Recruiting Place-Bound Students: The Influence of Location on the College Choice of High School Seniors

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Abstract

Using a 3x3 MANOVA (SES and Metropolitan Status), this study examines the influence of socio- economic status (SES) in combination with Metropolitan Status (urban, suburban, and rural) on the college selection process of high school seniors. This study finds that whereas high school students value cost, institutional quality, institutional characteristics and college culture, these values vary by the interaction between SES and Metropolitan Status.

Obtaining a college degree is a critical component to success and mobility in contemporary society (Freeman 2005; Perna and Titus 2005; Smith and Fleming 2006). According to the U.S. Department of Education, in the fall of 2005 approximately 17.5 million undergraduates enrolled in public 4-year colleges while 5.3 million enrolled in public 2-year colleges. In addition, another 3.2 million students enrolled at private 4-year colleges and 250,000 students enrolled at private 2-year colleges (Horn 2006). Researchers suggest that because of the increased market-rate competition associated with a postsecondary degree it is important for institutions of higher education to understand the factors that affect the recruitment efforts aimed at college students (Goff, Patino, and Jackson 2004; Kelpe Kern 2000). This exploratory study examines the values that influence rural, urban and suburban high school seniors as they undergo the college selection process.

The Values That Inform College Choice

Researchers agree that once a student decides to attend a college he or she makes substantial transitions as he/she prepares to matriculate to an institution of higher education (Freeman 2005; Hossler and Gallagher 1987; Pitre 2006). Letawsky, Schneider, and Pedersen (2003) suggest that choosing a college or university is critical in the development of high school students and it initiates for many students their ascent into adult decision-making processes. Somers and others (2006) further indicate that selecting a college or university is a complex process and involves for high school students several influential factors. The growing body of literature on college choice suggests that the factors which influence the selection process of high school students have involved such items as socio-economic status, academic ability, parents, race, gender, availability of financial aid, proximity, and high school involvement (Freeman 2005; Pitre 2006; Smith and Fleming 2006; St. John, Paulsen, and Carter 2005; Tienda and Niu 2006; Zimbroff 2005). Most notably, the literature reflects that high school

students heavily base their selection on the variables of race and affordability. Studies which examine location as an influence on the selection process of high school seniors are scarce.

A small body of literature has discussed the affects of race on the college choice process. This literature has largely focused on the college aspirations of African American students but has failed to indicate variance within the African American community in regard to the interaction of SES and location. Pitre (2006) finds that college aspirations among African American students are similar to those of their white peers, even though African American students exhibit lower levels of academic achievement. Smith and Fleming (2006) conclude that African American parents are more inclined to support their daughter's selection of a four-year institution and their son's selection of a two-year school. Freeman (2005) suggests that African American high school students base their selection of a college or university on factors that are influenced by their families and extended communities. Thomas (2004) reports that Black and Hispanic high school students in Texas are less likely to choose selective schools in-state and more prone to choose selective schools outside of Texas.

Similarly, when studies have focused on college choice factors outside of race these studies have primarily indicated cost factors influence the decision-making processes of college-bound students. These studies have focused more on issues of affordability as it relates to a high school student's desire to remain close to home, but these studies fail to address the complexity involved in the interactions of other factors and SES on those decisions. Somers and others (2006) conclude that students who opt to attend community colleges are influenced by their aspirations and encouragement, institutional characteristics, and finances. Tienda and Niu (2006) determine that high school seniors are just as inclined to choose a college out-of-state when their decisions are based on admission requirements, affordability, and opportunity. Letawsky, Schneider, and Pedersen (2003) concludes that student athletes are just as influenced in their college choice decisions by the academic environment of an institution as they are by the athletic environment of their prospective school. Zimbroff (2005) suggests that disadvantaged students' college choice decisions are influenced by their individual and collective group decision-making processes.

Goff, Patino, and Jackson (2004) find that institutions of higher education should seek to develop different marketing strategies that speak to the needs of individual student groups when attempting to attract students to their campuses. Whereas previous college choice studies reflect some of the challenges involved in the selection processes of college-bound students, their failure to examine the influences of location on those processes, hampers the recruitment efforts of institutions who seek to attract students to their campuses based on this variable. Further, as more institutions move to eliminate such things as race-based criteria from their admissions policies and focus more on economic variables to determine admission eligibility, examining location helps them to remain equitable in their admission standards. An investigation of location on the college selection process may provide a more holistic profile of prospective students in regard to their matriculation and retention within postsecondary settings.

