Using Scholarship Management Research to Optimize the Impact of Scholarship Funds

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Scholarship aid continues to be crucially important in attracting and retaining students in higher education institutions (Abrahamson & Hossler, 1990; Cabrera, Nora, & Castaneda, 1992; Paulsen & St. John, 1997; Schuh, 2000; St. John, 1992; St. John et al., 1994; Terkla, 1985). Although the general concept and effect of financial assistance is complex, the impact of scholarship aid on college selection and student persistence is significant (Pascarella & Terenzini, 1991; Schuh, 2000; Somers, 1995; St. John et al., 2000; Wilcox, 1991).

Strategy in scholarship policy development and the impact of aid policy are subjects worthy of increasing attention at the individual institutional level (Schuh, 2000; Somers, 1996), and the collaborative work of institutional researchers with financial aid and admissions personnel can produce important information for guiding key institutional decisions about financial aid policy (Voorhees, 1997).

Institutional researchers can help their institutions to maximize the impact of available scholarship funds, helping both the students and the institution overall in the most effective way. An ongoing study of scholarship offers and matriculation at a public university revealed notable results, with implications for immediate adjustment of scholarship policy and practice, and helping the institution to begin to improve the management of its vitally important scholarship funds.

Scholarship management research is an increasingly important realm of study for institutional researchers, and scholarship yield analysis is an area in which the institution can achieve practical results with a reasonably clear application. The purpose of this paper is to introduce scholarship yield analysis and to provide example information and illustrations to help institutional researchers consider undertaking this type of scholarship management research at their respective institutions.

Introduction

The intended audience for this paper is experienced researchers who are seeking to help their institutions improve the management of scholarship funds. As institutions seek to obtain maximum impact and effectiveness in the usage of vitally important scholarship funds, the study of grant aid offers and matriculation is fundamental.

In seeking to learn about how to obtain maximum impact and effectiveness in the use of scholarship funds at a public university, the Office of Institutional Research studied (a) grant aid offers that were made to accepted freshman applicants and (b) the subsequent matriculation of these grant aid offerees. Specifically, the purpose of the study was to learn about how to optimize the grant aid offers that were made to freshman applicants who were accepted for admission. These offers were intended to optimize the probability of attracting the prospective student to attend the university, while avoiding an "overaward" or "underaward" of grant aid. An overaward would provide more than the necessary amount of grant aid funds to an awardee, unnecessarily using funds that could be offered to assist another student or students. An underaward would provide less than the necessary amount of grant aid funds to an awardee, contributing toward the result of the awardee not enrolling at the institution.

Design of the Study

The focus of this study was principally upon *institutional* grant aid, because this is the type of grant aid about which the institution has a decision-making role and can affect certain aspects of the allocation of scholarship funds. Although eligibility criteria for federal and state grant aid is not controlled at the institutional level, scholarship policy makers at the institution develop institutional scholarship policy that is appropriate to the scholarship philosophy of the institution and the available funds.

For example, an institution can choose to offer a specified amount of institutional grant aid to applicants who meet certain eligibility criteria, such as having a specified level of ACT or SAT score and high school grade-point average. In this example, the institutional grant amount and the eligibility criteria, in test score and high school grade-point average, are established by the scholarship policy makers of the institution. Consequently, policy makers could choose to establish large scholarship award amounts at the higher levels of entrance test scores and high school grade-point averages, placing an emphasis upon scholarship aid for academically talented students. Policy makers could, however, choose instead to establish eligibility criteria that would make grants available across a broader range of entrance test scores and high school grade-point averages. These kinds of emphases and decisions are considerations for scholarship policy makers as they seek to develop and implement policies and procedures in accordance with the institutional scholarship philosophy and prevailing funding realities.

Because there is an opportunity for institutional policy makers to affect scholarship policy and scholarship eligibility criteria, this study was focused upon institutional grant aid offers and the matriculation of grant aid offerees.

Grant aid offers typically are a function of financial need and/or academic ability. Therefore, grant aid offerees were categorized by level of need, as indicated by federal student aid application information, and academic ability, as indicated by ACT Composite score. This study was delimited to prospective freshmen who were in-state residents of traditional age, which was operationally defined as an age ofless than 25. Because of special financial assistance that was available to certain prospective students, those students, such as talented-performance applicants (e.g., athletic scholarship applicants and music scholarship applicants) and African Americans, were excluded from the initial phase of this study.

The subjects for this study were all first-time freshmen to whom institutional grant aid offers were made for Fall 2003. Institutional grant aid was defined as any gift aid (aid that does not have to be repaid) from institutionally controlled financial aid programs, excluding the talented-performance scholarships in athletics and music as well as special grant aid for African American students. Institutional grant aid offers included “automatic scholarships” related to selected levels of admission criteria (e.g., for all admission applicants with a specified high level of ACT score and high school grade-point average), as well as competitively awarded scholarships, such as the Presidential Scholarship or other institutional, named scholarships.

