Volume 4, Eds 2
e-ISSN: 2716-666X

Please cite this article as: Jamil Azhar, S. M. F., Azemi, A., Rossli, M. A. H., Nadzri, M. S. (2023). The Effect of Control on The Prevention of Online Examination Fraud. The Asian Journal of Professional and Business Studies. Vol 4 Issue 2, 2023 No 7.

THE EFFECT OF CONTROLS ON THE PREVENTION OF ONLINE EXAMINATION FRAUD

Sheikh Muhammad Faris Jamil Azhar *(a),* Azwanis Azemi* *(b),* Muhammad Asyraf Haziq Rossli *(c)*
Muhammad Syazwan Nadzri *(d)*
Corresponding author*

(a)Universiti Poly-Tech Malaysia, Institute of Professional Studies, faris@uptm.edu.my
(b)Universiti Poly-Tech Malaysia, Institute of Professional Studies, azwanis@uptm.edu.my
(c)Universiti Poly-Tech Malaysia, Institute of Professional Studies, asyraf@uptm.edu.my
(d)Universiti Poly-Tech Malaysia, Institute of Professional Studies, syazwan_m@uptm.edu.my

DOI:
Received 2 November 2023, Accepted 20 December 2023, Available online 29 December 2023

ABSTRACT

The purpose of this study is to identify the effect of controls and heavy punishment on the prevention of online examination fraud for high qualification professional students at one of the universities in Malaysia. The study has listed five potential key factors as follows: (1) identity verification, (2) exam proctoring, (3) toilet visit procedures, (4) punishment, and (5) embarrassment. 108 professional students were given the questionnaire. Correlation and multiple regression analyses were performed on the data collected from the respondents. The results of the analyses have shown that certain controls, such as exam proctoring and embarrassment, have a positive impact on the prevention of online examination fraud at the university. Whereas the other controls, which are identity verification, toilet visit procedures, and punishment, do not significantly have a positive impact on the prevention of online examination fraud at the university. This study benefits higher education institutions by providing valuable information that may boost their oversight and improve their ability to prevent online examination fraud through more effective controls.

ARTICLE INFO

Keywords:

Academic Fraud,
Controls,
Online Examination,
Punishment

1.0 INTRODUCTION

The act of academic examination fraud is a grave concern that has the potential to erode the development of one's character and jeopardize the credibility of academic institutions (Meng et al., 2014). According to Bujaki et al. (2019) and Wei et al. (2014), the provision of unfair advantages to individuals can lead to the distortion of academic performance assessment. The perpetration of examination fraud in higher education can result in enduring ramifications, given that students who partake in unethical conduct during their academic tenure are predisposed to persist in such behaviour in their vocational pursuits, which could potentially culminate in corporate scandals (Malgwi & Rakovski, 2009; Meng et al., 2014).

The prevention of academic examination fraud is a responsibility that lies with the faculty and staff. The management of an institution is instrumental in establishing an environment that reduces the likelihood of fraudulent activities (Malgwi & Rakovski, 2008). According to Malgwi & Rakovski (2008, 2009), the implementation of robust internal control measures and the identification of risk factors can serve as effective deterrents to academic fraud within institutions. According to Hutton (2006), the implementation of severe sanctions and the uniform application of rules, in addition to the informal actions taken by academic staff, have proven to be efficacious in preventing instances of academic dishonesty.

According to Glenn and Raine (2014), the imposition of penalties is a crucial component in dealing with academic dishonesty, and it is imperative that individuals are held responsible for their misconduct. Lin (2013) has identified that insufficient punitive measures may serve as a contributing factor to academic fraud, as students may not be dissuaded from engaging in such behaviour if the repercussions are deemed inadequate. According to Leung (1995), the deterrent effect of punishment is more strongly influenced by the possibility of being punished than the severity of the punishment. According to Meng et al. (2014) and Bunn et al. (1992), enhancing the probability of facing penalties can serve as a preventive measure against academic misconduct.

Hutton (2006) identified several determinants that impact students' inclination towards engaging in unethical conduct, such as the potential for reward, the level of enforcement, the severity of penalties, and the probability of being caught. The phenomenon of academic examination fraud can be elucidated through the use of the fraud triangle theory, which encompasses three key elements: incentive or pressure, rationalization, and opportunity (Muhsin et al., 2018).

Previous research has indicated that the enrolment criteria for accounting professional examinations, such as the Association of Chartered Certified Accountants (ACCA), should be limited to students who have achieved exceptional academic performance in their secondary education. This is due to the fact that a significant number of students encounter difficulties in successfully completing their studies (Azemi et al., 2022).

The development of a professional accounting program is underway in order to align with the government's objective of attaining a total of 60,000 professional accountants by the year 2030. As evidenced by Azemi et al. (2022), this target was not accomplished in the year 2020.

