ii. Procedure

The data was collected via the constructed 48 paper-base questionnaires, accompanied with 221 online questionnaire for respondents' convenience, which contain 25 items, divided into three sections; Section 1; is for the collection of demographic information, level of education, the student's self-report of current GPAX and high school GPAX, background information of student's mother's and father's educational degree completion, Section 2; is for the collection of the students' behavior on social media usage and learning, Section 3; consists of questions regarding students opinions toward factors affecting academic performance.

iii. Model Specification

With all the stated hypotheses and factors considered, the following multiple linear regression model is adopted to evaluate relationships between the interested variables (predictors) and the dependent variable. The initial regression model is the following:

$$Yi = \beta 0 + \beta 1 \cdot (female) + \beta 2 \cdot (hs\_gpax) + \beta 3 \cdot (edu\_dad) + \beta 4 \cdot (edu\_mom) + \beta 5 \cdot (time\_sm) + \beta 6 \cdot (time\_smedu) + \beta 7 \cdot (time\_edu) + \beta 8 \cdot (time\_eduexam) + \varepsilon i \ ;$$

where Yi denotes the academic performance (GPAX or accumulated grade point average) of student i. Initially, there are a total of 8 variables selected as predictors for students' academic performance. The coefficient of interested predictors are βn, which capture the effect of each explanatory variables on the dependent variable. With randomly distributed surveys, students of both male and female are randomly selected; ***female*** being a dummy variable, as it is also of importance to testify whether gender difference has an effect on the result or not. The model also includes the effect from the student's own academic inclination, which is reflected by his or her academic performance background, in this case adopting ***hs_gpax*** (high school's cumulative GPAX). Other student characteristics included in the model are ***edu_dad*** and ***edu_mom,*** which are father's and mother's years studying. Apart from that there are also variables regarding time, which are ***time_sm,***

time_smedu, time_edu, and ***time_eduexam***; the core variables for this research being ***time_sm*** and ***time_smedu***, which mean student's time spent on social media daily for general and time spent on social media daily for academic purposes, respectively. Rather than including the effect of social media use, controlling student's own attentiveness on academic activities might help enhance the estimated effects on academic performance more efficiently because although a student may spend much time on social media, he or she may also spend time on academic activities, which could affect student's academic output positively. Therefore, ***time_edu,*** and ***time_eduexam*** are included, which represent time spent daily on academic activities before and during exam period.

There are also two more models, which are used to inspect other hypotheses. In the second specification, more dummy variables are included; ***communicate, update, news, edu, star,*** and ***shopping***, to see which type of social media usage purpose correlate with student's academic outcome.

Lastly, the third specification, excluding social media usage purposes dummy variables, the interaction effect of time spent on social media and academic activities on student's GPAX are included, male and female separately. As cited by many research on gender-specific social networking behavior, there exists a significant distinction between gender (Brett & Stroh, 1997; Ferret & Dougherty, 2004). Consequently, variables included in the model are, ***female x time_sm, female x time_smedu, female x time_edu,*** and ***female x time_eduexam.***

VI Basic Data Analysis & Result

i. Data and other Basic Information of the Variables

The analysis is done based on the acquired data from the respondent. Table1 contains descriptive statistics. Of all the samples acquired, around 62% counts for female respondents, and 38% is of male counterparts. The average current university GPA of the respondents are roughly

3.05 which is lower than the average of their high school GPA, being around 3.4. As for parents' educational background, the average education taken by respondents' father is 16.2 years, and 15.7 years for respondents' mother. For the purposes of usage of social media, communication ranks at number one with 94% of the sample population admitted to frequent usage. Then follows the usage for obtaining news, updating status and picture, usage for academic purposes, usage for following popular figures, and shopping with 81%, 62%, 56%, 47%, and 47% respectively.

Table 1: Definition and descriptive statistics of dependent and independent variables.

