

Effect of Online Social Networking Sites Usage on Academic Performance of University Students in Uganda

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ABSTRACT

Online social networking site (OSNS) like any technological innovation provides an opportunity for quick and easy access to information. As to whether the information obtained provides additional academic knowledge to students is hypothesized and measured by their academic performance in school. This study provides evidence to the ongoing debate of whether the use of OSNS among students improves academic performance of students. Findings from the study show that the effect of OSNS usage on academic performance was significant ($p < 0.05$). Further, the study demonstrated that for better academic performance, the optimum proportion of study time that a student may spend on OSNS usage was 25 percent. Students who manage their time well were more likely to perform better than those who did not, by up to 48 percent. Furthermore, students who used OSNS more for academic than for non-academic purposes were more likely to perform better academically, by up to 11 percent. Regarding student majors: science-based majors tend to benefit more from OSNS usage compared to arts-based majors, by up to 50 percent. Student general characteristics (being male or female, married or single) and student-preferred mode of learning (using traditional, hybrid or online approach) were not significant in this study. In conclusion, use of OSNS by students at universities, when properly regulated results in better academic performance.

Keywords

Online Social Networking, Academic Performance, Logistic Regression, Uganda.

1. INTRODUCTION

The usage of online social networking sites (OSNS) such as Facebook, WhatsApp and Instagram is increasing among students [1, 2]. Students use OSNS to share learning resources, collaborate and post content online, manage and coordinate schedules, gain motivation for serious studies, participate in peer education, socialize and enjoy a sense of community belonging, communicate with their instructors, gratify themselves and get entertainment [3-8].

Numerous studies have demonstrated that through using OSNS, students achieve better academic performance [9-13]. On the other hand, unwarranted use of OSNS may negatively influence students' academic performance [5, 14-19].

Consensus on whether the use of online social networking (OSN) among students improves academic performance of user students or not is yet to be arrived at [20-22]. The purpose of this study was, therefore, to investigate the effect of online social networking usage on student academic performance

among university students in Uganda; specifically to assess the direct effect of OSNS usage and study the indirect effect on academic performance; basing on student general characteristics and, whether this be the case with upperclassmen (people who spend significantly more time using technology for academic and work-related purposes) or underclassmen (people who spend significantly more time using technology for non-academic purposes), student time management ability, student major (arts or sciences) and student preferred mode of learning (using traditional, hybrid or online).

1.1 Literature Review

The use of popular online social networking sites such as Facebook, WhatsApp, Instagram, Snap Chat, Twitter and LinkedIn is today ubiquitous, especially among students. Students nowadays spend much time on social networks [23]. For example, it has been observed that students in Serbia spend a daily average of 2.76 hours on Facebook [4] while students in Ghana spend over eight hours daily on WhatsApp Messenger [24]. On the use of technology, often students fail to regulate themselves to rightly balance between academic and non-academic usage [25-27] [15] in a study on college student technology use and academic performance found that 75 percent of technology use among students is for non-academic but rather for leisure purposes.

Regarding academics, students use OSNS to access and share learning resources [3, 6, 18, 28], collaborate and post content online [29], manage and coordinate schedules [5, 8, 30, 31], gain motivation towards serious academic studies [5, 32]; participate in peer education through interaction with each other [1, 2, 33]; socialize and enjoy a sense of community belonging [34-36], communicate with their instructors [37, 38], gratify themselves [39] and get entertainment [7].

Through OSN, students institute cooperation with their peers and facilitate knowledge transfer from individual to other group members. Furthermore, students use OSN to discuss academics [1, 11]. Accordingly, OSN facilitates students to engage in knowledge-sharing, discussion, easier access to information and gain motivation to study [1]. By using OSN, a student is likely to gain motivation to study for better academic performance, given that a segment of students lack the motivation to study outside of educational institution. Furthermore, when instructors place learning resources and notifications important for a subject onto an OSN site, the result is that students more often get in contact with the resources [32, 40, 41], which, likely, they end up exploring for better academic performance.

