison, the scores for Blacks (3.9), and Chinese (3.8) and South Asian (3.8) origin students were both lower and virtually identical.

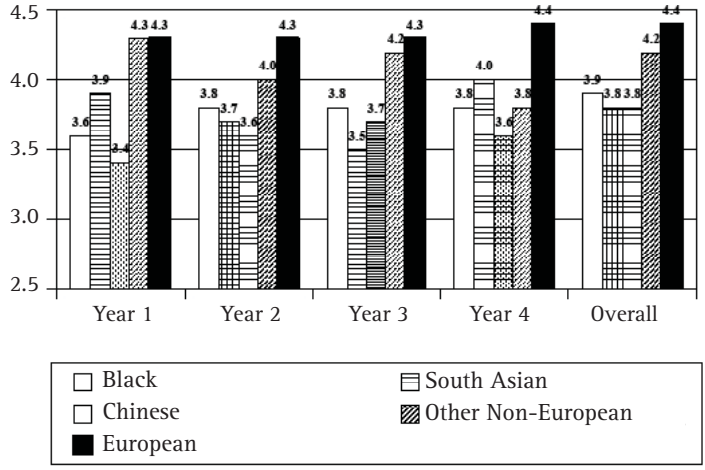


Figure 4: Perceptions of Equal Treatment of Minorities by Ethno-Racial Origin

Repeated analyses of variance indicate that for perceptions of equal treatment year to year within ethno-racial group differences are not statistically significant. Overall differences among groups are statistically significant. Multiple comparisons indicate that while differences between students of European and other non-European origin are not statistically significant, differences between these two groups and all others are statistically significant. Moreover, differences among Blacks and students of Chinese and South Asian origin are not statistically significant. More so than for other variables examined above, when it comes to perceptions of equal treatment of visible minorities, there is a general division between students of European and non-European origins ("other" non-European origin students being the exception among the non-European origin groups).

Information on English literacy is presented in Figure 5. The most remarkable feature of Figure 5 is that for each year differences among all groups with the exception of students of Chinese origin are negligible. For example, in year one, the scores for students of Chinese origin are 4.0 while for all other groups they are 4.8 or 4.9. The same pattern holds across the other years. Repeated analyses of variance indicate that there is no statistically significant within group change over the study period; however, overall differences between groups are statistically significant. Overall, there are no statistically significant differences among Black students, students of South Asian origin, students of Other Non-European origin, and those of European origin. By contrast, differences between students of Chinese origin and all other groups are statistically significant.

Overall, the data presented in Figures 1 to 5 suggest that there are ethno-racial origin based differences in assessments of professor performance; however, for GPA and academic program satisfaction, there is no change based on ethno-racial origin over four years of study. When scores are averaged over four years of study, differences based on ethno-racial origin are apparent for

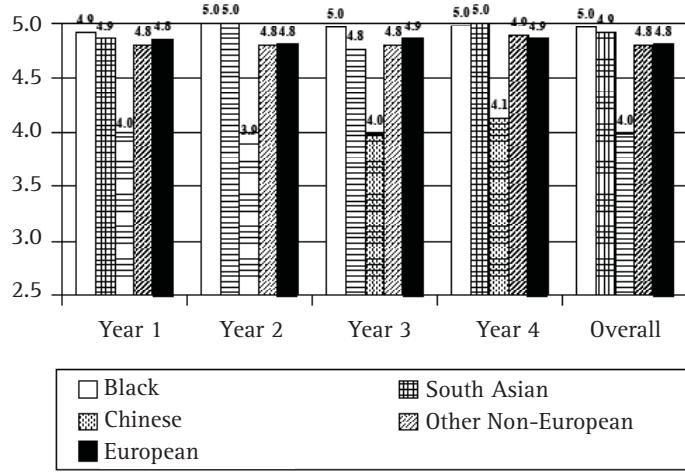


Figure 5: English Literacy by Ethno-Racial Origin

all three variables, although divisions do not divide neatly on a European/non-European basis. For perceptions of equal treatment by professors, staff, and other students it is a little different. Once again, within each group, there are no changes in perceptions over time. This time, however, distinctions based on European/non-European status are apparent. European origin students are more likely than other students to believe that visible minority students are treated equally. English literacy is again different because the only distinction of note is between students of Chinese origin and all others.

