

## **DISTANCE EDUCATION STUDENTS' INDULGENCE IN SIX SHARP PRACTICES: GENERAL LINEAR MODELLING OF PREDICTIVE PARAMETERS**

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## ABSTRACT

This study examined the degree to which students indulge in six prominent misconducts in Distance Education Institutions (DEIs). The study also quantified how class size, instructional delivery and institutional policies predict students' indulgence in sharp practices using a general linear modelling approach. A sample of 871 participants was drawn from 1,742 final-year students across two DEIs in Nigeria. A structured questionnaire was used for data collection. The questionnaire had acceptable psychometric estimates of dimensionality, content and construct validity, as well as reliability. Sharp practices such as cheating, plagiarism, falsification, impersonation, and arm-twisting were more prevalent in large classes, whereas only inducement was higher in small classes. Class size influenced students' indulgence in sharp practices in DEIs. Instructional delivery and institutional policies negatively predicted students' indulgence in the six sharp practices. Almost all the six sharp practices correlated positively and significantly, except for impersonation and inducement. Therefore, distance education students who cheat, plagiarize, arm-twist, falsify records, induce lecturers, and promote impersonation are more likely to indulge in other forms of sharp practices. It was concluded that large class sizes, poor instructional delivery, and poorly implemented institutional policies promote sharp practices among distance education students. Based on this conclusion, key policy and research implications are discussed.

**Keywords:** Academic misconduct, cheating, corruption, examination malpractice, unethical practices.

## INTRODUCTION

Sharp behaviors among students have become a global phenomenon, attracting the attention of academics worldwide. Consequently, it has become one of the most extensively debated themes in the literature on goal accomplishment (Hafeez et al., 2013; LaDuke, 2013; Tee & Curtis, 2018; Williams et al., 2014). In distance education literature, the focus of many previous studies has been on students' academic integrity (Amrane-Cooper et al., 2022; Ekahitanond, 2014; Hunter & Kier, 2022), unethical behavior, corrupt practices, academic misconduct (Burgason et al., 2019; Malik, 2015; Tsai, 2016) and other related terms. Sharp practices, by definition, are complex behaviors at institutions of learning impacted by several situational, contextual, and individual characteristics that undermine higher education quality worldwide (Starovoytova & Namango, 2016). It is well-documented that most students who graduate with high grades from institutions nowadays do not have abilities equivalent to their measure of academic grades owing to a range of academic wrongdoings (Arop et al., 2018; Basseby et al., 2019). The need for excellent grades and the desire to secure career possibilities following graduation seems to be accountable for students' engagement in different forms of unethical behaviors (Madukwe et al., 2019).

Students' participation in sharp practices has eaten deeply into the credibility of higher and distance education institutions, contributing to the swelling of their error scores (Owan et al., 2023). According to the Classical Test Theory (CTT), a student's true score can be determined using their observed score (actual score) plus or minus an error score. That is, there is always a degree of random or systematic error for every score a student obtains in an examination. These errors can often emanate from the test attributes, respondents' characteristics, environment, mode of examination, and the number of students in the hall, among several other factors. Therefore, students' indulgence in sharp practices increases the error score while decreasing or skewing the true score (Ekechukwu & Nwamadi, 2017; Joshua, 2019). Thus, misleading judgments can be made on the trait measured (Bassey et al., 2020; Bassey & Owan, 2020; Memory & Abosede, 2021; Owan et al., 2023; Owan, 2020) if the error score is not minimized.

In the past, participation in such unacceptable activities impacted students' performance in semester exams, leading to misleading grading and the quality of graduates offered to society by institutions (Bassey et al., 2019; Odigwe et al., 2018; Owan, 2020). Examples of sharp practices widely discussed in the literature are cheating, plagiarism, falsification and deceit (Arop et al., 2018). Others include sabotage, inducement, collaboration with an instructor to extract money from students, collusion, impersonation, and arm-twisting (Kumar, 2008). Aside from exam-related fraud, many students take their classmates' notes, textbooks, calculators, mobile phones, and other academic resources without returning them (Gullifer & Tyson, 2014). Some distance education students also tend to duplicate assignments from their peers for submission to instructors due to intellectual laziness. Some even go great lengths to locate computer business centers where they assume their bright colleagues must have typeset their works to reproduce them with new cover pages for submission covertly. Other scholars have reported that many students' assignment and term paper reports lack in-text citations and adequate referencing (Bachore, 2016; Eneji et al., 2022), which are dubious acts of intellectual theft. All these behaviors are reprehensible and should be addressed immediately.

Many students have blamed their apparent indulgence in academically deceptive practices on specific instructors' unprofessional behaviors. They claim this manifests in the form of certain teachers demanding excessive payments as a prerequisite for passing their exams. Some students attributed their engagement in academic misconduct to poor instructional delivery by lecturers, difficulties identifying quality course materials, and the school administration's inadequate execution of disciplinary procedures. While their justifications may be valid, it remains to be seen what reasons these students will provide in cases where they failed to bribe morally strong and professional instructors (Arop et al., 2018; Madukwe et al., 2019). The fact that many students label good-behaving instructors as "wicked individuals" undermines some of their reasons and suggests to the researchers the necessity to unearth the truth regarding this subject.

