Is there any Link between Gender, Personality Traits and Business Students' Study Time and Attendance?

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Abstract

Self-study and attendance rates are important factors in terms of academic outcomes. There is considerable variation in students' efforts. This is probably due to many factors. In the literature, there is a considerable focus on the link between academic success and personality traits (Big Five). However, few studies have investigated the relationship between study time, presence at lectures and personality traits. The purpose of this article is to find out more about how gender and personal characteristics can affect students' efforts (attendance and study time) by questioning 380 students at a business school in Norway. Results indicate significant and positive correlation between some of the personality traits (openness and conscientiousness) and study time. Females tend to study more, but the impact was not significant. None of the variables were significantly linked to attendance. The finding is useful information when designing various educational schemes. The chosen method for this study is ordinary linear regression model.

Keywords: *quantitative analyses; business school; gender; Big Five; students' effort*.

1. Introduction, theory and literature review

For policymakers it is important to know the effect of study effort on students' achievements in higher education. Previous research indicates there is a positive relationship between students' input and success [1,2]. This applies primarily to self-study. Stinebrickner and Stinebrickner [2] reported an additional hour study effort had substantial impact on students' performance. Bonesrønning and Opstad [1] confirmed this effect among business undergraduates, but they did not find such a strong effect as Stinebrickner and Stinebrickner, The effect in terms of attendance at lectures is more mixed [3]. In general, the impact is positive, but many studies find this effect to be weak. However, Opstad and Fallan [4] find this impact to be quite strong among business students. Andrietti and Velasco [5] investigated the link between study effort and performance in an economic course. The authors suggest both study time and attendance might have a positive impact on the students' grades.

The purpose of this paper is to identify factors that can influence on study effort. The average study time has declined over the last decades and the mean student study time is less than 30 hours in Norway [6]. There is a considerable variation from student to student. In the literature factors that determine the level of student effort are discussed [1,6,7].

There is a theoretical consideration of how the individual student will allocate a limited amount of time. How much time they spend on their studies depends on abilities, personal ambitions and characteristics, the degree of difficulty of the subject, teaching quality and the grading system. Harder grading practice and a more difficult subject will motivate many students to study harder to achieve the desired grades, while other students might just give up and reduce their effort.

A student who has good academic skills, finds the subject easy to learn, receives high-quality teaching and has no ambition in terms of good grades, does not need to make so much effort in this subject.

Bonnesrønning and Opstad [1] reported that students who perform more poorly than expected in a mid-semester test will increase their effort, while students who perform better than expected will decrease their study input. There is also a gender effect. Females tend to study more and to attend lectures more frequently than males [6,8]. According to Hadsel [8], one explanation for this is that they must study harder to achieve similar goals to the males, even if there is no difference in their academic skills.The Big Five personality traits [9] are a popular research instrument. Personal characteristics have five dimensions: extraversion; agreeableness; conscientiousness; emotional stability; and openness to experience. Extraversion is linked to being social and talkative; agreeableness is associated with contribution and helping others; conscientiousness means being well organized and goal-focused; emotional stability is related to being sure and emotionally stable; and finally, openness is linked to being curious and open-minded. According to Kertechian ([10], there is a strong link between conscientiousness and students' motivation to achieve better performance. Emotional stability and openness were also positively correlated with study motivation, while agreeableness and extraversion had no significant effect. Other researchers confirmed the strong

correlation between conscientiousness and factors such as learning goals and achievements, while the impact of the other personality traits to these issues is mixed [11,12].

2. Methodology

2.1 The sample

The sample consists of 380 students from a compulsory course in the second-year at a business school in Norway. A questionnaire was distributed among those undergraduates present at lectures for the period of 2016 to 2019. Since some students were absent there might be some bias. For about 60% of those students, it was possible to link the result with administrative data (for instance, grade point average).

2.2 The model

The model's dependent variable is Student effort (study time and attendance). Using the following linear regression model makes it possible to investigate the impact simultaneously:

$$Yi = a_0 + a_1X1 + a_2X2 + a_3X3 + a_4X4 + a_5X5 + a_6X6 + a_7X7 + \varepsilon$$

where:

Yi: attendance (hours a week attending lectures) or study time (hours a week, lectures excluded)
α_0: Constant
X_1: Gender (0:F, 1:M)
X_2: Openness (Likert scale 1 to 5, 1: strongly disagree, 5: strongly agree)
X_3: Extraversion (Likert scale 1 to 5, 1: strongly disagree, 5: strongly agree)
X_4: Agreeableness (Likert scale 1 to 5, 1: strongly disagree, 5: strongly agree)
X_5: Conscientiousness (Likert scale 1 to 5, 1: strongly disagree, 5: strongly agree)
X_6: Emotional stability (Likert scale 1 to 5, 1: strongly disagree, 5: strongly agree)
X_7: GPA (grade point average, upper-secondary school)
ε: Stochastic error

There are two versions of the model, with the second one including GPA (Grade Point Average, from upper secondary school) to see whether it has effect. Even though the sample is smaller for the second version, this has only marginal impact on the mean values and standard deviation. The purpose of the model is to identify which factors are correlated to students' effort.