In order to cast light on the experiences of students of different ethno-racial backgrounds, in the first year of the study, eight focus group meetings were held with Black students (48 participants), four with students of European origin (33 participants), and three with Chinese origin students (26 participants). All groups involving Blacks were moderated by the same Black female. Similarly, the European and Chinese origin groups were each led by a female of the same origin as group members. The results of these group meetings help shed light on what students might mean in answer to the survey question mentioned above focusing students' assessments of the treatment accorded visible minority students by professors, staff, and students.

An analysis of focus group results showed that within the university, students perceived little differential treatment based on ethno-racial origin (Grayson, 1994). When differential treatment was reported, it was relatively minor[5], and, in some instances, *favoured* minority students. As an example of what he viewed as negative treatment by professors, a student of Jamaican origin complained that, "there are some students, they are so vocal. They don't know more than you, but because you are not as vocal, they [professors], think you are not as bright and your mark will suffer right there" (p. 10). By contrast, a White student complained, "I felt that the professor was a racist. She was in-

accessible." The student continued, "she didn't have time. I asked her 'what is going on?' I saw the people who got the feedback," she said, "and they were all minority Asian" (p. 10). An example of what she viewed as negative treatment by other students was offered by a student of Chinese origin. She felt that her non-Chinese classmates "wouldn't be as friendly to you as the other people in their group" (p. 10). Another student of Chinese origin provided an example of what she regarded as negative treatment by a staff member. "When I came to university," she explained, "I didn't know much about the library, how to use the library, and then I asked a White [librarian] and she just responded indifferently." The student was convinced that "if another race or White people ask her questions, I think she will behave better," (p. 11). By contrast, a White male student reported that, "With the Student Programmes I was asking a question and I wasn't given the answers. A Black student came in, asked a question, and, all of a sudden, they diverted their attention . . . They stopped talking to me and started answering that person's questions. "That," he emphasized, "made me angry," (p. 11). Other analyses of the same focus group materials confirm that students of different origins may perceive unequal treatment of students of non-European origin; however, once again, such encounters are minor and are regarded as the exception rather than the rule (Grayson, Chi, & Rhyne, 1994; Grayson & Williams, 1994).

Unfortunately, although these focus group findings may explain why Black students and those of Chinese origin are less likely than those of European origin to believe that students are treated equally by professors, staff, and students, they shed less light on other concerns. For example, it was shown that in assessments of professor performance and program satisfaction Black students were closer to their European origin peers than to students of Chinese origin; however, Blacks, like Chinese origin students, believed that not all students were treated equally. Why is this?

There are at least three possible answers. First, despite positive experiences with their professors or satisfaction with programs, in the politically charged climate of the university, when asked a direct question about equal treatment, non-European origin students may filter their answers through an ideological framework – in this case one assuming differential treatment of visible minorities. Second, members of non-European origin groups may indeed experience differential treatment; however, this may be insufficient to jaundice their perceptions of professors' performance or satisfaction with their programs. Third, as noted previously, Black students more than any others grew up in households speaking English. By comparison, the vast majority of students of Chinese origin came from Chinese speaking households. Perhaps because of their facility in English Black students are better able to understand what goes on in the classrooms and, as a result, are more likely to favourably view their professors' performance and academic programs than their Chinese origin peers. Unfortunately, resolving these apparent contradictions is beyond the scope of the current study.

Model Fitting

While repeated analyses of variance are appropriate in examining change in professors' performance, GPA, academic program satisfaction, perceptions of equal treatment of minority students, and English literacy, path analyses allow an examination of the relationships among these variables within and between years.[6] Unfortunately, because of the relatively small numbers of Blacks, and students of South Asian and other non-European origins in the sample, analysis was restricted to European origin (n = 360) and Chinese origin (n = 54) students. (For a discussion of appropriate sample sizes see Garson, 2007). Model fitting was accomplished by using AMOS 4. Variables used in the analysis were normally distributed. The amount of missing data ranged from a low of 0% to a high of 25% with an average of 5% per variable. Missing data were estimated using the maximum likelihood method.

