

Academic Success in Independent Colleges:
Analyses of Persistence by
Indiana's 2000 Freshman Cohort

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Abstract

While much attention has been given to access to and retention in public four-year colleges as part of the policy debate about K-16 educational systems, the crucial role of independent colleges should not be overlooked. This paper examines the influence of high school preparation and student financial aid on persistence in independent colleges in Indiana using a cohort file of Indiana residents in the high school class of 2000 who enrolled during the 2000-01 academic year. Analyses indicated that high school grades and SAT scores had a more substantial influence on persistence than did high school curriculum. In addition, student financial aid was negatively associated with persistence, raising concerns about the adequacy of financial aid relative to the prices charged by private colleges.

Introduction

Increasingly states frame debates about education reform and finance to address issues related to K-16 education and public finance. Issues related to educational standards, high school exit exams, and graduation requirements are now often discussed in the context of preparing students for higher education. In contrast, discussions of subsidies to students and colleges are discussed related to market forces. Enrollment in private colleges is treated as a viable option for state residents who graduate from high school in both policy conversations. Increasing the capacity of private colleges can be an economical alternative for states that face increased student demand for higher education (Zumeta, 2004). However, the linkages between state policies on student aid and academic preparation and subsequent academic success of students in independent colleges are seldom examined at a state level.

In this context it is crucial to consider how state policies on K-12 education and student financial aid influence opportunity to enroll and persist in state systems. A recent report on academic preparation and success for the Indiana high school class of 2000 found that the high school curriculum students had completed had a more substantial influence on persistence in the state system as a whole (both public and independent colleges) than did measures of achievement (test scores and high school grades). In addition, the study found that student financial aid was positively associated with short-term persistence but not long-term persistence (St. John, Musoba & Chung, 2004b). Prior analyses of persistence by students in public colleges in Indiana have provided evaluative information about the efficacy of state grants (Hu & St. John, 2001; St. John, Hu & Weber, 2000, 2001), but equivalent studies of independent college students have not been published previously for Indiana and other states. Persistence outcomes should also be

separately examined for students enrolled in the independent colleges in Indiana because of the substantial role these colleges play in the state's system of higher education.

In the 1970s, national study groups speculated that many independent colleges would go out of business if there was not a more substantial investment in grants (e.g., Breneman, Finn & Nelson, 1978; Carnegie Commission on Higher Education, 1973). However, federal grants declined after 1980, only a few states made substantial investments in grants, and yet independent colleges remained competitive, increasing their share of enrollment (St. John, 2003). Unlike most other states, Indiana has made a substantial investment in grants for low-income students who enroll in independent colleges, indicating that research on persistence in these colleges should be of interest to policymakers in the state. But is the investment sufficient to equalize persistence opportunity for low-income residents who attend these colleges? This question is hardly ever addressed in policy discussions or the literature.

This paper provides an examination of the impact of academic preparation and student aid on persistence, using a database on resident Hoosiers in the class of 2000 who enrolled in Indiana's independent colleges in 2000-01. Both topics—student aid and academic preparation—are critical in the national debate on education policy, as they are in Indiana. After a brief overview of the study approach, the findings are presented and policy implications considered.

Study Approach

The workable models approach to institutional research on persistence was first proposed as a means of using institutional databases to assess the impact of financial aid (St. John, 1991), and the method was initially used in institutional studies of this topic (Somers, 1992; Somers &

St. John, 1997a, 1997b; St. John & Somers, 1997). The approach was expanded to examine the impact of financial aid on persistence in state systems, focusing on the role of state grants (St. John, 1999; St. John, Hu & Weber, 2000, 2001). More recently the approach has been adapted for state level studies of diversity (Hu & St. John, 2001), major choice (St. John, Hu, Simmons, Carter & Weber, 2004) and other topics. This is the first endeavor to adapt the model to examine the roles of preparation and student aid in independent colleges in a state-level study. A summary of the workable models approach below is followed by a description of the research approach used in this study.

Background

Informed by a review of theory and research in economics, sociology, and higher education, the workable models paper proposed a strategy for using institutional databases to examine the impact of student aid and persistence interventions on enrollment, controlling for the variables related to family background, curriculum, and high school preparation (St. John, 1991). These same factors—along with variables related to college grants, majors, and participation in remedial courses—were related to persistence.

Perhaps the most important feature of the proposed approach—and what made the conceptual model distinctive in research on student aid—was the proposal to use a design set of variables related to income, derived from financial aid applications. It compared income levels of students who applied for aid to those of students who did not apply for aid (and for whom income information was not collected). There were sufficient aid applicants who did not receive aid to avoid excessive correlation between income and aid variables. Over time this approach to

variable coding has been substantially refined, permitting the analyses of the effects of financial aid on persistence.

It is critical to use sound conceptual models in the design of research on enrollment and persistence (St. John, Asker & Hu, 2001). Without appropriate logical and statistical controls for variables that influence student outcomes, institutional research, like policy research, can be prone to errors in specification, sampling, and statistics (Becker, 2004; Heller, 2004). The workable models approach uses proven statistical methods rather than experiment with new methods. It provides a reasonable starting point for institutional and policy research because it is well grounded in theory and understandings from prior research.

State-level studies have substantially improved the policy relevance of the workable models approach. The initial test of the approach was in the state of Washington to examine the impact of changes in the state grant program (St. John, 1999). A similar research approach using student records has been used to examine the impact of state grants in Indiana. Most recently, a cohort of seniors in the high school class of 2000 was constructed using College Board data. This database has allowed us to refine the workable models approach because the longitudinal file includes richer and more complete student records.

The addition of College Board surveys from the SAT, completed by about 95% of test takers in a national sample (St. John, Musoba & Chung, 2004a), provides information on high school curriculum and student background prior to college. About 60% of Indiana high school students take the SAT each year. Using this survey information meant we had data on backgrounds—including self-reported income and high school curriculum. The College Board data for Indiana students was combined with records from public colleges, provided by the Indiana Commission for Higher Education (ICHE), and independent colleges, provided by the

Independent Colleges of Indiana, Inc. (ICI) (St. John, Musoba & Chung, 2004a). This study uses the longitudinal data for students in the class of 2000 who enrolled in Indiana's independent colleges.

