Does the Choice of Introductory Corporate Finance Textbook Affect Student Performance?

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I examine whether the choice of a more readable introductory corporate finance textbook can improve student performance. The ordinary least squares regression model is employed to analyze a sample of 260 students during the period from 2009 to 2011. In contrast to my expectation, I find that the choice of a more readable introductory corporate finance textbook does not improve student performance regardless of course delivery modes. I also find that student's major, educational experience and course delivery method are significant determinants of student performance.

INTRODUCTION

Instructors in Introductory Corporate Finance usually receive students' comments associated with the choice of textbook in teaching evaluations. Students complain that the writing in the textbook is not clear and therefore, they cannot grasp concepts effectively and perform well on required assignments. Students' complaints about the choice of textbook may be valid because if instructors adopt a more readable textbook, students might be able to obtain better grades in the course. Therefore, this paper intends to examine whether the choice of a more readable introductory corporate finance textbook can affect student performance positively.

Researchers in finance education have examined the importance of textbooks in students' learning experience in introductory corporate finance. Berry et al. (2011) explore how and to what extent students use the finance textbook and how it relates to their study process when preparing for class and exams. They assess if the finance textbook is the main vehicle for the students' learning plan and to what extent they rely on their textbook. They find that students know it is important to read, know the professor expects them to read, and know it will impact their grade, yet most students still do not read the textbook. Though many factors can lead students not to read the textbook, one of the endogenous variables that instructors can control is the readability of the textbook.

Readability analysis of textbooks has been conducted in various business disciplines (e.g., business communication in Razek and Cone (1981), organizational behavior in Villere and Stearns (1976), introductory economics in Gallagher and Thompson (1981), and introductory corporate finance in Plucinski and Seyedian (2011)). Plucinski and Seyedian (2011) use the Flesch-Kincaid Grade Level to examine the readability of five popular introductory corporate finance textbooks in the market. They find that "Fundamentals of Corporate Finance" 9th Edition by Ross, Westerfield, and Jordan is most readable of all textbooks in the study. Given this finding, the natural question that needs to be answered is whether the choice of a more readable introductory corporate finance textbook can improve student learning experience, thereby helping students to achieve better grades.

To my knowledge, this study appears to be a unique contribution. I could not find a research study that attempts to empirically test the effects of different introductory corporate finance textbooks on student performance. Nevertheless, the relationship between textbook readability and student performance has been examined in other areas. Spinks and Wells (1993) compare the readability levels of textbooks used in various business core courses with grades made by students in those courses and find that relationships between textbook readability levels, grades earned by students, and withdrawals of students from courses are significant. Pyne (2007) examines whether students who used different introductory microeconomics textbooks performed differently when they took Intermediate Microeconomics and Money and Banking, and finds that the choice of an introductory microeconomics textbook has a significant effect on student performance in Money and Banking. Durwin and Sherman (2008) investigate whether the choice of college textbook for Educational Psychology affects students' comprehension of the materials. They find that the two educational psychology textbooks with different authors and publication dates, but comparable readabilities attribute no significant difference in student comprehension.

This study attempts to examine whether the difference in readability of the two popular textbooks for Introductory Corporate Finance leads to a statistical difference in student performance. The following sections describe the data and research method, report the results, and provide concluding remarks.

DATA AND RESEARCH METHOD

This study was conducted at a four-year state university in the Appalachian region. The College of Business and Public Affairs, accredited by the AACSB International (Association to Advance Collegiate Schools of Business), has three departments: the Department of Accounting, Economics, and Finance, the Department of Information Systems, and the Department of Management and Marketing. The introductory corporate finance class is a required core course for all business majors. Before taking Introductory Corporate Finance, Students are required to complete the prerequisite courses in Principles of Managerial Accounting, Introduction to Economics, and College Algebra.

Two hundred and eighty-four students in eleven sections of introductory corporate finance classes from 2009 to 2011 are the subjects in this empirical study. Twenty-four students who did not show complete effort by not participating in the required assignments after the mid-term are removed from the sample. Since the students in the sample are taught by only one instructor, this study avoids the confounding effects of different instructors and different teaching methods.

Two different introductory corporate finance textbooks were used in the study. The textbook, "Foundations of Financial Management" 13th Edition by Block and Hirt (BH), was used in six sections (2 face-to-face and 4 online) from the 2009 spring semester to the 2010 spring semester; the textbook, "Fundamentals of Corporate Finance" 9th Edition by Ross, Westerfield, and Jordan (RWJ), was used in five sections (3 face-to-face and 2 online) from the 2010 fall semester to the 2011 fall semester. The introductory corporate finance class covers such topics as financial statements and analysis, time value of money, bond and stock valuations, capital budgeting, cost of capital, working capital management, and international financial management.

