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Persistence of Minnesota Undergraduates



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About the Minnesota Office of Higher Education

The Minnesota Office of Higher Education is a cabinet-level state agency providing students with financial aid programs and information to help them gain access to postsecondary education. The agency serves as the state's clearinghouse for data, research and analysis on postsecondary enrollment, financial aid, finance and trends.

The Minnesota State Grant Program, which is administered by the agency, is a need-based tuition assistance program for Minnesota students. The agency oversees tuition reciprocity programs, a student loan program, Minnesota's 529 College Savings Program, licensing and an early awareness outreach initiative for youth. Through collaboration with systems and institutions, the agency assists in the development of the state's education technology infrastructure and shared library resources.

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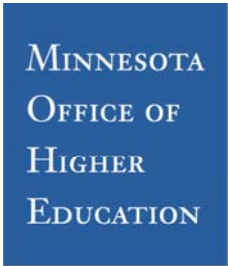
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Introduction

In May 2007, the Minnesota legislature enacted legislation that included a mandate for a study of the persistence of Minnesota State Grant recipients compared to the persistence of undergraduates who did not receive State Grants.

Sec. 10. POSTSECONDARY EDUCATION PARTICIPATION STUDY.

The Minnesota Office of Higher Education shall, by January 15, 2008, report to the house and senate committees with jurisdiction over higher education policy and finance on participation in postsecondary education by income, and persistence and graduation rates of State Grant recipients compared to students who did not receive State Grants. The Minnesota Office of Higher Education is authorized to match individual student data from the student record enrollment database with individual student data from the State Grant database on data elements necessary to perform the study.

Laws of Minnesota, 2007, Chapter 144, Article 1

In recent years taxpayers and state policy makers have expressed concern about the state's "return-on-investment" in postsecondary education. Students are also concerned about the return on their investment, particularly since they are relying more and more on loans to pay for higher education. If students do not graduate, they may leave postsecondary education with substantial student loans but receive few of the benefits of having a college degree.

Given the importance of this question for both students and society, state and federal lawmakers have focused on the issue of accountability in postsecondary education, and have been looking for ways to measure an institution's performance.

The study of these issues began with the following research questions:

- What percentage of undergraduates applied for financial aid?
- What percentage of Minnesota resident undergraduates who received a Federal Pell Grant or a State Grant in their first year persisted in postsecondary education to the second, third and fourth years of study?
- How does persistence of recipients of Federal Pell and Minnesota State Grants compare to persistence for students who did not receive a Pell Grant or a State Grant?
- How did persistence vary with the family income of the student?
- What were postsecondary graduation rates in Minnesota?

Summary of Findings

What proportion of Minnesota resident new-entering freshmen applied for financial aid using financial aid application data for 2002-03?

- Among the 53,258 first-time Minnesota undergraduates in fall 2002, 59 percent (31,449) applied for aid, and 41 percent (21,819) did not apply.
- A higher percentage of students applied for aid if they attended full-time (65 to 79 percent, depending on the type of institution attended).
- A higher percentage of students applied for aid if they were 23 years old or younger (70 percent).

What percentage of students persisted, where persistence is defined as enrolling as a new-entering Minnesota resident in fall 2002 and staying enrolled at any Minnesota institution in fall 2003, 2004 or 2005?

- The persistence rate from the first year to the second year for students who attended two-year institutions (57 percent) was substantially lower than the rate for students who attended four-year institutions (82 percent).
- The persistence rate from the first to the second year of enrollment was substantially lower for students who attended four-year institutions on a part-time basis (57 percent) than the rate for those who attended full-time (83 percent).

What are the persistence rates for students who received either a Federal Pell Grant, or a Minnesota State Grant, or both, during the 2002-03 academic year?

- The persistence rates for new undergraduates who attended four-year postsecondary institutions and who did not receive an award were slightly better than the rates for those who did. However, persistence for both groups at four-year institutions was high. Overall, 80 percent of full-time students who attended four-year institutions persisted to the fourth year (2005-2006).
- The persistence rate for students who attended two-year institutions on a full-time basis and who received an award (56 percent) was about the same as the rate for those who did not receive an award (58 percent).

What are the persistence rates of students from different family income quintiles?

- There was no substantial difference in persistence between undergraduates within each income group who received awards and those who did not receive awards. This was true for new undergraduates who attended two-year institutions and for those who attended four-year institutions.

- Persistence rates were higher for students who attended four-year institutions than for those who attended two-year institutions.
- Persistence was higher for students from higher income groups. This was true for students who attended two-year institutions and for students who attended four-year institutions.
- Students who attended four-year institutions were fairly evenly distributed across all the income groups. There were between 2,500 and 3,700 students in each income quintile.
- Students who attended two-year institutions were clustered at the lower end of the income scale, with 65 percent of the students (10,250 students) coming from families with incomes below \$50,000 - lowest two quintiles.

What are the college graduation rates?

- Among students who started at Minnesota four-year colleges and universities in fall 2000, 25.3 percent graduated from the same institution within four years; and 51.5 percent graduated within six years.¹
- Among students who started at two-year postsecondary institutions in fall 2003, 33.3 percent completed a degree, certificate or diploma in three years.

¹ The two data sets used for this persistence analysis do not include a variable indicating which students graduated. As a result, graduation rate data are from the U.S. Department of Education's Integrated Postsecondary Education Data System.

