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Performance during COVID**



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The Effects of Temporality on Students' Bloomberg Certification Performance during COVID

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Abstract

Purpose: Bloomberg Certification is valuable for business students to include on their resumes when searching for jobs. This research note examines the impact of temporality on Saginaw Valley State University (SVSU) students' Bloomberg Certification performance during COVID.

Methodology: We use data from 2020 and 2021 SVSU students regarding performance on Bloomberg Certification tests. In order for a student to receive Bloomberg Certification, all four modules of the Core Concepts section of the test must be passed (Economic Indicators, Currencies, Fixed Income, and Equities). Controlling for gender, intrinsic motivation, and attempt, we compare 2020 and 2021 SVSU student performance on Bloomberg Certification exams.

Findings: The study finds evidence that 2021 students were more successful in attaining Bloomberg Certification than 2020 students. COVID vaccines were available on SVSU's campus starting in January of 2021.

Unique Contribution to Theory, Policy and Practice: This research note provides evidence that SVSU finance students adjusted well to the COVID pandemic.

Keywords: *Bloomberg, COVID, Temporality*

INTRODUCTION

The use of Bloomberg Financial systems and their associated terminals are increasingly playing an important role for students in the finance discipline (Lester & Cole, 2009; McLaren, 2010; Root et al., 2007). The Bloomberg terminals provide students with an opportunity to have a real-world experience of investing in the stock market (Tuluca & Zwick,). For example, the use of Bloomberg Financials in business schools enable students to develop a better understanding of risk that is involved in investing in the stock market (Hales, et al., 2019; Lyman & Stone, 2006). Studies suggest that the benefits of students having a real-world experience in understanding the financial system substantially outweigh the costs of obtaining Bloomberg Financial systems (Duggal, 2006; Noguera et al., 2011; Siam, 2005). The digital transformation has been very beneficial for financial services growth (Chahal, 2023). Bloomberg is an example of accessing financial information digitally.

The COVID pandemic raises an important research opportunity associated with the use of Bloomberg Financial at business schools. The ongoing coronavirus (COVID-19) pandemic provides a naturally occurring experiment to assess the impact of the pandemic on student performance of the Bloomberg Financials (Sieweke & Santoni, 2020). This research note compares the performance of business school students on Bloomberg Certification early on in the pandemic (2020) and later into the pandemic (2021). COVID vaccines were available on Saginaw Valley State University's (SVSU) campus beginning in January of 2021.

In a group of undergraduate students only, as well as a group of undergraduate and graduate students combined, we find that students who took the Bloomberg Certification tests in later stages of the pandemic (2021 students) were more successful in attaining Bloomberg Certification than students in early stages of the pandemic (2020 students). We highlight the effects of this result on research and teaching, particularly during the pandemic.

THEORETICAL FRAMEWORK

As discussed in detail later in the paper, temporality is the independent variable of interest in our study. COVID vaccines became available as early as January of 2021 on Saginaw Valley State University's (SVSU) campus. William Perry was the first to suggest that college students experience an evolving developmental process to make meaning of their learning encounters (Hofer & Pintrich, 1997). This is as opposed to making meaning of learning encounters using a manifestation of personality (Hofer & Pintrich, 1997). In this study, we will examine how business students in the later stages of the pandemic performed on the Bloomberg Certification tests relative to students in the earlier stages of the pandemic.

RELATED LITERATURE REVIEW & HYPOTHESIS

2.1 COVID and Impact on Business School Student Performance on Bloomberg Financials

The COVID pandemic provided major challenges for higher education as the teaching had to shift from a predominantly face-to-face approach to an online approach (Campos et al., 2021; Mousa, 2021). Several studies document the substantial COVID-related challenges that were faced by the educational systems globally and in different countries in different continents such as Australia (Hogan et al., 2021), Ecuador (Martinez et al., 2021), South Africa (Mhlanga & Ramoroka, 2021; Maluleka, 2021), and India (Khan et al., 2021). Specifically, some of the major challenges that the educational systems faced included making sure that the newly implemented online educational system maintained the standard of education (Perrin & Wang, 2021) and whether the new online emphasis would be embraced by the culture of the educational institutions (Poudevigne et al., 2022).