It has been acknowledged that OSN sites provide an important background for social, emotional and cognitive development

of young people [42]. By means of OSN students manage the fulfillment of their daily activities such as going to lectures and performing tasks efficiently and sustainably [8] Once a student can well manage his schedules, he is likely to significantly improve in academic performance. Yet, another usefulness of the ONS sites is that through the sites, students establish communication avenues with their instructors, gain greater motivation to learn, which often lead to better learning outcomes [43, 44]. On the OSN sites, instructors may post required course materials, useful multimedia contents and necessary information pertaining to the course and in this place students leave their comments, opinions, and suggestions.

Drawing from the ensuing discourse, a number of scholars have observed that under the influence of OSN, students achieve better academic performance [9-13, 45]. This is because OSN sites facilitate the immediate transfer of knowledge and learning resources among students anywhere, anytime. Social media supports a more reflective approach to learning but also offer the opportunity to make teaching more practical and application-oriented [46]. [22] Investigated the influence of OSN and concluded that online socializing does not reduce students study time, instead it helps them to get the latest study related information, share course and class schedules.

While OSN may be a boon, its unwarranted use can negatively influence students' academic performance [2, 5, 14-19, 47] through shifting focus away from concentration on academics to, say, online entertainment and non-academic socialization. Students who use OSN much are likely to engage in multitasking (doing several academic or other activities concurrently) which diminishes focus and often leads to poor academic performance [48] Moreover, social networking can become addictive, distractive and have negative impact on social interactions, emotional health or cause burnout [2] It has also been noted that OSN leads to reduction in face-to-face interaction among people, sleep problems, anxiety, depression, lack of privacy, fake identity, time consumption and, not infrequently, addiction to social media usage that interferes with performing daily tasks [49, 50] Indeed, on an OSN site, there may be so much information overload that it becomes difficult to distinguish the useful from the useless [31]. Students who spend much time on OSN tend to procrastinate and postpone academic work more often [51-53] It has been shown that students who use OSN sites everyday have significantly lower grades than those who do not [54]. [55] Investigated phone usage and revealed that mobile phone usage significantly influence academic performance among male and female senior secondary school students. Similarly, [56] researched and found a lowering in academic performance among students who use ONS more.

There is an ongoing debate as to whether the use of OSN among students improves academic performance of user students or not does persist [20-22, 57]. On one hand, OSN is seen to improve academic performance of student users [22, 46, 58] while on the other it does negatively impact on academic performance [20, 51, 56, 59]. Aside from the ensuing arguments, [60] found that the reverse is the case, i.e. it is OSN usage that influences academic performance: the lower the academic performance the more the recourse to OSN. Yet, there are scholars who argue that OSN usage among students has neither positive nor negative effect on student academic performance [15, 61], whether this be among upperclassmen (people who spend significantly more time using technology for academic and work-related

purposes) or underclassmen (people who spend significantly more time using technology for non-academic purposes); whether male or female student [62, 63] whether there exist differences in learning styles or not [64]. According to [65], performance is a function of attention span, time management skills, student characteristics, academic competence and time spent on OSN. Student characteristics include age, gender, marital and family status, work requirements, major (arts or sciences based academic program of study that a student is enrolled in) and preferred mode of learning (using traditional, hybrid or online learner using technology of a student). Attention span refers to the length of time for which a student is able to concentrate on a particular academic activity, say a one-hour lecture.

2. METHODOLOGY

To achieve the objectives of this study, data were collected in May 2016 from 312 students of Makerere University using stratified cluster sample design. Students offering arts, sciences, male and female were targeted. Data were collected on the different characteristics as presented in Figure 1 with academic performance transformed into a binary outcome. Primary data were collected by means of a self-reported questionnaire.

