Student Learning Outcomes and Academic Advising for Business Students with Undeclared a Major

Jingyo Suh
Tuskegee University, Alabama

ABSTRACT

This study evaluates student learning outcomes of business students between decided and undecided students and analyzes factors contributing to the differences. Using the Major Field Test in Business as the measure of learning outcomes, the study finds no difference in learning outcomes for students based on the choice to matriculate as declared or undeclared. Declared and undeclared students are equally likely to obtain learning outcomes at the time of graduation.

This finding is against the general practice in today's academic advising on undecided students. It is perceived that enrolling in college without declaring a major is a waste of time and money. However, this study suggests that once a student entered college as an undeclared major, allow the student to consider the benefits of saving declaration for later. Taking some time exploring a variety of majors is a valuable investment for the future career. Becoming knowledgeable about choosing a major is better than hurry choosing and changing later.

Key words: undeclared a major, learning outcomes, major field test, academic achievement, academic advising

INTRODUCTION

An academic major is an academic discipline to which an undergraduate student formally commits. A student who successfully completes all courses required for the major qualifies for an undergraduate degree. However, there is a growing number of students who enter college undecided about their major. According to the Department of Education in 2010 (NCES, 2010), there are nearly 1,500 different academic programs in college and universities in the U.S., and 355 were new majors which were added for 10 years. It is estimated that there were over 1,800 college majors in 2020 (MyMajors, 2020). Major higher education institutions offer 100 - 300 majors per university. The existence of numerous study fields and the fear of judgment and commitment that a wrong choice may jeopardize one's career makes decision on a major difficult.

The term "undecided" labels the negative image to students, parents, and faculty. Research affirms that the academic major is the strongest and clearest curricular link to gains in student learning (Guthrie, 2006). Undeclared major often describes students who are not ready, unable, or immature to make educational and career decisions (Hagstrom, Skovholt, & Rivers, 1997). Some colleges start to use a different expression "exploratory program, open-major, or undeclared major" to encourage students to discover a career path (Van Wie, 2011). The negative image of undecided students stems from the institutional observation. For more than two decades, U.S. higher education institutions have been devoted to increasing retention rates due to budget cuts, competition for recruiting students, and the public image of the institution (Levitz, Noel, & Richter, 1999). Studies examined the outcomes of undecided students and classified them as an "at-risk" group in that undecided students recorded lower levels of academic achievement. Colleges and universities have vested interests in students declaring majors early in order to increase retention rates. Numerous reports show that retention rates for declared students are better, and they are more likely to graduate in four years (DesJardins, Kim, & Rzonca, 2003; Leppel, 2001).

This study examines prevailing negative perceptions about undecided students, specifically on learning outcomes. Though it is important to policymakers and administrators in higher education, we do not consider the financial aspects of undecided students. Assessing student learning outcomes in higher education is limited and difficult to develop due to variation in curriculum and contents covered by majors. Graduate school admission exams such as GRE, GMAT, MCAT, or LSAT can be a measure of achievement in a general or particular field of study for limited subjects. However, administering an additional exam requires costs and time and is even unnecessary to students who do not seek graduate schools. Educational Testing Service (ETS) developed a Major Field Test as a means of assessing students' mastery of their field of study. Major Field Test in Business (MFT-B) was developed in 1990 and has been adopted in more than 1,500 institutions in the U.S.A. according to the AACSB accreditation agency.

This study uses the MFT-B as learning outcomes of business students and analyzes differences between decided and undecided students. Little research was found in which directly compared student learning outcomes between declared and undeclared students.