The Association of Chartered Certified Accountants (ACCA) initially implemented computer-based exams (CBEs) for the Applied Knowledge component in 1998. Since 2015, ACCA has been actively exploring the utilisation of technology for exam administration, particularly in the context of the Applied Skills CBEs. Starting in June 2019, all of the Applied Skills exams offered by the Association of Chartered Certified Accountants (ACCA) are exclusively administered as computer-based exams. By June 2020, the remaining variants of these exams will also be delivered digitally. Commencing in March 2020, the administration of ACCA Strategic Professional examinations will transition to exclusive computer-based delivery in specific markets. This progressive shift will ultimately result in the complete global adoption of computer-based examinations for all ACCA assessments by the year 2022.

Students who possess a strong belief in the security, stability, and potential for future career opportunities in the field of professional accounting exhibit a higher likelihood of selecting the professional accounting program. Indeed, it is a widely acknowledged fact that the industry actively pursues individuals with a strong academic background who possess

the potential to assume roles as accountants or auditors in the future. According to Azemi et al. (2022), it is expected of these people that they will exhibit qualities such as integrity, honesty, and professionalism.

The issue of online examination fraud is a widespread phenomenon that has impacted numerous countries worldwide. Instances of online examination fraud have been brought to the forefront in recent news articles, citing examples of cheating during online examinations in India and at military academies (BBC News, 2020; Bengrut, 2021). Academic fraud has also been observed in Southeast Asian nations such as Singapore and Malaysia (The Star, 2019; The Straits Times, 2020).

The contemporary rapid-paced milieu, coupled with the desire to attain academic excellence and the accessibility of technology, are among the factors that have led to the escalation of academic misconduct (Curran et al., 2011; Gasparyan et al., 2016). The implementation of robust internal control measures is imperative to minimizing the incidence of fraudulent activities and discouraging individuals who engage in academic fraud (Transparency International, 2013). It is imperative to ensure that internal control policies and regulations are frequently revised to effectively tackle emerging challenges and forestall fraudulent activities (Baz et al., 2017).

Previous studies by Azhar et al. (2023), has shown that there is a relationship between monitoring and punishment on academic fraud prevention in physical examinations. Due to the growing prevalence of online tests and assessments after the pandemic, it is worthwhile to do more study on the issue within the framework of online examinations (Azhar et al., 2023).

To effectively tackle online examination fraud, it is imperative for academic institutions to consistently evaluate potential opportunities and pressures, revise internal control policies, and amend pertinent legislation to address emerging trends and deter fraudulent activities (Baz et al., 2017).

2.0 LITERATURE REVIEW

2.1 Academic Fraud

Studies define academic fraud differently. Martinez & Ramírez (2018) believe that academic dishonesty gives poor students an unfair advantage. Sierra and Hyman (2008) study student fraud. Academic fraud involves test cheating, assignment plagiarism, and uncited academic context use (Hughes & McCabe, 2006). Genereux and McLeod (1995) define academic fraud as illegally getting academic results.

There are several academic fraud prevention methods. The administration's strict rules and strong punishments work (Malgwi & Rakovski, 2009). Following the COVID-19 and the Movement Restriction Order (MRO) which requires many schools to deliver examinations online, laws and punishments must be modified to remain current and effective to prevent large-scale online academic fraud.

2.2 Identity Verification

Exam impersonation was 27.1% for Taderera, Nyikahadzoi, Matamande, and Mandimika (2014). A person mimicking another is impersonation. To avoid impersonation, the student's ID card is checked against official documents.

According to Taderera et al. (2014), students may claim to have lost their student IDs to acquire a letter from the Student's Records and Registration Office confirming their enrollment. This letter has no image, so anybody may imitate the student. Invigilators checking the student's ID before entering the exam location may not identify the impostor. ID cards may be falsified, making student authentication inefficient. The ID card has actual student information but with the imposter's photo. ID verification waits are long at the exam location, and invigilators cannot spend much time checking for impersonation (Rufai, Adigun, & Yekini, 2012). Online examinations without invigilators increase impersonation risk (Gathuri & Kamundi, 2014).

Rufai et al. (2012), Haruna (2018), and Saheed, Hambali, Adeniji, and Kadri (2017) advised biometric examinations. More secure biometric recognition prevents counterfeiting. Student screening, queueing, and dependability increase. Online tests and assessments might benefit from biometric identification since invigilators would have problems matching students' image IDs with their information (Gathuri & Kamundi, 2014).

Cheating students may even attend the test's start for identity verification alone and then ask someone else to take it (Gathuri & Kamundi, 2014). Thus, Gathuri and Kamundi (2014) recommended biometric or photo ID verification during tests. Since the study was done in 2014, it would be interesting to check whether the same control mechanism may prevent fraud in the commonly used online COVID-19 test.

2.3 Exam proctoring

Impersonation, cooperation, and unauthorized resource use during tests are academic fraud (Hylton, Levy, & Dringus, 2016). Proctoring students using invigilators may avoid exam-related crime. Exam proctoring involves student conduct (Hylton et al., 2016). Students may commit fraud with little oversight. Minor tests are cheated more than finals. Quizzes and assignments affect final grades less, and management will punish cheaters less. Minor assessments are frequently done unsupervised and without seats. This setting encourages student cheating (Yussof & Ismail, 2018). Noor and Dangi (2014) found that 23.7% of respondents thought invigilators were mismanaging tests. Another 22% claimed the seating is close, while 20.3% said free test seating encourages cheating.

