The Determinants of Business Students' Faculty Performance: Evidence from a Private University in Syria

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Abstract This study investigates factors that affect students' performance at the Faculty of Business Administration at a private university in the Syrian Arab republic. The impact of four variables; high school GPA, motivation, source of high school certificate, and gender, on student's faculty GPA have been examined using large sample of students for the period from 2005 to 2015. Applying Ordinary Least Squares (OLS) estimates, we find that high school GPA is the main determinants of student's faculty performance. Moreover, the difference in average faculty GPA between males and females is significant with males underperforming females. Furthermore, motivation seems an important determinant of faculty GPA though it is less reliable than high school GPA. Hence, Awareness sessions should be conducted for high school students to raise their awareness of their future careers. Moreover, admission policies need to be reviewed and developed to include motivation element in the admission process.

Keywords Academic performance • Motivation • Source of high school certificate • Gender • Business faculties

1 Introduction

Education is considered as important element of human capital, and thus a great provider to the improvement of the quality of life. Global competitiveness report, published by World Economic Forum (WEF) ranks countries' relative competitiveness in terms of their ability to raise productivity by utilizing their resources

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based on nine pillars. Higher education and training is the fifth pillar, which takes into account the quality of the educational system [1].

One of the methods that measure the overall effectiveness and the quality of higher educational institutions is student outcomes, which includes persistence, graduation rates, and student attrition [2]. Academic achievement is one of the most common methods for evaluating student persistence [3].

A number of factors have been suggested as potential determinants of students' faculty performance. For example, the previous performance of students as proxied by high school GPA [4, 5] is a dominant factor in explaining faculty performance as it reflects its ability in isolation of any possible faculty influence. Moreover, variation in the performance of students based on their gender is also observable. Furthermore, the source of high school certificate whether it is local or foreign, public or private could reflect different level of facilities and attention allocated to students.

A number of theories also propose motivation in education setting. One of the primary theoretical frameworks is Self-Determination Theory (SDT) [6]. SDT classifies motivation as intrinsic, extrinsic or amotivation [7]. However, Education motivation has three dimensions, individual's beliefs in ability to perform a specific task, reasons and goals of the individual in doing the task, and the emotional response concerning perform the task [8]. Having a choice can be a powerful motivator, which means people would be more likely to engage in an action if they believe they had chosen it. Patall et al. [9] find that providing choice enhanced intrinsic motivation.

Motivation can take two dimensions. First, students with high school GPA, who have alternative study choices beyond business study majors, are considered intrinsically motivated. If a student chooses her major, which is the result of her own choices, she will be in a higher level of motivation. Second, students are extrinsically motivated during their study in the university when they engage in academic tasks and become interested in their major [10]. Unfortunately, given the absence of data on such engagement, this paper will concentrate on the first dimension of motivation.

Investigating the determinants of business students' faculty performance in Syria is an interesting topic for many reasons. First, the admission to university in Syria is based on one method, which is student's high school GPA only. Moreover, the majority of students in Syria lack clear motives in terms of their educational and career goals. The result of such admission system is high percentage of dropouts and consequently huge amount of time and resources are wasted. Furthermore, exploring the main determinants of business students' faculty performance should help faculty administrators to understand factors that have the most influence in order to concentrate on them in their efforts to enhance students' performance.

The rest of the paper is constructed as follow: Sect. 2 reviews the related literature on the variables that affect students' faculty GPA. Section 3 presents the sample, methodology followed, and statistical tools implemented. Results are discussed in Sect. 4. Conclusion is presented in Sect. 5 with a summary of results and recommendations.

2 Literature Review

Researchers have explored many factors affecting student academic achievement, including student characteristics, learning/teaching process and social factors. The high school grade point average (HSGPA), motivation, and gender are amongst the thoroughly investigated variables.

Many researchers report that high school performance has a significant impact on academic performance [11–14], while others view high school performance as less reliable indicator of student academic achievement [15].

For example, Geiser and Santelices [12] argue that high school grade point average (HSGPA) is consistently the strongest predictor with a positive and statistically significant impact with on 4-year College grades for a sample of practically 80,000 students admitted to the University of California. Another study investigates the factors that determine student's performance in introductory economics for a sample of students at the University of Toronto [13]. This study found that the most important factor is the high school achievement, with a positive influence. According to [14] high school GPA is an extremely reliable predictor of college performance. They document a positive relationship between performance in high school and performance in college. Others consider HSGPA as an unreliable predictor of academic success in university. They argue that the reason of the insignificant impact of high school performance on academic performance could be the variations in grading standards across schools [15].