Lessons of Current Persistence Research

Current persistence research has focused on identifying student and institutional characteristics that influence student persistence. According to policy analyst and higher education researcher John Lee, of JBL Associates:

The research problem is complicated by the reality that progress toward college graduation is influenced by many factors. Key student characteristics, such as race/ethnicity, socioeconomic status, being older and/or having a family, are all predictive of persistence² and are often interrelated. Affordability is another key factor in the persistence discussion, which poses difficult research questions. The problem lies in untangling these interrelated factors that affect college persistence. Being low-income is often associated with inadequate academic preparation and attending colleges with fewer resources. Trying to decide which one of the contributing events is most important is to miss the point that they all must be addressed if we want to improve persistence and graduation rates. (Lee, 2005)

Students make choices about when and how to participate in postsecondary education. These choices affect the student's odds of persisting and obtaining a degree. The student must decide whether or not to:

- delay enrollment
- work off campus
- commute to campus, rather than live in a residence hall or close to campus
- attend a two- year rather than a four-year institution
- attend part-time rather than full-time

These decisions are based on the student's perception of risk (cost vs. chance of success), affordability, interactions with faculty and involvement in campus organizations and activities. In his *Ensuring Persistence and Degree Completion* report in 2005, John Lee argued that delaying enrollment, working off-campus, commuting to campus and attending two-year institutions lessen the odds of the student persisting and earning a degree. Furthermore, he claimed that the student's perception of affordability plays a major role in each of these key decisions.

² Hoyt 1999; Naretto 1995; Murtaugh 1999; Somers 1995; Zhu 2002

Summary of Findings from National Persistence Research

National studies have examined the issue of persistence. Two of the most pertinent studies are highlighted in this section.

Persistence and Attainment of Beginning Students with Pell Grants, National Center for Education Statistics, May 2002

The report described first-time postsecondary students who received Pell Grants, and how beginning Pell Grant recipients differed from other beginning students in their academic and enrollment characteristics. It also examined their three-year rates of persistence and attainment.

First and foremost, because Pell Grant recipients qualify for need based financial aid, they have demonstrated that they are financially needy. Financial need in itself places students at a disadvantage when compared with middle- and high-income students — especially high-income students who are more likely to succeed in postsecondary education. Income, therefore, was controlled to some extent in this study by excluding high-income students when analyzing differences between Pell Grant recipients and non-recipients with respect to their academic preparation and postsecondary outcomes.

Low- and middle-income Pell Grant recipients were more disadvantaged than their non-recipient counterparts in ways related to persistence: “they were more likely to have children, to be single parents, to be financially independent, not to have received a high school diploma, and to have delayed their postsecondary enrollment.”

Pell Grant recipients also were less likely to have SAT /ACT composite scores that were in the highest quartile or to have taken a rigorous course curriculum while in high school.

Although Pell Grant recipients who began their postsecondary studies in 1995–96 were at a comparative disadvantage in many ways and were less prepared academically than other beginning students, few differences in their rates of persistence were detected when compared to the persistence of non-recipients.

While some differences in persistence were found between Pell Grant recipients and non-recipients who attended private not-for-profit four-year institutions, few differences were found among those enrolled at public four-year institutions, public two-year institutions, or private for-profit, less-than-four-year institutions.

. . . It appears that Pell Grant recipients have a more difficult time remaining enrolled at private not-for-profit 4-year institutions and private for-profit less-than-4-year institutions if they do not also receive some loan assistance. Among beginning Pell Grant recipients enrolled at private institutions, those who did not also take on a student loan persisted at lower rates than those who did.

Persistence and Attainment of 2003-04 Beginning Postsecondary Students: After Three Years, National Center for Education Statistics, August 2007

Key findings on attainment and persistence at any postsecondary institution in the US through 2006 included:

Among the beginning students who were recent (2003) high school graduates, enrolled full time in the fall of 2003, and had bachelor's degree plans, 83 percent had not attained a degree and were still enrolled at some postsecondary institution three years later; 5 percent had attained a degree or certificate; and 12 percent had not attained any degree and were no longer enrolled in June 2006.

Among the 2003–04 beginning students who first enrolled at a public 2-year institution and then transferred to another institution, 18 percent had attained a certificate or associate's degree and were still enrolled at some postsecondary institution in June 2006; 62 percent had not yet attained any degree and were still enrolled at some postsecondary institution.

Fifty percent of the beginning independent students who first enrolled at 4-year institutions in 2003–04 had not attained any degree and were no longer enrolled; 41 percent had not attained any degree, but were still enrolled; 5 percent had attained a degree or certificate and were still enrolled; and 5 percent had attained a degree or certificate and were no longer enrolled.

Research Methodology

Data for this study were obtained from the Office of Higher Education's State Grant database and the student enrollment database. Financial aid application data were matched to student enrollment data to track the persistence and characteristics of Minnesota resident undergraduates who apply for student financial aid as well as those who do not apply.³ By creating a third limited-purpose database, the enrollment and the State Grant databases were not merged.

Data for the match started with 209,400 individual records in the student enrollment database who were Minnesota resident undergraduates in fall 2002. The 146,416 records from the Minnesota State Grant database for students who applied for financial aid in 2002-03 were added to see which students matched enrollment records. A match rate of 74 percent was obtained, resulting in 108,798 records. Of these, 53,258 were identified as new-entering Minnesota resident undergraduates. The analysis used this subset of 53,258 students.

