
Variables Related to Undergraduate Students Preference for Distance Education Classes

Manuel C. F. Pontes
Rowan University
pontes@rowan.edu

Cindi Hasit
Rowan University
hasit@rowan.edu

Nancy M. H. Pontes
Rowan University
pontesn@rowan.edu

Phillip A. Lewis
Rowan University
lewisph@rowan.edu

Karen T. Siefring
Rowan University
siefring@rowan.edu

Abstract

The purpose of this research is to identify student-specific characteristics that are related to students' preference for distance education courses. Since distance education courses provide students with more convenient and flexible class schedules, they should be preferred by students who have a greater number of competing demands, such as work and family, on their time. Not surprisingly, previous research has shown that such competing demands are also risk factors for undergraduate degree non-completion. Therefore a major purpose of this research is to examine whether students with risk factors for non-completion of their undergraduate degree prefer distance education courses. Another purpose of this research is to examine whether students with a disability that limits their mobility, and thus experience greater barriers to access their face-to-face class rooms, prefer distance education classes. For this research, the data are from the National Postsecondary Student Aid Survey (NPSAS) conducted in 2003-04. The NPSAS uses a complex survey design to collect data from a nationally representative sample of about 80,000 postsecondary undergraduate students in the US. Results confirm that students with increasing number of risk factors for non-completion of their degree show a significantly greater preference for distance education courses. Results also show that students with limited mobility also prefer distance education classes. Taken together, these results suggest that distance education classes are likely to increase enrollment and degree completion rates both for non-traditional undergraduates, who have more risk factors for degree non-completion than traditional undergraduates, and for students with physical disabilities that limit their mobility.

Introduction

Several research studies have examined whether students prefer face-to-face or distance education classes. In order to quantitatively combine the results from these studies, researchers conducted meta-analyses by extraction of an effect size from each study and estimation of a mean effect size across studies weighted by study sample size as described in the literature (Smith & Glass, 1977). Both the meta-analyses showed that students preferred face-to-face classes to distance education classes (Allen et al., 2002; Bernard et al., 2004). Also, both meta-analyses showed significant heterogeneity across studies; although the majority of studies showed that students preferred face-to-face classes, some studies showed that students preferred distance education classes (Allen et al., 2002; Bernard et al., 2004). This significant heterogeneity indicates that students' preference for distance education may be contingent on the characteristics of the students that were sampled in the particular studies (Allen et al., 2002; Bernard et al., 2004). The purpose of this research is to identify student variables that are related to their preference for distance education courses.

Student Preferences for Distance Education

A necessary condition for distance education is the spatial separation of information source and learners (Lou, Bernard, & Abrami, 2006; Parsad & Lewis, 2008). There are two distinctly different approaches to distance education, 1) Synchronous, and 2) Asynchronous distance education; for the latter, information source and learners are also separated in time (Lou et al., 2006; Parsad & Lewis, 2008). For students, a major advantage of distance learning classes is increased place utility; information is distributed and thus learning takes place at a more convenient location for the student. Consequently, students who have greater difficulty commuting to the face-to face class location are likely to prefer distance education.

Asynchronous distance education also offers students time utility, students can take classes at times that are convenient to them and are thus freed from having to adjust their non-academic activities in order to enroll in classes at the times that they are offered. Thus students who have external constraints, (such as full-time employment and/or family) that restrict the times when they can enroll in classes are likely to prefer distance education, especially asynchronous distance education. Indeed, previous research shows that students who worked more hours and experience greater conflict between class time and work commitments were more likely to be enrolled in an online section of a statistics course than in a face-to-face section of the same course (Dutton & Dutton, 2005). Conversely, full-time students, for whom their postsecondary education is their principal activity, are likely to be more willing or able to adjust their schedule to the times when classes are offered and are likely to be more able or willing to relocate so that they are closer to the class location. Thus, they are likely to have a relatively greater preference for face-to-face (lecture) classes.