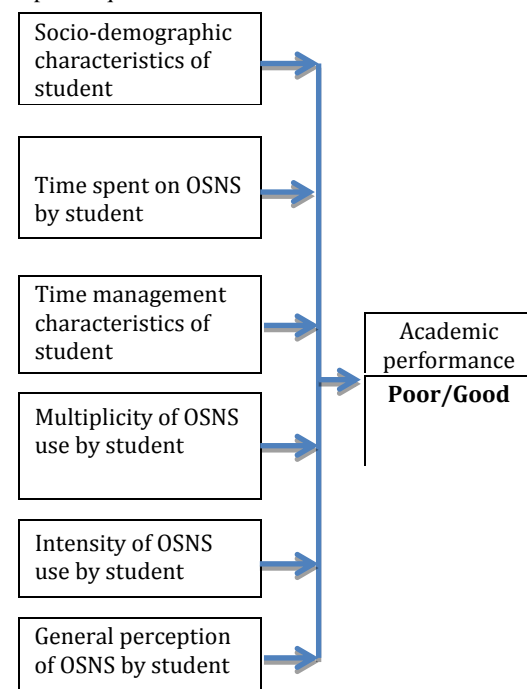


Figure 1: Conceptual framework for effect of online social networks on student academic performance

Fifty two (52%) percent of the respondents were male and 48 percent female. The majority of the respondents (74%) were students majoring in science-based disciplines while the rest (26%) were majoring in arts-based disciplines. The survey questions were designed to measure the constructs focusing on various plausible independent variables including student socio demographic characteristics, time spent on OSNS, time management, multiplicity of OSNS usage, intensity of OSNS usage and general perception of OSNS.

The data was analyzed using STATA Version 13.0 (StataCorp, 2013). Descriptive statistics were invoked for description of respondent characteristics. At bivariate level, simple logistic regression and cross tabulation were used. Significant independent variables were considered for

multivariate analysis performed using structural equation modeling approach.

3. FINDINGS

3.1 Description of respondents

Findings from the study are presented beginning with the characteristics of respondents, then the relationships between academic performance and the potential determinants and lastly the model for OSNS usage on academic performance.

In Table 1 a description of the characteristics of the respondents to the study is made.

Table 1: Characteristics of respondents

Variable	Percentage	n
Age		
<=20 years	36.55	106
>20 years	63.45	184
Gender		
Male	52.22	153
Female	47.78	140
Marital status		
Married	7.33	22
Single	92.67	278
Family status		
Has no children	94.8	237
Has children	5.2	13
Work requirements		
Spends <=8 hours	68.15	184
Spends >=8 hours	31.85	86
Time management skills		
Yes	65.65	193
No	34.35	101
Student major		
Arts	26.48	76
Sciences	73.52	211
Mode of learning		
A purely face-to face student	67.01	195
An hybrid (ie sometimes an online student)	31.62	92
A purely an online student	1.37	4
Time spent on OSNS		
Don't use	2.01	6
1-2 hours	22.82	68
3-4 hours	22.82	68

5-6 hours	15.44	46
>6 hours	36.91	110
Multiplicity of OSNS uses		
Strongly agree	27.3	80
Agree	34.81	102
Neutral	17.41	51
Disagree	14.68	43
Strongly disagree	5.8	17
Heavy use of OSNS		
Very high	15.31	45
High	16.67	49
Moderate	22.45	66
Low	20.75	61
Very low	24.83	73
General perception about OSNS (usefulness)		
Strongly agree	53.69	160
Agree	33.56	100
Neutral	9.4	28
Disagree	2.35	7
Strongly disagree	1.01	3
Academic performance		
Poor	38.33	115
Good	61.67	188