Not all student records from both databases matched because the student enrollment database contained records for students enrolled only during the fall 2002 term; while the State Grant database contained records of students enrolled for the full academic year from July 1, 2002 through June 30, 2003. This accounted for most of the unmatched records. In addition, other unmatched records occurred due to missing or incorrect social security numbers.

Students who were enrolled in fall 2002 and identified as new-entering Minnesota resident undergraduates were followed to see if they were still enrolled at any postsecondary institution in Minnesota in fall 2003, 2004 or 2005. If the student was attending any Minnesota institution and a record for that student was in the fall enrollment data for that year, he or she was counted as having persisted.

The analysis did not examine persistence beyond the fourth year of enrollment. By statute, students are not eligible for State Grants once they have four years of postsecondary education or the equivalent.

³ The Minnesota State Grant database contains student financial aid application data on enrolled students who might be eligible for the Minnesota State Grant and who are enrolled in a State Grant eligible Minnesota postsecondary institution. Data variables from the 2002-03 Minnesota State Grant database used in this study were the family adjusted gross income of the student and whether the student received any Federal Pell Grant or Minnesota Grant. Students who received any grant were tagged in the student enrollment dataset as an "award" student. Students who applied for financial aid, but did not receive either a Federal Pell Grant or Minnesota Grant were tagged as "applying and not receiving an award" student. Students in the enrollment database where there was not a match in the State Grant database were tagged as a "no award" student. Students in the "applying and not receiving an award" group were combined with students in the "no award" group for persistence purposes.

Where student family adjusted gross income data are reported it is only available for students who were in State Grant database; that is, the "award" and "applying and not receiving an award" group.

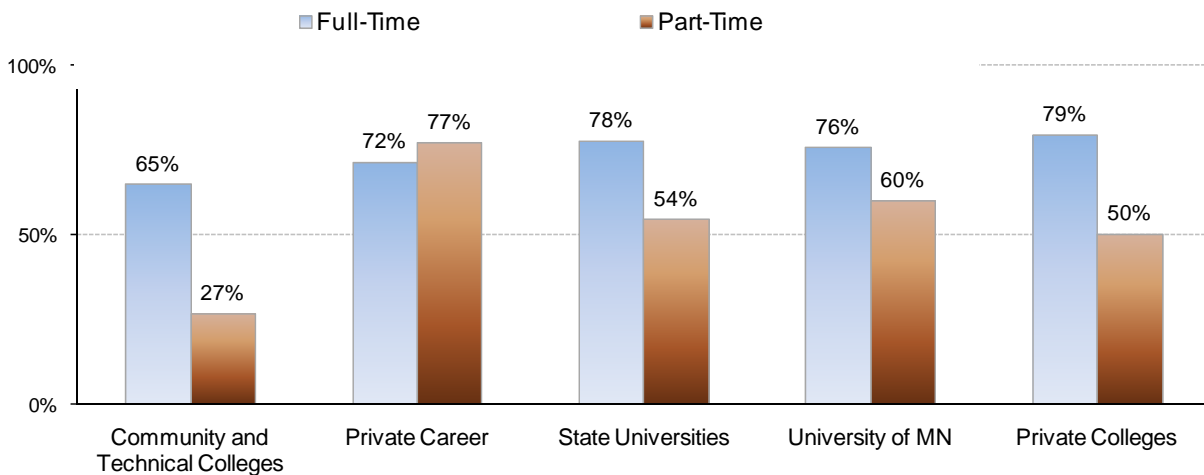
How Many Students Applied for Financial Aid?

Among the 53,258 first-time Minnesota undergraduates, 59 percent (31,449) applied for aid, and 41 percent (21,819) did not apply. Among the 31,449 first-time Minnesota undergraduates who applied for aid, 58 percent (18,300) received either Federal Pell Grants, State Grants or both.

Students were defined as having applied for financial aid if their records were in the State Grant database. The Free Application for Federal Student Aid (FAFSA) serves as the application form for federal financial aid and for the Minnesota State Grant program. Institutions participating in the Minnesota State Grant program are required to provide FAFSA information to the Minnesota Office of Higher Education for Minnesota resident undergraduates who could be eligible for State Grants.

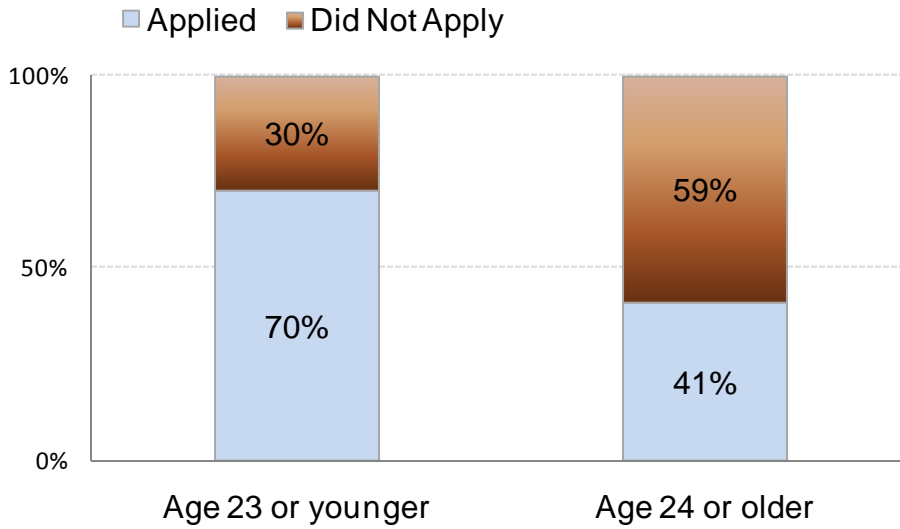
Full-time students attending all types of institutions were more likely to apply for financial aid, as shown in Figure 1. The percentage of full-time students who applied for aid ranged from 65 percent of those who attended community and technical colleges to 79 percent of those who attended four-year private colleges. The percentage of part-time students who applied for aid ranged from a low of 27 percent at community and technical colleges to a high of 77 percent at private career schools.