Lecture classes, on the other hand, allow in-person face-to-face interactions with students and instructors. Research shows that students enrolled in lecture classes prefer face-to-face contact with other students and the instructor and feel that they learn better when they have face-to-face contact with their fellow students (Dutton & Dutton, 2005). In summary, students preferences for distance education versus lecture classes is influenced by their relative preference for the increased time and place utility of distance education classes versus their preference for face-to-face interpersonal interactions with other students and faculty that are possible in face-to-face classes. In the next few paragraphs, demographic and other variables that may be related to students' preference for distance education are discussed.

Risk Factors for Degree Non-Completion

There has been much interest in identifying students who are at risk for non-completion of their undergraduate degree and in identifying ways to increase degree completion rates (Horn, Premo, & Malizio, 1995). Often, students who fail to complete their undergraduate degree have families to support; they often work full time while they are enrolled and are more likely to commute long distances either to their school or their jobs (Bean & Metzner, 1985). Seven risk factors have been identified that are linked to undergraduate student attrition. These are 1) delayed enrollment (first enrollment in postsecondary education not in the same year as graduation from high school), 2) part-time enrollment, 3) financial independence (either student is ≥ 24 years of age or is married or has children), 4) presence of dependents

other than spouse (children or elders), 5) full-time employment, 6) single parent, and 7) not a high school graduate (Horn et al., 1995). Previous research has shown that these risk-factors are strongly interrelated and students typically have multiple risk factors (Horn et al., 1995). Thus students who delay post-secondary education are more likely to be independent, to work full-time, and to have children (Horn et al., 1995). A major purpose of this study is to examine whether these 7 variables that are associated with greater dropout risk are also associated with greater preference for distance education.

Students' Family Status

Research has shown that students who have children are at greater risk for dropout (Horn et al., 1995). Compared to dependent students, (students who are less than 24 years of age and unmarried with no children), independent students, and in particular those who have families (partner and/or children) are likely to have additional responsibilities, and constraints upon their time (Horn et al., 1995; Pontes, 2003). These time constraints are likely to increase the students' preference for distance education which enables them to attend class from the convenience of their home and, with asynchronous distance education, at a time of their choice. Students with children may have childcare responsibilities that conflict with the times when face-to-face classes are scheduled. Also students with a family often experience time famine and are likely to have less time to develop friendships and socially interact with other students in their face-to-face classes (Pontes, 2003). Students with children also prefer to live in proximity to their family, friends, or other persons in their social network who can assist with childcare (Pontes, 2003). Furthermore students with a family are less likely to wish to relocate from their residence and thus disrupt their family's social ties in order to be near their face-to-face classes. Finally, students with a partner are likely to prefer distance education as it enables them to choose their educational institution without regard to its proximity to their partner's job or school. In summary, students with families (spouse/partner or children) are likely to prefer distance education classes. Although having a spouse/partner has not been shown to increase dropout risk, it may plausibly increase preference for distance education.

Physical Disabilities that Limit Mobility

One of the principal advantages of distance education courses is that students need not travel to the class location. Internet-based distance education course enable students to take the class from their residence. Consequently students with physical disabilities that restrict their mobility are likely to prefer distance education courses to face-to-face courses. Therefore this research also investigates whether students with limited mobility prefer distance education courses.

Methods

Data Source and Subjects

Data from the 2004 National Postsecondary Student Aid Study (NPSAS:04): Undergraduate Data Analysis System (DAS) were used for this research (Cominole et al., 2006). The NPSAS:04 Undergraduate DAS contains data on a sample of about 80,000 postsecondary undergraduates who were enrolled in about 1,400 postsecondary institutions in the US at any time between July 1, 2003 and June 30, 2004. The sample is representative of all postsecondary undergraduate students, enrolled in postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico, who were eligible to participate in the federal financial aid programs in Title IV of the Higher Education Act.