Various efforts have been suggested and implemented to address the issue of sharp practices, such as the use of 'higher-ordered' test items (Bassey & Owan, 2020), reinforcing institutional leadership and supervisory strategies (Madukwe et al., 2019; Owan et al., 2022b). Quality assurance committees are now overseeing and enforcing distance institutions' examination policies, as have campaigns to welcome new students and educate them on the importance of avoiding sharp examination practices (Bassey et al., 2019). Additionally, some distance education institutions have banned the idea of having class representatives and adopted the two-week result submission policy (Owan et al., 2023). Furthermore, conference marking strategies have also been used in crossing out and stamping all empty spaces in students' answer booklets before handing them to instructors for scoring (Arop et al., 2018). However, implementing these measures has not reduced the number of students engaging in sharp practices in DEIs. The current research was conceived by the persistence of the problem and the failure of different measures implemented to curb sharp practices.

The present study sought to understand the situation of students' indulgence in sharp practices and uncover some underlying parameters contributing to it. Thus, variables such as class size, instructional delivery and institutional policies were presumed to be explanatory of students' indulgence in sharp practices. Six sharp practices, identified by exploratory factor analysis and in line with existing literature, were considered in this study. These include cheating, plagiarism, falsification, impersonation, arm-twisting, and inducement. The study provided answers to questions such as:

1. To what extent do distance education students in two class sizes differ in their indulgence in sharp practices?

2. How much does instructional delivery predict distance education students' indulgence in the six sharp practices?
3. To what degree do institutional policies predict distance education students' indulgence in the six sharp practices?
4. What is the relationship among the six sharp practices indulged by distance education students?

## LITERATURE REVIEW

Previous studies have found that distance education students indulge more in sharp practices whilst taking online assessments than traditional examinations (Lanier, 2006; Shraim, 2019). In a study that surveyed 1,262 students for academic integrity, Lanier (2006) discovered that academic integrity was eroding due to the incident of cheating that was common in online classes compared to the traditional classroom setting. To maintain integrity in distance education, studies have indicated that examinations be substituted with other forms of assessment, adopting different examination forms, using online proctoring solutions and considering compulsory pass and fail grades (Elsalem et al., 2021). The study of Elsalem et al. also indicated that maintaining honesty in assessment requires examination combined with quizzes and submission of a written report. These studies all made suggestions aimed at reducing students' indulgence in sharp practices without testing their workability.

In a meta-analytic review, Giluk and Postlethwaite (2015) discovered that conscientiousness and agreeableness were negatively related to academic dishonesty while on the contrary, neuroticism, extraversion and openness to experience were positively related to academic dishonesty. A study on the role of essential need fulfilment in academic dishonesty showed that undergraduates in the need-frustration condition were more likely to cheat, while the contrary was the case with their counterparts in the need-satisfaction condition (Kanat-Maymon et al., 2015). While these studies offered reasons for students' indulgence in sharp practices, they did not quantify the degree to which students depended on them for unethical practices.

Studies on class size have also attested to its role in the malpractice behaviors of students. For example, Ekanem (2016) indicated that average class size distribution produced negative externalities on students' social well-being and increased delinquent behaviors among them. Nevertheless, the cited study further found that average class size distribution could determine students' well-being in terms of concentration, sadness and anxiety, while it was not significantly dependent on dizziness and disposition for malpractice. On the contrary, Miller and Ronit (2017) showed that classroom size, norms and the severity with which the institute treats dishonesty were the factors that most strongly influenced students' attitudes and behavior. Although the cited studies are related to the present study, their primary focus was not on distance education institutions.

Much research attention has also been paid to teachers' instructional delivery as a predictor of students' unethical engagements. For example, Muchai (2014) showed that several factors that contributed to cheating were contextual factors such as class attendance, lecturer-student interactions, poor invigilation, lack of adequate facilities and poor instructional delivery in the institutions. Xiao and Wilkins (2015) found that lecturer commitment to students' academic achievement and social integration were positively related to students' satisfaction and refusal to indulge in delinquent behaviors. Oko et al. (2017) showed that fear of failure, and congested sitting arrangements in examination halls, among others, are reasons why students associate with examination malpractice in universities. The survey of Petters and Okon (2014) indicated that societal preference for paper qualification, lack of positive self-concept and effective study skills, poor teaching process, inadequate preparation, and laziness are some of the causes of examination malpractice among distance education students. Another study associated distance education students' involvement in dishonest practices with teachers' poor subject proficiency (Fask et al., 2015).

Regarding institutional policies, Adeoti et al. (2015) revealed that the lack of appropriate punitive measures for culprits and peer influence were significant factors responsible for examination malpractices. Abanobi (2017) demonstrated that strict policies on the punishment of defaulters were not followed, which promoted students' indulgence in sharp practices. Saana et al. (2016) revealed that improper enforcement of academic dishonesty policies, high academic load and pressure to please family and guardians were the leading causes

of academic dishonesty in institutions. Cheating during examinations and inappropriately sharing answers in preparing assignments were some of the highly-occurring forms of academic dishonesty. Bachore (2016) disclosed that academic dishonesty was caused by the difficulty of the tests/exams, time scarcity, irrelevance of course material, pressure to get good grades and losing clarity on the policy and the need to have extra points to raise their grades.