Figure 1. Percentage of New Undergraduates Who Applied for Aid in 2002-2003 by Full-time/Part-time Attendance Status



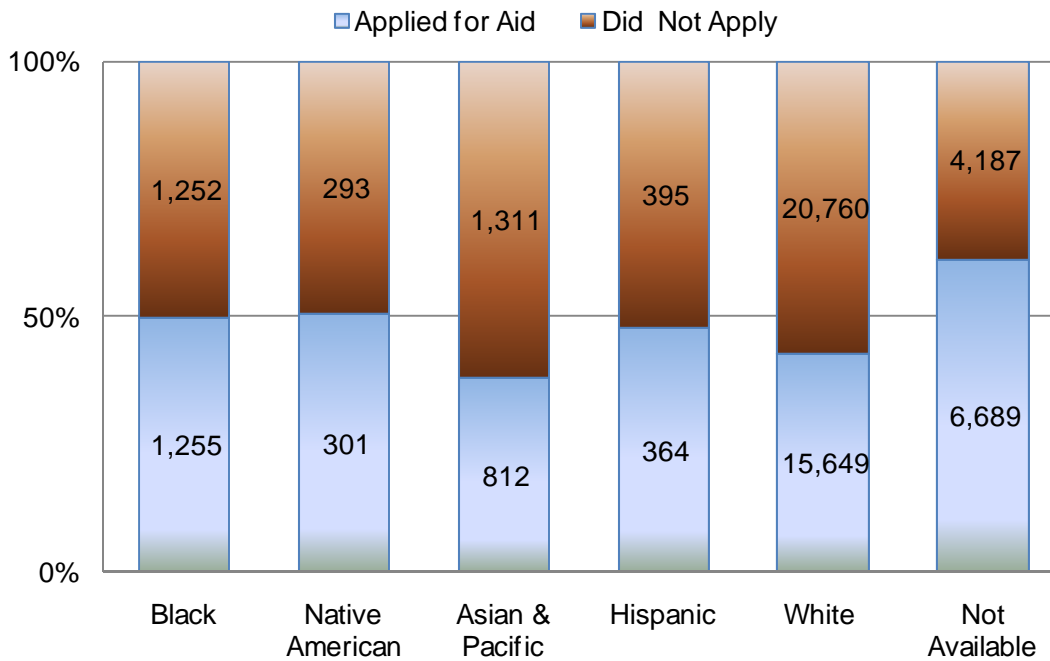
The percentage of new entering students who applied for aid also varied with age. Seventy percent of those who were 23 years old or younger applied for aid, while only 41 percent of those who were 24 years old or older applied for aid, as shown in Figure 2.

Figure 2. Percentage of New Undergraduates Who Applied for Aid in 2002-2003 by Age Group



The percentage of new undergraduates who applied for aid also varied for students from different racial/ethnic groups. Figure 3 shows the number of students from each racial/ethnic group and the percentage who applied for aid. Approximately 50 percent of white students, black students, American Indian students, and Hispanic students applied for aid. In contrast, 38 percent of Asian students applied for aid. The information on race/ethnicity came from the enrollment database, and was reported by postsecondary institutions. No race/ethnicity information was provided for 28 percent of the new-entering undergraduates in fall 2002.

Figure 3. Number of New Undergraduates Who Applied for Aid in 2002-2003 by Racial/Ethnic Group



Persistence Among Undergraduates Attending Two- and Four-year Institutions

This report discusses the percentage of Minnesota resident undergraduates who received a Federal Pell Grant or a State Grant in their first year and persisted in postsecondary education to the second, third and fourth years of study. The combination of Federal Pell and Minnesota State Grants was used because the Minnesota State Grant is designed to work in combination with the Federal Pell Grant.

The results for the four-year colleges are presented separately from the results for two-year colleges because the characteristics of students are very different. The four-year institutions, which include the University of Minnesota, the Minnesota state universities, and the not-for-profit private colleges, have similar persistence rates and have been combined in Table 1. Two-year institutions include the public community and technical colleges and private for-profit career schools.