Unfortunately not all independent colleges report consistently to the ICI. A total of 26 colleges provided student records for 2000-01 and 16 of these colleges provided usable data for 2001-02. Only a few of Indiana's independent colleges did not report data for the first year, but the sample is less comprehensive for the second year. It was possible to examine within-year persistence for students in the entire population of 26 colleges. For this paper we also used the subgroup of 16 colleges to examine within-year persistence (whether students stayed enrolled all year), first-to-second-year persistence, and continuous enrollment during the first two years after high school.

In this study we focus on applied issues in the Indiana context. We make no attempt to generalize beyond the institutions studied. Rather our purpose is to contribute to the understanding of patterns of student success and the roles public policy and institutional actions play in promoting student academic success. This approach is consistent with the original intent of the workable models approach, which was to enable applied research that addresses topics that can inform strategic action.

Model Specifications

The logical model used for this study provides a comprehensive assessment of academic success using three persistence outcomes:

- *Within-year persistence*: Whether students who enrolled in the fall also enrolled in the spring.

- *Year-to-year persistence:* Whether students who enrolled in the spring term of the freshman year reenrolled the following fall.
- *Continuous enrollment:* Whether students who enrolled in 2000-01 maintained continuous enrollment through spring 2002.

By comparing across the three measures of persistence, it is possible to build a better understanding of the roles and influence of academic preparation and academic experiences on college continuation through the first two years of college. These analyses examined the influence of five types of variables related to academic success:

First, a comprehensive set of variables related to student background were considered.

- Males were compared to females.
- Asian American, African American, Hispanic American, Native American/Other students, and students with missing race/ethnicity were compared to White students.
- Students in the high-income group, the low-income group, and with missing income information were compared to students in the middle-income group.¹
- Students whose parents had a high school education or less and who had no reported information on parents' education were compared to students who had at least one parent who had enrolled in college.²
- Students who attended high schools in urban locales, rural locales, or who had no information on high school locale were compared to students who attended high schools in suburbs or towns.

¹ Students could report income on student aid applications or responses to the College Board questionnaire. Therefore a substantially higher percentage of students reported income than is usually the case when student aid information is the only data source for income. The breakdown of income groups into thirds was based on the entire population of college students, including public college students.

² The College Board survey asked questions about parents' education, so we had a representation of this data.

Second, we had substantial information on academic preparation.

- Students who graduated with a college preparatory diploma (Core 40) or an honors diploma (additional courses in math, science, and language) were compared to students with a regular diploma or who did not have reported information of a high school diploma.³
- Students with A-grades and C-grades or lower in high school were compared to students who had B-grades in high school.
- Students with high SAT scores (top third), low SAT scores (low third), and missing SAT scores were compared to students who were in the mid-range (students within one standard deviation of the mean).

Third, students who had declared majors were compared to students who were undeclared as freshmen. Ten major categories were considered (humanities, arts, science and math, social sciences, health, business, education, computers, engineering, and other).

Fourth, variables related to academic achievement and college achievement/enrollment were considered.

- Students with A-grades and C-grades or lower in college were compared to students with B-grades.
- Students who took remedial math only, remedial language arts only, or both remedial courses were compared to students who did not take any of these courses.

³ Colleges in the State of Indiana report high school diploma type for residents. In addition, it was possible to infer the diploma type from the courses students took in high school, reported on the SAT questionnaire. In addition, students who apply for student financial aid report their diploma type on applications for state grants, a self report subject to verification.

- Students who enrolled full time the first term were compared to students who did not.
- Students who lived in campus housing were compared to students who did not.
- Students who delayed enrollment (enrolling in the spring term) were compared to students who enrolled in the fall in analyses of fall-to-spring enrollment and continuous enrollment.

Finally, the financial aid packages approach was used to examine the impact of student financial aid. Students who received grants but not loans, loans but not grants, grants and loans, and other aid packages usually with work-study were compared to students who did not receive student aid. Students who were self supporting were compared to other students.

Statistical Methods

This study used logistic regression analysis, a method appropriate for persistence research (Peng, So, Stage & St. John, 2002). Odds ratios are reported for independent variables along with three levels of significance (.01, .05, and .1). The third of these (.1) is a modest association and is not treated as significant in this discussion. In addition, descriptive statistics are reported. Also, a pseudo R^2 (Nagelkerke), chi squared, and percentage correctly predicted are presented for each logistic regression analysis.

Limitations

Given the multiple sources of data and the longitudinal nature of the database, this study overcomes many of the problems associated with the use of extant sources. Missing cases are

minimized because multiple sources are used. However, a few limitations merit consideration by readers.

The major limitation of the study is that 10 of the campuses did not report usable data for the second year. Therefore we were careful to compare analyses of the full set of campuses and the smaller set of campuses on within-year persistence so that we could build an understanding of this type of reporting limitation.

These analyses use population data for colleges that participated in the ICI student information system. The results should not be generalized beyond the colleges studied. Nor should these findings be interpreted as relating to undergraduates other than freshmen in the Indiana 2000 cohort. We did not present tests of significance for descriptive statistics because such differences can be misleading.

Further, we do not attempt to present significances for bivariate comparisons of persistence rates presented as descriptive statistics because such simple comparisons can be misleading and can result in misguided policy decisions (Becker, 2004; Heller, 2004). Instead, we used the multivariate analyses to discern significance of variables associated with student outcomes.

Findings

The analyses of within-year persistence for the entire group of 26 colleges are presented before the analyses of the three persistence outcomes for the 16 colleges with two years of usable data. Both descriptive statistics and regression results are presented and discussed.

Within-Year Persistence in 26 Colleges

The analyses in this section examine within-year persistence by students in the 2000 cohort who enrolled in the 26 independent colleges in the fall of 2000. Both descriptive statistics and logistic regression statistics are summarized. The overall within-year persistence rate was 85% (Table 1). The descriptive statistics compare persistence rates for different independent variables. In contrast the regression analyses (Table 2) indicate which variables were associated with higher odds of persistence (significant and odds ratios over 1.0) or reduced the odds of persistence (significant and odds ratios below 1.0).

Descriptive Statistics

Table 1 presents persistence rates, broken down by the variables in the regression analyses. Persistence rates for each set of variables are discussed briefly below.