Variables

Three dependent variables were used to assess students' preference for distance education. Two of these preference variables are enrollment variables: 1) whether the respondent was enrolled in at least one distance education class that year, and 2) whether the respondent was enrolled in a distance education program (all program classes offered through distance education). The third preference variable was an attitudinal variable: 3) whether the student was more satisfied with distance education classes or face-to-face classes (this question was only asked of students who were enrolled in at least one distance

education class in 2003-04). For the attitudinal variable, respondents indicated one of three responses: a) more satisfied with distance education, b) no difference in satisfaction between the two formats, or c) less satisfied with distance education. A distance education satisfaction index was defined as 100 times the number of students who were more satisfied, divided by the sum of the number of students who were either more satisfied or less satisfied, with distant education. The distance education dissatisfaction index was defined as 100%-distance education satisfaction index.

The independent variables investigated in this study were for the most part variables that have been shown to increase dropout risk (Horn et al., 1995). One of the categorical variables investigated was student's family/dependent status. The five categories were 1) dependent student, 2) unmarried/separated independent student with no dependents, 3) married student with no dependents, 4) unmarried/separated student with dependents, and 5) married student with dependents. (Note that an unmarried student may have strong social ties to a partner that are the equivalent of ties between married persons but there is no variable in the dataset that indicates whether an unmarried student has a partner). Other categorical variables investigated were student gender (male, female), attendance intensity in 2003-04 (exclusively full-time, mixed full- and part-time, and exclusively part-time), high school certificate (high-school degree or certificate or home school, no high-school degree or certificate). In addition other variables examined include student age, delayed post-secondary enrollment (0 years, 1-5 years, 6 or more years), number of hours worked per week (excluding work-study or assistantship), whether the student had limited mobility (Yes, No) and overall index of risk for student dropout (the dropout index of risk is the cumulative number of dropout risk factors for each students and ranged from 0 to 6 in the sample). Previous research showed that women and older students were more likely to enroll in an online section rather than a face-to-face section of a statistics course (Dutton & Dutton, 2005); therefore gender and age were included in the analyses.

Statistical Analyses

The estimates reported in this paper were produced using the NPSAS:04 Data Analysis System (DAS) (National Center for Education Statistics, 2009a). The DAS is a software application that enables users to specify and generate tables and to estimate covariance analyses from National Center for Education Statistics (NCES) data sets. Standard errors, confidence intervals, and t-statistics are estimated by Balanced Repeated Replication (BRR) (Rao & Shao, 1999). For univariate analyses of categorical variables and continuous variables grouped into mutually exclusive categories, the statistical significance of two-group differences were estimated by t-statistics (National Center for Education Statistics, 2009b).

Multivariate analyses were performed by three logistic regressions, one for each of the three dependent variables used to assess preference for distance education: 1) enrolled in one or more distance education classes (Yes/No), 2) enrolled in a distance education program (Yes/No), and 3) satisfaction with distance education classes (More satisfied/Less satisfied). For the multivariate regression, the predictor variables used were student gender (Male, Female), hours of work per week (continuous variable), marital status (Married, Unmarried), presence of dependents (Yes, No), presence of a disability that limited the student's mobility (Yes, No), and index of risk for dropout (0, 1, 2 or more). Since there was considerable inter-correlation among the various dropout risk factors, the overall index of risk was used for multivariate analyses along with marital status and presence of dependents. The other individual risk factors were not included in the multivariate model. Age was excluded from the regression models, since age was highly correlated with marital status, presence of dependents, and index of risk. More information about the use of the DAS with data from NPSAS:04, is available elsewhere (Cominole et al., 2006; National Center for Education Statistics, 2009a).

Results

UNIVARIATE ANALYSES

All students

Estimates indicate that 15.5% of all postsecondary undergraduate students in the US were enrolled in at least one distance education class in 2003-04 (Table 1). Also, 5.1% of all students in the US were

enrolled in a distance education program (all classes in program offered through distance education) in 2003-04 (Table 1). Of the students who were enrolled in at least one distance education class, the distance education satisfaction index (46.1%), was significantly less than the dissatisfaction index, (53.9%), $p < 0.01$ (Table 1). This result shows that in general, students were significantly less satisfied with the distance education format.