Abdaoui (2018) showed that 80.25 percent of teachers invigilate poorly. According to Taderera et al. (2014), 42.8% of respondents said the university should improve test monitoring to discourage cheating. As invigilation's are not voluntary, staff may be paid for their hours. Extra invigilators may help. Money makes more invigilators pay attention. Starovoytova and Arimi (2017) found that 26% of Kenyan students reported relaxed invigilation, which encourages cheating. Only 22% of students dreaded invigilators, and 18% never cheated. Bernardi, Banzhoff, Martino, and Savasta (2012) revealed that business students may cheat again on large or small tests. Thus, strict exam monitoring and proper student siting prevent cheating. According to LaSalle (2009), poor detection may promote cheating. Yussof and Ismail (2018) discovered that precise seating, strict proctoring, and integrating students from different courses in one test hall decrease major exam fraud. Madara and Namango (2016) reported that 100% of respondents agreed that randomizing seating to prevent friends from sitting together reduces cheating. 44% of students sat close to friends and swapped answers during examinations, 39% peeked at other students' answer sheets, and 20.3% took short notes, according to Noor and Dangi (2014). They found that 44.1% of respondents felt youngsters would cheat everywhere. According to Hosny and Fatima (2014), management may increase exam invigilators to decrease cheating.

Online tests are more prone to academic fraud, especially unsupervised ones (Hylton, Levy, & Dringus, 2016). Hylton, Levy, and Dringus (2016) found that unproctored online test takers outscored webcam-proctored students. The former took longer to test. The study also found that students took longer because they felt more comfortable taking it alone. However, Stack (2015) found no substantial difference in test performance between university-monitored and unmonitored browsers. These studies were largely done five years ago. It would be interesting to observe whether monitoring online tests can still prevent academic fraud, given rapid technological advancements.

2.4 Toilet Visit Procedures

Muhammad, Ghani, and Rossli (2021) discovered that loo breaks may lead to test fraud. They may use this loophole to get unauthorised material.

If not checked before and during online tests at university, students may hide their materials in toilets. Madara and Namango (2016) discovered that most students thought the examinations were in a vast auditorium to avoid detection. These variables favour student cheating. Thirteen percent suggested safe, toilet-equipped test venues away from lecture halls. Students may use the restroom many times throughout an exam to study, especially during an online examination at home. This student often returned from the 'toilet library' thrilled.

2.5 Punishment

Cheating students sometimes don't realise the consequences. Molnar and Kletke (2012) suggested penalties and laws to minimise fraud. Students must understand the regulations and penalties. Algerian students cheat more in college since there are little punishments, according to Abdaoui (2018). Non-fraudulent students recognise university standards and the consequences of breaking them, according to Yussof and Ismail (2018). The majority of Madara and Namango (2016) respondents believed an academic honour code and frequent class and written warnings would reduce academic dishonesty. In online examination setting, this warning could be briefed to students before the examination commences.

Madara and Namango (2016) said cheating affects student morale. Cheating lowers morale because unpunished cheats disappoint non-cheaters. 21.4% claimed no repercussions affect cheating. 33% of kids preferred suspension, 26% expulsion. Automatic fail, warning or cautionary statement, expulsion from the test, Student Disciplinary Committee, permanent ban from higher education, suspended for years, and a zero mark in the linked module were recommended cheating punishments by study students. Nullification, expulsion, suspension, and transcript inclusion worked for Taderera et al. (2014). They believed treatment and another opportunity to graduate with a lower class were futile. Disobedient candidates should be punished to dissuade others. Publicising fines and actions may deter and prevent, according to Malgwi and Rakovski (2009). The next section addresses this measure.

2.6 Embarrassment

The punishment humiliates a person when discovered (Cochran, Chamlin, Wood, & Sellers, 1999). Academic fraud punishment scares pupils. The worst outcome is university expulsion or disgrace if friends and family discover the dishonesty. Remorse and shame may deter students from cheating.

Cheating is caused by unclear learning goals. After hard study in high school, many college students relaxed their knowledge requirements in a free environment. Some cheat, knowing they would fail the exam. To educate, universities should encourage honesty and discourage cheating (Zhang, 2019). Exams assess morals and cultural awareness, thus integrity should be the first priority. Integrity and conscience are related.

To decrease test cheating, 47% of Madara and Namango (2016) proposed exposing cheaters as punishment. Exposure involves permanently publishing their photos on the school's notice board with their names, degrees, departments, and penalties. Without this exposure, pupils may think cheats are never caught (Madara & Namango, 2016).

Unlike Cochran et al. (1999), shame does not discourage academic fraud. Given the prevalence of social media and the importance of image now, it would be interesting to check whether the 1999 study's findings are still valid.

3.0 METHODOLOGY

3.1 Population and Sample Of Study

Within the context of research, the term "population" denotes a specific cohort of individuals or entities that seeks to extend their findings through generalization. The study involved a population of 150 professional accounting students enrolled at the university. High level professional qualification students are selected due to they are under higher pressure to pass their examinations compared to foundation levels students. This is assessed through the published world pass rates by the qualification body. The employed sampling method was simple random sampling, which involved the selection of a random sample from a comprehensive list of all subjects within the intended population. A sample size of 108 students has been determined by utilizing the sample size formulae developed by Krejcie & Morgan (1970), in conjunction with a table designed for determining sample size based on a given population.