Majors: Students in humanities and engineering majors persisted at an average rate of 90% or higher, while students with other majors persisted at rates between 80% and 90%.

Background: The persistence rates were nearly equal for males and females, but there were apparent differences in persistence rates by income and race/ethnic groups. Students with no reported race and Hispanics and Native Americans persisted at lower rates than other groups. Asian Americans persisted at the highest rate (95%). Students with missing income information and low incomes persisted at lower rates than students in middle- and upper-income groups who applied for aid. Students whose parents had not attained a college education persisted at lower rates than students whose parents had attended college. There was not much variation by locale.

Preparation: Students with honors diplomas persisted at a modestly higher rate than the average; Core 40 graduates persisted at about the average rate; and students with a regular

diploma (or missing information) persisted at a slightly lower rate. Students with higher grades in high school persisted at slightly higher rates than students with lower grades. Students with high SAT scores also persisted at higher rates than students with lower scores. Students with missing SAT scores persisted at about the same rate as students with average SAT scores.

College Achievement/Enrollment: Students with A-grades and B-grades persisted at substantially higher rates than students with C-grades or lower. Students who took remedial math only or remedial language only persisted at lower rates than students who took both types of remedial courses or students who did not take remedial courses. Student who enrolled full time persisted at a higher rate than part-time students. Students who lived on campus persisted at a slightly higher rate than students who lived off campus.

Student Financial Aid: There was not much difference in persistence rates by aid category. Students who did not receive aid persisted at about the average rate. However, self-supporting students, a very small group in this traditional age population, persisted at a lower rate than other students.

Logistic Regression

The logistic regression analysis for within-year persistence is presented in Table 2. Variables related to each set are discussed briefly, focusing on direction of effects (above or below 1.0) for significant variables.

Background: Four background variables were significantly associated with within-year persistence: males had higher odds of persisting than females, students with missing income information had lower odds of persisting than middle-income students, students whose parents had not attended college had lower odds of persisting than students whose parents had at least

some college, and students with missing locales were more likely to persist than students from suburban or rural locales. The finding on income is appropriately interpreted in relation to aid packages.

Academic Preparation: Students with missing GPAs from high school were less likely to persist than students with B-grades. In addition, students with high SAT scores had a slight (.1 alpha) positive association with persistence. High school curriculum types were not significantly associated with persistence.

College Majors: Students with most types of declared majors were more likely to persist through the freshman year than were students who were undeclared. Only math/science majors, computer majors, and “other” majors did not differ significantly from undeclared majors. Engineering had a substantially larger odds ratio than other majors. Controlling for other variables in the model, engineering majors were six times more likely to persist than students who did not have declared majors.

College Achievement/Enrollment: A-grades had a slight positive association with persistence (.1 alpha), while students with low grades had significantly lower odds of persisting than student with B-grades. Taking remedial language arts had a slight positive association with persistence (.1 alpha). However, taking remedial courses in both math and language arts substantially improved the odds of persisting through the first year, as did enrolling full time during the first term.

Student Financial Aid Packages: Students with grants but not loans, grants and loans, and packages with work-study had lower odds of persisting through their freshman year than students who did not receive student aid. However, receiving loans but not grants did not differ significantly from not receiving student aid. These findings are appropriately interpreted with

income statistics, since aid applications provided one source of income information. Students who did not have reported incomes (i.e., did not apply for aid and did not self report income on the SAT questionnaire) persisted at a lower rate than middle-income students, controlling for other variables. In contrast, students with loans did not differ significantly from students who did not receive aid. Interpreted together, these findings imply that middle-income students who took out loans had some positive consequence. However, the other types of packages included grants, and students with grants did not persist as well, controlling for other factors. This raises questions about the adequacy of grant aid for students in Indiana's independent colleges.

Persistence Outcomes in 16 Indiana Colleges

All three persistence outcomes are examined for the independent colleges that provided sufficient data. The descriptive statistics (Table 3) and regression analyses (Table 4) are discussed for all three outcomes simultaneously to optimize comparison of the three sets of analyses.

Descriptive Statistics

Overall, the within-year persistence rates were higher for the 16 colleges that reported both years of data than for the 26 colleges (92% compared to 85%, as noted on the bottom line of Tables 1 and 3). Persistence rates were lower for year-to-year persistence and continuous enrollment (69% and 61% respectively). The summary below refers to Table 3.

Majors: Business majors had relatively low persistence rates for within-year persistence (the only major below 90%). Majors in science/math, health, and business had relatively lower

persistence rates between years (below 65%). Science/math, health, business, and other majors had relatively lower rates of continuous enrollment (below 60%).

Background: Students with missing background information persisted at lower rates across most categories of background variables and across the three persistence outcomes. There was some variation in persistence rates across ethnic groups but it is important to note that most students in the data sets were White. Students with no reported income persisted at consistently lower rates than students in the income categories. Students whose parents had at least some college education persisted at a higher rate than their peers whose parents did not go to college.

High School Preparation: There was a consistent pattern of higher persistence rates for students with higher high school grades, advanced curricula, and higher SAT scores.

College Achievement/Enrollment: Students with A-grades in college persisted at higher rates than students who received C-grades or lower in college. There was not substantial variation in enrollment rates for remedial courses, except for continuous enrollment, where students who had no remedial coursework persisted at a higher rate. Students who enrolled full time persisted at substantially higher rates than did part-time students. Students who delayed their enrollment persisted at lower rates across years and in the second year than did students who enrolled during the first term after high school. Students who lived on campus persisted at high rates.

Student Financial Aid Packages: Students who did not receive aid persisted at rates lower than all aid groups except for students who received loans as the only form of aid. Interestingly the within-year persistence rates for loans only were higher for the 26 campuses (89%) than for the 16 campuses that provided two years of data (83%). However, a relatively small number of students in both groups had loans only.

Logistic Regression Analyses

The three regression analyses are presented in Table 4. The findings are discussed by variable block below.