Index of risk for degree non-completion

Results clearly showed that students with higher index of risk had a significantly greater preference for distance education classes. The percentage of students who enrolled in at least one distance education class was significantly less for students with dropout index of risk=0 (9.8%) than for students with index of risk=1 (13.7%) or index of risk=2 (16.9%) or index of risk=3 (19.9%) or index of risk ≥ 4 (21.9%) (Table 1). Also, the percentage of students who were enrolled in a distance education program was significantly less for students with index of risk=0 (2.6%) than for students with index of risk=1 (3.9%) or index of risk=2 (5.5%) or index of risk=3 (7.6%) or index of risk ≥ 4 (7.9%). For students with dropout index of risk ≥ 4 , the distance education satisfaction index (53.6%) was significantly greater than the distance education dissatisfaction index (46.4%), $p < 0.01$ (Table 1). Finally, the distance education satisfaction index is significantly smaller for students with index of risk=0 (37.5%) than for students with index of risk=2 (45.2%) or index of risk=3 (49.5%) or index of risk ≥ 4 (53.6%) (Table 1).

Hours worked per week

Results indicate that the number of hours worked per week was positively related to preference for distance education classes. The percentage of students who signed up for at least one distance education class was significantly less for students who worked 0-10 hours per week (11.8%) than for students who worked 11-20 hours per week (13.9%) or who worked 21-30 hours per week (15.2%) or who worked 31-40 hours per week (19.7%) or who worked 41 or more hours per week (21.8%). Enrollment in a distance education program was significantly less for students who worked 0-10 hours per week (3.5%) than for students who worked 11-20 hours per week (3.9%) or who worked 21-30 hours per week (4.4%) or who worked 21-40 hours per week (7.0%) or who worked 41 or more hours per week (9.5%). For students who worked 41 or more hours per week, the distance education satisfaction index (59.4%) was significantly greater than the distance education dissatisfaction index (40.6%), $p < 0.01$ (Table 1). Finally, the distance education satisfaction index is significantly smaller for students who work 0-10 hours per week (42.7%) than for students who work 31-40 hours per week (50.3%) or who work 41 or more hours per week (59.4%) (Table 1).

Marital/Family Status

Our results show that independent students, particularly those who were married and had children, showed a significantly greater preference for distance education classes than dependent students. The percentage of students who enrolled in at least one distance education class was significantly less for dependent students (11.1%) than for independent single students with no dependents (15.6%) or for married students with no dependents (19.6%) or for single students with dependents (20.5%) or for married students with dependents (25.1%) (Table 2). Enrollment in a distance education program was significantly less for dependent students (3.0%) than for independent single students with no dependents (5.2%) or for married students with no dependents (7.4%) or for single students with dependents (7.1%) or for married students with dependents (9.6%). For single students with dependents, the distance education satisfaction index (53.6%) was significantly greater than the distance education dissatisfaction index (46.4%), $p < 0.01$ (Table 2). Finally, the distance education satisfaction index is significantly smaller for dependent students (39.7%) than for independent single students with no dependents (45.5%), or for single students with dependents (53.6%) or for married students with dependents (51.9%) (Table 2). It should be noted that single students with dependents have greater dropout risk than married students with dependents (Horn et al., 1995). The results of this research indicate, however, that single students with dependents are significantly less likely than married students with dependents to enroll in distance education classes (20.5% versus married=25.1%, $p < 0.01$), and in distance education programs (single=7.1% versus married=9.6%, $p < 0.01$).

Gender

Results show that the percentage of students who enrolled in at least one distance education class was significantly less for men (13.6%) than for women (17.0%) (Table 2). Enrollment in a distance education program was also significantly less for men (4.5%) than for women (5.5%). The distance education satisfaction index for men (44.6%) was not significantly different from that for women (47.1%) (Table 2).

Attendance Intensity

Results show that the percentage of students who enrolled in at least one distance education class was significantly less for students who enrolled exclusively full-time (12.7%) than for students who enrolled mixed full- and part-time (17.3%), or for students who enrolled exclusively part-time (18.7%) (Table 2). Enrollment in a distance education program was significantly less for students who enrolled exclusively full-time (3.9%) than for students who enrolled mixed full- and part-time (4.7%), or for students who enrolled exclusively part-time (7.0%). The distance education satisfaction index for students who enrolled exclusively full-time (43.2%) was significantly less than that for students who enrolled exclusively part-time (51.5%) (Table 2).