As a first step, in a two group analysis, the model in Diagram 2 was estimated for European and Chinese origin students simultaneously. In evaluating the models, RMSEA values up to .050 indicated a good fit and values more than .050 but less than .080 represented a reasonable fit (Browne & Cudeck, 1993). Values between .080 and .100 indicated a mediocre fit and values of .100 or more indicated a poor fit (MacCallum, Browne, & Sugawara, 1996).

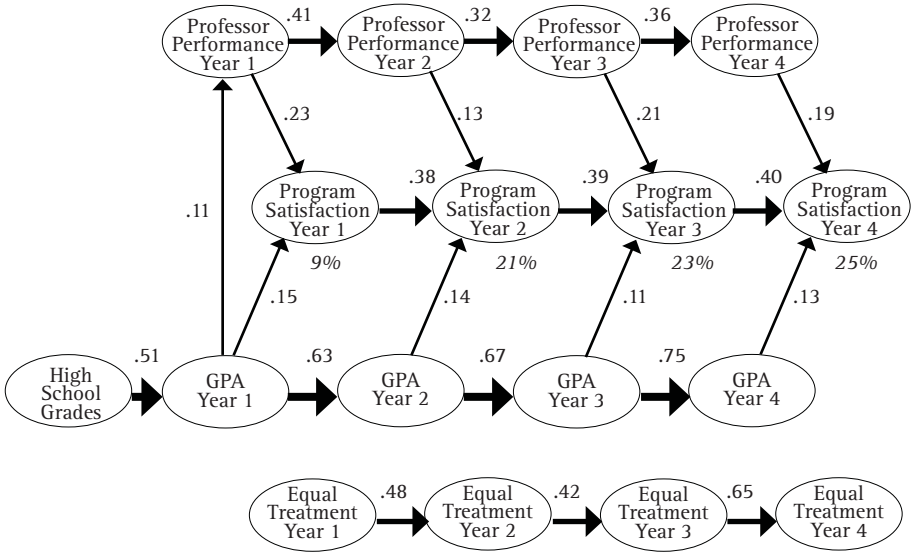
Chi-square for the model in Diagram 2 was 447.8 with 206 degrees of freedom. RMSEA equalled .053 with a 90% confidence interval between .047 and .060. The p test for close fit was .200 and CFI was .989. Despite the low p test, these values suggest a reasonable fit of the model.

Because of the acceptable fit, as a second step, the results of the unconstrained model were compared to the results of a fully constrained model. The chi-square difference between the unconstrained and constrained models of 57.5 with 33 degrees of freedom is statistically significant at the .05 level; therefore, we can conclude that differences exist between European and Chinese origin students.

Results of the simultaneous two group unconstrained analysis are presented in Diagrams 3 and 4. To facilitate analysis, paths between variables were removed it they were not statistically significant. Standardized regression coefficients are on, or near to, arrows. The thickness of arrows is in rough proportion to the size of the standardized regression coefficient. Explained variance in program satisfaction is in italics. Note that it is still appropriate to report explained variance even if no statistically significant paths are evident between the dependent and independent variables.

Information on students of European origin is found in Diagram 3, which embodies assumptions of both the grading leniency bias model and the student characteristics model. The former model postulates a positive link between GPA, assessments of professor performance and, by implication, academic program satisfaction. The latter model is based on the assumption that both high grades and assessments of professors' performance can be related to students' characteristics, such as high motivation. What this possibility means in the current

context is that students' achievement and assessments in one year should be good predictors of achievement and assessments in future years.