According to results in Table 1, more than half of the respondents were above 20 years (63.5%) with only 36.5%, 20 years and below. Regarding gender, the highest proportion was males (52.22%) then females (47.78%). As for family status only 5.2% had children with the majority (94.8%) having none. Majority of the respondents worked for 8 hours or less (68.15%) with only 31.85% working beyond 8 hours. Pertaining to time management, only 34.35% of respondents had poor time management skills with the rest (65.65%) having good time management skills. Majority of the students interviewed were majoring in Science disciplines (73.52%) with only 26.48% majoring in Arts. Regarding the mode of learning, majority of the respondents preferred purely face-to-face learning (67.01%) with only 31.62% preferring hybrid and 1.37% purely online. As regards time spent on OSNS, the highest proportion spent over 6 hours (36.91%) with only 2.01% not connected to OSNS. As for multiplicity of OSNS usage, the highest proportion (34.81%) agreed to using multiple OSNS followed by those who strongly agreed (27.3%) with the least being those who strongly disagree (5.8%). On intensity of OSNS usage, 15.31% reported that they were heavy OSNS users (i.e. use OSNS for over two (2) hours out of eight (8) working hours) while 24.83% reported that they were low users. Regarding respondents' general perception about OSNS, 53.69% strongly agreed that it's useful with only 1.01% strongly disagreeing. As for academic performance, majority of the respondents were good performers (61.67%) and only 38.33% were poor performers.

3.2 Relationship among predictors of academic performance

We present tests of relationship between duration and potential indirect predictors of academic performance in Table 2.

Table 2: Duration of OSNS usage and associated factors

		DURATION OF OSNS USAGE				
		0-2 hrs	3-4 hrs	5-6 hrs	7-8 hrs	9 plus hr
Enough time (tm8)	Yes	28.18	20.44	17.68	4.97	28.73
	No	14.41	24.32	16.22	15.32	29.73
		chi2(4) = 14.5288 Pr = 0.006				
Checking OSNS (as3)	Yes	17.22	23.44	16.27	10.05	33.01
	No	38.37	17.44	19.77	5.81	18.60
		chi2(4) = 18.7230 Pr = 0.001				
Sex	Male	27.33	23.33	16.00	11.33	22.00
	Female	20.14	19.42	17.99	6.47	35.97
		chi2(4) = 9.0398 Pr = 0.060				
Mode of learning (sc5)	A purely face-to face	27.08	23.44	18.23	8.85	22.40
	An hybrid	15.56	20.00	16.67	5.56	42.22
	A purely an online student	0.00	0.00	0.00	25.00	75.00
		chi2(8) = 19.8385 Pr = 0.011				
Power effect (sc91)	Yes	13.20	19.80	20.81	10.66	35.53
	No	42.39	25.00	10.87	5.43	16.30
		chi2(4) = 37.8547 Pr = 0.000				
Status updates (sc92)	Yes	12.59	17.04	20.00	11.85	38.52
	No	31.82	26.62	14.94	6.49	20.13
		chi2(4) = 26.4608 Pr = 0.000				
Primary means of comms (sc93)	Yes	18.37	19.90	19.39	10.71	31.63
	No	31.91	24.47	13.83	5.32	24.47
		chi2(4) = 10.0353 Pr = 0.040				
OSNS Enjoyment (pb1)	Strongly agree	14.16	20.35	17.70	10.62	37.17
	Agree	17.65	25.49	15.69	10.78	30.39
	Neutral	41.30	15.22	23.91	6.52	13.04
	Disagree	36.36	31.82	13.64	0.00	18.18
	Strongly Disagree	62.50	12.50	12.50	0.00	12.50
		chi2(16) = 35.8466 Pr = 0.003				
OSNS useful (pb2)	Strongly agree	15.72	17.61	18.87	12.58	35.22
	Agree	27.84	26.80	14.43	6.19	24.74
	Neutral	40.74	29.63	18.52	0.00	11.11
	Disagree	57.14	28.57	0.00	0.00	14.29
	Strongly Disagree	33.33	0.00	66.67	0.00	0.00
		chi2(16) = 35.6729 Pr = 0.003				
Improve performance (pb37)	Strongly agree	13.79	13.79	24.14	10.34	37.93
	Agree	19.15	27.66	9.57	10.64	32.98
	Neutral	28.07	21.05	19.30	3.51	28.07