Challenges that business schools faced during the pandemic were not different from those faced generally in the tertiary institutions. Business schools went through substantial difficulties before adjusting to the new situation. Similarly, professors and business students went through a difficult phase. For example, having to only use online educational services while traditionally teaching had a large face-to-face component posed substantial adjustment challenges. In addition to changes in course formats, students and professors were dealing with external factors exasperated by the pandemic, such as mental health issues, financial security, and home-life concerns (Campos et al., 2021). However, over time, the business schools and their respective professors and students also adjusted and became more comfortable with new processes. Therefore, our hypothesis is as follows:

Hypothesis: Business students who took the Bloomberg Certification tests in the later stages of the pandemic (2021) outperformed business students who took the tests in the earlier stages of the pandemic (2020).

EMPRICAL ANALYSIS

3.1 Method

The Bloomberg Market Concepts (BMC) is an online learning self-paced program designed to familiarize users with the Bloomberg terminal. The BMC consists of five sections: Core Concepts (which includes four modules: Economic Indicators, Currencies, Fixed Income, and Equities), Getting Started on the Terminal, Commodities, Equity Options, and Portfolio Management. Upon completing the Core Concepts, a BMC certificate will be awarded.

Throughout the BMC users will better understand the financial markets by reviewing 35 learning outcomes, becoming acquainted with over 100 Bloomberg terminal functions, and gaining insight into the financial markets by completing over 160 interactive questions. Obtaining the BMC certificate offers two distinct benefits to users. Firstly, it provides an experiential learning approach for understanding financial markets and, secondly, it gives users a recruiting advantage upon displaying the certificate on their resumes.

The BMC certificate has been integrated into the SVSU curriculum since the fall semester of 2020. In that fall semester, the BMC was included in the following courses: Investment Analysis and Real Estate Finance for juniors, Investment Strategy for seniors, and Student Managed Investment Portfolio for MBA students. In the winter semester of 2021, the BMC was incorporated into Investment Analysis, Financial Management, Investment Strategy, and Student Managed Investment Portfolio for seniors. During the spring semester of 2021, the BMC was part of Entrepreneurial Finance for juniors and Investment Policy for seniors. Finally, in the fall semester of 2021, the BMC certificate was integrated into Investment Policy for seniors and Student Managed Investment Portfolio for MBA students. It is worth noting that students who took the Bloomberg Certification in one course did not repeat it in a subsequent course.

Regarding data, 115 observations were used from 2020 and 2021 SVSU students. For individuals to become BMC certified, they must successfully complete four modules: Economic Indicators, Currencies, Fixed Income, and Equities. For any module that was not completed by a student, a score of 0 was used in our analysis. A breakdown of students by class and year is provided in **Table 1** below. FIN 608 students (eight students in total) were the only graduate students that attempted the Bloomberg tests from our sample. The remaining 107 students were undergraduate students.

TABLE 1: Student Breakdown

Course/Administrative	Number of Students		
	2020	2021	Total
FIN 104 (independent study)	0	1	1
FIN 302 (Investment Analysis)	21	14	35
FIN 304 (Financial Management)		24	24
FIN 307 (Real Estate Finance)	16		16
FIN 308 (Student Managed Investment Portfolio)		2	2
FIN 311 (Entrepreneurial Finance)		1	1
FIN 401 (Investment Strategy)	4	4	8
FIN 405 (Financial Policy)		3	3
FIN 608 (Student Managed Investment Portfolio)	6	2	8
Finance Club	10	4	14
Other (administrative individuals)		3	3
Total Students	57	58	115

Regression Model: $BMC = Course\ Year + Gender + Finance\ Club + Attempt$

3.2 Dependent Variable

The regression model used in our study is listed above. The dependent variable used in the model has a binary value and indicates whether or not a student passed all four modules to become BMC certified. Students needed to pass all four modules in order to become BMC certified. This would be a nice feature for those students to include on their resumes when applying for internships or jobs. Passing three or less of the modules would not qualify students as becoming BMC certified. Of the 115 observations in this study, 58 (50.4%) passed all four modules to become BMC certified. The other 57 (49.6%) did not pass all four modules. This dependent variable is defined in the appendix.