## **METHOD**

This study is within the quantitative research method framework, adopting the ex-post facto design. We used this research design based on the notion that the variables of the study had already occurred in DEIs before this investigation. The context of this study is Cross River State, Nigeria, located in the country's South-South geopolitical zone. Latitude 5°45'N and Longitude 8°30'E are the area's coordinates. The state is bounded on the north by Benue State, on the west by Ebonyi and Abia States, on the southwest by Akwa Ibom State, and the east by the Republic of Cameroon. The distance education institutions in Cross River State were studied due to the prevalence of unethical behaviors among distance education students in other contexts (Burgason et al., 2019; Malik et al., 2021; Valizadeh, 2022). Besides, in this study, various forms of sharp practices appear prevalent among distance education learners. These gave rise to the choice of the study's context to compare results with those from other parts of the world.

### **Participants**

The targeted participants for this study comprised 871 respondents randomly drawn from a population of 1,742 final-year distance education students. These respondents were from nine selected departments across the two distance education institutions (National Open University of Nigeria [NOUN], Ikom and Calabar study centers; the National Teachers' Institute [NTI], Calabar) in Cross River State, Nigeria. The participants of this study were 54% males ( $n = 470$ ) and 46% females ( $n = 401$ ). The analysis of respondents' age revealed that 13% ( $n = 113$ ) were less than 20 years, 48% ( $n = 418$ ) were between 20 and 24 years, 32% ( $n = 279$ ) were between 25 and 29 years, whereas 7% ( $n = 61$ ) were 30 years or older. Final year students were considered for convenience in gathering data since they have more knowledge and experience about academic integrity than other levels. Final-year students were also considered because they were writing their final research projects and were more likely to violate academic integrity while writing their research projects and term papers.

The multi-stage sampling procedure was employed in selecting the sample for this research: this involved cluster and simple random sampling techniques. Clustering was performed in stage 1 to group final year students according to the two participating institutions. In stage 2, the nine available faculties across both institutions (NOUN = eight faculties; NTI = one faculty) were purposively selected. In stage 3, one department from each selected faculty was randomly enlisted using the simple random sampling technique. All the final year students in the nine selected departments, numbering 871, constituted the sample for this study (representing 50% of the targeted population). A prospective power analysis was performed before data collection using the G\*Power program (Cohen, 1988; Erdfelder et al., 2009; Faul et al., 2007) to determine whether the sample size of this study was large enough to achieve sufficient statistical power (Uakarn, 2021). The result of the a priori power analysis indicated that a sample of 152 (For Pearson Correlation), 567 (for simple linear regression) and 148 respondents (for independent t-test) is adequate for the study to achieve 95% statistical power in accurately rejecting the null hypothesis when the alternative hypothesis is true or vice versa. This indicates that the sample of 871 distance education students selected for the study is larger than the minimum requirements for an acceptable power.

### **Data Collection and Analysis**

#### **Measures**

This study considered three predictive factors: class size, instructional delivery and institutional policies. Class size is the total number of distance learners in a class. It is the lecturer-student ratio in distance education institutions. Instructional delivery refers to the degree to which lecturers effectively discharge

teaching assignments to students in distance education institutions in line with expected standards. Institutional policies denote the availability and implementation of guiding principles directing distance education students' behavior and how the breach of such rules and regulations will be handled or enforced.

This study examined six sharp practices: cheating, plagiarism, falsification, impersonation, arm-twisting and inducement. Cheating is using unauthorized aids and displaying unethical behavior during an examination. Plagiarism is the use of the intellectual works of others without acknowledging the source(s). Falsification is the alteration of information or data, gaining unauthorized access through hacking or altering computerized records during or after an examination. Impersonation is the act of a person passing off to write an examination for another person. Arm-twisting refers to candidates' or accomplices' actions to strike fear (verbally, physically or otherwise) in officials or the examiner to gain undeserved grades to pass an examination. Inducement is the act of using monies, sex or gift items before or after a test to induce examiners for the awards of undeserved marks.

### The Scale

A structured questionnaire was used for data collection in this study. The items on the questionnaire were based on inputs from the review of related literature and contemporary trends of academic integrity in higher education institutions. A new instrument was developed for contextual peculiarities due to a dearth of a previously validated instrument measuring the variables of this study. Section A of the questionnaire requested respondents' biographic information such as sex, institution, and class size. Section B measured instructional delivery and institutional policies, with each variable having five items. *Lecturers pay attention to students' questions while teaching* is a sample item on instructional delivery. *In my institution, there are provisions for punishing all forms of examination malpractices* is a sample item for institutional policies.