For unconstrained model: Chi-square = 447.8 df = 206. RMSEA = .053 (lower bound = .047; upperbound = .060). P test for close fit = 200. CFI = 980

Diagram 3. Final Model of the Relationship Among Program Satisfaction, Professor Performance, GAP, and Perceptions of Equal Treatment for European Origin Students Over Four Years of Study

Consistent with the grading leniency bias model, in first year, there is a statistically significant, but small (.11) path between GPA and assessments of professor performance. In all other years, however, there is no statistically significant link between GPA and assessments of professor performance. In essence, in all years but the first, the fundamental tenet of the grading leniency bias model is unsupported: high grades do not result in favourable assessments of professor performance.

Although high GPA does not translate into favourable assessments of professor performance, in all years there is a positive but small link between GPA and program satisfaction. In other words, students of European origin who earn high grades are slightly more satisfied with their academic programs than students with low grades. Similarly, in all years, students who believe that their professors perform well in the classroom are slightly more likely than others to be satisfied with their academic programs.

Although both GPA and effective teaching contribute to program satisfaction, in second, third, and fourth years the strongest predictor of academic pro-

gram satisfaction is not GPA or professor performance, but program satisfaction in the previous year. As students encounter different circumstances as they progress through their academic careers, this finding suggests that European origin students have evaluative schemes that predispose them toward either positive or negative assessments of their academic programs. The same is true for assessments of professor performance. Assessments of performance in the previous year are better predictors than GPA of professor performance in the current year.

Not surprisingly, achievement in one year is also related to prior achievement. Students who did well in high school are also likely to do well in first year. High first year GPA results in high second year GPA, and so on. The magnitudes of coefficients between grades are the largest in the model.

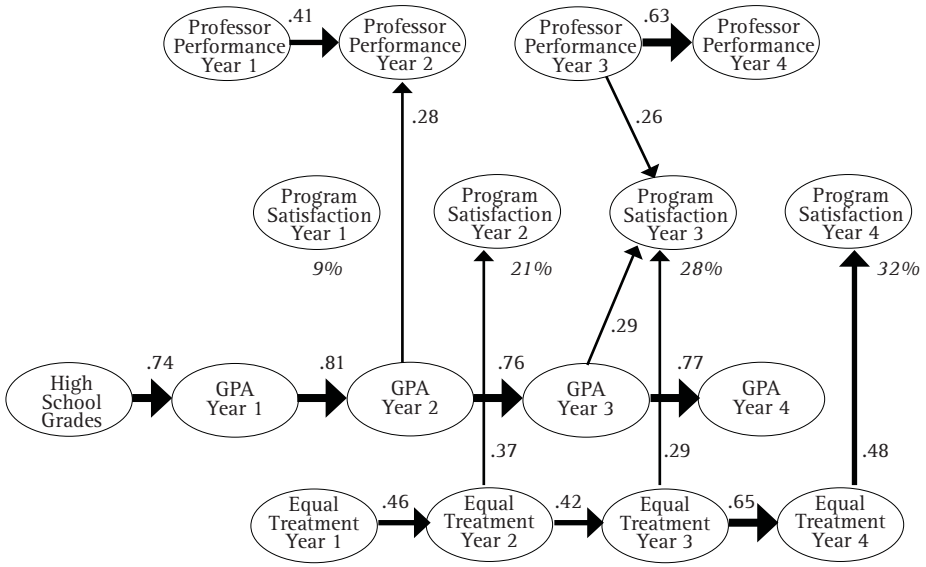
The diagram also shows that the coefficients between European students' assessments of the extent to which visible minority students are treated equally are also relatively large. Put differently, students who in one year view non-European origin students as being treated like all other students are likely to have similar observations in subsequent years. Consistent with the student characteristics model, this finding also suggests that in any given year positive evaluations of this aspect of the campus environment contribute to future positive evaluations. The diagram also indicates that perceptions that non-European origin students are treated in the same way as other students have no consequences for either grades or academic program satisfaction.

The amount of explained variance in academic program satisfaction is 9%, 21%, 23%, and 25% in years one, two, three, and four respectively.

