

The Relationship of Pell Grants to the Retention, Persistence, and Degree Attainment Rates of the Fall 2003 through Fall 2005 Cohorts Of First-Time Full-Time Freshmen

The proportion of students receiving Pell grants is often used as a proxy for socioeconomic status in institutional level retention models. A higher proportion of Pell grant recipients indicates a higher proportion of lower income students and therefore lower expected retention and graduation rates. For example, U.S. News says it develops its "... predicted graduation rates using a regression model based on the SAT and ACT scores and high school class standing of those students who entered six years ago, per-student educational expenditure data from two of the first four years that this class was enrolled, percentage of Pell grant recipients, and whether a school is public or private."¹

Higher SAT scores, high school class standing, and per-student expenditures are positively related to graduation rates. Being a public institution or having a higher proportion of Pell grant recipients are negatively associated with graduation rates.

We tested the relationship of Pell grants to success at UMass Boston by looking at the retention, persistence, and degree attainment rates of the fall 2003, fall 2004, and fall 2005 cohorts of incoming first-time full-time freshmen. About 30% of the 2003 cohort received Pell grants a figure that rose to about 40% for the 2004 and 2005 cohorts. We eliminated the international students from each cohort because they are ineligible for Pell grants. We did simple tests of statistical significance for differences in the retention to the second year rates and then for persistence rates through the fall 2010 semester. Once each cohort began to have members graduate, we changed from reporting the simple return rate to reporting the percentage of students who had returned or graduated by a given fall semester. Finally, we tested for graduation rates alone without considering continuing students.

For every retention and persistence measure, the Pell grants recipients in each cohort performed better than the non-Pell grant recipients at a statistically significant level. Not only were the differences statistically significant, they were large and meaningful. For example, 85% of the Pell grant recipients in the fall 2003 cohort returned for the second year compared to only 65% of the non-Pell grant recipients, and 53% have graduated from UMass Boston compared to 35% of the non-Pell recipients in that cohort.

However, at UMass Boston, receiving a Pell grant is associated with more than socioeconomic status. In the 2003 cohort, Pell grant recipients had significantly higher high school GPAs (3.03 v. 2.94) and lower Verbal SAT scores (432 v. 498). Asians were the group most likely to have Pell grants (61%), and White non-Hispanics were the least likely (15%). A higher proportion of DSP students received the grants than the non-DSP students (47% v. 21%).

¹ Retrieved from: <http://www.usnews.com/education/blogs/college-rankings-blog/2007/08/28/on-pell-grants-and-performance> December 21, 2010, KBM

Graduation rates were somewhat different. There was no significant difference in the four-year graduation rate by Pell grant status for any cohort, but the five and six-year graduation rates were significantly higher for Pell grant recipients in the 2003 and 2004 cohorts. The difference in the five-year graduation rate for the 2005 cohort approached statistical significance ($P < .08$). Details of the persistence and graduation rates for the three cohorts are presented in the following table.

**Retention, Persistence, and Graduation Rates by Pell Grant Status
Fall 20003 to Fall 2005 Cohorts**

Fall 2003	Pell	No Pell	Difference	Significance
Ret. Fall 2004	85%	65%	20%	***
Ret. Fall 2005	74%	52%	22%	***
Ret. Fall 2006	66%	44%	21%	***
Grad. or Ret. Fall 2007	62%	41%	21%	***
Grad. or Ret. Fall 2008	56%	40%	16%	***
Grad. or Ret. Fall 2009	56%	40%	15%	***
Grad. or Ret. Fall 2010	57%	40%	18%	***
Graduated by Fall 2007	10%	10%	0%	None
Graduated by Fall 2008	36%	28%	8%	*
Graduated by Fall 2009	48%	33%	15%	***
Graduated by Fall 2010	53%	35%	18%	***
Fall 2004	Pell	No Pell	Difference	Significance
Ret. Fall 2005	79%	66%	13%	**
Ret. Fall 2006	69%	56%	13%	**
Grad. or Ret. Fall 2007	67%	53%	15%	**
Grad. or Ret. Fall 2008	62%	47%	15%	***
Grad. or Ret. Fall 2009	61%	40%	20%	***
Grad. or Ret. Fall 2010	56%	45%	11%	*
Graduated by Fall 2008	11%	12%	-1%	None
Graduated by Fall 2009	39%	30%	9%	*
Graduated by Fall 2010	53%	35%	18%	*
Fall 2005	Pell	No Pell	Difference	Significance
Ret. Fall 2006	75%	67%	8%	**
Ret. Fall 2007	67%	54%	12%	***
Grad. or Ret. Fall 2008	63%	51%	12%	**
Grad. or Ret. Fall 2009	58%	46%	12%	**
Grad. or Ret. Fall 2010	58%	42%	16%	***
Graduated by Fall 2009	12%	15%	-2%	None
Graduated by Fall 2010	34%	28%	6%	None
Significance - * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$				