Background: Low-income students were less likely to persist within year than middle-income students, a finding that differed from the larger group of colleges, but this variable was not significant for year-to-year persistence or continuous enrollment. However, students with missing income information were less likely to persist across the three analyses, a finding consistent with the analysis of within-year persistence at all schools. Students whose parents did not go to college were less likely to persist through the freshman year, consistent with the finding for the 26 campuses, but this variable was not significant for the other two outcomes. However, students with missing information about income were consistently less likely to persist across the three outcomes. Low-income students and students whose parents had not attended college were less likely to persist. Students from rural locales were less likely to persist across years and students with missing locales were more likely to persist within the first year (consistent with the finding for the 26 campuses). African Americans were more likely to persist across years and to maintain continuous enrollment. If African Americans made it through their first year in independent colleges, they were more likely to persist, a pattern that is very different than in public colleges in Indiana, where males were more likely to be continuously enrolled (Hu & St. John, 2001; St. John, Musoba & Chung, 2004b).

Academic Preparation: Honors diplomas were positively associated with continuous enrollment, but were not significantly associated with the other two persistence outcomes. Grades were associated with persistence across the three outcomes, with students who had had A-grades in high school more likely to be continuously enrolled and students with C-grades or

lower less likely to persist after the first year. High SAT scores were positively associated with all three outcomes. This is a contrast to the analyses of persistence by the cohort of all public and private colleges: diploma types had a more substantial influence on enrollment in four-year colleges and persistence than did SAT scores or high school grades for the 2000 cohort as a whole (St. John, Musoba & Chung, 2004a).

Majors: Consistent with the persistence analysis for the 26 independent colleges (Table 2), engineering majors were more likely to persist in all three models. In contrast, science/math majors were less likely to persist than undeclared students in analyses of year-to-year persistence and continuous enrollment. These findings suggest that further consideration of possible explanations for the lower persistence rates by science/math majors merit attention.

Interestingly, business and health, two majors with lower persistence rates (evident in Table 3), were not significantly associated with persistence outcomes (Table 4). Clearly the lower persistence rates for students with these majors were attributable to factors other than their major choice. This suggests that the factors associated with major choice merit study by private college in Indiana, especially as it pertains to preference for majors like health (e.g., nursing and premed) and business.

College Achievement/Enrollment: Taking both types of remedial courses was not significantly associated with any of the persistence outcomes in the 16 independent colleges, although it had a significant and positive association with within-year persistence in the 26 colleges (Table 2) and in the 2000 cohort as a whole (St. John, Musoba & Chung, 2004a). This contrast illustrates that significant findings have a situated aspect—related to the population being studied—that may be more meaningful than attempts to discern universal effects.

All of the other variables were at least modestly significant in one of the three analyses. A-grades in college had a modest positive association (.1 alpha) with continuous enrollment. Low grades reduced the odds of persistence across the three analyses. Remedial math had a negative association with continuous enrollment, while remedial language arts showed an early positive association. Being enrolled full time had a significant positive association with persistence across the three outcomes, but the size of the odds ratio decreased over time. Delayed enrollment decreased the odds of returning the second year and of continuous enrollment. Living on campus improved the odds of returning and maintaining continuous enrollment.

Student Financial Aid Packages: All types of aid packages were negatively associated with persistence in at least one of the analyses. Viewing these analyses as a whole, it is evident that financial aid is insufficient, given costs, for students in Indiana's independent colleges. This conclusion is mitigated somewhat by the finding that students whose income was not reported were less likely to persist across all models. There is reason to be concerned about affordability for Hoosiers who choose independent colleges.

In addition, the slight positive association for loans only, evident for the 26 colleges (Table 2), was not evident among students in the 16 campuses (Table 4). This illustrates the role of situated, or nested, findings in a subpopulation. In this case, students in the 10 campuses excluded here were advantaged in some way because of loans. This is an interesting finding that may merit further analysis by the campuses that did not provide the second year's data.

Conclusions and Implications

These findings provide a rich overview of persistence in Indiana's independent colleges. They include two general findings related to methods and interpretation as well as two specific findings that have implications for state policy in Indiana.

First, multivariate models reveal different patterns of relationship when compared to bivariate findings and when interpreted using the logic of the student choice construct (St. John, Asker & Hu, 2001). Multivariate analyses using sound logical models provide insight into relationships among variables, while bivariate analyses can be misleading. For example, in this study the findings on major choice reveal two different sorts of insights about these relationships.

Consider the example of business majors. While business majors consistently persisted at lower rates, these majors were not significant variables in persistence regression analyses. This suggests that variables associated with the choice of these majors were also associated with persistence and provide the explanation for the observed drop out. This indicates that research on the major choice process—along with interventions that aim to inform students about the choice process—could provide important insights for independent colleges.

Consider also the example of science/math majors. The findings about science/math majors indicate a different sort of issue: not only did these majors persist at lower rates, but they were negatively associated with persistence from year-to-year and continuous enrollment. This suggests that there is something about the majors themselves that merits attention. Perhaps it is difficult to meet the requirements of science majors in small independent colleges. Students may choose to transfer to larger campuses with more offerings, or the challenge of these majors may be greater so these students drop out.

Second, it is important to consider research using institutional data as situated in appropriately interpreted contexts, but informed by theory and prior research. For example, consider the findings on loans as the only form of aid. It was apparent that removing 10 colleges from the data set explained the change in significance (between Tables 2 and 4). This illustrates that loans had a different meaning and value for the students in the 10 colleges—relative to their peers—than for the students in the 16 colleges that provided more data. Further, within-year persistence rates were higher for the 16 colleges than for the 10. So the value of loans only within the 10 colleges should be interpreted in the context of the lower persistence rates in these colleges. Further analysis would be needed to uncover the reason for the change in significance, in this instance, but the finding itself illustrates the role of context.

Third, the findings on specific variables related to preparation for Hoosiers enrolled in independent colleges (both the 16 and the 26) indicate that high school grades and SAT scores had a more substantial influence on college success of students in independent colleges than they had for the public and private college cohort as a whole, which included students in both public and private colleges (St. John, Musoba & Chung, 2004a). This finding should be interpreted in relation to situated contexts. It is probably related to the college choice process as well as to the distinctiveness of independent colleges. It is possible that more traditional measures of achievement are important in these colleges because of their emphasis on the liberal arts.