Overall, for students of European origin, contrary to the grading leniency bias model, there is little connection between GPA and evaluations of professor performance. By contrast, in all years, students who get high grades and who believe that their professors perform well in the classroom are likely to be satisfied with their academic programs. The best predictors of GPA, professor performance, and program satisfaction, however, are previous levels of achievement and assessment. In addition, assessments of equal treatment of minority students are predicted by previous assessments of equal treatment, although there is no statistically significant connection between these assessments, GPA, and academic program satisfaction. As seen in a prior study (Grayson, 2004), these latter findings suggest underlying personality dimensions that predispose students to evaluate their environment in relatively consistent ways.

The results of the same model as applied to students of Chinese origin are found in Diagram 4. Most consistent with the model based on students of European origin are the findings that in any given year the best predictor of academic achievement is academic achievement in the previous year; with the exception of year two, GPA does not predict the assessment of professor performance; and the fact that perceptions of equal treatment of minorities in one year predict perceptions in the following year.

In contrast to the model of European origin students, only in third year is there a positive path between GPA and program satisfaction, and professor per-



For unconstrained model: Chi-square = 447.8 df = 206. RMSEA = .053 (lower bound = .047; upper bound = .060). P test for close fit = .200. CFI = .989

Diagram 4. Final Model of the Relationship Among Program Satisfaction, Professor Performance, GPA, and Perceptions of Equal Treatment for Chinese Origin Students Over Four Years of Study

formance and program satisfaction. There are no statistically significant paths between program satisfaction in one year and the next. Professor performance in years one and three predicts performance in the following year, but performance in year two does not predict performance in the following year.

Perhaps most important given the focus of the current study is that in years two, three, and four there is a positive and moderate path between perceptions of equal treatment of minorities and academic program satisfaction; however, in no year is there a statistically significant path between perceptions of equal treatment and GPA. Consistent with research cited earlier, students who perceive that minority students are treated equally are likely to be more satisfied than others with their academic programs. By contrast, perceptions of equal treatment have no consequence for GPA.

The amount of explained variance in program satisfaction are 9%, 21%, 28%, and 32% in years one, two, three, and four respectively.

Overall, these findings suggest that relationships among GPA, professor performance, academic program satisfaction, and perceptions of equal treatment of minorities are different for students of European and Chinese background. Although academic program satisfaction of European origin students can be explained by GPA, professor performance, and probable personality characteristics, these explanations are less tenable for students of Chinese origin. For

this group, with the exception of year one, perceptions of equal treatment of minority students is the best predictor of academic program satisfaction.

Literacy Considerations

Earlier it was noted that 80% of students of Chinese origin reported English as a second language. As seen earlier, previous studies have indicated that difficulty with English may have a number of negative implications for adaptation. As a result, it was important to examine the possibility that facility with English contributed more to an understanding of academic program satisfaction than perceptions of equal treatment of minorities. In order to test this possibility, perception of equal treatment in Diagram 2 was replaced by the English literacy index comprised of questions measuring students' ability to speak, read, and follow a conversation in English.[7] All other aspects of the model remained intact.

The simultaneous analysis of European and Chinese origin students resulted in a chi-square of 600.7 with 206 degrees of freedom. RMSEA had a value of .068 with a 90% confidence interval between .062 and .075. The p test of close fit was .000 and CFI .985. Figures such as these suggest a relatively poor fit compared to the main model discussed in this study. As a result, it is possible to conclude that the program satisfaction of students of European and Chinese origin is less a function of literacy than of perceptions of (un)equal treatment of minority students.

CONCLUSIONS

In the introduction to this article it was pointed out that large numbers of immigrants to Canada in general, and to Toronto in particular, are from other than European countries. The largest of these groups is from China. Many of the sons and daughters of such immigrants enrol in institutions of higher education. In recognition of their Chinese and other consistencies of non-European origins universities have specified in their academic plans the need ensure that recruiting practices are inclusive of these groups and that university practices take into consideration the possibility that such groups might have particular needs.

In view of concerns like these, the objectives of this article were a) to examine changes in students' assessments of professor performance, GPA, academic program satisfaction, and perceptions of equal treatment of visible minority students over four years of study and to determine the impact of ethno-racial origin on each; b) to assess the extent to which an integration of various models of the relationship between academic achievement, teaching effectiveness, and student characteristics contributes to an understanding of program satisfaction for students of European and Chinese origin.