MEASUREMENT OF STUDENT LEARNING OUTCOMES

Research indicates that undecided students are at-risk of dropping out of college because they have low aspirations or lack of educational commitment and occupational goals (Noel, Levitz, & Saluri, 1985). This finding suggests an early choice of major to increase retention and graduation rates. Delen (2011) indicates that higher education institutions pay attention to enhance retention rates to affect university rankings, school reputation, and financial well-being. In similar reasoning, Brown (2009) identified two reasons that higher education institutions focus on student retention and persistence: institutional performance and financial implications. Retention rates of incoming freshmen are commonly used as a representative measure of student achievement and progress of the institution. Even though there is little agreement on the relationship between major decision and degree attainment, many administrators and faculty believe that undecided students are less likely to complete a degree than their decided classmates (e.g., Lucas & Epperson, 1990). As an intervention, colleges encourage undecided students to declare a major early through implicit or explicit regulation. Financial implications are for the benefit of the institution instead of students.

When considering student learning outcomes, academic administrators and researchers usually use retention rates, rate of good academic standing (C or better), or cumulative grade point average (GPA) as a proxy for learning outcomes since direct measurement of learning outcomes is limited. However, those variables are not the correct learning outcomes of individual students. Concerning the retention rates, researchers pointed out that retention is an institutional outcome, instead of individual student outcomes (Green, 2002; Hagedorn, 2003; Metz, 2004). The same reasoning is applied to the rate of good academic standing. Furthermore, students transfer to another institution due to personal, familial, and financial reasons which are other than educational aspects. As many accreditation agencies indicated, GPA is not a good measure of student learning outcomes due to significant variations among instructors who teach the same course and the subjective nature of assessment in course grading. Due to the non-standardized nature of GPA, comparison of one subgroup (college or major) to another subgroup is problematic (Herman & Nelson, 2009). Anaya (1999) pointed out that unless the differences in GPA reflect differential learning for students, the generalization of GPA is limited. It is generally accepted that GPA does not provide a basis for comparing learning outcomes either between or within institutions.

Student learning outcomes for high school students are assessed by standardized tests such as regents exam, Scholastic Aptitude Test (SAT), or American College Testing (ACT). Since the implementation of the No Child Left Behind (NCLB) legislation in 2001, accountability of K-12 schools became a main concern of educators and policy makers. Under NCLB, states, schools, and districts set the same basis of evaluation for all students. However, American higher education institutions were not diligent in developing accountability tools for institutions except retention and graduation rates. Some argue that students from different educational and familial backgrounds tend to value different types of information and apply them differently and thus, comparison between or within institution is difficult task. This is true since colleges and universities serve different group of students and each institution's mission is unique. Nonetheless, there is skepticism that college graduates do not have the knowledge and skills expected in the worksite. Falling job placement rates among college graduates can be interpreted as evidence that the importance of college education has been reduced. Accountability calls for quality enhancement in student learning outcomes. Selecting the right

indicator is critical for a truthful and accurate assessment of college and university's performance.

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Educational Testing Service (ETS) developed the test and conducts the analysis for institutions. ETS sends MFT reports to the institutions so that they can be used for comparing one program to a chosen reference group from among the thousands of programs assessing their students with MFT. These can be used for internal and external benchmarking. This study shows that the correlation coefficient between college overall GPA and MFT-B was only 0.383, which indicates that the validity of GPA as a measure of student learning outcomes was not justified. Furthermore, the average GPA was highly correlated with majors, which indicates that some programs overly inflated GPA in order to save struggling programs. GPA is also flawed due to significant variations among instructors who teach the same course and the subjective nature of assessment in course grading. Due to the non-standardized nature of GPA, comparison of one subgroup (college or major) to another subgroup is problematic (Herman & Nelson, 2009). Anaya (1999) pointed out that unless the differences in GPA reflect differential learning for students, the generalization of GPA is limited. It is generally accepted that GPA does not provide a basis for comparing learning outcomes either between or within institutions.

WHO MATRICULATES AS DECLARED OR UNDECLARED?

The sample in this study is from 390 business students who graduated from a small private institution during the period between May 20011 and May 2017. The university is located in the rural south region. The college of business program is accredited by AACSB International and offers seven business undergraduate degrees. Students with undecided in a major are placed in the College of Arts and Sciences until they declare a major.