This study uses Metropolitan Status as an indicator of location and doing so addresses students' exposure to various forms of social, cultural, and economic capital. Among other characteristics, urban settings are often described as more racially and ethnically diverse and possess nearly twice the poverty compared to less-urbanized areas (Levine and Coupey 2003). Using these rather broad descriptors compels researchers to assume that all urban students are "at-risk." Studies focusing on urban risk factors suggest that urban status has been conflated with race/ethnicity, poverty, or other characteristics classically associated with disadvantaged students (Hug, Krajcik, and Marx 2006). We contend that there are potential protective factors in an area with a high-density of educational resources, cultural resources, and targeted student services. Little research attention has been devoted to rural student populations. Levine and Coupey (2003) found little demographic differences between urban and rural student populations in terms of race, SES, or "at-risk" behaviors, thus discounting the widely held belief that urban students are a particularly at-risk population. However, the manner in which these factors influence the educational and occupational aspirations of urban and rural students remains widely contentious. How these factors influence the college search and choice process is even less understood. Using Metropolitan Status in addition to SES allows for a more sensitive treatment and perhaps a more accurate examination of the factors that influence the search process of college choice.

Method

Data source. The data source for this study is the Educational Longitudinal Study: 2002. The data collection was designed and implemented by the National Center for Education Statistics (NCES), U.S. Department of Education (NCES 2004). As a large-scaled longitudinal data collection project, ELS: 2002 followed a national probability sample of approximately 24,500 students who were in the tenth grade in 2002. Currently, three waves of data are available: data from the base year of 2002 (tenth grade), the first follow-up in 2004 (twelfth grade), and the second follow-up in 2006 (sophomore year in college). The data used in this study are from the second wave of data collection when the participants were in twelfth grade.

Research design. The analyses conducted in this study typically require large sample sizes. To conduct such analyses separately for sub-groups, specifically students identified as Urban, Suburban, and Rural, requires that the sample is sufficiently large to have included enough participants from these groups. Consequently, there is a lack of research for investigating the issues related to college choice values, especially for the rural populations, due to lack of access. In this sense, ELS: 2002 offered us the rare opportunity to investigate these issues related to the factors that students value when considering college choice of urban, suburban, and rural twelfth grade students. The 3x3 MANOVA tested the main effects of Metropolitan Status (Urban, Suburban, and Rural) and Socio-economic Status (Low, Medium, High), as well as the interaction between the two variables and their respective effect on students' college choice values of Cost, Institutional Quality, Institutional Characteristics, and College Culture.

Variables. Socio-economic Status (F1SES1R) is computed by NCES based on information reported by the parents and the schools. It is further imputed into Quartiles (F1SES1QR) which was used for this study. We combined the inner two quartiles into one group representing "Middle" SES. Students were identified as Low SES (n = 1,117), Middle SES (n = 2,652), and High SES (n = 1,376). Metropolitan Status (BYURBAN) is a variable developed by NCES to describe the metropolitan status of the students' school in accordance with the following three locale codes: Urban (n = 1,397) refers to a school in a large or mid-size central city; Suburban (n = 2,743) refers to a school in a large or small town or is on the urban fringe of a large or mid-size city; and Rural (n = 1,005) refers to a school in a rural area.

The first follow-up survey of ELS: 2004 contained eleven items selected to measure four areas or factors that the students valued when choosing where to apply and eventually attend college: Cost, Institutional Quality, Institutional Characteristics, and College Culture. The specific items that related to each of these factors are listed in Table 1. Items were scored in such a way that higher values on the response scales indicate a higher degree of value, and negatively worded items were reverse scored to conform to the direction. We averaged the values of the items devoted to each factor to create four new variables that reflect the four factors.