Variable	Definition	Mean	Std. Dev.	Min	Max
gpax	University's cumulative grade point average	3.056	0.466	0	4
hs_gpax	High school's cumulative grade point average	3.428	0.41	2.25	4
female	Gender (1:female, 0:otherwise)	0.621	0.486	0	1
edu_dad	Father's educational level (years of studying)	16.23	3.123	9	24
edu_mom	Mother's educational level (years of studying)	15.736	2.842	9	24
communicate	Social media use for communication (1:active user, 0:otherwise)	0.944	0.23	0	1
update	Social media use for updating status and pictures (1:active user, 0:otherwise)	0.621	0.486	0	1
edu	Social media use for academic purposes (1:active user, 0:otherwise)	0.569	0.496	0	1
news	Social media use for news (1:active user, 0:otherwise)	0.81	0.393	0	1
star	Social media use for following celebrities (1:active user, 0:otherwise)	0.472	0.5	0	1
shopping	Social media use for shopping and business purposes (1:active user, 0:otherwise)	0.466	0.5	0	1
time_sm	Time spent on social media for leisure (hours per day)	5.007	2.085	1.5	9
time_smedu	Time spent on social media for academic performance and news purposes (hours per day)	1.827	1.229	0.5	9
time_edu	Time spent on learning and reviewing (hours per day)	0.946	1.083	0.25	9
time_eduexam	Time spent on learning and reviewing during exam period (hours per day)	4.564	2.07	0.25	9

Figure1 : Female students' time spent on social media daily on average

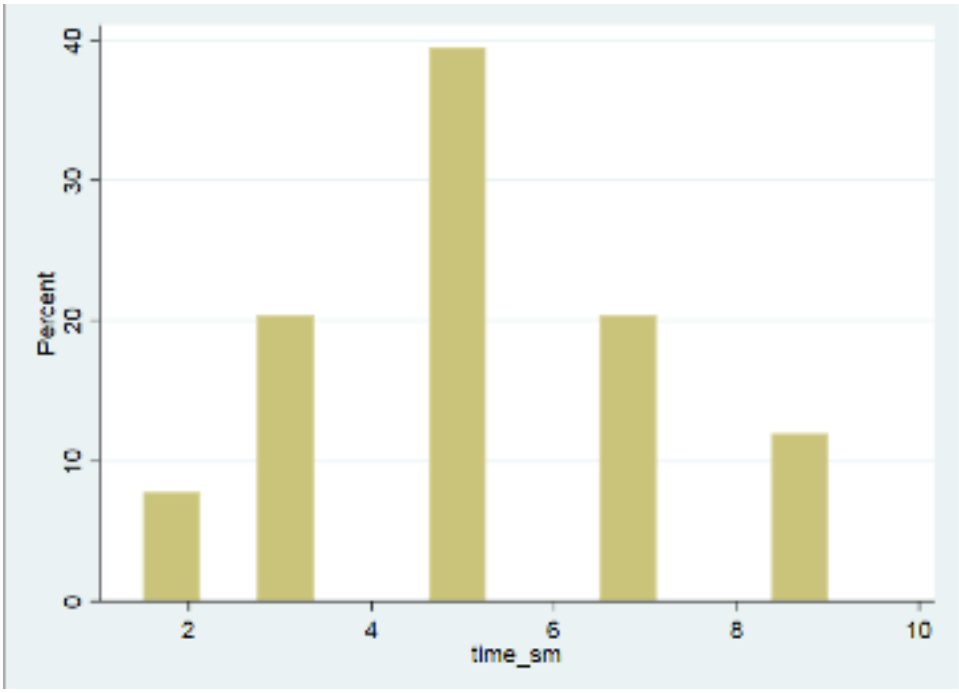
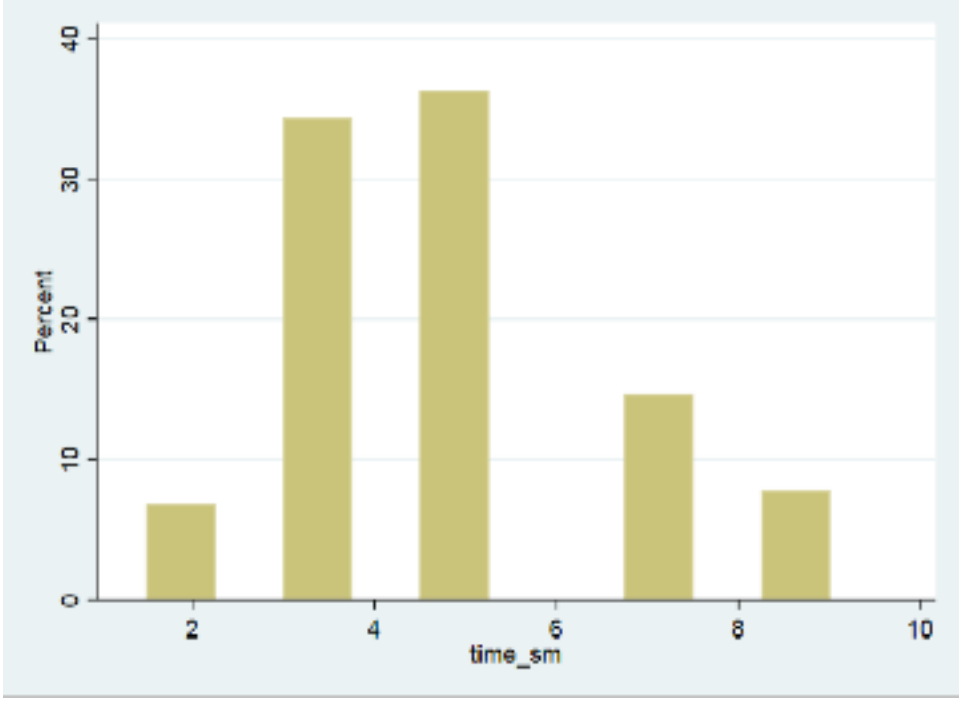