	Disagree	21.57	25.49	21.57	7.84	23.53
	Strongly Disagree	46.15	15.38	15.38	15.38	7.69
		chi2(16) = 29.3758 Pr = 0.022				
Hard to resist (ad24)	Strongly agree	6.06	24.24	19.70	10.61	39.39
	Agree	21.54	16.92	9.23	15.38	36.92
	Neutral	15.63	31.25	15.63	6.25	31.25
	Disagree	24.59	22.95	13.11	8.20	31.15
	Strongly Disagree	43.08	18.46	26.15	3.08	9.23
		chi2(16) = 48.1751 Pr = 0.000				
Multiple OSNS (ad1)	Strongly agree	18.99	17.72	20.25	10.13	32.91
	Agree	17.17	20.20	18.18	12.12	32.32
	Neutral	21.57	23.53	23.53	5.88	25.49
	Disagree	28.57	26.19	9.52	4.76	30.95
	Strongly Disagree	58.82	29.41	5.88	5.88	0.00
		chi2(16) = 26.8569 Pr = 0.043				
OSNS first priority (ad3)	Strongly agree	17.50	20.00	17.50	10.00	35.00
	Agree	14.29	31.43	15.71	14.29	24.29
	Neutral	25.53	10.64	29.79	2.13	31.91
	Disagree	18.67	18.67	18.67	6.67	37.33
	Strongly Disagree	40.00	23.64	9.09	10.91	16.36
		chi2(16) = 34.5231 Pr = 0.005				
OSNS addiction (ad23)	Strongly agree	11.11	20.00	17.78	13.33	37.78
	Agree	16.33	22.45	12.24	10.20	38.78
	Neutral	20.00	15.38	21.54	10.77	32.31
	Disagree	27.59	25.86	13.79	8.62	24.14
	Strongly Disagree	33.33	25.00	18.06	4.17	19.44
		chi2(16) = 20.6535 Pr = 0.192				

Initially, we established that there was no significant direct relationship between potential predictors and academic performance. We further performed the chi-square tests for potential predictors and time spent on OSNS and established that all potential factors, except two (sex and level of addiction to OSNS) were significant ($p < 0.05$).

Table 2 shows that 28.73% of the students who consulted OSNS for their assignments spent over 9 hours on OSNS as much 33.01%, who often checked OSNS in the middle of working on an assignment. Further, students who reported that they learned best while using purely online materials (75%), spent over 9 hours on OSNS. Power fluctuations affected usage of OSNS and subsequently, academic performance; 35.53% of the students who reported to be completely out of touch when the power was off, spent over 9 hours on OSNS.

Findings also show that students who spent at least 9 hours on OSNS had the following characteristics: 38.52% admitted updating their statuses and checking that of their friends on a daily basis, 31.63% used OSNS as ones primary means of communication, 37.17% used OSNS for enjoyment, 37.93% used OSNS to improve their academic performance, 39.39 % found it hard to resist the use of OSNS, 32.91% agreed to use

of multiple OSNS and 35% strongly agreed to have postponed an activity for OSNS.

3.3 Model of OSNS Usage on Academic Performance

The study found that the effect of heavy OSNS usage on student academic performance to be statistically significant (presented in Table 3 which follows).

Table 3: Model of academic performance and OSNS usage

Academic Performance	Odds Ratio	P>z	95% C.I	
Heavy use				
Strongly Agree	1.00	-	-	-
Agree	0.51	0.14	0.21	1.24
Neutral	0.47	0.08	0.20	1.08
Disagree	0.66	0.35	0.28	1.57
Strongly Disagree	0.39	0.03	0.17	0.89

From Table 3, there exists a significant association between heavy use of OSNS and academic performance.