Table 1
Educational Longitudinal Study 2002:
First follow-up items included in the study with their associated factors

College Culture	
F1S52G	The chance to live away from home
F1S52E	An active social life in school
F1S52D	The strong reputation of the school's athletic program
Institutional Quality	
F1S52C	School's courses/curriculum
F1S52I	A good record in placing graduates in jobs
F1S52K	The strong reputation of the school's academic programs
F1S52J	A good record for placing graduates in graduate school
F1S52M	The availability of a degree program that will allow you to get a job in your chosen field
Cost	
F1S52A	Low expenses (tuition, books, room and board)
F1S52B	The availability of financial aid, such as school loans, scholarships, or grants
F1S52R	Acceptance of college credit
Institutional Characteristics	
F1S52P	The geographic location of the school
F1S52O	The size of the school
F1S52N	The racial/ethnic makeup of the school

Data analysis. In constructing a full factorial design, every possible combination of SES and Metropolitan Status was included in the study for each of the four factors. A two-way between subject 3x 3 Multivariate Analysis of Variance (MANOVA) was used to examine the main effects and the interaction effects of Metropolitan Status and SES on twelfth-graders' value of Cost, Institutional Quality, Institutional Characteristics, and College Culture when choosing a college.

For ELS: 2002 data collection, some groups were intentionally over-sampled so that more stable estimates could be obtained for these smaller populations. If ignored in analyses, such over-sampling can cause biased estimates for population parameters. In this study the appropriate sampling weight provided in ELS: 2002 data was applied based on the user guidelines (NCES 2004). More specifically, because only sample members with data in the second wave of data collection were useable for this study, the cross-sectional weight variable for the second follow-up sample (F1PNLWT) was applied in the analyses along with a design effect size of 2.26. Finally, 2,099 students were excluded due to missing data, leaving the final sample size of 5,145 students.

Results

A two-way 3x3 Multivariate Analysis of Variance (MANOVA) was conducted to determine the effects of three levels of SES (High, Middle, and Low) and three levels of Metropolitan Status (Urban, Suburban, and Rural) on the four dependent variables: Cost, Institutional Quality, Institutional Characteristics, and College Culture. Prior to conducting the MANOVA, Box's test of equality of covariance matrices was performed. The significant result $F(80, 8{,}452{,}781) = 2.441$, $p < 0.001$ indicates a violation to the assumption that the covariance matrices of the dependent variables are equal across group, however, ANOVA is considered to be robust. Bartlett's test of sphericity was significant, $X\ (9) = 2251.75$, $p < 0.001$ and lead to the rejection of the hypothesis that the correlation matrix is an identity matrix. Furthermore, no evidence of multicollinearity and singularity (i.e., redundancy in the dependent variables) were present as regressions were performed with each dependent variable in turn serving as the dependent variable with all other dependent variables serving as the independent variables in these analyses. Based on these analyses, the variance inflation factors (VIFs) as calculated in SPSS all ranged between 1.01 and 1.19—well below accepted indications of multicollinearity. Therefore a 3x3 MANOVA was calculated. Means and standard deviations on values impacting college choice by SES and Metropolitan Status are presented in Table 2. The results are reported in terms of Wilks' Lambda (Λ) see Table 3 for MANOVA results. The MANOVA produced significant main effects for Metropolitan Status—Wilks' $\Lambda = 0.99$, $F(8, 5136) = 7.12$, $p < 0.001$; for SES—Wilks' $\Lambda = 0.94$, $F(8, 5136) = 38.67$, $p < 0.001$; and a significant 2-way interaction effect (SES x Metropolitan Status)—Wilks' $\Lambda = 0.99$, $F(16, 5136) = 2.219$, $p = 0.003$. Bonferroni adjustments were made prior to computing the follow-up univariate F-tests. Bonferroni adjustments were made due to multiple significant differences in an effort to avoid increasing the probability of an inflated Type I error rate. For these tests, the alpha level was set at $0.05/3 = 0.0167$.