Section C contained 24 items that elicited information on the six sharp practices. Each of these was measured with four items. A sample item for arm-twisting is "some students can gang up to threaten lecturers for high grades after examinations." A sample item for cheating is "some intelligent students swap scripts with their dull colleagues during an examination." For falsification, a sample item is "some students produce fake school fees receipts if they cannot pay their school fees." A sample item for impersonation is "some students upgrade their examination scores through examination officers." A sample item for inducement is "some students in my school cannot pass any examination without offering gifts to lecturers." A sample item for plagiarism is "most of my colleagues use electronic documents downloaded from the Internet without citing the source." The questionnaire was designed in a modified 4-point Likert scale format, where respondents were given four options, including Strongly Agree (SA), Agree (A), Disagree (DA) and Strongly Disagree (SD) to choose the one that matches their opinions. The participants were required to respond objectively based on their degree of agreement or disagreement with the attributes measured.

The initial draft of the instrument was submitted to five quality assurance experts and three psychometrists for content and face validity. These experts scrutinised the items and rated their clarity, relevance, and ambiguity. Their ratings were used to quantify the degree of content validity following the Lawshe approach (Lawshe, 1975). Based on the average ratio, item content validity indices ranged from .86 to .98, whereas the scale content validity was .95. These values met the minimum acceptable thresholds (Hadi et al., 2020; Zamanzadeh et al., 2015). However, items observed as ambiguous and irrelevant were dropped and revised accordingly. The instrument was trial-tested on a pilot sample of 200 final-year distance education students who were not the main study's participants but were part of the population. This sample was considered large enough and in the recommended ratio (5:1) of students per item in the questionnaire for a dimension reduction technique to be implemented (See Boateng et al., 2018; Mundfrom et al., 2005). The dimensionality of the questionnaire was determined using exploratory factor analysis (EFA), while construct validity (convergent and discriminant) was also performed.

### Ethical Consideration

Before conducting the study, the researchers obtained written permission from each participant. Participants were informed about the study's goals to make an informed decision about whether to participate. Based

on national regulations, ethical clearance was waived for this study since filling out a questionnaire poses no major health risk, and the items in the questionnaire were not self-directed (See Federal Ministry of Health, 2007, pp. 13-14). Participants signed or thumb-printed the informed-consent form before participating in the study. Everyone who took part in the research understood that it was entirely up to them whether they wanted to take part in it and exit at any point. To protect participants' privacy, we did not collect respondents' personal information such as names, emails or phone numbers. This way, participants could be confident that their identities were protected. The data collected were kept secure and private in passworded computer accessible only to the research team.

### Procedure for Data Collection/ Analysis

Data for the main study was collected by the researchers who made physical visits to the distance education institutions after obtaining permission to administer the questionnaire. Copies of the questionnaire were distributed to the respondents with the help of three trained research assistants to ensure a high rate of return. The respondents were encouraged to give accurate and unbiased responses to every item with a confidentiality guarantee. The respondents filled and returned the questionnaire copies to the researchers after one week. Of the 871 questionnaires administered, 821 were filled correctly and returned, representing a 94.26% return rate. The 821 copies contained no missing responses and were used for statistical analysis. Independent t-test, regression and Pearson correlation analyses were all used to answer the research questions (where applicable).

## FINDINGS

### Exploratory Factor Analysis

The Maximum likelihood estimation was used for the EFA, and a KMO value of .72 was obtained, with a significant Bartlett's test of sphericity,  $\chi^2(435) = 2645.87, p < .001$ . This means the pilot sample is adequate for the implementation of EFA. Several irrelevant items were screened out, such as those that loaded on factors with fewer than three items; those with loadings below .30; those that cross-loaded to multiple factors; those with empty loadings. After screening eleven irrelevant items, an 8-factor solution was extracted with eigenvalues greater than one. These eight factors jointly explained 58.43% of the total variance. Relatively, factors 1, 2, 3, 4, 5, 6, 7, and 8 explained 9.03, 9.35, 10.23, 6.77, 6.36, 6.22, 5.43 and 5.05% of the shared variance respectively. The factor and pattern matrices revealed that all factor loads across the eight extractions ranged from .57 to .90. After a careful examination, the factors were named based on the items that loaded onto them. Thus, factors 1, 2, 3, 4, 5, 6, 7, and 8 were labelled instructional delivery, institutional policies, cheating, armed twisting, plagiarism, inducement, impersonation and falsification (See Table 1).

**Table 1.** Exploratory Factor Analysis of the Questionnaire

Factors	Items	M	SD	$\lambda$	$\lambda^2$	$\epsilon$
Instructional delivery	1. Most lecturers do not offer constructive feedback to students' questions	2.46	1.16	.90	.81	.19
	2. Differentiated lessons are offered to capture the varied learning needs of students	2.41	1.14	.80	.64	.36
	3. Most lecturers only offer course outlines without teaching us	2.41	1.15	.80	.63	.37
	4. Lecturers always engage students to do additional research to enhance their content knowledge.	2.42	1.15	.79	.63	.37
	Sum	9.70	4.60	.29	2.71	1.29
Institutional policies	5. Involvement in examination malpractice is punishable in my institution	2.45	1.17	.85	.73	.27
	6. Policies on academic misconduct are made available to all students	2.60	1.10	.82	.67	.33
	7. Victims of the same academic crimes face similar sanctions	2.59	1.17	.79	.62	.38
	8. Different offences have clearly stated disciplinary actions for offenders in the school handbook.	2.56	1.13	.78	.60	.40
Sum	10.20	4.57	3.24	2.62	1.38	