High-School Degree or Certificate

Results show that the percentage of students who enrolled in at least one distance education class was significantly greater for students without a high school degree or certificate (17.8%) than for students with a high school degree or certificate (15.3%). Enrollment in a distance education program was significantly greater for students without a high school degree or certificate (6.3%) than for students with a high school degree or certificate (5.0%). The distance education satisfaction index for students with a high school degree or certificate (45.7%) was not significantly different from that for students without a high school degree or certificate (50.7%) (Table 2).

Delayed Post-Secondary Enrollment

Results show that the percentage of students who enrolled in at least one distance education class was significantly less for students who did not delay post-secondary enrollment (enrolled immediately after high school graduation) (13.9%) than for those who delayed post-secondary enrollment by 1-5 years (18.3%) or for those who delayed post-secondary enrollment by 6 or more years (20.1%) (Table 3). Enrollment in a distance education program was significantly less for students who did not delay post-secondary enrollment (4.4%) than for those who delayed post-secondary education by 1-5 years (6.7%) or for those who delayed post-secondary enrollment by 6 or more years (7.5%). The distance education satisfaction index for students who did not delay post-secondary enrollment (43.5%) was significantly less than that for students who delayed post-secondary enrollment by 6 or more years (52.5%) (Table 3).

Student Age

Results show that the percentage of students who enrolled in at least one distance education class was significantly less for undergraduate students between 15-23 years of age (11.7%) than for those students between 24-30 years (18.6%), or for those students between 31-40 years (23.4%) or for those students who were 41 or more years of age (21.6%) (Table 3). Enrollment in a distance education program was significantly less for undergraduate students between 15-23 years of age (3.2%) than for those students between 24-30 years (6.6%), or for those students between 31-40 years (8.5%) or for those students who were 41 or more years of age (8.5%). The distance education satisfaction index for students between 31-40 years of age (53.9%) was significantly greater than the distance education dissatisfaction index (46.1%), $p < 0.01$. The distance education satisfaction index was significantly less for students 15-23 years (40.3%) than for students 24-30 years (48.7%) or for students 31-40 years (53.9%) or for students who were 41 years or older (49.9%) (Table 3).

Disability that limits mobility

Results show that the percentage of students who enrolled in at least one distance education class was significantly greater for students who had a disability that limited their mobility (20.7%) than for those who did not have such a disability (15.3%) (Table 3). Enrollment in a distance education program was significantly greater for students who had limited mobility (6.7%) than for students who did not have limited mobility (5.0%). The distance education satisfaction index for students who had limited mobility (54.4%) was significantly greater than that for students who did not have limited mobility (45.6%) (Table 3).

Students enrolled in a distance education program

Students enrolled in a distance education program accounted for about a third (32.9%) of all students who took at least one distance education class in 2003-04. For students enrolled in a distance education program, the distance education satisfaction index (62.8%) was significantly greater than the distance education dissatisfaction index (37.2%), $p < 0.01$ (Table 3). Of all students who took a distance education class, those who were enrolled in a distance education program had a significantly higher index of distance education satisfaction (62.6%) than those students who were not enrolled in a distance education program (37.5%), $p < 0.01$ (Table 3).

MULTIVARIATE ANALYSES

Effects on distance education enrollment: at least one class

Results showed that hours worked per week (OR=1.01, $t=13.74$), dependents living in household (OR=1.33, $t=7.47$), and disability that limits mobility (OR=1.27, $t=3.93$), had a significant positive association with enrollment in a distance education class (Table 4). Students with dropout index of risk=1 (OR=1.33, $t=6.04$), or dropout index of risk ≥ 2 (OR=1.46, $t=8.85$) were also more likely to enroll in a distance education class than students with dropout index of risk=0. Married students (OR=1.34, $t=7.77$), and women (OR=1.23, $t=6.11$) were more likely to enroll in a distance education class than unmarried students, and men, respectively.