During the last three decades, numerous researchers have highlighted the importance of motivational variables for students' experience and performance in education setting [16]. Motivation is considered as an important factor that influences a learners' ability to learn and the level of their achievement [17]. Breen and Lindsay [18] argue that academic performance is based on motivation and ability. Moreover, a positive and significant correlation between academic motivation and academic achievement among university students has been documented in a number of studies [8, 10, 19].

Kusurkar et al. [20] differentiates between two types of motivation, autonomous motivation and controlled motivation. Autonomous motivation originates within an individual while controlled motivation originates from external sources. They construct a new variable based on a combination of the above two types of motivation. This new variable is positively associated with high study effort and better GPA.

Tessema et al. [2] assess the effect of gender on some education outcomes. Female students tend to have higher GPAs than male students do. Woodfield and Earl-Novell [21] confirm this result finding that female students outperformed male students and attributed this partly to female students being more study-reliable and thus less likely to skip lectures. However, in other countries the fact "female outperform their counterparts" are reversed ([22], p. 1).

3 Sample and Methodology

The data for this study was obtained from the registration system of the Arab International University, a privet university in Syria. The total number of observations is 11,463 enrolled students covering six faculties. Our study is concerned with students from the Faculty of Business Administration. Hence, the sample is reduced to 2267 that includes all students, graduated and enrolled, with complete set of information. The final sample consists of 2267 cases covering 11 year period from 2005 (establishment year) to 2015.

3.1 Variables

The dependent variable that represents academic achievement of students is the student's faculty GPA (FGPA). Four predicting independent variables are included in this non-experimental study; high school GPA (HSGPA), gender (Gender), the source of high school certificate (SHSC), and motivation (BusMotv). The following table defines the set of variables used (Table 1).

Table 1 Variables used in the study

Serial	Variable name	Definition	Variable label	Measurement term	Value labels	
					Value	Value label
1	FGPA	The student's faculty GPA	Faculty GPA	Scale	[0, 4]	
2	HSGPA	High school GPA	High school GPA	Scale	[50, 100]	
3	Gender	Demographic variable	Gender of student	Dichotomous	[1, 0]	1 = Male
4	SHSC	Source of high school certificate	Syrian high school certificate	Dichotomous	[1, 0]	1 = Syrian HS certificate
5	BusMotv	Student has a HSGPA gives him/her a chance to register in another faculty with a higher required grade, but he/she chooses to enroll in the faculty of business administration	Intrinsic motivated students variable	Dichotomous	[1, 0]	1 = HSGPA is equal or higher than 60%

Table 2 Descriptive statistics of the variables for the period 2005–2015

Variable	Minimum	Maximum	Mean	Standard deviation	Skewness	Kurtosis
FGPA	0.17	3.95	2.1225	0.74476	−0.406	−0.139
Gender	0	1	0.73	0.445	−1.027	−0.946
HSGPA	50.00	99.75	65.6948	10.70795	0.797	0.031
SHSC	0	1	0.87	0.339	−2.166	2.693
BusMotv	0	1	0.65	0.477	−0.628	−1.607

3.2 *Descriptive Statistics*

Table 2 provides descriptive statistics for the above-defined variables. It can be noticed that the average faculty GPA is 2.1225 with a standard deviation of 0.74476. This indicates a modest average performance of business students given that the pass GPA is two. However, the standard deviation is quite large. The skewness for FGPA variable is −0.406 means that the data are mildly skewed to the left of the mean. The kurtosis statistics for FGPA is −0.139, which indicates that the variable is flattered (short-tailed than normal).

High school GPA (HSGPA) has a mean of 65.6948, which is higher than the minimum GPA that is required to enroll in the faculty of 50%. However, the standard deviation of HSGPA is 10.70795, which is quite high and indicates that considerable number of students has a HSGPA that is higher than the minimum required by the faculty. The skewness for HSGPA is +0.797 which means that the data of this variable are skewed to the right of the mean. The Kurtosis for HSGPA is +0.031, which indicates that, the distribution has slightly heavier tails and a sharper peak than the normal distribution. The above statistics can be further noticed in Fig. 1, which shows the distribution of HSGPA and FGPA.