Cheating	9. Some of my colleagues utilise lecture notes to write exams	2.37	1.11	.93	.87	.13
	10. Some students enable their friends to duplicate their answers during exams	2.37	1.11	.87	.76	.24
	11. Many students that engage in test misconduct are frequently not discovered	2.41	1.13	.82	.68	.32
	Sum	7.15	3.35	2.62	2.30	.70
Armed-twisting	12. Some students intimidate teachers to achieve good ratings after examinations.	2.56	1.16	.78	.61	.39
	13. When faced with challenging examination problems, many students confront instructors face-to-face.	2.37	1.10	.70	.50	.50
	14. Some students use forceful means to get proposed examination questions before they are written	2.61	1.11	.69	.47	.53
	15. Some students consult influential relatives to get favourable grades from hapless lecturers.	2.54	1.13	.60	.36	.64
Sum	10.08	4.50	2.77	1.94	2.06	
Plagiarism	16. Some students at my institution copy scholarly publications without properly citing their sources.	2.48	1.12	.84	.71	.29
	17. Some students submit homework that has been copied from other classmates.	2.53	1.10	.82	.67	.33
	18. Some of my colleagues' research work has been rejected due to a high 'Turnitin' similarity report	2.46	1.14	.75	.56	.44
Sum	7.47	3.36	2.41	1.94	1.06	
Inducement	19. Several students pay their instructors money to pass an exam in my institution.	2.48	1.09	.82	.67	.33
	20. Some students at my institution provide unsolicited gifts to lecturers to pass exams.	2.47	1.13	.79	.62	.38
	21. Class representatives often collect funds from colleagues to untoward lecturers for high grades.	2.56	1.12	.78	.60	.40
Sum	7.51	3.34	2.38	1.90	1.10	
Impersonation	22. Some students often help their friends write their exams on their behalf	2.57	1.08	.79	.63	.37
	23. Some students hire professional imposters to represent them during examinations	2.52	1.13	.68	.47	.53
	24. Some intelligent students swap scripts with their duller colleagues to assist them after completing theirs	2.52	1.08	.66	.44	.56
	25. Some students do not write their examinations by themselves	2.47	1.08	.57	.33	.67
Sum	10.08	4.37	2.71	1.86	2.14	
Falsification	26. Some students at my school pay to improve their low cumulative grade point average.	2.49	1.06	.70	.49	.51
	27. Some final-year students present research results that were not derived from experiments/field surveys	2.49	1.09	.70	.49	.51
	28. some students get unauthorized access to alter their result records.	2.53	1.12	.69	.48	.52
	29. Some friends use fake receipts for school fees to get into exam rooms.	2.49	1.05	.61	.37	.63
Sum	10.00	4.32	2.70	1.83	2.17	

Extraction Method: Maximum Likelihood.

Rotation Method: Promax with Kaiser Normalization.

a Rotation converged in 5 iterations.

## Construct Validity (Convergent and Discriminant) and Reliability

In this study, we followed the Fornell-Larcker criterion (Fornell & Larcker, 1981) to establish the convergent validity of the instrument. This approach uses the Average Variance Extracted (AVE) and Composite Reliability (CR) metrics to determine whether the measurement model has convergent validity. AVE is the difference between



the degree of variance captured by a construct and measurement error. Values over 0.70 are considered extremely excellent, while values of 0.50 are deemed adequate (Owan et al., 2022c). Regarding reliability, CR is a measure of internal consistency and is regarded as a more accurate estimate than Cronbach's alpha. CR values of 0.7 or higher are considered acceptable (Owan et al., 2022a). Mathematically, the AVE for construct  $\xi v$  is defined as:

$$AVE_{\xi v} = \frac{\sum \lambda_{vk}^2}{(\sum \lambda_{vk}^2) + \epsilon_{vk}}$$

Where:

$\sum \lambda_{vk}^2$  = Sum of the squared factor loadings for construct  $\xi v$  with k number of items

$\epsilon_{vk}$  = Error variance of the  $K^{\text{th}}$  ( $K_1, K_2, K_3, \dots, K_n$ ) of construct  $\xi v$

But,  $\epsilon_{vk} = 1 - \lambda_{vk}^2$

Similarly, the composite reliability (CR) for construct  $\xi v$  is given as:

$$CR_{\xi v} = \frac{(\sum \lambda_{vk})^2}{(\sum \lambda_{vk})^2 + \epsilon_{vk}}$$

Where:

$\sum \lambda_{vk}$  = Sum of the factor loadings for construct  $\xi v$  with k number of items

$\epsilon_{vk}$  = Error variance of the  $K^{\text{th}}$  ( $K_1, K_2, K_3, \dots, K_n$ ) of construct  $\xi v$