This raises questions about the new policy discourse on K-16 systems. The issues of preparation and prior achievement may have different meanings and values for public colleges than for independent colleges. The collegiate curriculum in public universities is more discipline based, which may explain why high school curriculum has a more significant relation to persistence in these colleges. However, independent colleges are smaller and place more

emphasis on cross-disciplinary thinking. Also, their curriculum tends to draw upon several disciplines. These issues merit further exploration by Indiana's independent colleges as they adjust to policy changes for high school graduation.

Finally, the research reported here raises concerns about affordability of independent colleges for traditional age high school graduates in Indiana. While the state and the colleges themselves make substantial investments in grants for students attending independent colleges, these investments may not adequately address financial need. However, this is a complex question because of the effects of income and aid. The patterns evident in these analyses differ substantially from patterns in the state as a whole (St. John, Musoba & Chung, 2004a), which means that affordability presents a different type of challenge in independent colleges than in public colleges in Indiana.

Further, the differences in findings on the role of finances are appropriately interpreted with an understanding of the higher persistence rates in independent colleges. College costs are no doubt a factor that negatively influences persistence in these colleges—indeed, the cost of enrollment is higher—but these colleges apparently also attract students with higher odds of persistence. It was not possible to include the influence of tuition charges in this study because of data limitations, but this variable should be studied in future research. Thus, the findings on the effects of aid packages does not mean aid is ineffective; rather, it is not fully adequate to equalize the opportunity to persist in learning environments that have high persistence rates.

All of these conclusions have not only practical implications, as discussed above, but also relate to the role of research on persistence. Persistence, as studied using workable models, is situated in the lived contexts of academic communities. Institutional data, if appropriately analyzed, can help us to untangle the ways institutional practices and public policies interact with

student success if we have the patience to carefully construct analyses and interpret findings in ways that are grounded by theory and prior research.

Table 1: Breakdown of Persistence Rates for Variables in Analyses of Persistence for Indiana 2000 High School Graduates Enrolled in 26 Independent Colleges, 2000-01

Variable	Category	Persistence of Fall to Spring Freshman			
		Persisters		Non Persisters ©	
		N	Row %	N	Row %
Major in Freshman Year	Humanities	255	90.4	27	9.6
	Arts	218	89.3	26	10.7
	Science and Math	289	83.8	56	16.2
	Social Science	354	88.3	47	11.7
	Health	318	88.8	40	11.2
	Business	550	87.7	77	12.3
	Education	674	87.5	96	12.5
	Computer	138	80.7	33	19.3
	Engineering	292	92.7	23	7.3
	Others	289	79.8	73	20.2
	Undecided ©	1,334	81.1	311	18.9
Composite Gender	Male	2,066	85.2	358	14.8
	Female ©	2,640	85.6	443	14.4
	Missing ©	5	38.5	8	61.5
Composite Ethnicity	Native American	12	70.6	5	29.4
	Asian Amer. Pacific Islander	60	95.2	3	4.8
	African American	204	81.6	46	18.4
	Hispanic American	70	75.3	23	24.7
	White ©	4,261	85.8	705	14.2
	Other	22	91.7	2	8.3
	Missing	82	76.6	25	23.4
Composite Parent Income Level	Low (below \$30,000)	843	82.9	174	17.1
	Mid (\$30,000-\$70,000) ©	1,717	86.2	274	13.8
	High (over \$70,000)	1,748	88.4	230	11.6
	Missing	403	75.5	131	24.5
Composite Parent Education Level	Middle/Jr High School or Less	18	66.7	9	33.3
	High School	1,112	82.2	240	17.8
	College or Beyond ©	2,112	88.7	270	11.3
	Missing	1,469	83.5	290	16.5
Composite Locale	City	752	83.7	146	16.3
	Suburban and Town ©	1,749	84.6	318	15.4
	Rural	1,130	84.5	207	15.5
	Missing	1,080	88.7	138	11.3
Composite High School Diploma	Honors	1,824	90.6	190	9.4
	Core 40	982	84.0	187	16.0
	Regular or Missing ©	1,905	81.5	432	18.5

Table 1 (cont.): Breakdown of Persistence Rates for Variables in Analyses of Persistence for Indiana 2000 High School Graduates Enrolled in 26 Independent Colleges, 2000-01

Variable	Category	Persistence of Fall to Spring Freshman			
		Persisters		Non Persisters ©	
		N	Row %	N	Row %
Composite High School GPA	A	1,355	91.1	133	8.9
	B ©	1,385	85.8	230	14.2
	C or Lower	570	82.7	119	17.3
	Missing	1,401	81.1	327	18.9
Composite SAT Scores	High	1,886	90.6	196	9.4
	Mid ©	1,275	83.5	252	16.5
	Low	712	77.7	204	22.3
	Missing	838	84.2	157	15.8
College Freshman GPA	A	1,478	94.5	86	5.5
	B ©	2,006	92.4	164	7.6
	C or Lower	1,227	68.7	559	31.3
	Missing	0		0	
Remedial Coursework in Freshman Year	Remedial Math Only	99	70.7	41	29.3
	Remedial Language Arts Only	168	81.6	38	18.4
	Remedial Math & Lang. Arts	34	91.9	3	8.1
	No Remedial Coursework ©	4,410	85.8	727	14.2
Enrollment Status	Full-time	4,509	85.9	741	14.1
	Part-time ©	202	74.8	68	25.2
Delayed Enrollment in Spring as Freshman	Delayed				
	Not Delayed ©				
Housing Status in Freshman Year	On-Campus	3,192	87.3	466	12.7
	Others ©	1,519	81.6	343	18.4
Dependency Status	Indeterminate Status ©	1,311	84.3	245	15.7
	Self-supporting	37	71.2	15	28.8
	Dependent ©	3,363	86.0	549	14.0
Aid Packages	Grants Only	1,678	86.5	263	13.5
	Loans Only	48	88.9	6	11.1
	Grants and Loans	1,519	85.3	262	14.7
	Other Packages	821	82.8	171	17.2
	None ©	645	85.8	107	14.2
Total		4,711	85.3	809	14.7

© is the reference category in regressions.