The variables used in this study are primarily associated with student effort, student characteristics, and course characteristics. Student effort is measured by the student's course grade, which is based on homework assignments (25%), quizzes (20%), and exams (55%). Student characteristics such as gender, in-state/out-of-state status, and major were collected through the faculty advising system at the university. These variables have been examined in studies such as Didia and Hasnat (1998), Borde, et al. (1998), and Terry (2002). GENDER is a dummy variable where a male student is equal to 1 and 0 otherwise. FROM is a dummy variable where an in-state student is equal to 1 and 0 otherwise. AF is a dummy variable where a student with accounting/finance major is equal to 1 and 0 otherwise. BD is a dummy variable where a student with a bachelor degree is equal to 1 and 0 otherwise. The course delivery method can also affect student performance. Shum and Chan (2000) find that remote-site interactive television students have statistically significant poorer performance relative to regular students while Van Ness, et al. (2000)

find that students who take introductory corporate finance online receive lower grades than those who take the class in a traditional classroom setting. F2F is a dummy variable where the course that was taught in traditional delivery is equal to 1 and 0 otherwise. Finally, BOOK is a dummy variable where the class adopting the RWJ textbook is equal to 1 and 0 otherwise.

Assuming that a textbook with better readability can improve student learning, thereby increasing student performance, I hypothesize that the students in classes using the RWJ textbook perform better than those in classes using the BH textbook. The t-test is used to test the difference in means and the Wilcoxon rank-sum test is utilized to test the difference in medians for the full sample and two subsamples (face-to-face and online). After the nonparametric tests, the ordinary least squares regression analysis is used to examine the relationship between student performance and the choice of textbook by controlling student and course characteristics.

EMPIRICAL RESULTS

Table 1 reports the descriptive statistics for my sample. The mean course percentage in Introductory Corporate Finance is 73.3 or a low "C". The sample shows that there are more females than males. Almost seventy-seven percent of the students are in-state students. Out of the sample, thirty-seven percent of the students are majoring in accounting and finance. Ten percent of the students who take the Introductory Corporate Finance as one of the foundation courses in the MBA program have a bachelor degree. There are more students taking Introductory Corporate Finance online than in a face-to-face setting. Forty-six percent of the students take Introductory Corporate Finance in a face-to-face setting. Forty-four percent of the students take Introductory Corporate Finance with the more readable RWJ textbook.

TABLE 1
DESCRIPTIVE STATISTICS

Variable	# of Obs.	Mean	Std. Dev.	Min	Max
PERCENT	260	0.733	0.145	0.154	0.997
GENDER	260	0.412	0.493	0	1
FROM	260	0.765	0.425	0	1
AF	260	0.365	0.482	0	1
BD	260	0.096	0.295	0	1
F2F	260	0.462	0.499	0	1
BOOK	260	0.435	0.497	0	1

Note: PERCENT is a continuous variable showing students' course grades. GENDER is a dummy variable where a male student is equal to 1 and 0 otherwise. FROM is a dummy variable where an in-state student is equal to 1 and 0 otherwise. AF is a dummy variable where a student with accounting/finance major is equal to 1 and 0 otherwise. BD is a dummy variable where a student with a bachelor degree is equal to 1 and 0 otherwise. F2F is a dummy variable where the course that was taught in traditional delivery is equal to 1 and 0 otherwise. BOOK is a dummy variable where the class adopting the RWJ textbook is equal to 1 and 0 otherwise.

I use the t-test to test the mean difference and the Wilcoxon rank-sum test to test the median difference in student performance. Table 2 shows the nonparametric test results for the full sample and the two subsamples. Panel A indicates that regardless of the delivery method for the course, students in classes adopting the BH textbook perform better than those in classes adopting the RWJ textbook, but the difference is not significant. When I partitioned my sample by the delivery method, as indicated in Panel B and Panel C, students in both face-to-face and online classes adopting the BH textbook perform better than those in classes adopting the RWJ textbook; however, the difference is not significant.