Effects on distance education enrollment: entire program

Results showed that hours worked per week (OR=1.02, $t=9.86$), and dependents living in household (OR=1.33, $t=5.17$), had a significant positive association with enrollment in a distance education program (Table 4). Students with dropout index of risk=1 (OR=1.32, $t=3.75$), or dropout index of risk ≥ 2 (OR=1.63, $t=6.44$), were more likely to enroll in a distance education program than students with dropout index of risk=0. Married students (OR=1.47, $t=6.32$), and women (OR=1.17, $t=3.13$) were more likely to enroll in a distance education program than unmarried students and men, respectively.

Effects on satisfaction with distance education classes

Results showed that hours worked per week (OR=1.01, $t=4.89$), dependents living in household (OR=1.26, $t=2.61$), and disability that limits mobility (OR=1.34, $t=2.41$), were significantly related to increased satisfaction with distance education courses (Table 4). Students with dropout index of risk ≥ 2 were more satisfied with distance education courses than students with dropout index of risk=0 (OR=1.33, $t=3.04$). Married students (OR=0.95, $t=-0.62$), and women (OR=1.08, $t=0.96$) were not more satisfied with distance education than unmarried students or men, respectively.

Conclusion

The results of this research, obtained with a large nationally representative US sample, show that a significant majority of post-secondary undergraduate students were less satisfied with distance education classes (Table 1). Thus the results of this research confirm the results of two recent meta-analyses that indicate that students had a significantly lesser preference for distance education than for face-to-face classes (Allen et al., 2002; Bernard et al., 2004). Both of these meta-analytic studies, however, showed significant heterogeneity in effect sizes across studies which indicates that there are moderator variables

that influence the effects of education format on student satisfaction (Allen et al., 2002; Bernard et al., 2004).

The results of this study identify some important student characteristics that moderate (influence) the effects of education format on satisfaction ratings and suggest how the composition of a convenience sample of distance education students could influence whether the students in the sample are either more satisfied or less satisfied with distance education. Thus, if a convenience sample of distance education students consists of students who are enrolled in a distance education program then the results of our study suggest that the students are likely to be more satisfied with distance education classes than with face-to-face classes (Table 3). Conversely, if a convenience sample of distance education students consists of students who are not enrolled in a distance education program then the results of this study suggest that the students are likely to be less satisfied with distance education classes than with face-to-face classes (Table 3).

The results of this study also have implications for student evaluations of faculty that are commonly used for tenure and promotion decisions. The student evaluations of the faculty in distance education courses are likely to be influenced by the characteristics of the students in their classes. Faculty who teach distance education classes in which the majority of students prefer face to face classes are likely to receive less favorable evaluations than faculty who teach distance education classes in which the majority of students prefer the distance education format. Comparisons of student evaluations of faculty who teach distance education classes should ideally be adjusted for students' preference for distance education format

The results of this study clearly show that post-secondary students with higher index of dropout risk are more likely to prefer distance education (more likely to enroll in distance education classes and programs, and likely to be more satisfied with distance education). As shown in Table 1, the percentage of students with 4-6 dropout risk factors who enrolled in one or more distance education classes in 2003-04 (21.9%) is more than twice the percentage of students with zero dropout risk factors who enrolled in distance education classes in 2003-04 (9.8%). Also, results showed a monotonic increase in distance education enrollment and satisfaction with increasing risk index (Table 1). An examination of distance education enrollment was also performed for each of the individual risk factors (Tables 1 -3). Results showed that for each of the risk factors, persons with the risk factor were significantly more likely to enroll in distance education classes than persons without the risk factor (Tables 1-3). Multivariate analyses with logistic regression also confirmed that students with a higher index of risk were more likely to enroll in distance education courses or programs and were more satisfied with distance education courses (Table 4). The increased preference for distance education observed in students who are at greater dropout risk suggests that distance education classes may be important to increase the retention of high-risk post secondary students (Barefoot, 2004). Also distance education programs may expand the market for higher education by attracting more non-traditional students who are unsure whether their work and family obligations will allow them to enroll in face-to-face classes at the fixed times and locations when they are offered.