With regard to the first objective, it was found that over four years of study students of various ethno-racial groups differed in their assessments of professor performance, GPA, academic program satisfaction, and perceptions of equal treatment of minorities. Importantly, however, with the exception of perceptions

of equal treatment of minorities, clear divisions did not occur between students of European origin and all others. For example, in first year, Black students were the most likely to positively evaluate the classroom performance of their professors. South Asian students were least appreciative of their professors' performance. For perceptions of equal treatment of minorities, it was different. In this instance, non-European origin students were more likely than those of European origin to view unequal treatment. Findings such as these indicate that the university realities of students of different ethno-racial backgrounds vary. Moreover, the positive experiences of some groups may be consistent with the objectives of university policies (e.g. Black students' positive evaluations of professors' performance) while the negative experiences of other groups are not (e.g., perceptions of unequal treatment reported by students of Chinese origin). Although in one sense students may be presented with the same university environment, different groups of students may experience and interpret this environment in different ways.

With respect to the second objective, it is safe to conclude that a combination of the assumptions of the grading leniency bias and student characteristics models contribute to an understanding of the factors affecting the within and between year academic program satisfaction of both European and Chinese origin students; however, different factors explain the program satisfaction of each group. For European origin students it can be argued that while GPA and professor performance contribute to program satisfaction, as seen in a former study (Grayson, 2004), personality characteristics that predispose students to positively evaluate their environments likely are of greater consequence. For students of Chinese origin it is different. The greatest predictor of program satisfaction is perceptions of equal treatment of visible minority students. This finding is consistent with other research that has found a relationship between discrimination on campus and satisfaction with various aspects of the university experience. As in the current study, this research has also revealed no connection between perceptions of discrimination and GPA.

It is difficult to explain the findings for students of Chinese origin. It is clear from the repeated analyses of variance that their university experiences are far less positive than those of European origin students and that they perceive less equal treatment of minority students. It is easy to understand how perceptions (or the experience) of unequal treatment might lead to reduced program satisfaction; however, it is more difficult to understand why for Chinese origin students a predisposition in one year to positively evaluate academic programs had no consequences for future evaluations.

Part of the answer might be found in research indicating that students of Chinese origin suffer from a "low sense of coherence" (Ying et al., 2001). One of the characteristics of a low sense of coherence is an inability to experience oneself and the environment as structured, predictable, and explicable. Given this possibility, students of Chinese background may not develop the consistency of perception that leads their European origin peers to more or less consistently

evaluate their professors' performance and their own academic program satisfaction. For female students of Chinese origin this low sense of coherence might be exacerbated by role conflict resulting from the traditional expectations of many Chinese origin parents (Tang & Dion, 1999). This possibility is consistent with research undertaken at the same university as the current study in which it was found that female students of Chinese origin had by far the worst health of any ethno-racial group (Grayson, 1997). Additional research of a qualitative and quantitative nature is needed to determine the ways in which these and other possible factors affect the ways in which students of Chinese origin experience the university environment. In the meantime, it is clear that *it is inappropriate to assume that the factors and processes contributing to the academic program satisfaction of European and Chinese origin students are the same.*

There are at least two implications of these findings. First, students of non-European origin do not all experience the university in the same way. For example, while Black students may agree with their Chinese origin peers that visible minorities are not always treated equally, they have different assessments of professors' performance. As a result, rather than focusing in general on diversity, it may be necessary for universities to develop policies targeted to the needs of different groups ethno-racial groups of students, including those of European origin. Second, the factors explaining educational outcomes, such as program satisfaction, may vary by ethno-racial origin. As a result, researchers in universities should conduct their own theory based research on their students in order to determine what works, and why it works. In this sense, the accommodation of a diverse body of students must be seen as an iterative process in which assessment is crucial and the possibility of policy change ever-present.