Table 2: Logistic Regression Analyses of Within-Year Persistence by Indiana 2000 High School Graduates Enrolled in 26 Independent Colleges, 2000-01

	Persistence of Fall to Spring Freshman	
	Odds Ratio	Sig.
Male	1.367	***
Native American and Other	0.844	
Asian American	2.646	
African American	1.285	
Hispanic American	0.718	
Race Missing	0.829	
Family Income Low	0.828	
Family Income High	0.861	
Family Income Missing	0.301	***
Parent Education High School or Less	0.769	**
Parent Education Missing	0.959	
Locale City	1.079	
Locale Rural	0.959	
Locale Missing	2.327	***
High School Diploma Honors	1.188	
High School Diploma Core 40	1.063	
High School GPA A	0.972	
High School GPA C or Lower	0.844	
High School GPA Missing	0.371	***
SAT Score High	1.245	*
SAT Score Low	0.879	
SAT Score Missing	1.079	
Humanities	1.802	**
Arts	1.663	**
Science and Math	1.113	
Social Science	1.552	**
Health	1.738	***
Business	1.588	***
Education	1.446	***
Computer	0.978	
Engineering	6.203	***
Others	0.914	
College GPA A	1.293	*
College GPA C or Lower	0.154	***
Remedial Math Only	0.863	
Remedial Language Arts Only	1.444	*
Remedial Math and Language Arts	5.433	***
Full-time in First Semester	2.877	***
Delayed Enrollment		
On-Campus Housing	1.000	

**Table 2 (cont.): Logistic Regression Analyses of
Within-Year Persistence by Indiana 2000 High School
Graduates Enrolled in 26 Independent Colleges, 2000-01**

	Persistence of Fall to Spring Freshman	
	Odds Ratio	Sig.
Self-supporting	1.661	
Grants Only	0.368	***
Loans Only	0.671	
Grants and Loans	0.294	***
Other Packages	0.274	***
Number of Cases	5,520	
Model χ^2	902	
Nagelkerke R ²	0.267	
% Correctly Predicted	85.8	

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 3: Breakdown of Persistence Rates for Variables in Analyses of Persistence for Indiana 2000 High School Graduates Enrolled in 16 Independent Colleges

Variable	Category	Persistence of Fall to Spring Freshman				Persistence of Spring Freshman to Fall Sophomore				Continuous Enrollment of Fall or Spring Freshman thru Spring Sophomore			
		Persisters		Non Persisters ©		Persisters		Non Persisters ©		Persisters		Non Persisters ©	
		N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %
Major in Freshman Year	Humanities	188	93.1	14	6.9	147	71.0	60	29.0	141	63.8	80	36.2
	Arts	147	93.6	10	6.4	109	67.7	52	32.3	105	61.4	66	38.6
	Science and Math	204	91.9	18	8.1	140	61.4	88	38.6	130	52.8	116	47.2
	Social Science	226	90.4	24	9.6	169	68.7	77	31.3	162	60.0	108	40.0
	Health	252	93.0	19	7.0	178	63.6	102	36.4	170	56.7	130	43.3
	Business	306	89.0	38	11.0	223	64.8	121	35.2	206	53.9	176	46.1
	Education	467	92.8	36	7.2	362	68.4	167	31.6	352	62.1	215	37.9
	Computer	71	91.0	7	9.0	59	77.6	17	22.4	55	66.3	28	33.7
	Engineering	230	93.1	17	6.9	204	88.7	26	11.3	195	78.9	52	21.1
	Others	222	91.0	22	9.0	177	67.0	87	33.0	165	57.5	122	42.5
	Undecided ©	900	90.5	94	9.5	667	70.3	282	29.7	644	61.7	400	38.3
Composite Gender	Male	1,419	91.2	137	8.8	1,091	71.4	437	28.6	1,040	62.5	625	37.5
	Female ©	1,789	92.1	154	7.9	1,343	67.8	637	32.2	1,284	60.0	855	40.0
	Missing ©	5	38.5	8	61.5	1	16.7	5	83.3	1	7.1	13	92.9
Composite Ethnicity	Native American	6	75.0	2	25.0	6	85.7	1	14.3	6	66.7	3	33.3
	Asian Amer. Pacific Islander	36	100.0	0	0.0	31	72.1	12	27.9	30	69.8	13	30.2
	African American	127	87.6	18	12.4	91	66.9	45	33.1	86	55.8	68	44.2
	Hispanic American	40	93.0	3	7.0	21	50.0	21	50.0	17	37.8	28	62.2
	White ©	2,943	91.9	261	8.1	2,240	69.8	968	30.2	2,144	61.7	1,330	38.3
	Other	14	100.0	0	0.0	10	66.7	5	33.3	8	53.3	7	46.7
	Missing	47	75.8	15	24.2	36	57.1	27	42.9	34	43.6	44	56.4
Composite Parent Income Level	Low (below \$30,000)	644	89.3	77	10.7	484	70.3	204	29.7	456	59.5	310	40.5
	Mid (\$30,000-\$70,000) ©	1,189	93.5	83	6.5	904	69.3	400	30.7	863	62.2	525	37.8
	High (over \$70,000)	1,159	93.7	78	6.3	904	72.7	339	27.3	874	66.0	450	34.0
	Missing	221	78.4	61	21.6	143	51.3	136	48.7	132	38.8	208	61.2
Composite Parent Education Level	Middle/Jr HS or Less	11	78.6	3	21.4	6	46.2	7	53.8	5	31.3	11	68.8
	High School	755	91.4	71	8.6	534	65.0	288	35.0	499	55.8	395	44.2
	College or Beyond ©	1,443	95.6	66	4.4	1,111	69.7	483	30.3	1,069	64.3	593	35.7
	Missing	1,004	86.3	159	13.7	784	72.3	301	27.7	752	60.4	494	39.6
Composite Locale	City	561	91.4	53	8.6	401	66.5	202	33.5	378	57.6	278	42.4
	Suburban and Town ©	1,237	92.1	106	7.9	946	71.5	378	28.5	899	62.7	535	37.3
	Rural	809	92.0	70	8.0	604	67.8	287	32.2	578	60.1	383	39.9
	Missing	606	89.6	70	10.4	484	69.5	212	30.5	470	61.3	297	38.7
Composite High School Diploma	Honors	1,249	96.0	52	4.0	1,005	75.7	323	24.3	985	71.3	396	28.7
	Core 40	652	92.6	52	7.4	449	61.4	282	38.6	419	53.5	364	46.5
	Regular or Missing ©	1,312	87.1	195	12.9	981	67.4	474	32.6	921	55.7	733	44.3
Composite High School GPA	A	901	96.9	29	3.1	739	77.6	213	22.4	729	74.2	253	25.8
	B ©	986	92.8	77	7.2	713	66.1	365	33.9	668	57.7	489	42.3
	C or Lower	435	90.8	44	9.2	292	61.3	184	38.7	265	51.0	255	49.0
	Missing	891	85.7	149	14.3	691	68.6	317	31.4	663	57.2	496	42.8