The data on whether students attended on a part-time or full-time basis comes from the Office of Higher Education's enrollment database. Postsecondary institutions report whether each student is enrolled full-time or part-time.⁴

Table 1. Persistence of Full-time and Part-time Students by Type of Institution and Award Status

	Year	Four-year Institutions						Two-year Institutions					
		Full Time		Part Time		Total		Full Time		Part Time		Total	
		Number of students	Percent who persisted	Number of students	Percent who persisted	Number of students	Percent who persisted	Number of students	Percent who persisted	Number of students	Percent who persisted	Number of students	Percent who persisted
Award	2002-3	7,076		289		7,365		8,158		2,778		10,936	
	2003-4	5,717	81%	159	55%	5,876	80%	4,608	56%	1,595	57%	6,203	57%
	2004-5	5,563	79%	219	76%	5,782	79%	2,142	26%	1,423	51%	3,565	33%
	2005-6	5,260	74%	276	96%	5,536	75%	1,179	14%	1,133	41%	2,312	21%
No award	2002-3	11,351		620		11,971		10,859		12,137		22,996	
	2003-4	9,634	85%	355	57%	9,989	83%	6,309	58%	3,297	27%	9,606	42%
	2004-5	9,936	88%	478	77%	10,414	87%	3,347	31%	2,688	22%	6,035	26%
	2005-6	9,539	84%	600	97%	10,139	85%	1,965	18%	2,088	17%	4,053	18%
Total	2002-3	18,427		909		19,336		19,017		14,915		33,932	
	2003-4	15,351	83%	514	57%	15,865	82%	10,917	57%	4,892	33%	15,809	47%
	2004-5	15,499	84%	697	77%	16,196	84%	5,489	29%	4,111	28%	9,600	28%
	2005-6	14,799	80%	876	96%	15,675	81%	3,144	17%	3,221	22%	6,365	19%

Students who did not receive awards included those who applied for aid and did not qualify, plus students who did not apply for aid. Overall number of Minnesota residents who were new students, fall 2002 = 53,258

⁴ The definitions of the full-time and part-time data elements in the student enrollment database are:

Full-time—a student whose course load or other required activity amounts to at least 75 percent of the normal full-time load during this reporting period as defined by your institution.

Part-time—a student whose course load or other required activity amounts to less than 75 percent of the normal full-time load during this reporting period as defined by your institution.

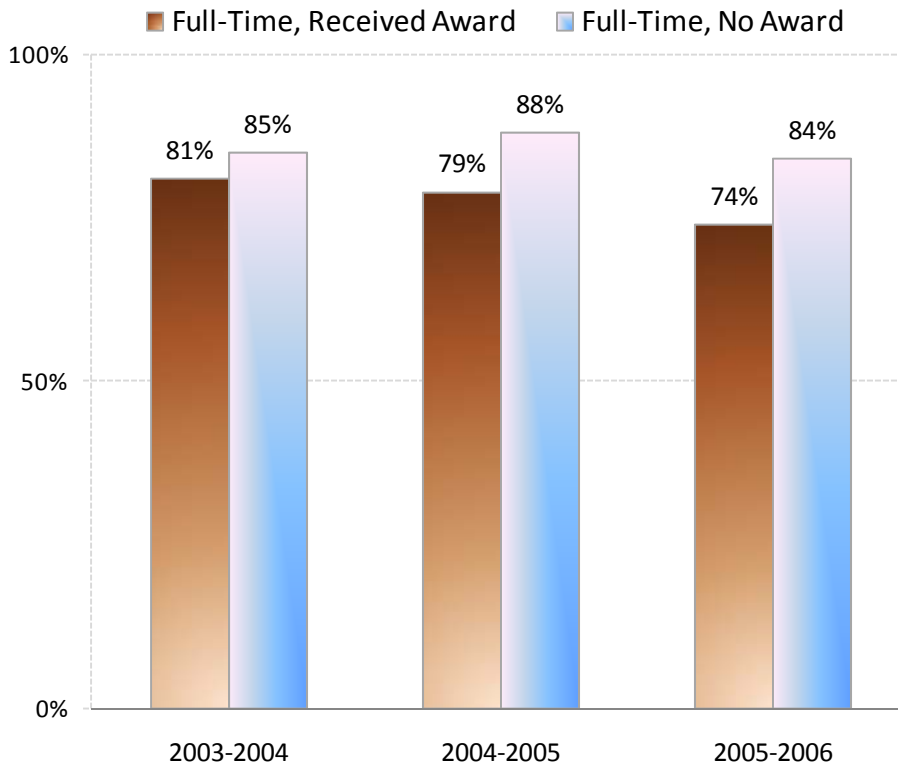
About 38 percent of new undergraduates attending four-year institutions received a Federal Pell or State Grant award or both. Similarly, 34 percent of new undergraduates attending two-year institutions received Federal Pell Grants, State Grants or both.

Students who attended four-year institutions tended to be younger and registered for full-time course loads, while students at two-year institutions tended to be older and registered for part-time course loads. These student characteristics and enrollment patterns affect persistence.

In fall 2002, approximately the same number of first-time full-time students enrolled in the four-year institutions (18,427) as enrolled in the two-year institutions (19,017). Ninety-five percent of the students who attended four-year institutions attended on a full-time basis, and 38 percent of the full-time students received awards. Less than 5 percent (909) of the first-time students attending four-year institutions were part-time, and 32 percent (289) of these part-time students received awards.

In fall 2002, 66 percent of the first-time students attending two-year institutions were full-time and 43 percent of the full-time students received awards. Forty-four percent (14,915), attended on a part-time basis and 19 percent of these part-time students received aid awards.

Figure 4. Persistence of Full-time Undergraduates Attending Four-year Institutions Who Were New Entering Students in 2002-2003



Among new undergraduates who attended two-year institutions, 44 percent attended on a part-time basis. Figure 5 shows persistence for full-time students at two-year institutions and Figure 6 shows persistence for part-time students at two-year institutions.