3.2 Data Collection Procedure

The study used primary data to investigate the impact of robust controls and severe penalties on deterring online academic misconduct. The study opted for a questionnaire survey as the means of data collection to elicit information from the participants. The survey consisted of three principal components. The first section, Section A, was centred on gathering demographic data. The second section, Section B, aimed to assess the participants' knowledge of online examination fraud through the use of a Likert scale. Lastly, Section C focused on the independent variables of the study, which encompassed identity verification controls, exam proctoring controls, toilet visit procedures, punishment, and embarrassment.

The methodology employed for data collection involved the use of digital questionnaires on the Google Form platform, which ensured the anonymity of the participants and enhanced the credibility of the data. The rationale behind selecting this approach was based on the fact that a significant proportion of the participants had convenient access to digital gadgets, and it also helped in reducing expenses by utilizing the computer laboratory of the institution, if required. The utilization of the Google Form platform obviated the necessity of producing physical questionnaires, thereby diminishing expenses and reducing environmental impact.

4.0 RESULTS AND ANALYSIS

The research project received a total of 108 completed questionnaires, which is consistent with the recommended sample size proposed by Krejcie & Morgan (1970) in their sample size table. Section A of the survey was used to gather demographic data from the participants. Given that there were no instances of missing data in Section A, the present study proceeded to conduct a demographic analysis of the 108 participants using the frequency function of SPSS software for descriptive statistics. Table 1 displays the outcomes.

Table 1

DEMOGRAPHIC PROFILE	N	PERCENT	CUMULATIVE PERCENT
GENDER			
Male	29	26.8%	26.8%
Female	79	73.2%	100.0%
RACE			
Malay	105	97.2%	97.2%
Bidayuh	3	2.8%	100.0%
AGE			
20-21 years	49	45.4%	45.4%
22-24 years	50	46.3%	91.7%
25 years or above	9	8.3%	100.0%
EDUCATION LEVEL			
SPM	1	0.9%	0.9%
Diploma	10	9.3%	10.2%
Bachelor's Degree	27	25.0%	35.2%
Professional Certificate	70	64.8%	100.0%

SEMESTER			
1-2	25	23.1%	23.1%
3-4	39	36.1%	59.2%
5 or more	44	40.8%	100.0%
SOURCE OF INCOME			
Family	10	9.3%	9.3%
Student's Loan/Scholarship	74	68.5%	77.8%
Working	24	22.2%	100.0%

5.0 FINDINGS AND DISCUSSION

5.1 Correlation Analysis

The analysis of correlation holds significant value in a research endeavour as it enables the determination of the magnitude and orientation of the association between two given variables. Several correlation analyses could be employed in a research investigation. The Pearson correlation and the Spearman's rank correlation coefficient are frequently used analytical techniques (Pallant, 2016). In order to investigate the association between the variables, a Pearson correlation analysis was conducted for the present study. The Pearson correlation outcome is a numerical value ranging from negative one to positive one. The sign of the score indicates the presence of either a positive or negative correlation, denoting a direct or inverse relationship between the variables, respectively.

According to Pallant (2016), the magnitude of the Pearson correlation's absolute value indicates the degree of association, where a value of 1 indicates a robust association, and a value of zero (0) indicates no association. Pallant (2016) posits that a correlation coefficient of approximately 0.1 is indicative of a small effect size, while a coefficient of approximately 0.3 is indicative of a medium effect size, and a coefficient of approximately 0.5 is indicative of a large effect size. The subsequent subsections provide a discussion of the Pearson analysis outcomes in this study.

5.1.1 Relationship between Prevention of Online Examination Fraud and Identity Verification (H1)

The Pearson correlation analysis outcomes for the correlation between the prevention of online examination fraud and identity verification are presented in Table 2.1. The two-tailed significance value is 0.008, indicating statistical significance at a 95% confidence level. Therefore, it can be concluded that the variables exhibit a statistically significant correlation. According to the Pearson correlation coefficient of 0.255, a moderately positive correlation exists between identity verification and the mitigation of online examination fraud.

Table 2.1 Correlation between Prevention of Online Examination Fraud and Identity Verification

		ONLINE EXAMINATION FRAUD	IDENTITY VERIFICATION
Online Examination Fraud	Pearson Correlation	1	0.255**
	Sig. (2-tailed)		0.008
	N	108	108

**Correlation is significant at the 0.01 level (2-tailed)

5.1.2 Relationship between Prevention of Online Examination Fraud and Exam proctoring (H2)

The findings of a Pearson correlation study are presented in Table 2.2, which discusses the relationship between preventing online examination fraud and monitoring. The two-tailed significance value is 0.000, indicating statistical significance at a 95% confidence level. Therefore, there is a noteworthy correlation between the variables. The table displays a Pearson correlation value of 0.507, indicating a significant positive correlation between exam proctoring and the prevention of online examination fraud.