Table 3 (cont.): Breakdown of Persistence Rates for Variables in Analyses of Persistence for Indiana 2000 High School Graduates Enrolled in 16 Independent Colleges

Variable	Category	Persistence of Fall to Spring Freshman				Persistence of Spring Freshman to Fall Sophomore				Continuous Enrollment of Fall or Spring Freshman thru Spring Sophomore			
		Persisters		Non Persisters ©		Persisters		Non Persisters ©		Persisters		Non Persisters ©	
		N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %
Composite SAT Scores	High	1,255	95.4	60	4.6	1,044	78.1	292	21.9	1,021	73.1	376	26.9
	Mid ©	884	91.1	86	8.9	642	65.2	343	34.8	619	57.7	454	42.3
	Low	490	86.9	74	13.1	303	55.3	245	44.7	265	42.5	359	57.5
	Missing	584	88.1	79	11.9	446	69.1	199	30.9	420	58.0	304	42.0
College Freshman GPA	A	937	97.0	29	3.0	799	78.0	225	22.0	795	75.4	259	24.6
	B ©	1,287	96.1	52	3.9	1,015	71.5	404	28.5	981	66.7	490	33.3
	C or Lower	989	81.9	218	18.1	621	58.0	450	42.0	549	42.5	744	57.5
	Missing	0		0		0		0		0		0	
Remedial Coursework in Freshman Year	Remedial Math Only	99	85.3	17	14.7	58	55.2	47	44.8	49	40.2	73	59.8
	Remedial Lang. Arts Only	120	87.6	17	12.4	75	59.1	52	40.9	57	39.6	87	60.4
	Remedial Math & Lang. Arts	34	91.9	3	8.1	22	64.7	12	35.3	17	45.9	20	54.1
	No Remedial Coursework ©	2,960	91.9	262	8.1	2,280	70.2	968	29.8	2,202	62.6	1,313	37.4
Enrollment Status	Full-time	3,020	92.4	250	7.6	2,338	69.9	1,008	30.1	2,164	61.3	1,367	38.7
	Part-time ©	193	79.8	49	20.2	97	57.7	71	42.3	161	56.1	126	43.9
Delayed Enrollment in Spring as Freshman	Delayed					132	43.1	174	56.9	122	39.9	184	60.1
	Not Delayed ©					2,303	71.8	905	28.2	2,203	62.7	1,309	37.3
Housing Status in Freshman Year	On-Campus	2,069	94.0	132	6.0	1,660	73.5	598	26.5	1,617	67.6	775	32.4
	Others ©	1,144	87.3	167	12.7	775	61.7	481	38.3	708	49.6	718	50.4
Dependency Status	Indeterminate Status ©	1,030	89.1	126	10.9	693	61.7	431	38.3	644	51.5	607	48.5
	Self-supporting	31	81.6	7	18.4	20	57.1	15	42.9	14	33.3	28	66.7
	Dependent ©	2,152	92.8	166	7.2	1,722	73.1	633	26.9	1,667	66.0	858	34.0
Aid Packages	Grants Only	1,200	93.4	85	6.6	978	72.1	378	27.9	945	65.4	500	34.6
	Loans Only	19	82.6	4	17.4	16	69.6	7	30.4	13	48.1	14	51.9
	Grants and Loans	968	92.7	76	7.3	701	70.7	290	29.3	672	63.0	395	37.0
	Other Packages	570	90.0	63	10.0	403	65.5	212	34.5	383	56.4	296	43.6
	None ©	456	86.5	71	13.5	337	63.7	192	36.3	312	52.0	288	48.0
Total		3,213	91.5	299	8.5	2,435	69.3	1,079	30.7	2,325	60.9	1,493	39.1

© is the reference category in regressions.

Table 4: Logistic Regression Analyses of Persistence with Multiple Outcomes, by the Indiana 2000 Cohort for Students Enrolled in 16 Independent Colleges

	Persistence of Fall to Spring Freshman		Persistence of Spring Freshman to Fall Sophomore		Continuous Enrollment of Fall or Spring Freshman thru Spring Sophomore	
	Odds Ratio	Sig.	Odds Ratio	Sig.	Odds Ratio	Sig.
Male	1.251		1.163	*	1.234	***
Native American and Other	1.027		1.578		1.216	
Asian American			1.502		1.973	*
African American	1.182		1.536	**	1.672	***
Hispanic American	2.358		0.664		0.690	
Race Missing	0.612		0.973		0.803	
Family Income Low	0.663	**	1.028		0.960	
Family Income High	0.767		0.993		0.949	
Family Income Missing	0.580	**	0.362	***	0.390	***
Parent Education HS or Less	0.685	**	1.002		0.946	
Parent Education Missing	0.330	***	1.657	***	1.286	*
Locale City	1.111		0.831		0.881	
Locale Rural	0.963		0.816	**	0.885	
Locale Missing	1.595	**	1.089		1.246	*
High School Diploma Honors	1.201		1.205		1.370	**
High School Diploma Core 40	1.034		0.983		1.084	
High School GPA A	1.083		1.245	*	1.284	**
High School GPA C or Lower	1.091		0.746	**	0.784	*
High School GPA Missing	0.588	*	0.735	*	0.777	
SAT Score High	1.612	**	1.300	**	1.289	**
SAT Score Low	0.912		0.848		0.808	*
SAT Score Missing	1.334		1.234		1.168	
Humanities	1.539		1.074		1.132	
Arts	1.498		0.962		1.079	
Science and Math	1.219		0.684	**	0.676	**
Social Science	1.078		1.056		1.073	
Health	1.423		0.775		0.810	
Business	0.857		0.935		0.832	
Education	1.385		1.034		1.124	
Computer	2.252	*	1.617		1.425	
Engineering	6.779	***	3.076	***	2.617	***
Others	1.252		1.174		1.076	