Table 2
Means and standard deviations for Cost, Institutional Quality, Institutional Characteristics, and College Culture by SES and Metropolitan Status

		Cost	Quality	Characteristics	Culture
	Low	$M = 2.57$	$M = 2.55$	$M = 1.79$	$M = 1.86$
	$n = 374$	$SD = 0.50$	$SD = 0.45$	$SD = 0.59$	$SD = 0.54$
URBAN	Middle	$M = 2.48$	$M = 2.51$	$M = 1.8$	$M = 1.91$
$n = 1397$	$n = 696$	$SD = 0.55$	$SD = 0.47$	$SD = 0.58$	$SD = 0.56$
	High	$M = 2.24$	$M = 2.43$	$M = 1.79$	$M = 1.92$
	$n = 327$	$SD = 0.61$	$SD = 0.53$	$SD = 0.53$	$SD = 0.54$
	Low	$M = 2.48$	$M = 2.49$	$M = 1.76$	$M = 1.82$
	$n = 523$	$SD = 0.58$	$SD = 0.49$	$SD = 0.59$	$SD = 0.54$
SUBURBAN	Middle	$M = 2.35$	$M = 2.46$	$M = 1.75$	$M = 1.85$
$n = 2743$	$n = 1422$	$SD = 0.59$	$SD = 0.49$	$SD = 0.55$	$SD = 0.54$
	High	$M = 2.04$	$M = 2.48$	$M = 1.81$	$M = 1.97$
	$n = 798$	$SD = 0.63$	$SD = 0.47$	$SD = 0.51$	$SD = 0.53$
	Low	$M = 2.51$	$M = 2.36$	$M = 1.72$	$M = 1.78$
	$n = 220$	$SD = 0.61$	$SD = 0.53$	$SD = 0.56$	$SD = 0.57$
RURAL	Middle	$M = 2.35$	$M = 2.41$	$M = 1.72$	$M = 1.86$
$n = 1005$	$n = 534$	$SD = 0.57$	$SD = 0.49$	$SD = 0.53$	$SD = 0.56$
	High	$M = 2.1$	$M = 2.48$	$M = 1.75$	$M = 1.92$
	$n = 251$	$SD = 0.62$	$SD = 0.48$	$SD = 0.50$	$SD = 0.56$

Cost. The value of Cost in college choice revealed significant main effects for Metropolitan Status—$F(2, 5136) = 21.93$, $p < 0.001$, $\eta^2 = 0.25$ and SES—$F(2, 5136) = 124.35$, $p < 0.001$, $\eta^2 = 0.28$. Post hoc tests using Tukey's Honestly Significant Difference (HSD), indicated that High SES students ($M = 2.131$, $SD = 0.017$), Middle SES students ($M = 2.390$, $SD = 0.012$), and Low SES students ($M = 2.511$, $SD = 0.018$) all differed significantly ($p < 0.001$) when valuing Cost in choosing a college. Post hoc tests also revealed that Urban students valued Cost when choosing a college significantly more than both Suburban and Rural students ($p < 0.001$). In spite of the significant main effects, there were no significant interaction effects among the levels of Metropolitan Status and SES.

Table 3
A 3x3 MANOVA by SES and Metropolitan Status

Tests of Between-Subjects Effects

Source	Dependent Variable	df	*F*	*p*	η^2
SES	COST	2	124.35	.000	.25
	QUALITY	2	.100	.905	.00
	CHARACTERISTICS	2	1.026	.359	.00
	CULTURE	2	12.185	.000	.20
BYURBAN	COST	2	21.925	.000	.28
	QUALITY	2	7.329	.001	.25
	CHARACTERISTICS	2	3.804	.022	.18
	CULTURE	2	1.453	.234	.00
SES * BYURBAN	COST	4	1.387	.236	.00
	QUALITY	4	4.645	.001	.30
	CHARACTERISTICS	4	.668	.614	.01
	CULTURE	4	1.483	.205	.00
Error	COST	5136			
	QUALITY	5136			
	CHARACTERISTICS	5136			
	CULTURE	5136			
Total	COST	5145			
	QUALITY	5145			
	CHARACTERISTICS	5145			
	CULTURE	5145			

Institutional quality. The results for the MANOVA indicated a significant main effect for Metropolitan Status—$F(2, 5136) = 7.33$, $p = 0.001$, $\eta^2 = 0.20$; a non-significant effect for SES; and a significant interaction between Metropolitan Status and SES—$F(4, 5136) = 4.65$, $p = 0.001$, $\eta^2 = 0.20$. Because the interaction between Metropolitan Status and SES was significant, we chose to ignore the Metropolitan Status main effect and instead examined the Metropolitan Status simple main effects, that is, the differences among Urban, Suburban, and Rural students within Low, Middle, and High SES groups separately. There were no significant differences within the High SES group. In other words, High SES Urban, Suburban, and Rural students all valued Institutional Quality with the same or similar regard. Additionally, there were no significant differences across the SES groups labeled as Suburban. High SES, Middle SES, and Low SES all valued Institutional Quality with the same or similar regard. Within both the Middle and Low SES groups, Urban students valued Institutional Quality significantly higher than both Suburban—$F(1, 5144) = 6.241$, $p = 0.013$—and