Although most of the variables that predict dropout risk are related to increased distance education enrollment, there are some variables such as gender and marital status that are not risk factors for dropout (Horn et al., 1995) but nevertheless are significantly related to distance education enrollment (Tables 2 and 4). Our results show that enrollment in distance education classes or in distance education programs is significantly greater for women than for men and significantly greater for married students than for unmarried independent students (Tables 2 and 4). Previous research shows that single students with dependents are at greater risk for dropout than married students with dependents (Horn et al., 1995). The results of this study, however, show that single students with dependents are significantly less likely to enroll in distance education classes or programs than married students with dependents (Table 2).

Previous research has shown that online classes generally have much higher dropout rates (Frankola, 2001; Oblender, 2002; Patterson & McFadden, 2009). The results of this study suggest that one reason why online courses have higher dropout rates is that they enroll a greater proportion of students who are at greater risk for dropout. For those online courses that predominantly enroll dependent students with low dropout risk, the results of this study suggest that these classes may have higher dropout rates than

face-to-face classes because the majority of students enrolled in the online class students are likely to prefer face-to-face classes. Future research should compare the dropout rates of distance education classes versus face-to-face classes by stratifying on dropout index of risk. It is plausible that for high risk students, their dropout rates from distance education classes may not be higher, and may even be lower, than their dropout rates from face-to-face lecture classes.

Finally, both univariate and multivariate analyses show that distance education is preferred by students who have a disability that limits their mobility. Higher education institutions are required to provide access to students with disabilities (Milani, 1996). The offer of distance education classes and programs should make higher education more accessible to persons with disabilities and possibly increase enrollment and graduation rates for such students.

Table 1: Distance Education: Enrollment and Satisfaction Relative to Face-to-Face Classes

	Group	Distance Education Enrollment - % (SE)		Distance Education Satisfaction Index - % (SE)
		At least one course	Entire program	
All students	All	15.5 (0.29)	5.1 (0.17)	46.1 (0.83)
Index of Risk for Non- Completion of Degree	Zero (Ref)	9.8 (0.25)	2.6 (0.14)	37.5 (1.53)
		13.7 (0.48)**	3.9 (0.25)**	41.5 (1.74)
	One	16.9 (0.52)**	5.5 (0.35)**	45.2 (2.13)*
	Two	19.9 (0.66)**	7.6 (0.38)**	49.5 (2.31)**
	Three	21.9 (0.60)**	7.9 (0.42)**	53.6 (1.44) ††**
	Four - Six			
Hours Worked Per Week	0 – 10	11.8 (0.29)	3.5 (0.16)	42.7 (1.26)
	(Ref)	13.9 (0.40)**	3.9 (0.25)**	40.7 (2.27)
	11 – 20	15.2 (0.51)**	4.4 (0.31)**	38.9 (1.90)
	21 - 30	19.7 (0.60)**	7.0 (0.42)**	50.3 (1.48)**
	31 – 40	21.8 (0.71)**	9.5 (0.50)**	59.4 (2.26) ††**
	41 or more			

%=percentage of all students in group, SE=standard error of estimate, Entire program=all classes in program offered via distance education, Distance education satisfaction > Distance education dissatisfaction: †=p<0.05, ††=p<0.01, Two-group contrast with Ref (reference group): *=p<0.05, **=p<0.01.

Table 2: Distance Education: Enrollment and Satisfaction Relative to Face-to-Face Classes