Figure 5. Persistence of Full-time Undergraduates Attending Two-year Institutions Who Were New Entering Students in 2002-2003

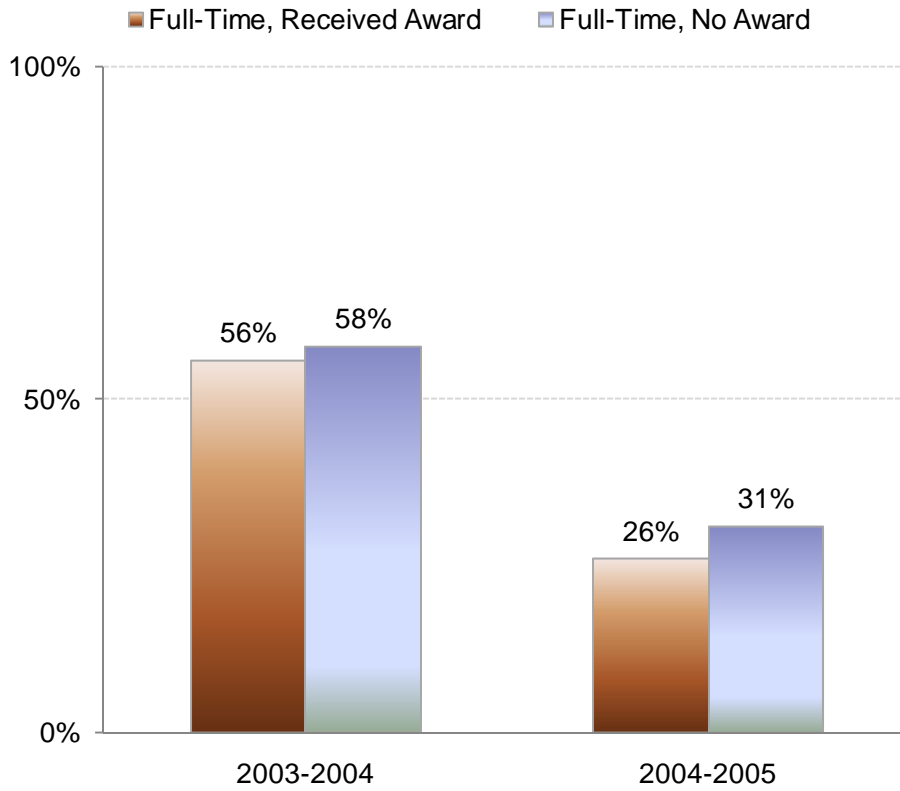
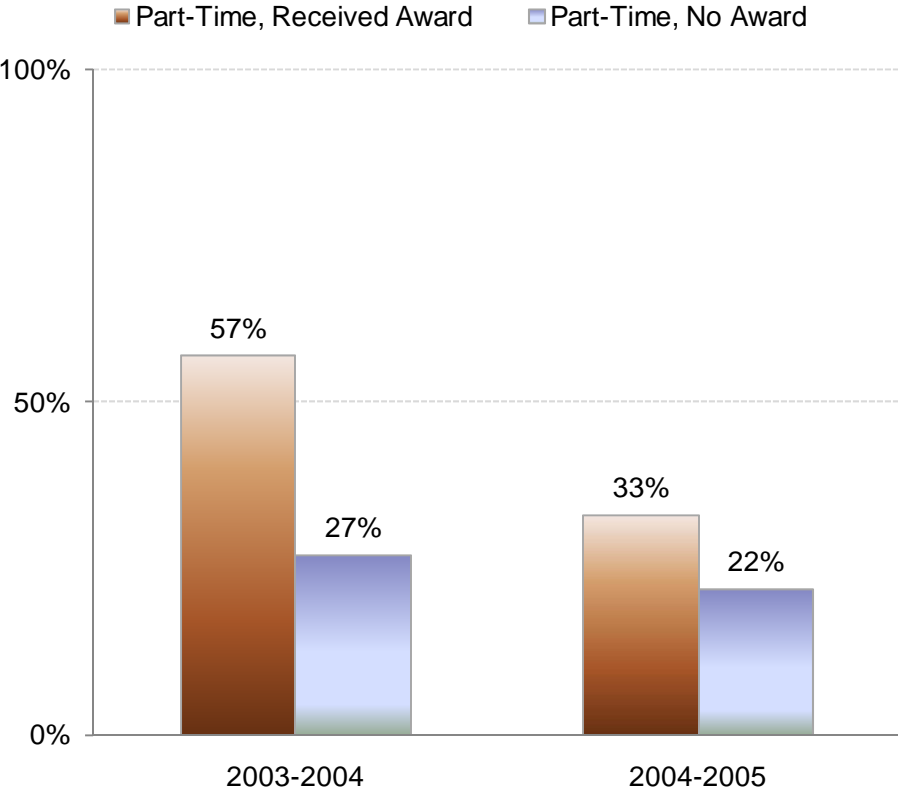


Figure 6. Persistence of Part-time Undergraduates Attending Two-year Institutions Who Were New Entering Students in 2002-2003



The persistence rates for four-year students who did not receive an award are slightly better than the persistence rates for those who did. However, persistence for both groups at four-year institutions is quite high. Overall, 80 percent of full-time students who attended four-year institutions persisted to the fourth year.

It is understandable that students who received an award had slightly lower persistence, since these awards are based on income and these students came predominantly from the 40 percent of families in the lower end of the income distribution. The National Center for Education Statistics has demonstrated that lower-income students are more likely to have characteristics associated with an increased likelihood of dropping out of postsecondary education, such as having children, being single parents, being financially independent, and having delayed enrolling in postsecondary education after high school. (NCES, 2002)

The persistence rate from the first to the second year for students who attended four-year institutions on a part-time basis is substantially lower than the rate for full-time students who attended four-year institutions. The increase in part-time student persistence from the second year to the third and fourth years probably represents an influx of transfer students and many of them attended part-time.