2.3 The data

There are slightly more females than males in the sample (Table 1). The average student studies around 16 hours a week and is present at lectures for around 11 hours a week, which is quite high since the total numbers are 15–20 hours a week for the average student, depending on the choice of subjects. But all students are free to select extra subjects during the semester. Notice the high values of standard deviation and the difference between minimum and maximum. This mean there is a substantial variation among the students.

	Min	Max	Mean	Std.Dev.
Gender (1;M, 0:F)	0	1	0.46	0.499
Study time (hours a week, lectures excluded)	0	50	15.94	9.642
Attendance (hours a week attending lectures)	0	55	10.56	6.250
GPA (upper-secondary school)	46.90	66.70	51.3115	2.92751
Personality traits: (Likert scale 1 to 5, 1: strongly disagree, 5: strongly agree)				
Openness	1.25	5.00	3.2308	0.74932
Extraversion	1.50	5.00	3.6450	0.74450
Agreeableness	1.25	5.00	3.9545	0.58362
Conscientioousness	1.50	5.00	3.6924	0.65587
Emotional stability	1.50	5.00	3.3811	0.74717

Table 1 – Descriptive Statistics

3. Findings and discussion

Findings are in line with previous research (Table 2). Unstandardized coefficient Beta, standard deviation in parenthesis, the VIFs (variance inflation factors) are all between 1 and 2.

	Dep.var: Study Time				Dep.var: Attendance			
	Model 1		Model 2		Model 1		Model 2	
	B	Sig,	B	Sig	B	Sig	B	Sig
Constant	-5.76		-14.84		6.00		5.03	
Gender	-2.60	0.036	-2.50	0.131	-0.81	0.240	-0.61	0.514
	(1.23)		(1.65)		(0.69)		(0.93)	
Extraversion	0.38	0.633	-0.58	0.578	-0.36	0.422	-0.49	0.414
	(0.80)		(1.03)		(0.45)		(0.59)	
Agreeableness	-0.269	0.794	-1.18	0.385	0.04	0.941	-0.12	0.877
	(1.03)		(1.36)		(0.59)		(0.80)	
Conscientious-	4.82	0.000	5.00	0.000	0.86	0.073	0.48	0.441
ness	(0.84)		(1.08)		(0.48)		(0.62)	
Openness	1.40	0.064	2.01	0.029	0.52	0.222	0.60	0.254
	(0.75)		(0.91)		(0.42)		(0.52)	
Emotional	0.15	0.854	0.79	0.490	0.39	0.414	0.07	0.921
Stability	(0.83)		(1.14)		(0.42)		(0.66)	
GPA			0.22	0.332			0.60	0.254
			(0.23)				(0.52)	
	N=299		N=194		N=315		N=199	
	Adj.R^2 =0.123		Adj.R^2 =0.104		Adj.R^2 =0.01		Adj.R^2 = -0.019	

Table 2 – Results from the Regression Model

Among the personality traits there is a strong significant correlation between conscientiousness and hours of self-study among the students. Like Kertechian [10], the regression model provided a positive connection between openness and self-effort, but with significantly lower levels and effect than conscientiousness. For the three other personality traits (agreeableness, extraversion and emotional stability), this study did not find any significant correlation with study time.

The link between attendance and personality traits is rather weak in this study, and only conscientiousness is slightly positively correlated with attendance in Model 1 (version 1). The explanation for this may be that most students choose to attend the lectures. But when it comes to self-study, hard-working targeted students stand out compared to others. They spend more time studying in preparation of the final exam.

Notice neither of the models find any significant impact of GPA. Grade point average from upper-secondary school is a proxy of academic skills and ability. The literature shows that the relationship between academic ability and effort is not unique. Weak students can choose to work hard to catch up, while skilled students can choose less effort since they feel they have control over the subject. The effort depends on the goals set by each student. If skilled undergraduates want to achieve an A, then they know that a significant effort is required.

This study confirmed that females spent more hours a week with their textbooks and notes than their male peers. This may be because they take their study more seriously or, as Hadsell [8] argues, because they are more risk-averse and feel they need to study harder to achieve their goals.

However, this study did not find any gender difference in attending the lectures.

4. Contribution and conclusion

Study effort might be a crucial determinant of academic success and performance. There are significant individual differences depending on abilities and ambitions. This may explain why this study could prove a link between effort and GPA. There is a strong correlation between study time and the two factors of gender and the personality trait conscientiousness. This study did not identify factors correlated to the students' presence at lectures. It is useful to gain more knowledge about what determines the level of students' effort, since education authorities have tools that can influence these efforts (grading practice, mid-semester test, compulsory exercises, content in the subject and more).

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