	Group	Distance Education Enrollment - % (SE)		Distance Education
		At least one course	Entire program	Satisfaction Index - % (SE)
Dependent students Independent students	Dependent students (Ref)	11.1 (0.24)	3.0 (0.14)	39.7 (1.18)
	Independent students	15.6 (0.50)**	5.2 (0.33)**	45.4 (2.13)*
	Single – no dependents	19.6 (0.78)**	7.4 (0.50)**	45.5 (3.28)
	Married – no dependents	20.5 (0.69)**	7.1 (0.49)**	53.6 (1.84) ††**
	Married – dependents	25.1 (0.79)**	9.6 (0.49)**	51.9 (1.94) **
Gender	Men (Ref)	13.6 (0.31)	4.5 (0.18)	44.6 (1.32)
	Women	17.0 (0.40)**	5.5 (0.23)**	47.1 (1.20)
Attendance Intensity	Exclusively full-time (Ref)	12.7 (0.32)	3.9 (0.20)	43.2 (1.15)
	Mixed full- and part-time	17.3 (0.46)**	4.7 (0.22)**	40.4 (1.60)
	Exclusively part-time	18.7 (0.53)**	7.0 (0.30)**	51.5 (1.74)**
High School Degree/Certificate	Yes	15.3 (0.30)	5.0 (0.18)	45.7 (0.80)
	No	17.8 (0.71)**	6.3 (0.49)*	50.7 (2.66)

Dependent=dependent students, Independent=Independent students, %=percentage of students in group, SE=standard error.

Table 3: Distance Education: Enrollment and Satisfaction Relative to Face-to-Face Classes

		Distance Education Enrollment - % (SE)		Distance Education
		At least one course	Entire program	Satisfaction Index - % (SE)
Delayed Post-Secondary Enrollment	0 years (Ref)	13.9 (0.30)	4.4 (0.16)	43.5 (1.05)
	1-5 years	18.3 (0.62)**	6.7 (0.38)**	46.8 (1.88)
	6 or more years	20.1 (0.74)**	7.5 (0.46)**	52.5 (2.09)**
Student Age	15 – 23 years (Ref)	11.7 (0.26)	3.2 (0.14)	40.3 (1.11)
	24 – 30 years	18.6 (0.48)**	6.6 (0.35)**	48.7 (1.91)**
	31 – 40 years	23.4 (0.73)**	8.5 (0.48)**	53.9 (1.80) ††**
	41 or more years	21.6 (0.76)**	8.5 (0.50)**	49.9 (2.18) **
Disability that limits physical activities	No (Ref)	15.3 (0.29)	5.0 (0.17)	45.6 (0.83)
	Yes	20.7 (0.98)**	6.7 (0.71)*	54.4 (3.02) †**
Enrolled in distance education program	No (Ref)	11.0 (0.29)	0	37.5 (1.02)
	Yes	100	100	62.8 (1.16) ††**

%=percentage of students in group, SE=standard error.

Table 4: Multivariate Effects (Logistic Regression) on Distance Education (DE) Enrollment and Satisfaction

Variables		Enrollment in DE Course		Enrollment in DE Program		Satisfaction with DE Course	
		OR (95% CI)	t	OR (95% CI)	t	OR (95% CI)	t
Hours worked per week		1.01 (1.01 – 1.01)	13.74	1.02 (1.01 – 1.02)	9.86	1.01 (1.01 – 1.01)	4.89
Dependents:	Yes	1.33 (1.23 – 1.43)	7.47	1.33 (1.19 – 1.48)	5.17	1.26 (1.06 – 1.50)	2.61
	No R						
Index of Risk:	One	1.33 (1.21 – 1.46)	6.04	1.32 (1.14 – 1.54)	3.75	1.13 (0.92 – 1.40)	1.19
	Two	1.46 (1.34 – 1.59)	8.85	1.63 (1.40 – 1.90)	6.44	1.33 (1.10 – 1.60)	3.04
	Zero R						
Disability that limits mobility	Yes	1.27 (1.12 – 1.43)	3.93	1.16 (0.94 – 1.43)	1.38	1.34 (1.05 – 1.71)	2.41
	No R						
Marital Status:	Married	1.34 (1.24 – 1.45)	7.77	1.47 (1.30 – 1.66)	6.32	0.95 (0.79 – 1.13)	- 0.62
	Unmarried R						
Gender:	Female	1.23 (1.15 – 1.31)	6.11	1.17 (1.06 – 1.29)	3.13	1.08 (0.92 – 1.27)	0.96
	Male R						

DE=distance education, OR=odds ratio, 95% CI=95% confidence interval, t=t-statistic, R=reference category (for categorical variables), Dependents=student has dependents

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