Rural students—$F(1, 5144) = 18.253$, $p < 0.001$. Upon further examination, it is noted that the Urban, Suburban and Rural students did not value Institutional Quality similarly across the SES groups. Within the Urban group, Low and Middle SES students valued Institutional Quality significantly higher than High SES students—$F(1,5144) = 8.850$, $p = 0.003$. Conversely, in the Rural group, High SES students valued Institutional Quality significantly higher than the Low SES students—$F(1, 5144) = 6.552$, $p = 0.011$.

Institutional Characteristics. The results for the MANOVA failed to indicate any significant findings regarding the value of Institutional Characteristics. There appeared to be no differences among the SES groups, the Metropolitan Status groups, nor were there any differences among SES groups within Metropolitan Status groups Suburban and Rural students with respect to valuing Institutional Characteristics.

College Culture. The MANOVA indicated no significant interaction effects of Metropolitan Status and SES—$F(4, 5136) = 1.475$, $p = 0.207$—nor was there a significant main effect for Metropolitan Status—$F(2, 5136) = 1.434$, $p = 0.239$. SES presented a significant main effect for College Culture—$F(2, 5136) = 12.18519$, $p < 0.001$, $\eta^2 = 0.25$. The follow-up tests consisted of pair-wise comparisons among the three SES levels. The Tukey HSD indicated that High SES students valued College Culture significantly more when considering choosing a college than either Middle SES students ($M_{diff} = 0.89$, $p < 0.001$) or Low SES students ($M_{diff} = 0.12$, $p < 0.001$).

Discussion

In the area of college choice measurement, we noticed that previous studies relied heavily on using such variables as ethnicity or socio-economic status or a combination of the two (Freeman 2005; Pitre 2006; Smith and Fleming 2006; St. John, Paulsen, and Carter 2005; Tienda and Niu 2006). We determine that using such variables can often be misleading because they give the impression that college students make their college choice decisions homogeneously across SES Groups. Furthermore, using variables solely based on ethnicity or SES have been found problematic in the admission decisions of institutions of higher education because neither variable adequately captures such things as persistence and access. Adding the demographic characteristic of Metropolitan Status (Urban, Suburban, or Rural) offers a unique approach to explore the factors that affect the college choice decisions of postsecondary students. Location is a more authentic variable because it captures issues surrounding access to resources and educational inequity in a more sensitive manner than either race or SES.

This study began with an investigation of whether the factors students value when considering colleges to apply to or attend would vary across Metropolitan Status, SES, or an interaction between the two variables. Of the four dependent variables included in this study—Cost, Institutional Quality, Institutional Characteristics, and College Culture—only Institutional Quality yielded a significant interaction between SES and Metropolitan Status. The results from the present study suggest that demographic

variables are related to the college search process of high school seniors. Significant Metropolitan Status and SES differences on the college search factors were reported.

Socio-economic Status. It should come as no surprise that Low SES students value Cost more than their Middle and High SES peers and that they value Cost over the other three factors when considering college. Low SES students with college aspirations appear to approach the college search process from a practical and financial lens. However, High SES students value Institutional Quality as their primary concern when engaging in the college search process. This finding suggests that college expenses are secondary to the quality of the education itself, thus eschewing practicality for the best educational 'fit.' Middle SES students valued Institutional Quality most ($M = 2.47$, $SD = 0.49$) and Cost ($M = 2.38$, $SD = 0.58$) similarly with no significant difference. Finally, High SES students valued Institutional Characteristics and College Culture greater than their Middle or Low SES peers regardless of Metropolitan Status. This finding suggests that High SES students, unburdened by issues of cost and college expenses, have the luxury of considering these additional factors in the college search process. These students would have the largest pool of colleges from which to choose and thus would require additional factors to make choices for application. Low SES and even Middle SES students have a much smaller pool of possible colleges, and thus, we can assume do not stray far from using Cost and Institutional Quality as their primary factors of consideration.

