

A Quantitative Assessment of the Impact of the Internet on Academic Fraud

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Abstract— Academic fraud has been acknowledged to be a global phenomenon and as a result many scholars and stakeholders have expressed concern about its growth rate in recent times. Owing to this development, many individuals and institutions have attributed the surge to the evolution of the internet. The research is to verify whether there is any statistical significant relationship between the internet and academic fraud and also to estimate the extent of the impact of the internet on academic fraud using UDS-Navrongo campus as a case study. The study applied the multiple linear regression model on the data collected from a sample of 350 students using questionnaires. Under this model, a correlation and regression analysis is done, resulting in a model equation. Academic fraud (dependent variable) was studied alongside a number of independent variables (indicators/regressors) to determine if, there is any relationship between them. The level of impact of the significant independent variables on academic fraud were determined thereafter. Findings from the study reveals a significant positive relationship between internet usage by students in academic exercises and academic fraud. It is however hoped that, these findings, will be of immense benefit to academic institutions and other stakeholder by taking proactive and strategic measures in reducing internet related acts of academic fraud.

Index Terms— Academic Fraud, Academic Integrity Internet, Multiple Linear Regression Model.

I. INTRODUCTION

Internet technology has undoubtedly made life easier and more convenient in almost every aspect of our lives. By this development, internet usage has grown upto 151.6% since 2000, and access to information on any topic is only a click away [20].

However, there seem to be some growing concern regarding the propensity and ease with which it aids students in the commitment of acts of academic fraud. These acts, which are known to take various forms including: plagiarism, false citation, multiple submission, and cheating in examination amongst others. This apparently bringing into question the integrity of academic institutions and the quality of students that graduate from these institutions [1]-[4],[6].

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Consequently, numerous researchers have conducted some forms of studies into this area over the years and although there is high level of agreement on the exponential growth rate of incidences of this alarming phenomenon, there is still some level of dispute and uncertainty regarding internet accessibility and usage by students in academic exercises as the root causes of academic fraud [6],[9]-[11],[15]. There is a dearth of empirical evidence pointing out to the fact as to whether students have significantly dropped their old method of academic fraud and adapted internet related ones [10]-[11],[13],[16]-[17].

Nonetheless, in the absence of the fact that; the internet is the root cause for the rise in cases of academic fraud, several researchers, the public and academics still make some non-factual and hypothetical pronouncements regarding the fact that, the internet is the root cause for the rise in academic fraud.

For instance, according to [5],[7]-[9],[11], academic fraud is a growing concern amongst students for better grades. It occurs in the elementary school, middle school, high school, college, and even in master's level programs and further added that, the evolution of the internet is making it easier to have access to different tools that facilitates the acts of academic fraud and normally leave students with a decision to choose academic dishonesty over academic integrity.

Ryan in 1998, reports that, data from 1997-1998 suggests that, 1 in 6 papers submitted to 2 separate college classes were entirely or almost entirely copied from other sources [17], while 2 in a survey of 2,100 students on 21 campuses in 1999 by McCabe, showed approximately one third of students admitting to serious cheating on tests (copying in examination, use of crib notes, or helping others on a test) and about half admitted to serious cheating on written assignments (plagiarism, collaboration with others, failure to footnote, falsifying laboratory data, submitting a “paper mill” manuscript or copying) and that in high school, the problem is apparently worse because in a 2001 survey of 4,500 high school students, 74% participated in one or more instance of serious act of academic fraud [11],[13]-[15],[17]-[18].

By these appreciable propositions and others, this research is examines and analyses the relationship between the internet and academic fraud in the Navrongo campus of the University for Development Studies.

II. MATERIALS AND METHODS

The study took on a cross-sectional and quantitative study design. A cross-sectional design was adopted because the

study was undertaken at one point in time and a quantitative approach was deemed fit to meet the objectives of the study.

Data that was required was collected within the university using a questionnaire.

The sampling technique used is simple random sampling where data was collected from some students through questionnaires. It sought to find out their engagement level in various form of academic dishonest, sources that aided in those acts and the frequency of engagement.

Statistical Package for Social Sciences (SPSS) software package (version 20.0) was used in coding, processing and obtaining the analysis of the data from the questionnaires.