3.3 Independent Variable of Interest

Later or earlier stages of COVID: We reflected the temporality associated with later (2021) versus earlier (2020) stages of the pandemic (*Course Year* variable). Temporality is the independent variable of interest in our study as COVID vaccinations became available as early as January of 2021 on SVSU's campus. William Perry was the first to propose that college students undergo an evolving developmental process to make meaning of their learning experiences (Hofer & Pintrich, 1997). This is as opposed to making meaning of learning experiences via a manifestation of personality (Hofer & Pintrich, 1997). This is consistent with our hypothesis of business students performing better on the Bloomberg Certification tests in the later stages of the pandemic compared to the earlier stages of the pandemic as they adapt to a new environment.

3.4 Control Variables

Gender: This study uses a binary variable where male student equals 1 and female student equals 0 (*Gender* variable). Several studies suggest that there are unequal effects of disasters and emergencies on women, and that women are more adversely impacted when such disasters and crises occur (Bateman & Edwards, 2002; Major, 1999; Van Willigen, 2001). For example, compared to men, women are more likely to be negatively impacted by hurricanes both psychologically and non-psychologically (Bateman & Edwards, 2002; Van Willigen, 2001). In addition, there is the stereotyped perception of women being more vulnerable when disasters occur (Bolin et al., 1998; Fordham & Ketteridge, 1998; Enarson & Morrow, 1998; Tanner et al., 2018). Therefore, it is important to control for gender.

Intrinsic motivation: We evaluated motivation via the *Finance Club* variable. Members of the SVSU Finance Club had an option as to whether or not to attempt to attain Bloomberg Certification. It was not required for them to achieve Bloomberg Certification. Conceptually, Finance Club students were more likely to be motivated to get certified. Focusing on the interest of students using the Bloomberg Financials in the pre-COVID era, Hales et al. (2019) point to several intrinsic motivational factors that enhance the interest of students in using the Bloomberg Financials. The Hales et al. (2019) study suggests that intrinsic motivational factors, such as students' receptivity to new technology and the perceived relevance of subject for future career,

all influenced students' performance in using the Bloomberg Financial System. Thus, it is important to control for intrinsic motivation.

Attempt: We control for whether students made one or two attempts in completing the certification process (*Attempt* variable). On one hand, one could argue that students who took the Bloomberg tests a second time (*Attempt* = 1) were more motivated than those who took it only one time. On the other hand, an argument could be made that students who took the Bloomberg tests a second time are not as strong in school as those who took the tests only one time. Therefore, we control for *Attempt*.

These independent variables are defined in the appendix.

FINDINGS AND DISCUSSION

4.1 Findings

We used SPSS to undertake the correlation matrix, descriptive statistics, and logistic regression analysis. The results of our correlation matrix are presented in **Table 2** below. Descriptive statistics are provided in **Table 3** below.

Table 2: Correlation Matrix

Variable	<i>BMC</i>	<i>Finance Club</i>	<i>Course Year</i>	<i>Gender</i>	<i>Attempt</i>
<i>BMC</i>	1.00				
<i>Finance Club</i>	0.16	1.00			
<i>Course Year</i>	(0.04)	(0.16)	1.00		
<i>Gender</i>	(0.23)	0.07	(0.19)	1.00	
<i>Attempt</i>	0.41	(0.16)	(0.42)	(0.03)	1.00