3.3 *Frequency Analysis*

Table 3 further shows the frequency information for the three other variables. The number of female students of 616 students constitutes (27.2%) of the total number of students enrolled at the faculty of Business Administration that is considerably lower than those for males with 1651 enrolled students. This table also shows that non-Syrian high school certificate is relatively small with 301 students that represent only 13.3% of the sample. Students with a motivation, as measured by BusMotv, are almost twice (1473 students) the number of students that are not motivated (794 students).

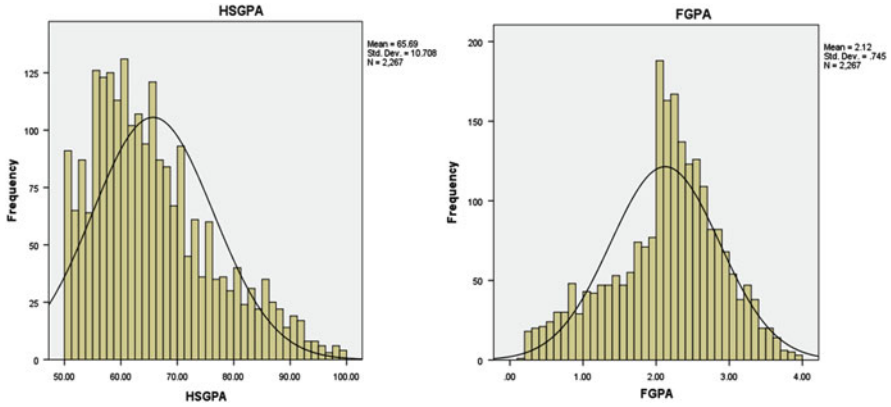

Fig. 1 The distribution of HSGPA and FGPA

Table 3 Frequency distribution for gender, SHSC, and BusMotv

Variable	Distribution	
Gender	Female	Male
	616	1651
SHSC	Not Syrian	Syrian
	301	1966
BusMotv	Not motivated	Motivated
	794	1473

3.4 Correlation Matrix

Table 4 shows the Pearson correlation coefficients between the examined variables. The first row indicates significant correlation FGPA and gender of (−0.203) as the negative sign indicate that female is performing better than males. There is also a positive and significant correlation coefficient between FGPA and HSGPA (0.210). This positive correlation is expected given that it represents a higher ability of students should be reflected in a higher FGPA. The correlation between FGPA and SHSC of −0.016 is insignificant which suggests that students who obtained their high school certificate from a foreign country perform no worse than those with Syrian high school certificate do. There is also a positive and significant correlation, though not strong, between motivation and FGPA of 0.110.

3.5 Regression Analysis

We apply Ordinary Least Squares (OLS) multiple regression for the whole sample period to investigate the predicting ability of a set of four variables: *motivation,*

Table 4 Pearson correlation coefficients of the tested variables for the period 2005–2015

Variable	FGPA	Gender	HSGPA	SHSC	BusMotv
FGPA	1	−0.203***	0.210***	−0.016	0.110***
Gender		1	−0.157***	0.004	−0.112***
HSGPA			1	−0.335***	0.709***
SHSC				1	−0.181***
BusMotv					1

***indicates significance at the 1% level of significance

grades in high school, source of high school and gender. That is, we run the following regression.

$$FGPA = c + Gender + SHSC + HSGPA + BUSMotv + e \quad (1)$$

We estimate five versions of the above equation including variables in the estimation subsequently in order to clarify the individual impact of each variable on the faculty GPA (FGPA).

4 Results

Table 5 shows the results from all tested models using OLS regressions. All models (1–5) indicate a negative and significant coefficient of Gender on faculty GPA. This indicates that male business students perform worse than female students do. Model 1 suggests that business students with clear business motives perform better than those without business motives by 0.137 point.

Model 3 indicates that high school GPA has a positive and significant impact on faculty GPA with a coefficient of 0.013. This is consistent with [11–14]. The source of high school certificate (SHSC) has positive and significant impact on faculty GPA as suggested by model 3 with a coefficient of 0.113. This suggests that students that hold a Syrian high school certificate perform better in there faculty compared to their non-Syrian high school certificate holders counterparts.

Model 4 indicates a positive and significant impact of high school GPA on Faculty GPA. The coefficient of high school GPA is 0.014 is significant at 1% level of significance. Moreover, Gender factor has a negative and significant impact on faculty GPA. The gender coefficient of −0.287 indicates that female students performs better than males by 0.287. This different performance is also significant at 1% level of significance. This result is consistent with Tessema et al. [2] and Woodfield and Earl-Novell [21].