Table 1 (appendix) shows descriptive values regarding average ACT score, age, and gender between decided and undecided students. More than 70% of incoming students declared majors while there were 116 (29.7%) undecided students about the major. Compared with

decided students undecided students have a lower score in ACT, higher average age, and a higher portion of male students which are in line with previous research (Maxwell, 1997).

In order to predict the likelihood of declaring a major at the beginning of freshmen, we employ the logistic regression analysis. The variables used in the analysis include gender, ACT/SAT combined score, and age. ACT verbal and math scores and high school GPA were considered, but turned out to be insignificant to predict declaring a major. Table 2 (appendix) shows the results of the logistic regression model. In line with the existing literature, ACT scores are the most significant variable that distinguished decided students from undecided students ($p<.01$). Students who recorded high test scores go to college knowing exactly what they want to do during their college years.

Gender was also a significant variable in deciding a major ($p<.01$) early. Some researchers report that there were significant gender differences in selecting majors (Malgwia, Howea, & Burnabya, 2005). For women, aptitude in the major was an influential factor while men were focusing on the job opportunities and the level of compensation. Our sample students show that women are a lot more decided in choosing a major than men. Though its influence was weak, age was one of the factors that distinguished whether students are decided or undecided about a major ($p<.1$). This model, as a whole, predicted student's decision about majors with 74.6 percent accuracy for incoming freshmen.

LEARNING OUTCOMES BETWEEN DECLARED AND UNDECLARED

Colleges and universities throughout the USA are often considered the graduation rates as success of institutional performance. Degree completion rates are commonly a factor in determining financial support in some states (Center for American Progress, 2012). Having a college degree is the key to find a good well-paid job and to achieve a successful life. However, when we consider the recent hiring process after the COVID-19 pandemic hit, having a college degree is not enough to find a job. The unemployment rate for young adults between 15- to 24-year-olds was 12.5 percent in December 2020, more than four percent higher than the 8.4 percent from December 2019 (Federal Reserve Bank of St. Louis, 2020). The employment figure for current and future college graduates is even doomed due to the loss of internships (Glassdoor, 2021). Now, it is time that we turn our focus to students learning outcomes from the graduation rates or retention rates to measure institutional performance or student success. Table 3 (appendix) shows the correlation coefficient between the student learning outcome, MFT-B score, and predictor variables.

As can be found, the college overall GPA does not show the highest correlation with MFT-B ($r=0.383$). High school achievement, ACT Score, is better predictor of MFT-B than overall GPA. Comparing to MFT-B, GPA has higher correlation with Gender, AGE (negatively), Major, and Undecided major (negatively), while showing weaker correlation with ACT. we may conclude that MFT-B is a better measure for assessing student learning outcomes than GPA.

In order to test the effect of student learning outcomes of business students, we performed the standardized ordinary least squares (OLS) analysis to get the best possible estimates. Table 4 (appendix) shows the OLS regression results.

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In order to test the effect of student learning outcomes of business students, we performed the standardized ordinary least squares (OLS) analysis to get the best possible estimates. Table 4 shows the OLS regression results. Overall, the model explained approximately 28% of the variation in MFT-B scores (R2 =0.283). Consistent with the existing studies, overall GPA and ACT are significant at the $p<0.01$. Regarding GPA, a 0.1 increase in GPA is expected to increase the MFT-B score by 0.64 points. ACT score, an indicator of pre-college academic performance, shows approximately a 1-to-1 influence on MFT-B score. A 1-point increase in ACT score is to increase a 0.92 point in MFT score. The effect of gender and age on the MFT-B, however, is not justified at the $p<0.05$ in the sample. One unique finding in this study is the role of major. Major is categorized as 1 if the major is quantitative in nature including accounting, finance, and economics and 0 other business majors. The positive and large coefficient on major indicates that being in an accounting, economics, or finance (AEF) major would be associated with better performance on the MFT-B. The OLS regression predicts that being in AEF major results in 3.7 points higher on the MFT-B than other majors. Actually, simple comparison of the MFT-B scores indicates that AEF students record 6.4 points higher than students in other business majors.