Table 2. 2 Correlation between Prevention of Online Examination Fraud and Exam Proctoring

		ONLINE EXAMINATION FRAUD	EXAM PROCTORING
Online Examination Fraud	Pearson Correlation	1	0.507**
	Sig. (2-tailed)		0.000
	N	108	108

**Correlation is significant at the 0.01 level (2-tailed)

5.1.3 Relationship between Prevention of Online Examination Fraud and Toilet Visit Procedures (H3)

The results of the Pearson correlation analysis examining the association between the prevention of online examination fraud and toilet visit procedures are presented in Table 2.3. The two-tailed significance value has been determined to be 0.001, indicating a level of statistical significance below the commonly accepted threshold of 0.05. Therefore, it can be concluded that there is a significant correlation between the two variables. According to the Pearson correlation coefficient of 0.318, there exists a moderately positive association between strict toilet visit procedures and the prevention of online examination fraud.

Table 2. 3 Correlation between Prevention of Online Examination Fraud and Toilet Visit Procedures (H3)

		ONLINE EXAMINATION FRAUD	TOILET VISIT PROCEDURES
Online Examination Fraud	Pearson Correlation	1	0.318**
	Sig. (2-tailed)		0.001
	N	108	108

**Correlation is significant at the 0.01 level (2-tailed)

5.1.4 Relationship between Prevention of Online Examination Fraud and Punishment (H4)

The Pearson correlation analysis results for the association between prevention of online examination fraud and punishment are presented in Table 2.4. The two-tailed significance value has been determined to be 0.000, indicating a level of statistical significance below the commonly accepted threshold of 0.05. Therefore, there is a statistically significant correlation between the two variables. As shown by the Pearson correlation coefficient of 0.455, which is displayed in the table, there is a significant positive correlation between the administration of punishment and the prevention of online examination fraud.

Table 2. 4 Correlation between Prevention of Online Examination Fraud and Punishment

		Online Examination Fraud	Punishment
Online Examination Fraud	Pearson Correlation	1	0.455**
	Sig. (2-tailed)		0.000
	N	108	108

**Correlation is significant at the 0.01 level (2-tailed)

5.1.5 Relationship between Prevention of Online Examination Fraud and Embarrassment (H5)

The results of the Pearson correlation analysis examining the association between the prevention of online examination fraud and embarrassment are presented in Table 2.5. The two-tailed significance value is 0.000, indicating statistical significance at a 95% confidence level. Consequently, there exists a noteworthy correlation between the two variables. The table displays a Pearson correlation value of 0.391, indicating a moderate positive association between the variables of embarrassment and prevention of online examination fraud.

Table 2. 5 Correlation between Prevention of Online Examination Fraud and Embarrassment

		Online Examination Fraud	Embarrassment
Online Examination Fraud	Pearson Correlation	1	0.391**
	Sig. (2-tailed)		0.000
	N	108	108

**Correlation is significant at the 0.01 level (2-tailed)

The primary aim of this investigation was to examine the influence of identity verification in mitigating academic misconduct at the university. The present study formulated hypothesis H1, positing that the act of identity verification exerts a positive influence on the deterrence of online examination fraud. The findings of this study indicate that the implementation of identity verification measures has a negligible beneficial effect on deterring instances of online examination fraud. This result aligns with the discovery made by Farisi (2013). One possible explanation for the limited effect observed could be attributed to the unreliability of online identity verifications in the era of sophisticated technology that can assist individuals to impersonate students sitting for online examination.

The subsequent aim of this investigation was to examine the influence of surveillance on the deterrence of online scholarly misconduct, as indicated by the formulation of hypothesis H2. The findings derived from the conducted analyses indicate that exam proctoring exerts a noteworthy favourable influence on the deterrence of online academic misconduct. This discovery aligns with the research conducted by Hylton et al. (2016) and LaSalle (2009), which posited that students are more likely to achieve higher scores in an unsupervised setting that affords them the ability to engage in academic dishonesty during online examinations.

The third aim of the study was to examine the influence of lavatory protocols on deterring online academic misconduct. Hypothesis H3 was formulated by the study to achieve this particular objective. The conducted analyses

indicate that the procedures related to toilet visits have a negligible positive effect on deterring online examination fraud. The present finding aligns with the research conducted by Vegendla and Sindre (2019), which posited that stringent protocols for lavatory usage, particularly in the context of online assessments, may not yield optimal outcomes. Measures such as complete prohibition or mandating students to carry a webcam and record themselves while using the lavatory are not feasible.

The subsequent aim of this investigation was to examine the influence of punitive measures on deterring online academic misconduct, as posited by hypothesis H4. The results of the analyses indicate that the imposition of punishment exerts a statistically insignificant positive influence on the deterrence of online academic misconduct. Therefore, this discovery aligns with the research conducted by Taderera et al. (2014), which asserted that specific forms of penalties, such as graduating with a lower class and counselling are not effective in deter student from cheating in online examinations.