The persistence rates from the first year to the second year for students who attended two-year institutions were substantially lower than the rates for students who attended four-year institutions. In addition, the rate of persistence from the second year to the third year for full-time students who attended two-year institutions was much lower than the rate of persistence from year one to year two. One reason is that many students would have completed a diploma, certificate or associate degree by the end of the second year.

The persistence rate for students who attended two-year institutions on a full-time basis and who received an award is about the same as the rate for those that did not receive an award. However, for students who attended two-year institutions on a part-time basis, there is a large difference in persistence between those who received awards and those who did not. Fifty-seven percent of students who received an award persisted to the second year, while only 27 percent of those who did not receive an award persisted to the second year. Several factors may account for this, including differences in family income, educational preparation, age and family situation. Additional research (described below in the section on suggestions for further research) is needed to examine these factors and how they are related to persistence.

While students are eligible to receive Federal Pell Grants and Minnesota State Grants when they attend on a part-time basis, fewer than 2,800 of the new entering students who attended two-year institutions on a part-time basis received awards during 2002-2003. In contrast, there were more than 12,100 students who attended two-year institutions on a part-time basis and did not receive awards.

Persistence and Family Income

The following tables indicate the persistence rates for students who attended two-year and four-year institutions by income. The tables include data only for students who applied for aid. The income brackets listed were chosen to correspond to income quintiles for Minnesota households based on census data for 2002. For example, approximately one-fifth (20 percent) of Minnesota households had incomes less than \$30,000 in 2002 and one-fifth had incomes of \$100,000 or more.

Table 2. Persistence at Two-year Institutions by Income

Family Annual Adjusted Gross Income													
	Year attended	Less than \$30,000		\$30,000 to \$49,999		\$50,000 to \$69,999		\$70,000 to \$99,999		\$100,000 or more		Total	
		Number of Students	Percent who persisted	Number of Students	Percent who persisted	Number of Students	Percent who persisted	Number of Students	Percent who persisted	Number of Students	Percent who persisted	Number of Students	Percent who persisted
Award	2002-3	6,346		2,775		943		91		-		10,155	
	2003-4	3,422	54%	1,728	62%	612	65%	65	71%	-		5,827	57%
	2004-5	2,008	32%	935	34%	354	38%	36	40%	-		3,333	33%
	2005-6	1,287	20%	572	21%	250	27%	36	40%	-		2,145	21%
No award	2002-3	403		726		2,016		1,943		622		5,710	
	2003-4	217	54%	418	58%	1,288	64%	1,271	65%	428	69%	3,622	63%
	2004-5	131	33%	248	34%	725	36%	805	41%	296	48%	2,205	39%
	2005-6	83	21%	161	22%	448	22%	548	28%	206	33%	1,446	25%
Total	2002-3	6,749		3,501		2,959		2,034		622		15,865	
	2003-4	3,639	54%	2,146	61%	1,900	64%	1,336	66%	428	69%	9,449	60%
	2004-5	2,139	32%	1,183	34%	1,079	36%	841	41%	296	48%	5,538	35%
	2005-6	1,370	20%	733	21%	698	24%	584	29%	206	33%	3,591	23%

The number of students listed as receiving no award in this table included only those who applied for aid. Number of new entering Minnesota resident undergraduates who attended two-year institutions and provided income data = 15,865

Table 3. Persistence at Four-year Institutions by Income

Family Annual Adjusted Gross Income													
	Year attended	Less than \$30,000		\$30,000 to \$49,999		\$50,000 to \$69,999		\$70,000 to \$99,999		\$100,000 or more		Total	
		Number of Students	Percent who persisted	Number of Students	Percent who persisted	Number of Students	Percent who persisted	Number of Students	Percent who persisted	Number of Students	Percent who persisted	Number of Students	Percent who persisted
Award	2002-3	2,574		2,412		1,718		519		15		7,238	
	2003-4	1,974	77%	1,962	81%	1,402	82%	435	84%	19	127%	5,792	80%
	2004-5	1,930	75%	1,932	80%	1,364	79%	452	87%	16	107%	5,694	79%
	2005-6	1,859	72%	1,851	77%	1,300	76%	422	81%	15	100%	5,447	75%
No award	2002-3	91		251		1,512		3,151		2,413		7,418	
	2003-4	68	75%	199	79%	1,269	84%	2,658	84%	1,968	82%	6,162	83%
	2004-5	71	78%	209	83%	1,272	84%	2,654	84%	2,033	84%	6,239	84%
	2005-6	72	79%	213	85%	1,224	81%	2,498	79%	1,943	81%	5,950	80%
Total	2002-3	2,665		2,663		3,230		3,670		2,428		14,656	
	2003-4	2,042	77%	2,161	81%	2,671	83%	3,093	84%	1,987	82%	11,954	82%
	2004-5	2,001	75%	2,141	80%	2,636	82%	3,106	85%	2,049	84%	11,933	81%
	2005-6	1,931	72%	2,064	78%	2,524	78%	2,920	80%	1,958	81%	11,397	78%

The number of students listed as receiving no award in this table included only those who applied for aid. Number of new entering Minnesota resident undergraduates who attended four-year institutions and provided income data = 14,656

There was no substantial difference in persistence between students in each income bracket who received awards and students who did not receive awards for either two-year or four-year institutions.