Concerning declared versus undeclared a major at the time of college admission, the influence of declaring or undeclaring is not significant on the MFT-B score. Although matriculating as declared versus undeclared was not significant, the sign and magnitude of the undeclared a major shows the opposite influence on the learning outcomes of business students. Undeclared students tend to achieve approximately a 1-point higher on the MFT-B score than declared students when the influence from pre-college performance and college GPA is controlled.

DISCUSSION

The findings of this research may be against the general practice in today's academic advising on undecided students. On the surface, enrolling in college without declaring a major appears to a waste of time and money. However, taking some time exploring a variety of majors is a valuable investment for the future career. Becoming knowledgeable about choosing a major is better than hurry choosing and changing later. Colleges and universities offer a variety of disciplines before undecided students make their decision on a major. As long as student learning outcomes are not different, taking some time and careful decision on choosing a major is a good way of career choice.

Previous research suggested that institutions should decrease the likelihood of attrition from college by having students declare a major and declare early to improve degree completion rates (Onink, 2010; Simon, 2012). This study, however, finds no difference in students learning outcomes for business students based on the choice to matriculate as undeclared or declared. Undeclared and declared students are equally likely to complete their undergraduate degrees on-time and achieve the targeted learning outcomes. Most schools offer academic advising services, mentoring, and other resources designed to take the pressure out of declaring a major early. Many also put on informational workshops or fairs that explore different majors and drill down to what students ultimately want to gain from their studies. Once a student entered college as an undeclared major, let him/her consider the benefits of saving declaration for later.

The early research on undecided college students was characterized as immature and unable to make academic and career decisions. This view on undecided students needs to be changed. From the sample data presented here, we conclude that academic backgrounds and gender are strong indicators in relation to declaring an academic major for entering freshmen. However, once in college, declaring or undeclaring a major is not important in deciding a major. In fact, whether a student is decided or undecided about a major may not be as important as how the student decides one. Mindful decisions after exploring many different fields and careful inspection about one's abilities and interests might be better than premature choices.

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Appendix

Table 1
Comparison of decided and undecided students

	decided	undecided

Gender (% of female students)	0.439	0.353
ACT Score (set decided majors at 100)	100	90.7
Age	22.5	23.1
N	274	116

Table 2
Logistic Regression of Declaring a Major

	β	p	Exp(B)
Gender	.629	.009	.533
ACT Score	.217	.000	.805
Age	-0.163	.091	1.177
Constant	.413	.863	.662

Note: N=390. Dependent variable = 1 if decided and 0 if undecided in major.

Table 3
Correlation coefficient of variables

	MFT_Score	*Overall_GPA*	*Gender*	*Age*	*Major*	*ACT Score*	*Undecided*
MFT_Score	1.000						
Overall_GPA	0.383	1.000					
Gender	0.061	0.281	1.000				
Age	-0.054	-0.391	-0.206	1.000			
Major	0.328	0.362	0.095	-0.078	1.000		
ACT Score	0.410	0.320	0.032	-0.115	0.169	1.000	
Undecided	-0.116	-0.271	-0.158	0.143	-0.113	-0.275	1.000

Table 4
Standardized OLS Regression Results on MFT-B

Variable	Coefficient	St. Error	t-statistic	p-value
Intercept*	n/a	9.869	8.421	0.000
Overall_GPA	6.360	1.293	4.917	0.000
Gender	-0.267	0.811	-0.330	0.742
Age	0.657	0.344	1.911	0.057
Major	3.732	0.907	4.113	0.000
ACT Score	0.915	0.136	6.746	0.000
Undecided	0.952	0.897	1.062	0.289

Note: N=390. R^2 =0.283. Dependent variable is MFT Score. * The intercept term is not shown to avoid disclosing institution-specific information.