Metropolitan Status. Among the three groups, Urban students valued Quality and Cost significantly greater than their Suburban and Rural peers. Institutional Quality was valued most by Urban students ($M = 2.50$, $SD = 0.48$) possibly due to the access Urban students have to richer environmental assets and interventions targeting educational aspirations of high school students. Cost was an important factor to Urban students, however, one cannot eliminate the overrepresentation of Low SES students in urban centers. Consequently, we interpret this finding as an artifact of the influence of SES on the college choice process.

Interaction between SES and Metropolitan Status. While the results showed that Low SES students valued Cost over Quality and Urban students valued Quality over Cost, the interaction of the two variables yielded fascinating and unexpected results with respect to Institutional Quality. While the Suburban students valued Institutional Quality homogenously, the same cannot be said for the Urban and Rural Students. Among the Urban students, SES was an influencing variable in that the Low SES and Middle SES students valued Quality more than the High SES students. However, among the Rural students, the High SES students valued Quality greater than the Low SES, similar to the larger population. This suggests that Metropolitan Status, specifically Urban can act as a leveler or an influencing variable for Low and Middle SES students regarding Institutional Quality. For example, Urban students may be more savvy in regard to college choice because they have more access to such cultural outlets like museums, libraries, universities and urban outreach initiatives (Johnson and Bell 1995; Mundt 1998; Ramaley 1996; Rodin 2005).

Recommendations

The empirical evidence found in the model suggests some important implications for those individuals concerned with the selection, admission, recruitment and retention of students in postsecondary settings. This may be particularly true of Admissions Officers, Guidance Counselors, Program Coordinators, and senior-level administrators who are competing to recruit and attract students to their campuses. In addition, this study provides inferences that inform retention efforts across such institutional settings as two-year colleges, community colleges, private and public institutions of higher education, minority-serving institutions, proprietary schools, and federal and state government agencies would be interested in the results of the model.

The study reflects Cost as a primary concern for contemporary college students which implies that students today pay special consideration to financing their education. Such information suggests that an important aspect of current recruitment materials should include information which informs students and parents on the best ways to finance college. Recruitment initiatives should include such things as financial information sessions in which Admissions or Financial Aid counselors are able to answer questions regarding the cost associated with college attendance. The model proposes that students in urban environments are particularly attentive to college cost. The literature typically suggests that students in urban areas come from academically-challenged schools, tend to be lower SES, and are more likely to be an ethnic minority (Levine and Coupey 2003). Such variables may imply that students in these areas are more sensitive to cost factors versus other aspects of the college experience. Consequently, when targeting urban environments recruitment initiatives may need to be tailored to address the specific concerns these students have concerning financing their education. The results of this study suggest, however, that students in urban areas may not be as homogeneous as previous research postulates. Consequently, when recruiting occurs in these areas, individuals should take care to challenge their assumptions regarding the factors that are normally associated with urban environments. Recruitment initiatives targeting these areas should reflect that various types of students exist within these urban environments and as a result should work to meet the expectations of these individuals. An emphasis on cost early in the recruitment phase of all students regardless of their location could assist the long-term retention efforts of institutions of higher education as students come to college more informed and better equipped to manage the finances associated with college attendance.

The study indicates that Institutional Quality and Institutional Characteristics play a significant role in selecting a college for Urban students when considering socio-economic status. As institutions of higher education compete to recruit students to their campuses they should attempt to display and emphasize those things which make their institutional settings unique. Such things as the school's curriculum, graduate job placements, and academic programs should be a crucial component of recruitment materials. Individuals who represent their college or university should be aware of their school's history regarding alumni success in graduate schools or within the professional realm. Students with High SES are more concerned with college culture which could

indicate that counselors should be prepared to present the various aspects of social life on their campuses when recruiting these students. It is possible that when students are not as concerned about cost they are able to focus more on the luxury items associated with college attendance. In such cases it may be a good idea for current students, who serve as orientation leaders or presidents of social organizations, to accompany counselors on visits to these high SES areas. Allowing current students to accompany counselors could serve as a means of introducing segments of college life from a perspective to which these prospective students can relate. Finally, this study emphasizes the need for recruitment efforts to be flexible, multi-dimensional, and sensitive to the changes in the demographic composite of contemporary college students.

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