The final aim of this investigation was to examine the influence of embarrassment on deterring online academic misconduct. Hypothesis H5 was formulated by the study to address this particular objective. The conducted analyses indicate that embarrassment has a statistically significant and positive effect on deterring online examination fraud. The statistical analysis of the embarrassment regression yielded a p-value of 0.062, indicating a significance level between 0.05 and 0.10. This discovery aligns with the research conducted by Madara and Namango (2016) which posited that to deter cheating, one effective approach is to publicly shame the cheaters by displaying their photographs, names, year of study, and department on the institution notice board. Furthermore, it is crucial to explicitly state the penalty assigned to each individual, prominently displayed in a large-size font. This will effectively demonstrate that there are consequences for cheating, countering the misconception held by some students that no one faces punishment even when detected.

5.2 Multiple Regression

Pallant (2016) asserts that multiple regression is a crucial statistical technique utilised to ascertain the degree to which independent variables can accurately predict the dependent variable, which represents the outcome of interest. Tables 3 and 4 present the outcomes of the multiple regression analysis conducted in this study. Table 3 reveals that the R2 value is 0.302, signifying that 30.2% of the variance in the prevention of online examination fraud can be accounted for by the independent variables, namely identity verification, monitoring, toilet visit procedures, punishment, and embarrassment.

Table 3 Model summary[b] for multiple regression

Model	R	R Square	Adjusted R Square	Std. Error Of The Estimate
1	.550[a]	.302	.268	0.460954

a. Predictors: (Constant), Embarrassment, Identity Verification, Toilet Visit Procedures, Punishment, Proctoring
b. Dependent Variable: Online Examination Fraud

Table 4 displays the linear correlation between every independent variable and the dependent variable. Consequently, the analysis provides support for both hypotheses H2 and H5. The findings suggest that the implementation of exam proctoring and embarrasment has a notable and favourable impact on deterring academic misconduct. The observed p-value for the exam proctoring process is statistically significant, with a value of 0.010. The statistical analysis reveals that toilet visit procedures exhibits the highest p-value, which is equal to 0.957. Given that exam proctoring is the sole independent variable with a p-value below 0.05, it is deemed to be a statistically significant factor in the mitigation of academic misconduct. Conversely, despite the fact that the p-value associated with embarrassment (0.062) exceeds the threshold of 0.05 for statistical significance, it remains below the level of 0.10. Thus, this factor is deemed to have marginal significance.

The results also suggest that implementing identity verification procedures, establishing limits for toilet use, and imposing punishments do not significantly deter online examination fraud. Based on the findings of statistical significance tests, it was concluded that the variables of identification verification (p = 0.742), bathroom visit procedures (p = 0.957), and punishment (p = 0.514) did not meet the conventional significance level of p 0.05. Consequently, the study lacks data to substantiate hypotheses H1, H3, and H4 pertaining to them.

Table 4: Multiple Regression Results Coefficients[a]

MODELS		UNSTANDARDIZED COEFFICIENTS B	STD. ERROR	STANDARDIZED COEFFICIENTS BETA	T	SIG.
1	(Constant)	1.841	0.426		4.319	0.000
	Identity Verification (H1)	0.026	0.077	0.031	0.331	0.742
	Exam proctoring (H2)	0.334	0.127	0.353	2.635	0.010
	Toilet Visit Procedures (H3)	0.004	0.067	0.006	0.054	0.957
	Punishment (H4)	0.081	0.123	0.085	0.655	0.514
	Embarrassment (H5)	0.128	0.068	0.191	1.884	0.062

a. Dependent variable: Online Examination Fraud

6.0 CONCLUSION AND FUTURE DIRECTION

The primary objective of this study was to investigate the determinants that impact the deterrence of online academic dishonesty at the university among high level professional qualification students. The study has identified five factors that have a significant impact on the subject matter. These factors include identity verification, monitoring, toilet visit procedures, punishment, and embarrassment.

In correlation analysis, the result shown that all variables have significant positive correlation with prevention of online examination fraud. Whereas, multiple regression analysis shown that only exam proctoring and embarrassment has statistical significance in the prevention of online examination fraud.

Subsequent investigations could direct their attention towards the analysis of various forms of embarrassment, as such measures have been shown to yield favourable outcomes in deterring instances of academic misconduct. The present investigation incorporated embarrassment as a variable, and the outcomes of the statistical analysis exhibited a marginal level of significance. Various forms of disciplinary measures are available to universities to name and shame students, including report to parents, publish name or image on the university board and publish name or image on social media. Further categorising various forms of embarrassment and conducting a comprehensive examination of each category may yield supplementary insights and generate more intricate findings and inferences.

Finally, the present investigation was conducted in a nation that is in the process of economic and social growth. Subsequent investigations could replicate this study in an alternative nation, particularly in a developed context, and subsequently contrast the outcomes with those obtained from a distinct country. Various factors, including the accessibility of dependable technology, legal and regulatory frameworks, ethical considerations, and other pertinent aspects, may exert an impact on the outcomes of interactions between different nations. This particular study has the potential to make a significant contribution to the ongoing research on the prevention of online examination fraud.