To achieve the objectives of this research, the Multiple Linear Regression Model was chosen as the main statistical methodology for analyzing the data. This was used to determine the relative likelihood of a relationship between the internet and academic fraud. The multiple regression is a model that portrays a correlation between a dependent variable and a set of predictors/independent variables.

A. Tested Hypothesis

From the research questions, the study formulated the following hypothesis:

Null hypothesis is H_0 : There is no relationship between the Internet and Academic Fraud.

Alternative hypothesis is H_1 : There is a relationship between the Internet and Academic Fraud.

From the analysis we determined the multiple linear regression Coefficient and determined also whether to reject the Null hypothesis or accept the alternative hypothesis.

III. RESULTS AND DISCUSSION

The administered questionnaire was coded and inputted into SPSS for further analysis, resulting in the tables below.

A. Forms of Student Engagement in Acts of Academic Fraud

The various forms of academic fraud including; downloading and submitting a similar or same report as your own, coping answers from group pages as your own, changing sample data from the internet to suite your purpose, downloading and altering similar or same laboratory data as your own, and coping during examination amongst others. The analysis for the various elements of fraud model equation parameters, and coefficients is therefore presented in the tables below.

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.422 ^a	0.178	0.176	0.70007
2	.490 ^b	0.24	0.236	0.67413
3	.534 ^c	0.285	0.279	0.65502
4	.549 ^d	0.301	0.293	0.64845
5	.558 ^e	0.311	0.301	0.64483

Table 2: Forms of Students Engagement in Acts of Academic Fraud

Question Code	Indicators under the internet	Yes	Percentage (%)	No	Percentage %	Can't Remember	Percentage (%)
QB1	Downloading and Submitting a similar/or same report as your own	223	63.7	81	23.1	46	13.1
QB2	Coping answer from group pages on WhatsApp and submit as your own work	245	70	35	10	70	20
QB3	Changing sample data from the internet to suite your purpose and submit as your own work	175	50	66	18.9	109	31.1
QB4	Downloading and altering similar/or same laboratory report as your own work.	67	19.1	242	69.1	41	11.7
QB5	Do you have friends who engage in some of these behavior just like you do?	161	46	140	40	49	14

QB6	Downloading documents and forging them as your own e.g. Certificates, Results etc.	37	10.6	253	72.3	70	17.1
QB7	Copying and pasting sentence from an online/electronic source without acknowledging the source	94	26.9	187	53.4	69	19.7
QB8	Communicating with a friend during exams/quizzes though a social media platform e.g. WhatsApp.	259	74	43	12.3	48	13.7
QB9	Using a smart phone to search online for answers during quizzes and exams.	182	52	113	32.3	55	15.7

Table 3: Table of Coefficients

Model	Unstandardized Coefficients			Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
	B		Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	0.705	0.091		7.746	0					
	QB9	0.44	0.051	0.422	8.691	0	0.422	0.422	0.422	1	1
2	(Constant)	0.397	0.105		3.778	0					
	QB9	0.397	0.049	0.381	8.029	0	0.422	0.396	0.376	0.973	1.028
	QB8	0.271	0.051	0.252	5.319	0	0.315	0.275	0.249	0.973	1.028
3	(Constant)	0.097	0.121		0.806	0.421					
	QB9	0.387	0.048	0.371	8.048	0	0.422	0.397	0.366	0.971	1.03
	QB8	0.268	0.05	0.249	5.402	0	0.315	0.279	0.246	0.973	1.028
	QC1.2	0.206	0.044	0.211	4.642	0	0.235	0.242	0.211	0.997	1.003
4	(Constant)	0.23	0.128		1.791	0.074					
	QB9	0.37	0.048	0.355	7.698	0	0.422	0.383	0.346	0.955	1.047
	QB8	0.284	0.049	0.264	5.747	0	0.315	0.296	0.259	0.96	1.042
	QC1.2	0.217	0.044	0.223	4.929	0	0.235	0.256	0.222	0.989	1.011
	QC1.0	-0.084	0.03	-0.13	-2.836	0.005	-0.122	-0.151	-0.128	0.967	1.034
5	(Constant)	0.064	0.148		0.433	0.665					
	QB9	0.375	0.048	0.36	7.844	0	0.422	0.39	0.351	0.953	1.05
	QB8	0.221	0.057	0.206	3.899	0	0.315	0.206	0.175	0.72	1.39
	QC1.2	0.217	0.044	0.222	4.937	0	0.235	0.257	0.221	0.989	1.011
	QC1.0	-0.087	0.029	-0.135	-2.96	0.003	-0.122	-0.158	-0.132	0.965	1.036
	QB7	0.13	0.059	0.115	2.209	0.028	0.222	0.118	0.099	0.741	1.35