All institutional grant aid offers to first-time freshmen, except for the previously cited exclusions, were included in this study. Institutional grant aid amounts, offeree ACT score level, and offeree level of financial need were independent variables in this study, and matriculation status was the dependent variable. These variables were loaded into a large matrix which was analyzed in sections, to study matriculation of institutional grant aid offerees.

Although the study was focused upon scholarship yield matrices for institutional grant aid, the study included corresponding matrices for total grant aid, to provide a broader context for review and understanding of grant aid offers, matriculation, and yield analyses. This additional context helped the multidisciplinary review team members to strengthen their understanding of the complete realm of grant aid at the University.

Delimitations

The study was delimited to first-time freshman applicants who are (a) in-state residents of traditional age (less than age 25), (b) not African American, and (c) not applicants for athletic or music scholarships.

Results and Analysis

Comprehensive matrices of award offers and matriculation results were constructed by level of financial need and ACT Composite score interval, as shown in the table shells in Figures 1 and 2. Within the cells of the matrices, grant aid offers and matriculation percentages were scrutinized and reviewed for evidence of possible “overaward” and “underaward.” Interpretation of the matriculation percentages and strategies for optimizing enrollment yield were developed, reviewed, and discussed by a multidisciplinary committee consisting of personnel from the Office of Institutional Research, the Office of Student Financial Aid, the Office of Undergraduate Admissions, and the Coordinator of Undergraduate Scholarships. This committee was called the Strategic Scholarship Committee.

Decisions about what percentages stipulate what actions were discussed carefully by this multidisciplinary committee of reviewers. Yield percentages at or near 100% were considered to be indicative of greater risk of overaward. Yield percentages of less than 40% were considered to be indicative of greater risk of underaward or noncompetitive award. Review and discussion of the yield percentages was performed by the Strategic Scholarship Committee, which also used supplementary information consisting of customized rosters of institutional grant aid offerees by matrix cell and including grant offer amounts, grant name, student’s intended major program of study, and county of residence.

For matrix cells with yield percentages at or near 100% and preferably with 10 or more cases, the Committee interpretation was that the risk of overaward was sufficiently substantial to prescribe some reduction of grant aid offer for this particular matrix cell. Conversely, for matrix cells with yield percentages of less than 40% and preferably with 10 or more cases, the Committee interpretation was that the risk of underaward or noncompetitive award was sufficiently substantial to prescribe the consideration of increasing the grant aid offer for this particular cell. Figure 3 shows an example matrix cell with high risk of overaward, and Figure 4 displays an example matrix cell with high risk of underaward.

A1

High Need			
Inst. Grant Aid Offered	ACT 31-36		
	Admitted	Enrolled	% Yield
$10000-above			
9000-9999			
8000-8999			
7000-7999			
6000-6999			
5000-5999			
4000-4999			
3000-3999			
2000-2999			
1000-1999			
500-999			
001- 499			
Subtotal			
$0			
Total			

B1

Medium Need			
Inst. Grant Aid Offered	ACT 31-36		
	Admitted	Enrolled	% Yield
$10000-above			
9000-9999			
8000-8999			
7000-7999			
6000-6999			
5000-5999			
4000-4999			
3000-3999			
2000-2999			
1000-1999			
500-999			
001- 499			
Subtotal			
$0			
Total			

C1

No Need			
Inst. Grant Aid Offered	ACT 31-36		
	Admitted	Enrolled	% Yield
$10000-above			
9000-9999			
8000-8999			
7000-7999			
6000-6999			
5000-5999			
4000-4999			
3000-3999			
2000-2999			
1000-1999			
500-999			
001- 499			
Subtotal			
$0			
Total			

Fig. 1. Example shell: upper part of first column of cells, with cells A1, B1, and C1.

D1

No Fed. Aid Application: Grant Offered			
Inst. Grant Aid Offered	**ACT 31-36**		
	Admitted	Enrolled	% Yield
10000-above			
9000-9999			
8000-8999			
7000-7999			
6000-6999			
5000-5999			
4000-4999			
3000-3999			
2000-2999			
1000-1999			
500-999			
001-499			
Subtotal			
$0			
Total			

E1

No Fed. Aid Application: No Grant Offered			
Inst. Grant Aid Offered	**ACT 31-36**		
	Admitted	Enrolled	% Yield
$0			

Grant Offerees	**ACT 31-36**		
Not Grant Offerees			

Total Grant Aid Offered	**ACT 31-36**		
	Admitted	Enrolled	% Yield
10000-above			
9000-9999			
8000-8999			
7000-7999			
6000-6999			
5000-5999			
4000-4999			
3000-3999			
2000-2999			
1000-1999			
500-999			
001-499			
$0			
Total			

Fig. 2. Example shell: lower part of first column of cells: D1, E1, and two column-aggregate displays.