Discriminant validity was examined using the Fornell-Larcker testing methodology by evaluating how much variation ( $AVE_{\xi v}$ ) it captures and how much variance it shares with other constructs ( $\phi_{iv}$ ). The a priori is that the values of the square root of the AVE for each construct should be bigger than the inter-construct correlation. That is,

$$\sqrt{AVE_{\xi v}} \geq \phi_{iv} \quad \forall i \neq v$$

**Table 2.** Convergent and Discriminant Validity Evidence of the Questionnaire

Factors	AVE	$\alpha$	CR	1	2	3	4	5	6	7	8
1. Instructional delivery	.68	.89	.89	<b>.82</b>							
2. Institutional policies	.65	.88	.88	.01	<b>.81</b>						
3. Cheating	.77	.91	.91	.02	-.05	<b>.88</b>					
4. Armed-twisting	.48	.79	.79	-.02	.07	.17	<b>.70</b>				
5. Plagiarism	.65	.77	.84	-.02	-.04	-.16	-.14	<b>.80</b>			
6. Inducement	.63	.77	.84	.10	.04	.01	-.05	.01	<b>.79</b>		
7. Impersonation	.46	.84	.77	.02	-.15	-.12	.01	.01	.04	<b>.68</b>	
8. Falsification	.46	.83	.77	-.04	.22	.09	-.01	.03	-.01	-.17	<b>.68</b>

AVE = Average variance extracted. Values above .50 are evidence of convergent validity

= Cronbach alpha reliability estimate

CR = Composite reliability estimates

Bolded values along the diagonal are square roots of AVE.

Discriminant validity is achieved once the diagonal values are greater than the correlation estimates off the diagonal.

The convergent and discriminant validities were computed using these formulas. Table 2 shows that convergent validity was achieved for instructional delivery, institutional policies, cheating, plagiarism and inducement because all their AVE values are greater than .50. Although factors such as armed twisting, impersonation, and falsification had AVE values slightly lower than .50, convergent validity was also achieved because their CR values were greater than .60 (Fornell & Larcker, 1981). All the factors had acceptable reliability because their CR values were above the .70 threshold. Table 2 shows that discriminant validity was also achieved since all the bolded values along the diagonal are greater than the correlation values below.

### Research Question 1

To what extent do distance education students in two class sizes differ in their indulgence in sharp practices? Distance education students were classified into two independent groups based on their responses to class sizes in section A of the questionnaire. A class size of 1-35 students is small, whereas those with more than 35 students are considered large per Nigeria's National educational blueprint. An independent t-test analysis revealed that 459 respondents were in a small class while 362 were in large classes. On average, Table 3 indicates that distance education students' indulgence in sharp practices such as cheating, armed twisting, plagiarism, impersonation and falsification was more prevalent in large than small class sizes. Only inducement was observed to be higher in small than large classes. Furthermore, Table 3 revealed significant mean differences between small and large class sizes in distance education students' indulgence in sharp practices such as cheating, plagiarism, impersonation, and falsification. No significant class size mean difference was recorded for distance education students' indulgence in sharp practices such as arm-twisting and inducement.

**Table 3.** Independent T-Test Result of Class Size Differences in Distance Education Students' Indulgence in Six Sharp Practices

Sharp practices	Class size	N	M	SD	MD	t	p
Cheating	Small	459	15.1	3.8	1.24***	4.85	.000
	Large	362	16.4	3.4			
Plagiarism	Small	459	15.1	3.8	1.16***	4.54	.000
	Large	362	16.3	3.4			
Impersonation	Small	459	14.7	4.6	2.27***	7.87	.000
	Large	362	17.0	3.5			
Falsification	Small	459	14.8	3.9	0.62*	2.25	.025
	Large	362	15.4	3.9			
Arm-twisting	Small	459	13.2	4.5	0.53	1.60	.110
	Large	362	13.8	4.9			
Inducement	Small	459	15.0	4.6	0.50	1.54	.124
	Large	362	14.5	4.8			

\*\*\*Significant at  $p < .001$

\*Significant at  $p < .05$

df = 819; M = Mean; SD = Standard deviation; MD = Mean difference

### Research Question 2

How much does instructional delivery predict distance education students' indulgence in the six sharp practices? A simple linear regression analysis was performed to predict students' indulgence in the six sharp practices based on instructional delivery. Table 4 shows that 2, 4, 2, 2, 2 and 2% of the variance in

distance education students' indulgence in sharp practices such as cheating, armed twisting, plagiarism, inducement, impersonation and falsification is explained by instructional delivery. Thus, 98, 96, 98, 98, 98 and 98% of the unexplained variances are attributable to other extraneous predictors. Table 4 also shows that instructional delivery predicts distance education students' indulgence in all six sharp practices. This is because the F-ratios of the various sharp practices had significant p-values at 1 and 819 degrees of freedom. The significant negative prediction of the results in Table 4 implies that other things being equal, a 1% increase in instructional delivery is associated with a 0.15, 0.17, 0.14, 0.15, 0.13, and 0.14% decline in distance education students' indulgence in cheating, armed-twisting, plagiarism, inducement, impersonation and falsification, respectively.