TABLE 2
TEST OF DIFFERENCES IN MEAN AND MEDIAN OF COURSE GRADE

		Course grade in Introductory Corporate Finance	
Panel A: Full sample	# of obs.	Mean	Median
Classes using BH textbook	147	0.744	0.756
Classes using RWJ textbook	113	0.719	0.745
p-value for difference		0.169	0.147
Panel B: Face-to-face subsample			
Face-to-face classes using BH textbook	62	0.784	0.795
Face-to-face classes using RWJ textbook	58	0.765	0.764
p-value for difference		0.354	0.171
Panel C: Online subsample			
Online classes using BH textbook	85	0.714	0.728
Online classes using RWJ textbook	55	0.670	0.714
p-value for difference		0.116	0.177

I estimate the relationship between student performance and the textbook choice by using ordinary least squares with a sample size of 260 students, and report the results in Table 3. The coefficient of FROM is negative and significant at the 10% level, suggesting that in-state students perform worse than out-of-state students. Student motivation proxied by student major (AF) has positive coefficient with significance at the 1% level, suggesting that accounting and finance students perform better than students with other majors. Educational experience proxied by student bachelor degree completion (BD) has positive coefficient with significance at the 1% level, suggesting that students with a bachelor degree perform better than students without a bachelor degree. Consistent with the previous studies, course delivery methods affect student performance significantly. The coefficient of F2F has a positive sign and significant at the 1% level, suggesting that students in face-to-face sections perform better than those in online sections. Finally, the coefficient of BOOK is negative but insignificant, suggesting that students in classes adopting the more readable RWJ textbook do not perform significantly better than those in classes adopting the less readable BH textbook.

I disaggregate the sample by course delivery method and re-estimate the relationship between student performance and the textbook choice by controlling student characteristics. The results are also presented in Table 3. There are 120 students enrolled in face-to-face classes and 140 students enrolled in online classes. In subsample regressions, I find that accounting and finance students perform better than students with other majors. As to education experience, I find that students with a bachelor degree perform better than students without a bachelor degree in online classes, and that students with a bachelor degree perform worse than students without a bachelor degree in face-to-face classes. However, the choice of a more readable textbook does not have a significant effect on student performance in classes delivered both face-to-face and online.

TABLE 3
REGRESSION RESULTS

	Full Sample		Face-to-face Subsample		Online Subsample	
	coefficient	t-stat	coefficient	t-stat	coefficient	t-stat
Intercept	0.690***	31.047	0.790***	36.377	0.678***	20.102
GENDER	-0.012	-0.684	-0.021	-1.041	-0.009	-0.321
FROM	-0.029*	-1.658	-0.024	-1.219	-0.027	-0.945
AF	0.074***	4.204	0.056***	2.827	0.093***	3.092
BD	0.129***	4.298	-0.166***	-8.399	0.150***	4.987
F2F	0.092***	5.097				
BOOK	-0.027	-1.511	-0.024	-1.183	-0.029	-1.024
# of obs.	260		120		140	
F Statistic	9.84***		54.03***		6.95***	
R-squared	13.19%		10.25%		16.88%	

Note: PERCENT is the dependent variable in the regression. GENDER is a dummy variable where a male student is equal to 1 and 0 otherwise. FROM is a dummy variable where an in-state student is equal to 1 and 0 otherwise. AF is a dummy variable where a student with accounting/finance major is equal to 1 and 0 otherwise. BD is a dummy variable where a student with a bachelor degree is equal to 1 and 0 otherwise. F2F is a dummy variable where the course that was taught in traditional delivery is equal to 1 and 0 otherwise. BOOK is a dummy variable where the class adopting the RWJ textbook is equal to 1 and 0 otherwise. *** shows coefficients significant at the 1% level, ** significant at the 5% level, and * significant at the 10% level.

CONCLUSION

This research study investigates the impact of changing the introductory corporate finance textbook has on student performance. Given the fact that researchers have rated the readability of various introductory corporate finance textbooks in the market, I am able to extend the study by examining the impact of choosing a more readable textbook on student performance while controlling for student gender, in-state/out-of-state status, major, educational experience, and course delivery method. Based on a sample of 260 students, nonparametric tests of mean and median differences across textbooks and course delivery methods indicate that student performance in classes using less readable textbook is higher than student performance in classes using more readable textbook, but the difference is not significant. The result is confirmed by ordinary least squares regressions. Regression results also indicate that student major, educational experience and course delivery method appear to significantly affect student performance. Accounting and finance students perform better than students with other majors. Students with a bachelor degree perform better than students without a bachelor degree. Students in face-to-face classes perform better than those in online classes.

Because the sample used in this study was obtained from students at one university under one instructor, this research represents only a preliminary attempt at the issue. Collecting student data from different institutions to increase the sample size may lead to more robust findings. The research methodology in this study can be used by other disciplines to examine the effect of textbooks with different readability has on student performance.

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