REFERENCES

Azemi, A., Rosly, A. S., Mohamad, A., Ishak, S. N., & Palil, M. R. (2022). Impacts of Achievement in Secondary School on Performance in Accounting Professional Examinations in Bumiputra's Academic Institution. *The Asian Journal of Professional & Business Studies, 3(2).*

Azhar, S. M. F. J., Ghani, E. K., Muhammad, K., & Sukmadilaga, C. (2023). Factors Influencing Academic Fraud Prevention among Accounting Students. *Review of Economics and Finance, 21(1).*

Abdaoui, M. (2018). Strategies for Avoiding Cheating and Preserving Academic Integrity in Tests. Alkhitab w El-Tawassol Journal, 4(1). https://doi.org/5424/IJO/21547

Baz, R., Samsudin, R. S., & Che-Ahmad, A. (2017). The Role of Internal Control and Information Sharing in Preventing Fraud in the Saudi Banks. *Journal of Accounting and Financial Management*.

BBC News. (2020). West Point faces worst cheating scandal in decades. *BBC News*. https://www.bbc.com/news/world-us-canada-55407459

Bengrut, D. (2021). 150 students caught cheating during SPPU online exams. *Hindustan Times*. https://www.hindustantimes.com/cities/pune-news/150-students-caught-cheating-during-sppu-online-exams-101618934257960.html

Bujaki, M., Lento, C., & Sayed, N. (2019). Utilizing professional accounting concepts to understand and respond to academic dishonesty in accounting programs. *Journal of Accounting Education*. https://doi.org/10.1016/j.jaccedu.2019.01.001

Bunn, D. N., Caudill, S. B., & Gropper, D. M. (1992). Crime in the Classroom: An Economic Analysis of Undergraduate Student Cheating Behavior. *The Journal of Economic Education*. https://doi.org/10.2307/1183222

Cochran, J. K., Chamlin, M. B., Wood, P. B., & Sellers, C. S. (1999). Shame, embarrassment, and formal sanction threats: Extending the deterrence/rational choice model to academic dishonesty. *Sociological Inquiry*, *69*(1), 91–105. https://doi.org/10.1111/j.1475-682X.1999.tb00491.x

Curran, K., Middleton, G., & Doherty, C. (2011). Cheating in Exams with Technology. *International Journal of Cyber Ethics in Education*, *1*(2), 54–62. https://doi.org/10.4018/ijcee.2011040105

Farisi, M. I. (2013). Academic dishonesty in distance higher education: Challenges and models for moral education in the digital era. *Turkish Online Journal of Distance Education*, *14*(4), 176–195. https://doi.org/10.17718/tojde.76761

Gasparyan, A. Y., Nurmashev, B., Voronov, A. A., Gerasimov, A. N., Koroleva, A. M., & Kitas, G. D. (2016). The pressure to publish more and the scope of predatory publishing activities. *Journal of Korean Medical Science*. https://doi.org/10.3346/jkms.2016.31.12.1874

Gathuri, J. W., & Kamundi, S. (2014). Impersonation Challenges Associated With E-Assessment of University Students. Journal of Information Engineering and Applications, 4(7), 60–69.

Genereux, R. L., & McLeod, B. A. (1995). Circumstances surrounding cheating: A questionnaire study of college students. Research in Higher Education, 36(6), 687–704. https://doi.org/10.1007/BF02208251

Glenn, A. L., & Raine, A. (2014). Neurocriminology: Implications for the punishment, prediction and prevention of criminal behaviour. In *Nature Reviews Neuroscience*.

Haruna, U. S. (2018). sVeriTool : A Verification Tool for Preventing Impersonation of Students in Examination Halls Using Fingerprints. 11(2), 37–52.

Hosny, M., & Fatima, S. (2014). Attitude of students towards cheating and plagariasm. Journal of Applied Sciences, Vol. 14, pp. 748–757.

Hughes, J. M. C., & McCabe, D. (2006). Academic misconduct within higher education in Canada. Canadian Journal of Higher Education.

Hutton, P. A. (2006). Understanding Student Cheating and What Educators can do About it. *College Teaching*. https://doi.org/10.3200/CTCH.54.1.171-176

Hylton, K., Levy, Y., & Dringus, L. P. (2016). Utilizing webcam-based proctoring to deter misconduct in online exams. *Computers and Education*, *92–93*, 53–63. https://doi.org/10.1016/j.compedu.2015.10.002

Krejcie, R. V, & Morgan, D. (1970). Small-Sample Techniques. *The NEA Research Bulletin*, *30*, 607–610.

LaSalle, R. E. (2009). The Perception of Detection, Severity of Punishment and the Probability of Cheating. *Journal of Forensic Studies in Accounting & Business*.

Leung, S. F. (1995). Dynamic Deterrence Theory. *Economica*. https://doi.org/10.2307/2554776

Lin, S. (2013). Why serious academic fraud occurs in China. *Learned Publishing*. https://doi.org/10.1087/20130105

Madara, D. S., & Namango, S. S. (2016). Faculty Perceptions on Cheating in Exams in Undergraduate Engineering. 7(30), 70–86.

Malgwi, C. A., & Rakovski, C. (2008). Behavioral implications of evaluating determinants of academic fraud risk factors. *Journal of Forensic & Investigative Accounting*.