Persistence rates were substantially better for students attending four-year institutions than for students attending two-year institutions, regardless of family income.

Among students attending two-year and four-year institutions, persistence was somewhat higher for students from families in each higher income bracket. In other words, the higher the family income, the more likely it appeared the student would persist.

Students who attended four-year institutions were fairly evenly distributed across all the income groups. There were between 2,500 and 3,700 students in each income quintile. In contrast, the number of students who attended two-year institutions were concentrated at the lower end of the income scale, with two thirds of all students who applied for aid (10,250 students) coming from families with incomes below \$50,000.

College Graduation Rates

Legislation assigning this study to the Office of Higher Education said the study was to include “graduation rates of State Grant recipients compared to students who did not receive State Grants.” The enrollment and state grant data sets do not have a variable indicating whether the student graduated.

The Minnesota Office of Higher Education has information on graduation rates for undergraduates from the National Center for Education Statistics Integrated Postsecondary Education Data System. However, it is not correlated with financial aid and student income data.

Graduation rates show the status of a cohort of first-time, full-year, full-time students and their status after several years of attendance. Graduation rates for students attending two-year institutions are based on their enrollment after three years. Graduation rates for students attending four-year institutions are based on their enrollment after four and six years. For students who attended four-year institutions, only students who stay at the same institution, or who graduate from that institution within six years, were counted. Students who completed a diploma, certificate or degree (associate or bachelor’s) were counted as graduates.

Graduation rates do not capture students who transfer from one institution to another (in or out) and they do not capture students who enrolled on a part-time basis when they started postsecondary education. Institutions with more part-time students will generally have lower graduation rates, because students who start as full-time students may attend on a part-time basis in subsequent terms.

In Minnesota, 25.3 percent of students who started at four-year institutions in fall 2000 graduated in four years, 51.5 percent graduated in six years.

Among Minnesota students who started at two-year institutions in fall 2003, 33.3 percent completed a degree, certificate or diploma in three years. It is important to keep in mind that public two-year institutions serve as important stepping stones to four-year institutions, and many students who start by attending two-year institutions transfer to four-year institutions without formally completing an associate degree.

For more information on graduation rates, including rates for each Minnesota institution and the variation in graduation rates by race/ethnicity, please see *Minnesota Measures, 2007*, Office of Higher Education, February 2007 and *Minnesota Measures, 2008*, forthcoming.

Suggestions for Further Research

Persistence - In this report, the analysis has focused on the income of students' families and the type of institution the students attended. Research by the National Center for Education Statistics and by John Lee has identified several characteristics associated with a higher risk that students will drop out of postsecondary education. These characteristics include:

- delayed entry - whether the student delayed enrollment in postsecondary education after high school
- registration load – whether the student registered for a full-time or part-time credit load
- hours per week of work while enrolled – whether the student worked full-time or part-time while enrolled
- financial independence - whether the student is defined as financially independent of parents
- children - whether the student has dependent children
- single parent - whether the student is a single parent
- absence of a high school diploma – whether the student graduated from high school, received a GED, or attended postsecondary education without graduating from high school

Many of these characteristics are related to each other. The National Center for Education Statistics study *Persistence and Attainment of Beginning Postsecondary Students with Pell Grants* (2002) found that Pell Grant recipients would have much lower persistence rates because they are much more likely to have one or more of the risk factors for dropping out of postsecondary education. The risk factors were strongly correlated with income, and Pell Grant recipients are likely to come from families with incomes of \$35,000 or less. Pell Grant recipients were more likely to be students who delayed enrollment after high school, attended postsecondary education part-time, and worked full-time while enrolled, so it was expected they would have lower rates of persistence. When the analysis controlled for the risk factors, there were small differences in the rates at which Pell Grant recipients and non-recipients remained enrolled.

A multivariate analysis could examine how the relationships between the variables affect persistence.

Participation by Low-Income Students - The Office of Higher Education provided a rough estimate of the proportion of low-income high school students who enrolled in postsecondary education the fall after high school graduation in the *Minnesota State Grant Review*, (September 2006). That estimate was that approximately 15 percent of high school seniors in spring 2004 who received free- or reduced-price school lunch participated in postsecondary education in fall 2004.

Income data for high school seniors is not available in detail, but some analysis is possible using the assumption that students who received free or reduced-price school lunch were low-income. Income data for postsecondary students is only available for those who applied for financial aid. In order to estimate the percentage of low-income high school graduates who go on to college,

the proportion of Minnesota high school graduates from low-income families who participated in postsecondary education was estimated using available data from the Minnesota Department of Education and the Office of Higher Education. To estimate how many of these high school students enrolled in postsecondary education the following fall, the analysis examined the number of 17 and 18 year old students who applied for financial aid and had relatively low expected family contributions, based on their income and family size. Comparing these estimates to the number of 17 and 18 year olds enrolled in postsecondary education the following academic year yielded the 15 percent estimated enrollment rate for low-income students. That analysis used a broad-based estimate of the family incomes that corresponded to family incomes of students in the free- and reduced-price lunch program. Further analysis may allow for more specific analysis of the number of recent high school graduates enrolled in postsecondary education who appear to be from families with incomes similar to the family incomes of students in the free- and reduced price lunch program.

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