Table 4 (cont.): Logistic Regression Analyses of Persistence with Multiple Outcomes, by the Indiana 2000 Cohort for Students Enrolled in 16 Independent Colleges

	Persistence of Fall to Spring Freshman		Persistence of Spring Freshman to Fall Sophomore		Continuous Enrollment of Fall or Spring Freshman thru Spring Sophomore	
	Odds Ratio	Sig.	Odds Ratio	Sig.	Odds Ratio	Sig.
College GPA A	1.103		1.137		1.208	*
College GPA C or Lower	0.162	***	0.582	***	0.387	***
Remedial Math Only	1.016		0.696	*	0.607	**
Remedial Language Arts Only	1.828	**	1.012		0.797	
Remedial Math and Language Arts	2.557		1.346		1.148	
Full-time in First Semester	4.531	***	1.903	***	1.652	***
Delayed Enrollment			0.338	***	0.371	***
On-Campus Housing	1.317		1.317	***	1.400	***
Self-supporting	1.520		1.339		0.692	
Grants Only	0.650	**	0.709	**	0.670	***
Loans Only	0.303	*	0.681		0.391	**
Grants and Loans	0.437	***	0.457	***	0.410	***
Other Packages	0.435	***	0.430	***	0.386	***
Number of Cases	3,512		3,514		3,818	
Model χ^2	398		415		646	
Nagelkerke R ²	0.243		0.157		0.211	
% Correctly Predicted	91.8		71.8		70.2	

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

References

- Becker, W. E. (2004). Omitted variables and sample selection in studies of college-going decisions. In E. P. St. John (Ed.), *Readings on equal education: Vol. 19, Public policy and college access: Investigating the federal and state roles in equalizing postsecondary opportunity* (pp. 65–86). New York: AMS Press, Inc.
- Breneman, D. W., Finn, C E., & Nelson, S. (Eds.). (1978). *Public policy and private higher education*. Washington, DC: The Brookings Institution.
- Carnegie Commission on Higher Education. (1973). *Priorities for action: Final report*. New York: McGraw-Hill.
- Heller, D. E. (2004). NCES research on college participation: A critical analysis. In E. P. St. John (Ed.), *Readings on equal education: Vol. 19, Public policy and college access: Investigating the federal and state roles in equalizing postsecondary opportunity* (pp. 29–64). New York: AMS Press, Inc.
- Hu, S., & St. John, E. P. (2001). Student persistence in a public higher education system: Understanding racial/ethnic differences. *Journal of Higher Education*, 72(3), 265–86.
- Peng, C. Y. J., So, T. H., Stage, F. K., & St. John, E. P. (2002). The use and interpretation of logistic regression in higher education journals: 1988–1999. *Research in Higher Education* 43(3), 259–294.
- Somers, P. A. (1992). *A dynamic analysis of student matriculation decisions in an urban public university*. Unpublished doctoral dissertation. University of New Orleans.
- Somers, P. A., & St. John, E. P. (1997a). Analyzing the role of financial aid in student persistence. In J. S. Davis (Ed.), *Student aid research: A manual for financial aid*

- administrators* (pp. 127–138). Washington, DC: National Association of Financial Aid Administrators.
- Somers, P. A., & St. John, E. P. (1997b). Interpreting price response in enrollment decisions: A comparative institutional study. *Journal of Student Financial Aid*, 29(3), 15–36.
- St. John, E. P. (1991). The impact of student financial aid: A review of recent research. *Journal of Student Financial Aid*, 21(1), 18–32.
- St. John, E. P. (1999). Evaluating state grant programs: A study of the Washington state grant programs. *Research in Higher Education*, 40(2), 149–70.
- St. John, E. P. (2003). *Refinancing the college dream: Access, equal opportunity, and justice for taxpayers*. Baltimore, MD: Johns Hopkins University Press.
- St. John, E. P. (Ed.) (2004). *Readings on Equal Education: Vol. 19, Public Policy and College Access: Investigating the Federal and State Roles in Equalizing Postsecondary Opportunity*. New York: AMS Press, Inc.
- St. John, E. P., Asker, E. H., & Hu, S. (2001). College choice and student persistence behavior: The role of financial policies. In M. B. Paulsen & J. C. Smart (Eds.), *The finance of higher education: Theory, research, policy & practice* (pp. 419–436). New York: Agathon Press.
- St. John, E. P., Hu, S., Simmons, A., Carter, D. F., & Weber, J. (2004). What difference does a major make? The influence of college major field on persistence by African American and White students. *Research in Higher Education*, 45(3), 209–232.
- St. John, E. P., Hu, S., & Weber, J. (2000). Keeping public colleges affordable: A study of persistence in Indiana's public colleges and universities. *Journal of Student Financial Aid*, 30(1), 21–32.

- St. John, E. P., Hu, S., & Weber, J. (2001). State policy and the affordability of public higher education: The influence of state grants on persistence in Indiana. *Research in Higher Education, 42*(4), 401–428.
- St. John, E. P., Musoba, G. D., & Chung, C. G. (2004a). Academic access: The impact of state education policies. In E. P. St. John (Ed.), *Readings on equal education: Vol. 19, Public policy and college access: Investigating the federal and state roles in equalizing postsecondary opportunity* (pp. 131–151). New York: AMS Press, Inc.
- St. John, E. P., Musoba, G. D., & Chung, C. G. (2004b, July 21). *Academic preparation and college success: Analyses of Indiana's 2000 high school class*. [Report prepared for the Indiana Commission on Higher Education and the Lumina Foundation for Education]. Bloomington, IN: Indiana Project on Academic Success.
- St. John, E. P., & Somers, P. (1997). Assessing the impact of aid on first-time enrollment decisions. In J. S. Davis (Ed.), *Student aid research: A manual for financial aid administrators* (pp. 101–126). Washington, DC: National Association of Financial Aid Administrators.
- Zumeta, W. (2004). State higher education financing: Demand imperatives meet structural, cyclic, and political constraints. In E. P. St. John & M. D. Parsons (Eds.), *Public funding of higher education: Changing contexts and new rationales*. Baltimore: Johns Hopkins University Press.