Malgwi, C. A., & Rakovski, C. C. (2009). Combating academic fraud: Are students reticent about uncovering the covert? *Journal of Academic Ethics*. https://doi.org/10.1007/s10805-009-9081-4

Martinez, L., & Ramírez, R. E. (2018). Academic fraud by university students in Colombia: How chronic is the illness? Educacao e Pesquisa, 44(1), 1–17. https://doi.org/10.1590/s1517-9702201706157079

Meng, C. L., Othman, J., D'Silva, J. L., & Omar, Z. (2014). Ethical Decision Making in Academic Dishonesty with Application of Modified Theory of Planned Behavior: A Review. *International Education Studies*. https://doi.org/10.5539/ies.v7n3p126

Molnar, K. K., & Kletke, M. G. (2012). Does the Type of Cheating Influence Undergraduate Students' Perceptions of Cheating? Journal of Academic Ethics. https://doi.org/10.1007/s10805-012-9164-5

Muhammad, K., K Ghani, E., & Rossli, M. A. H. (2021). Determinants of Academic Fraud in Higher Education Institutions: a Fraud Triangle Perspective. Psychology and Education Journal, 58(2), 3879–3892. https://doi.org/10.17762/pae.v58i2.2653

Muhsin, Kardoyo, & Nurkhin, A. (2018). What Determinants of Academic Fraud Behavior? From Fraud Triangle to Fraud Pentagon Perspective. KnE Social Sciences, 3(10), 154. https://doi.org/10.18502/kss.v3i10.3126

Noor, R. M., & Dangi, M. R. M. (2014). Empirical study on student?s cheating behaviour in higher education institution system using fraud diamond theory. Gading Business and Management Journal (GBMJ), 18(2), 31–50. Retrieved from http://irep.iium.edu.my/54985/

Pallant, J. (2016). *SPSS Survival Manual 6th edition* (6th ed.). Mc Graw Hill Education. https://books.google.com/books?hl=en&lr=&id=ryfxDwAAQBAJ&oi=fnd&pg=PT8&dq=SPSS+SuSurviv+Manual&ots=AYXDWb-Udl&sig=IUzfuTogHGZ_4xrBNIwJ5VwaqXI

Rufai, M. M., Adigun, J. O., & Yekini, N. a. (2012). A Biometric Model for Examination Screening and Attendance Monitoring in Yaba College of Technology. World of Computer Science and Information Technology Journal (WCSIT), 2(4), 120–124.

Saheed, Y. K., Hambali, M. A., Adeniji, I. A., & Kadri, A. F. (2017). Fingerprint Based Approach For Examination Clearance in Higher Institutions. FUOYE Journal of Engineering and Technology. https://doi.org/10.46792/fuoyejet.v2i1.46

Sierra, J. J., & Hyman, M. R. (2008). Ethical Antecedents of Cheating Intentions: Evidence of Mediation. Journal of Academic Ethics. https://doi.org/10.1007/s10805-008-9056-x

Stack, S. (2015). The Impact of Exam Environments on Student Test Scores in Online Courses. Journal of Criminal Justice Education. https://doi.org/10.1080/10511253.2015.1012173

Starovoytova, D., & Arimi, M. (2017). Witnessing of Cheating-in-Exams Behavior and Factors Sustaining Integrity. Journal of Education and Practice, 8(10), 127–141. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ1139834&site=ehost-live

Taderera, E., Nyikahadzoi, L., Matamande, W., & Mandimika, E. (2014). Exploring management strategies to reduce cheating in written examinations : case study of Midlands State University. *Journal of Case Studies in Education*.

The Star. (2019). Fake degrees: A worrying trend in Malaysia. *The Star*. https://www.thestar.com.my/news/nation/2019/05/06/a-worrying-trend-in-msia/

The Straits Times. (2020). Coronavirus: NUS students allegedly abuse Covid-19 measures to cheat on exam. *The Straits Times*. https://www.straitstimes.com/singapore/education/coronavirus-nus-students-allegedly-abuse-covid-19-measures-to-cheat-on-exam

Transparency International. (2013). The decentralisation of education and corruption. In *Global Corruption Report: Education*. https://doi.org/10.4324/9780203109816

Vegendla, A., & Sindre, G. (2019). *Mitigation of Cheating in Online Exams* (A. V. S. Kumar (ed.)). IGI Global. https://doi.org/10.4018/978-1-5225-7724-9

Wei, T., Chesnut, S. R., Barnard-Brak, L., & Schmidt, M. (2014). University Students' Perceptions of Academic Cheating: Triangulating Quantitative and Qualitative Findings. *Journal of Academic Ethics*. https://doi.org/10.1007/s10805-014-9219-x

Yussof, S. H., & Ismail, S. (2018). ACADEMIC DISHONESTY AMONG ACCOUNTING STUDENTS IN MALAYSIA. In Management and Accounting Review (MAR) (Vol. 17). https://doi.org/10.24191/mar.v17i1.579

Zhang, Q. (2019). *On the Causes and Countermeasures of Student Cheating in College*. *376*(Sschd), 344–346. https://doi.org/10.2991/sschd-19.2019.60