LIMITATIONS

There are three limitations of the current study. First, analysis was based on one institution. Although it is unlikely that different processes are operative in other universities, the possibility should be tested empirically. Second, although the number of students of European origin available for study was suitable, it would have been desirable to have larger numbers of students of non-European origin involved in the study. In view of the large number of parameters estimated in the models, it would have been particularly helpful to have had greater numbers of students of Chinese origin. Third, the question dealing with equal treatment of minority students was general. The availability of more specific indicators of equal treatment would have made it possible to more clearly identify possible areas of university intervention.

NOTES

1. Note that the terms 'White' and of 'European origin' will be used as synonyms, as will the terms 'non-White' and 'non-European origin'. 'Visible minority' will refer to individuals of non-European origin. The general term, 'ethno-racial origin,' will apply to all groups. This nomenclature is appropriate as in the current context some of the groups analyzed, such as Chinese, may be viewed as ethnic groups, although they are also distinguishable on the basis of physiological factors. Others, like those of European origin, are racial groups.
2. Portions of this section are adapted from Grayson (2004).
3. Exact questions can be found in Appendix A.
4. In a three year study initiated in 2003 of domestic and international students at the University of British Columbia, York, McGill, and Dalhousie, students were asked a question that can shed light on the question utilized in this study. In the first year of the study they were asked, "Since last September, how often have you been treated unfairly by professors?" At York, 63% of European origin and 67% of Chinese origin students replied "never." Differences were not statistically significant. When the question substituted "students" for "professors" 52% of European origin, and 47% of Chinese origin students replied "never." This time, differences were statistically significant. When similar inquires were made about "university staff," 65% of both groups replied "never." From these findings we can conclude that a majority of students of either origin are unlikely to experience unfair treatment from professors and staff; however, students of Chinese origin experience more unfair treatment from other students than their peers of European origin. The fact that the reciprocals of these figures indicate a degree of unfair treatment by professors, students, and staff suggests validity of the general question used in this study.
5. Of course, the students involved may not share this characterization of the incident.
6. As the analysis described earlier showed that a principal component analysis of questions measuring professor performance and English literacy extracted one component for each, and as the associated factor scale correlated very highly with the means of questions for each, it was decided to utilize indexes rather than latent variables in the models. This practice ensured consistency of variables from one survey to the next.
7. One reviewer raised the possibility that because 80% of students of Chinese origin have English as a second language, "testing the effect of English proficiency in a simultaneous analysis of Chinese and European participants may raise problems of multicollinarity." This is a valid concern; however, correlations between perceptions of equal treatment and English literacy for Chinese origin students were at best moderate and statistically significant in only two of the four years of the study. For students of European origin correlations in none of the four years were statistically significant.

APPENDIX A

Program Satisfaction

All things considered, how satisfied or dissatisfied are you with your academic program at York?

Very Dissatisfied	Dissatisfied	Neither Satisfied nor Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4	5

Professor Performance

In total, how many different instructors do you have in your courses? _____ instructors

How many of the instructors in the courses in which you are currently enrolled would you say:

	Number of Instructors
a) Have adequate technical expertise with regard to teaching (e.g., go at the right speed, use effective teaching methods, etc.)	_____
b) Know their subject matter well	_____
c) Are responsive to the class (e.g., encourage questions, listen to what students have to say)	_____
d) Care about students in the class (e.g., convey warmth, are easy to talk to, are considerate of students' circumstances, etc.)	_____
e) Have a sense of humour	_____
f) Are well organized	_____

Equal Treatment

We would like to get an idea of your feelings on what are usually called 'equity' issues. For the items listed below, please circle the number that best reflects your feelings.

	Strongly Agree				Strongly Disagree	Don't Know
	1	2	3	4	5	8
d) Visible minority students were treated in the same way by professors, staff, and students as other students were treated	1	2	3	4	5	8

English Literacy

Please circle the number which best reflects your degree of agreement or disagreement with the following statements. There are no 'right' or 'wrong' answers.

	Strongly Agree				Strongly Disagree	Don't Know
	1	2	3	4	5	8
e) I have no difficulty in speaking English	1	2	3	4	5	8
f) I can read English with no problem	1	2	3	4	5	8
g) I can easily follow a conversation in English	1	2	3	4	5	8

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