The summary model in the above tables gives a summary of the regression model. In the case of this, the multiple regression coefficient is 0.558 which is an improvement over previous four (4) regressions of 0.422, 0.490, 0.534 and 0.549. This gives an indication that adding more variables to the model as obtained in the previous ones will increase its predictive power or ability.

Since the multiple regression coefficient (R) is 0.558 (That is greater than 0.5) then we reject the null hypothesis that “there is no relationship between the internet and academic fraud and accept the alternative that, “There is a relationship between the internet and academic fraud”. This is in respect of the thumb rule that, a regression coefficient between 0.5 and 1 inclusive indicate a strong relation between the

multiple independent variables and the dependent variable and otherwise is a weak relationship.

Also R-squared is 0.311 implying that approximately 31.1% of the variation in the number of cases of academic fraud is accounted for by the model (cases of academic fraud).

The research work therefore concludes that, there is a relationship between the internet and academic fraud.

Furthermore, taking a critical look at the coefficient output in table 3, it is observed under the Sig column; the average exercise of the following independent variable QB7, QB8, QB9, QC1.0 and QC1.2 has a significant effect on the level of cases of academic fraud. However, the independent variable QB1, QB2, QB3, QB4, QB5, QB6 and QC 1.1 did not seem to have any effect on the dependent variable QC1.3 (academic fraud) since they do not produce significant results (their P-value were greater than 0.05).

From these significant predictors and the Beta coefficients under the standardized coefficients in the coefficient output table (since we want to standardized all the variables) we have the following Multiple linear regression model Equation;

From the table also, the intercept is 0.064 whilst the slopes of partial correlation coefficients of the significant independent variables of QB7, QB8, QB9, QC1.0 and QC1.2 are 0.360, 0.206, 0.222, -0.135 and 0.115 respectively.

Hence putting all together fits the model equation below;

$$Y = 0.064 + 0.360(QB7) + 0.206(QB8) + 0.222(QB9) - 0$$

Where;

Y = Academic fraud.

QB7 = Copying and pasting sentences from an online/electronic sources without acknowledging the source.

QB8 = Communicating with a friend during exams/quizzes through a social media platform e.g. WhatsApp.

QB9 = Using a smart phone to search online for answers during quizzes and exams.

QC1.0 = Which of the following sources if not used frequently can reduce academic fraud?

QC1.2= Why do prefer your choice in QC.1.0 above?

A. Interpretation of the Model Equation

The interpretation of any fitted model requires the ability to draw inferences from the estimated coefficients. This estimated coefficients for the independent variables, represent the slope or rate of change of the dependent variable per unit of change in the independent variable.

Therefore, from the model above, any unit increase in QB7, QB8, QB9 and QC1.2 causes a corresponding increase of 0.360, 0.206, 0.222, and 0.115 respectively on cases of academic fraud. However, any unit case of QC1.0 has an inverse implication of 0.135 on cases of academic fraud.

IV. CONCLUSIONS

Findings from the study reveals a significant use of the internet related methods in the commitment of acts of academic fraud relative to the old or traditional methods as more than average of the study sample admit to using internet-aided methods in plagiarism, cheating and coping amongst others. This finding is in accordance with [9] and [11] studies which indicated that, the internet technology is causing the rise in cases of academic fraud. Coupled with the

above is the positive correlational relationship between the internet indicators and academic fraud which goes to support the hypothesis that, the internet is the root cause for the rise in cases of academic fraud.

This study concludes that, it is imperative academic institutions and stakeholders to adopt more pragmatic and sophisticated instructional and assessment practices towards ensuring that students become honorable in their studies rather than just craving for grades by engaging in all forms of academic fraud.

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