Figure2 : Male students' time spent on social media daily on average



According to Figure1, 39.52% of 167 female students spend at least five hours on social media daily while it is 36.27% of 102 male students, as shown in Figure2. Therefore, there is no significant difference on time spent between the two genders in the matter of social media usage.

ii. Regression Result

Table 2: Regression Result

VARIABLES	(1) gpax	(2) gpax	(3) gpax
female	0.129**	0.112*	0.0389
	(0.0549)	(0.0580)	(0.162)
hs_gpax	0.415***	0.409***	0.416***
	(0.0622)	(0.0637)	(0.0623)
edu_dad	-0.000535	-0.00168	-0.000472
	(0.00858)	(0.00878)	(0.00855)
edu_mom	-0.0105	-0.0107	-0.0102
	(0.00808)	(0.00841)	(0.00824)
time_sm	-0.0295***	-0.0346***	-0.0510***
	(0.0109)	(0.0117)	(0.0161)
time_smedu	0.0436**	0.0456**	0.0674**
	(0.0189)	(0.0193)	(0.0338)
time_edu	0.0127	0.00992	0.0160
	(0.0243)	(0.0246)	(0.0350)
time_eduexam	0.0107	0.00953	0.00942
	(0.0118)	(0.0120)	(0.0217)
communicate		-0.00638	
		(0.0955)	
update		0.00807	
		(0.0540)	
news		-0.0782	
		(0.0631)	
edu		0.0363	
		(0.0666)	
star		0.0293	
		(0.0627)	
shopping		0.0538	
		(0.0584)	
femalextime_sm			0.0327
			(0.0215)
femalextime_smedu			-0.0344
			(0.0403)
femalextime_edu			-0.00574
			(0.0475)
femalextime_eduexam			-0.000853
			(0.0260)
Constant	1.733***	1.821***	1.788***
	(0.244)	(0.263)	(0.261)
Observations	269	269	269
R-squared	0.217	0.226	0.222

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1