A1

High Need			
Inst. Grant	ACT 31-36		
Aid Offered	Admitted	Enrolled	% Yield
$10000-above			
9000-9999	1	1	100.00%
8000-8999	1	0	0.00%
7000-7999			
6000-6999	1	1	100.00%
5000-5999	2	2	100.00%
4000-4999	8	3	37.50%
3000-3999			
2000-2999			
1000-1999			
500-999			
001- 499			
Subtotal	13	7	53.85%
$0	4	1	25.00%
Total	17	8	47.06%

B3

Medium Need			
Inst. Grant	ACT 26-27		
Aid Offered	Admitted	Enrolled	% Yield
$10000-above			
9000-9999			
8000-8999			
7000-7999			
6000-6999			
5000-5999	32	32	100.00%
4000-4999			
3000-3999	124	116	93.55%
2000-2999	128	128	100.00%
1000-1999	241	241	100.00%
500-999	32	32	100.00%
001-499			
Sub total	557	549	98.56%
$0	363	151	41.60%
Total	920	700	76.09%

Fig. 3. Example of overaward.

B1

Medium Need			
Inst. Grant	ACT 31-36		
Aid Offered	Admitted	Enrolled	% Yield
$10000-above			
9000-9999			
8000-8999			
7000-7999			
6000-6999	112	38	33.93%
5000-5999			
4000-4999	928	204	21.98%
3000-3999			
2000-2999	246	44	17.89%
1000-1999			
500-999			
001-499			
Subtotal	1286	286	22.24%
$0	14	3	21.43%
Total	1300	289	22.23%

Fig. 4. Example of underaward or noncompetitive award.

Utilizing Results to Improve Scholarship Management

After the Fall 2003 Census revealed matriculation information for the entering freshman class of Fall 2003, results from grant aid offers that were made to the entering freshman class of Fall 2003 were analyzed by the Strategic Scholarship Committee. Based upon its review, analysis, and discussion, the Committee developed recommendations for adjustments to grant aid amounts for "automatic scholarships" that are available to prospective students and awarded on the basis of ACT score and high school grade-point average. The Committee also made comments about grant aid amounts for other campus scholarships. These recommendations and comments were forwarded to the scholarship policy makers of the University, some of whom serve on the Strategic Scholarship Committee. These recommendations resulted in the strategic adjustment of grant aid amounts and eligibility criteria for subsequent entering freshman classes.

Conclusions, Implications, and the Role of Institutional Researchers in Scholarship Management Research

From experiences in working with this type of research at this public university, the authors recommend that a multidisciplinary team of reviewers analyze and discuss the results of the research and interpret the results for use in developing scholarship policy and practice. The role of institutional researchers clearly is important in conducting this type of research, but the collective strength and wisdom in this type of research definitely is enhanced by the committed involvement of professionals from the Office of Student Financial Aid and the Office of Undergraduate Admissions. Although the general construct of scholarship yield analysis is relatively simple, the conducting of this kind of research requires extensive effort and commitment to high quality standards in scholarship processing and data management. Also, the complexity of this multivariate schema, the study of price sensitivity, and the "flattery factor" of scholarship offers makes this a demanding realm of research. However, cautious analysis and discussion of scholarship yield by a multidisciplinary team of reviewers can produce notable impact through recommendations for adjustment of scholarship policy.

Although conducting this type of research requires extensive effort and commitment to high quality standards in scholarship processing and data management, the rewards in improved effectiveness and

the greater return on investment of scholarship dollars are clearly beneficial to the University. Similarly, as scholarship dollars are offered more effectively to prospective students, this improved method of developing and adjusting offers yields a better match of scholarship dollars to prospective students, resulting in more students receiving assistance from the available grant aid funds.

This realm of research appears to be an emerging one for institutional researchers, as scholarship management becomes even more crucial and as information system elements and tools make the study of scholarship management more feasible. The university in this study already is benefiting from this research through improved targeting of scholarship offers to prospective students, which benefits the aggregate pool of grant aid offerees and produces greater impact for each of the precious scholarship dollars that the University has. Beyond the development and analysis of scholarship yield matrices for institutional grant aid, the University must engage in further campus dialogue, education, and collaboration among scholarship administrators, fund-raising personnel, and academic departments, so that key personnel across campus will have a similar common threshold of understanding about the management and administration of grant aid funds at the University.

Finally, the research to date at this institution has been informative and has instructed recommendations for the adjustment of scholarship policy at the University. However, this research also has illuminated areas for additional research, and the authors consider the current research to be part of a “work in progress.” For example, examination of the dimension of commuter versus non-commuter applicants is under way at the University, and the study of other dimensions in the complex fabric of student financial aid is certain to follow. Nevertheless, scholarship yield analysis, as conducted in this study, definitely will make a positive contribution toward improving the effectiveness of scholarship management in higher education institutions, and institutional researchers clearly have an important opportunity and crucial role in undertaking this growing realm of research.

Note

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(Abstract)

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Scholarship aid continues to be crucially important in attracting and retaining students in higher education institutions. Institutional researchers can help their institutions to maximize the impact of available scholarship funds, helping both the students and the institution overall in the most effective way. An ongoing study of scholarship offers and matriculation at a public university revealed notable results, with implications for immediate adjustment of scholarship policy and practice, and helping the institution to begin to improve the management of its vitally important scholarship funds. Scholarship management research and the role of institutional researchers are addressed.