**Table 4.** Prediction of distance education students' indulgence in sharp practices using instructional delivery

Sharp practices	Model	SS	MS	F	R <sup>2</sup>	
Cheating	Regression	234.01	234.01	17.47***	.02	-15
	Residual	10970.54	13.40			
	Total	11204.56				
Arm-twisting	Regression	212.46	212.46	15.57***	.04	-17
	Residual	14923.25	18.01			
	Total	15035.72				
Plagiarism	Regression	257.87	257.87	19.65***	.02	-14
	Residual	10750.27	13.13			
	Total	11008.14				
Inducement	Regression	244.24	244.24	18.75***	.02	-15
	Residual	10550.27	13.53			
	Total	11008.14				
Impersonation	Regression	258.44	258.44	14.50***	.02	-13
	Residual	14593.35	17.82			
	Total	14851.80				
Falsification	Regression	241.16	241.16	18.37***	.02	-14
	Residual	10613.38	13.10			
	Total	12637.53				

\*\*\*Significant at  $p < .001$

SS = Sum of squares; MS = Mean square

df = 1 & 819

### Research Question 3

To what extent do institutional policies predict distance education students' indulgence in the six sharp practices? Table 5 indicates that institutional policies explain 1.0, 1.0, 0.0, 4.0, 0.0 and 0.0% of the variance in distance education students' indulgence in cheating, arm-twisting, plagiarism, inducement, impersonation and falsification. This implies that 99, 99, 100, 96, 100 and 100% of the unaccounted portions of the variances are attributable to other predictors, respectively. Furthermore, Table 5 shows that institutional policies significantly predict distance education students' indulgence in cheating, arm-twisting and inducement. However, institutional policies do not predict substantially distance education students' indulgence in sharp practices such as plagiarism, impersonation and falsification. If other things remain the same, Table 5 indicates that a 1% increase in the formulation of a sound university policy is tied to 0.08, 0.10 and 0.20% reductions in distance education students' indulgence in sharp practices such as cheating, arm-twisting and inducement respectively.

**Table 5.** Prediction of distance education students' indulgence in sharp practices based on university policy

Sharp practices	Model	SS	MS	F	R2	$\beta$
Cheating	Regression	70.55	70.55	5.19*	.01	-.08
	Residual	11134.01	13.60			
	Total	11204.56				
Arm-twisting	Regression	179.34	179.34	8.23**	.01	-.10
	Residual	17856.38	21.80			
	Total	18035.72				
Plagiarism	Regression	27.31	27.31	2.04	.00	-.05
	Residual	10980.83	13.41			
	Total	11008.14				
Inducement	Regression	680.99	680.99	32.54***	.04	-.20
	Residual	17140.75	20.93			
	Total	17821.74				
Impersonation	Regression	35.10	35.10	1.94	.00	-.05
	Residual	14816.70	18.09			
	Total	14851.80				
Falsification	Regression	0.28	0.28	0.02	.00	-.01
	Residual	12637.25	15.43			
	Total	12637.53				

\*\*\*Significant at  $p < .001$

\*\*Significant at  $p < .01$

\*Significant at  $p < .05$

Df= 1 & 819s

#### Research Question 4

What is the relationship among the six sharp practices indulged by distance education students? Table 6 shows that cheating has a weak significant positive relationship with plagiarism, falsification, arm-twisting and inducement, respectively. However, cheating has a moderately significant positive correlation with impersonation. Plagiarism was found to have a weak positive but significant relationship with falsification, impersonation, arm-twisting and inducement. Similarly, falsification has a significantly weak and positive correlation with impersonation, arm-twisting and inducement, respectively. Furthermore, impersonation correlates with arm-twisting and inducement in a weak, positive and significant manner. Lastly, there is a weak, significant, positive relationship between arm-twisting and inducement.

**Table 6.** Correlation matrix of the relationship among the six sharp practices indulgence by distance education students

Sharp practices	M	SD	(1)	(2)	(3)	(4)	(5)	(6)
(1) Cheating	15.7	3.7	1	.15***	.19***	.48***	.25***	.08*
(2) Plagiarism	15.6	3.7	.000	1	.13***	.14***	.15***	.12**
(3) Falsification	15.1	3.9	.000	.000	1	.13***	.20***	.15***
(4) Impersonation	15.7	4.3	.000	.000	.000	1	.14***	-.02
(5) Arm-twisting	13.5	4.7	.000	.000	.000	.000	1	.22***
(6) Inducement	14.7	4.7	.032	.001	.000	.644	.000	1

M = Mean; SD = Standard deviation

Values above the diagonal are bivariate Pearson correlation values

Values below the diagonal are probability levels

\*\*\*  $p < .001$

\*\*  $p < .01$

\*  $p < .05$

## DISCUSSIONS AND CONCLUSION

### Discussion

The first finding of this study discovered that sharp practices such as cheating, plagiarism, falsification, impersonation, and arm-twisting were more prevalent in large class sizes than in smaller ones among distance education students. Only inducement was higher in small classes than in large ones. This finding may be due to the crowded nature of large classes, where many students may go unnoticed in implementing unacceptable practices. Also, because students sit compactly in large class sizes, it may be difficult for light to penetrate; thus, making the spaces underneath desks dark for an invigilator to sight from a distance small piece of papers (usually held by some students during examination). On the contrary, in small class sizes, sharp practices such as impersonation will be reduced since lecturers may be able to recognize almost all the students in the class. Class size may not have influenced distance education students' indulgence in falsification, arm-twisting and inducement because these are usually done in secret and on a personal or small group basis.