Significant at 0.05 p-value level

Table 3: Descriptive Statistics

Variable	N	Mean	Std Dev	Minimum	Maximum	25th Pctl	50th Pctl	75th Pctl
<i>BMC</i>	115	0.50	0.50	0.00	1.00	0.00	1.00	1.00
<i>Finance Club</i>	115	0.12	0.33	0.00	1.00	0.00	0.00	0.00
<i>Course Year</i>	115	0.50	0.50	0.00	1.00	0.00	1.00	1.00
<i>Gender</i>	115	0.63	0.49	0.00	1.00	0.00	1.00	1.00
<i>Attempt</i>	115	0.15	0.36	0.00	1.00	0.00	0.00	0.00

With regards to our *Hypothesis*, we predicted that students who took the Bloomberg Certification tests in the later stages of the pandemic (2021) performed better than those who took the tests in

the earlier stages (2020). **Table 4** shows results of undergraduate students only (107 of the 115 students). Consistent with our *Hypothesis*, 2021 students performed better than 2020 students in attaining the BMC certification. In additional analysis (untabulated results), our *Hypothesis* is supported via a marginal statistically significant relationship between *Course Year* and *BMC* when including both 107 undergraduate students and 8 graduate students.

Table 4: Logistic Regression with Undergraduate Students Only (*BMC* is Dependent Variable)

Variables	Coefficients	Standard Error	Wald	<i>p</i>
Constant	(2.455)	1.072	5.244	0.022**
<i>Finance Club</i>	3.762	1.155	10.599	0.001***
<i>Course Year</i>	2.850	1.060	7.224	0.007***
<i>Gender</i>	(1.265)	0.529	5.721	0.017**
<i>Attempt</i>	24.520	9,494.502	0.000	0.998

n: 107

Nagelkerke R^2 (pseudo R^2) 0.578

Hosmer-Lemeshow test: Chi-square of 7.835 (0.250 p-value)

* Significant at 0.10 p-value level

** Significant at 0.05 p-value level

*** Significant at 0.01 p-value level

4.2 Discussion

Our research note finds that students in later stages of the COVID pandemic (i.e., 2021 students) were more successful in obtaining Bloomberg Certification than students in early stages of the pandemic (i.e., 2020 students). This indicates that students performed better after they adapted to the pandemic. This corresponds to COVID vaccinations becoming available as early as January of 2021 on Saginaw Valley State University's campus. Our findings have implications for both research and pedagogical approaches during COVID in the use of the Bloomberg Financials in business schools. Increasingly, business students studying finance, accounting, and related subjects have been required to use Bloomberg Financial systems (Lester & Cole, 2009; McLaren, 2010; Root et al., 2007). The BMC certificate offers two main practical benefits: firstly, it provides an experiential learning approach for understanding financial markets, and, secondly, it gives a recruiting edge when presented on a resume. Advocates suggest that using these Bloomberg terminals provide students with real-world experience of investing in the stock market (Tuluca &

Zwick, 2016), and a much better appreciation of risk in investing in the stock market (Hales, et al., 2019; Lyman & Stone, 2006). Utilizing Bloomberg can help students analyze diversification of various companies. This is important as Hyder and Khoshnoud (2023) find a negative relationship between the degree of company diversification and firm value.

From a research implication perspective, COVID was unquestionably a major global event. The effects of this pandemic have not yet been reflected in the *International Journal of Finance* (IJF). Our review of publications in the IJF from 2019 to present indicates no publication exploring the potential implications of the pandemic on the finance discipline. Given the importance of both the COVID event and the *IJF*, our study remedies this potential limitation. From a practical implication viewpoint, we are not sure what these effects of COVID for students will be over time. With the incidence of COVID, do students do better or worse over time? For example, in some subjects such as math and reading, the National Assessment of Educational Progress reported that scores of thousands of U.S. students substantially declined following COVID (Gutierrez, 2023). The exam evaluated approximately 450,000 children between fourth and eighth grade (Gutierrez, 2023). Our study, however, suggests that business students performed better over time with respect to the Bloomberg Certification.

There is an important limitation to our study. Bloomberg tests were available to students at SVSU starting in the fall of 2020. If Bloomberg was available for several years before, then we could perform a pre- versus post-COVID analysis as opposed to an early-pandemic versus later-pandemic analysis.

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