Model 5, that contains all examined variables, confirms model 3 and 4 results. The only surprising result is that the business motive variable (BusMotv) has changed its sign from positive to negative with a coefficient of 0.135. This contradicting effect is due to the high correlation between HSGPA and BusMotv

Table 5 The results from running OLS regressions on the faculty GPA (dependent variable)

Model	1	2	3	4	5
Constant	2.268***	2.268***	1.498***	1.316***	1.104***
Gender	−0.323***	−0.323***	−0.291***	−0.287***	−0.286***
SHSC		0.001		0.113**	0.125***
HSGPA			0.013***	0.014***	0.018***
BusMotv	0.137***	0.137***			−0.135***
Adj-R2	0.048	0.047	0.073	0.075	0.078

Table 6 Descriptive statistics for the two BusMotv students with tests of equality

	BusMotv	Number	Mean	Standard deviation	Standard error	F-test	T-test
FGPA	1	1473	2.182	0.77356	0.02016	15.2	5.47
	0	794	2.011	0.67464	0.02394	0	0

Note: F-test is Levene's Test for Equality of Variances while t-test is for Equality of Means when Equal variances are not assumed

of 0.709 that is significant at 1% level of significance. Hence, the negative sign of the BusMotv coefficient should be ignored.

To further examine the last result of the impact of business motive on student's faculty performance, we first split our sample into two groups; one with business motive that comprises students with high school GPA of 60% or more, while the other group consists of students with less than 60% high school GPA. Students with High school GPA of equal or more than 60% have the opportunity to enrol in another faculty require higher HSGPA.

Then, we perform an F-test for the equality of variance. The p-value form the F-test indicates that the variances of the faculty GPA of both groups are not equal. Next, we examine if the averages of the faculty GPA of both groups are equal using t-test.

The results from Table 6 indicate that students with business motives (BusMotv = 1) have higher mean FGPA of 2.18 compared to students without business motives (BusMotv = 0) with a mean FGPA of 2.01. The results from testing the equality of variance between two groups: with business motives (BusMotv = 1) and without business motives (BusMotv = 0) suggests rejection of the null hypothesis that variances are equal as indicated by p-value of 0.000. The t-test for equality of means yields a t-value of 4.729, which is significant at 1% level of significance. It indicates that there is a significant difference between the means of both groups of 0.17 and suggests that students with business motives (BusMotv = 1) has significantly higher faculty GPA than students without business motives (BusMotv = 0). Hence, the result of the regression model 5 of negative impact of business motive on faculty performance is merely due to the mutlicollniearity between high school GPA and busMotv variables.

5 Conclusion and Recommendations

We investigate factors that predict student's academic achievement based on a set of variables that cover information about student's prior achievement, gender, source of high school certificate and the degree of motivation. We find that high school GPA is the main determinants of student's faculty performance. Moreover, the difference in average faculty GPA between males and females is significant with males underperforming females. Furthermore, motivation seems an important determinant of faculty GPA though it is less reliable than high school GPA.

The results obtained from this paper have a number of implications. First, high school GPA remains the dominant factor in determining faculty GPA. This suggests that policy makers should continue to use this criteria in admission process. However, special attention needs to be paid to motivation and consequently this factor should be implemented in admission policies. Second, awareness sessions and visits need to be arranged for high school students to a number of faculties to raise their awareness of their future careers in order to avoid any future disappointments and possible dropouts. Third, faculties should encourage students from both genders to work in mixed teams when doing assignments and projects to motivate males for better academic performance. Finally, special attention and academic guidance should be made available for non-Syrian high school certificate holders' students to fit in their new academic and social environment.

Four caveats apply to this research. First, our findings are based on one private university in the Syrian Arab Republic. Hence, expanding the sample to cover other private and public universities should add to our understanding of the factors that affect business students' faculty performance. Second, this study concentrates on business students and do not include students from other disciplines. Expanding this study to include other disciplines will enrich the results and make it better generalized. Third, we measure motivation as a dummy variable, which takes two values only. This raises the issue of multicollinearity between HSGPA and motivation. Another possible way to measure motivation is the number of choices the student has. Finally, this paper investigates the impact of four variables on business students' faculty performance. Other factors such as engagement, learning process, institutions, and social factors could play an important role in determining student performance. Addressing those caveats and investigating such additional factors would constitute a venue for further research.

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