Table 4: Model of Academic Performance and potential direct predictors

Academic Performance	OR	P>z	95% C.I	
Time management skills				
Yes				
No	0.49	0.05	0.24	0.99
Member of multiple OSNS				
Strongly agree				
Agree	2.13	0.09	0.90	5.05
Neutral	1.84	0.25	0.65	5.21
Disagree	1.60	0.39	0.55	4.68
Strongly Disagree	5.00	0.05	1.01	24.60
Heavy use of OSNS				
Strongly agree				
Agree	0.42	0.16	0.12	1.39
Neutral	0.29	0.04	0.09	0.93
Disagree	0.48	0.25	0.14	1.67
Strongly Disagree	0.20	0.01	0.06	0.66

From Table 4, for students who had good time management skills, the odds of performing well were higher compared to students with poor time management skills. Regarding being a member of multiple OSNS, for students who strongly disagreed, the odds of performing well academically were higher compared to students who strongly agree.

With reference to heavy use of OSNS, for students who strongly disagreed, the odds of performing well academically were lower compared to those of students who strongly agreed. Similarly, for students who were neutral regarding heavy use of OSNS, the odds of performing well academically were lower compared to those of students who strongly agreed.

4. DISCUSSION OF FINDINGS

This study focused on the effect of online social networking site usage on student academic performance in Uganda; specifically assessing the effect of indirect effect via OSNS usage and direct effect on academic performance; basing on student general characteristics and, whether this be the case with upperclassmen (people who spend significantly more time using technology for academic and work-related purposes) or underclassmen (people who spend significantly more time using technology for non-academic purposes), student time management capability, student major (arts or sciences) and student preferred mode of learning (using

traditional, hybrid or online). To study the direct and indirect effects, we employed structural equation models as presented in Table 3 and Table 4.

From the study, the effect of OSNS usage on academic performance was significant ($p < 0.05$). This is in agreement with several other scholars: [9-13, 43, 45] Farther, this study demonstrated that for better academic performance, the optimum proportion of study time that a student may spend on OSNS usage is approximately twenty-five percent (25%); note taken of students who spend approximately two (2) hours on OSNS usage out of eight (8) study hours in a day. It is probable that the students whose OSNS usage are above the optimum, likely tend towards addiction to social media usage leading to interference with their daily tasks performance synchronous with studies by [49, 50] Besides, it is likely that the students whose OSNS usage are above the optimum do engage on multitasking which diminishes focus and often leads to poor academic performance [48, 56]. Moreover, students who spend much time on OSNS tend to procrastinate and postpone academic work more often [51-53].

Consistent with the study by [8] students who manage their time well reported better academic performance. This study found that students who manage their time well are likely to perform better than those who do not, by up to 48 percent. Farther, the study found that students who reported that they use OSNS more for academic purposes also reported better academic performance, by up to 11 percent compared to those who engage in OSNS usage for more for non-academic purposes.

Considering the student major: with regards to good academic performance: science-based majors tend to benefit more from OSNS usage compared to arts-based majors, by up to 50 percent. This is likely because science-based studies are factual. The science information found on the Internet is easily verifiable while the arts based information may be debatable.

5. CONCLUSION

The amount of time spent using online social networking sites (OSNS) significantly affects student academic performance. For good academic performance, the optimum proportion of study time that a student may spend on OSNS usage is approximately twenty-five percent (25%). Students who manage their time well are likely to perform better than those who do not, by up to 48 percent. Furthermore, students who use OSNS more for academic than for non-academic purposes are likely to perform better academically, by up to 11 percent. Regarding student majors: science-based majors tend to benefit more from OSNS usage compared to arts-based majors, by up to 50 percent. However, demographic characteristics of the students such as sex and age do not affect their OSNS usage and subsequently their academic performance. The study recommends that educational institutions should institute compulsory OSNS courses for all students to enable them manage and refocus OSNS so as to benefit their academic performance.

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