This finding aligns with Ekanem's (2016) finding that average class size distribution produced negative externalities on the university students' social well-being and increased delinquent behaviors among them. The finding also agrees with the results of Miller and Ronit (2017) that the best predictors of attitudes and behaviors are situational factors (i.e., the characteristics of the student's academic environment). This finding in the present study implies that a teacher may be more effective in instructional delivery in small than large classes and that when a teacher is effective in the classroom, students learn better and thus help them prepare effectively before the examination. This simply connotes that smaller class sizes may increase learning effectiveness and reduce sharp practices among university students.

This study uncovered secondly that instructional delivery is a significant negative predictor of students' indulgence in sharp practices in distance education institutions. This implies that, other things being equal, an increment in the quality of instructional delivery is associated with a decrease in students' indulgence in sharp practices and vice versa. This finding is not surprising because lecturers can communicate the correct values for distance learners to shape their behaviors through the instructional delivery process. Lecturers can also inform students of the dangers of indulging in sharp practices. Such advice may go a long way to minimize the degree to which distance education students are involved in sharp practices. Conversely, institutions where lecturers do not instruct students against these, may witness a high rate of students' indulgence in sharp academic practices.

This finding corroborates the result of Muchai (2014) that several factors that contributed to cheating were contextual such as class attendance, lecturer-student interactions, poor invigilation, lack of adequate facilities and poor instructional delivery in the institutions. This also agrees with the study of Xiao and Wilkins (2015) that lecturer commitment to students' academic achievement and social integration were positively related to student satisfaction and refusal to indulge in delinquent behavior. The implication of this to learning effectiveness is that successful learning typically requires effective performance from students and lecturers. Lecturers committed to their student's academic achievement will spend more time and effort planning lessons, developing and acquiring learning resources, researching new content, and thinking about how to convey information and monitor student progress for effective learning. This may also be a practical model to ensure that students learn effectively and shun all forms of academic misconduct.

Thirdly, this research revealed that institutional policies significantly predicted students' indulgence in sharp practices such as cheating, arm-twisting and inducement in distance education institutions. However, institutional policies had a non-significant negative prediction of distance education students' indulgence in falsification, plagiarism, and impersonation. The inverse prediction recorded for the six sharp practices implies that well-formulated and implemented policies in distance education institutions could be used to reduce students' indulgence in cheating, arm-twisting, plagiarism, inducement, falsification and impersonation. This is because well-documented policies will specify clear rules and regulations stating what is expected, what should be avoided, and the punishment for going against the laws. Implementing such policies may prevent students from involving in sharp practices, while the punishment that will be meted out to offenders may serve further as a deterrent to other students.

The non-significant effect of institutional policies on students' indulgence in plagiarism, falsification and impersonation is attributable to the poor implementation of policies that address the three identified practices.

For example, it is rare to find many students being penalized for plagiarizing other people's work. Also, the punishment allocated for impersonation (imprisonment) appears too strict for most distance education institutions to implement. Consequently, students caught impersonating are rarely reported to relevant committees and authorities for action. The reluctance of lecturers to report such cases and institutions' unwillingness to take disciplinary sanctions on students caught indulging in such sharp practices could enable students to continue in such fraudulent acts, being aware that nothing would be done. Falsification may not have responded significantly to the prediction of institutional policies because such are usually challenging to detect, and where students are caught, they are rarely handed over to disciplinary committees for action. This finding supports Archibong (2012), whose study showed that many students and lecturers are not punished for their wrongdoings; hence, the mere formulation of university policies did not improve students' indulgence in sharp practices. Therefore, until appropriate policies are correctly enforced, distance education institutions will find it challenging to curb the trend of sharp practices among students.

Lastly, this study found significant positive correlations among students' indulgence in almost all the six sharp practices, except for the correlation between impersonation and inducement. This result suggests that distance education students who cheat during examinations, plagiarize other people's work, arm-twist for private gains, falsify records, induce lecturers for grades, and promote impersonation are more likely to carry out all other forms of sharp practices. The only exception is that students who induce lecturers (using different strategies) are not likely to impersonate and vice versa. This result is explainable because inducement and impersonation often improve scores after an examination. A person who had planned for impersonation may not find any reason to induce lecturers for increased marks, having already hired a more brilliant person for the examination. People may resort to inducement if they are sure of not writing an examination very well. Therefore, a student can resort to inducement if impersonation plans fail but may remain calm if successful.

## Conclusion

This study was designed to quantify the degree of students' indulgence in six sharp practices in the context of some distance education institutions in Nigeria. The study proved that some institutional variables promoted, whereas others discouraged, sharp practices among distance education students. Variables such as large class sizes, inadequate instructional delivery, and deficiently implemented institutional policies promoted students' indulgence in sharp practices. Conversely, small class sizes, good instructional delivery, and well-implemented university policies can discourage sharp practices among distance education students. Thus, the extent of students' indulgence in sharp practices will vary with a distance education institution, depending on the class size, quality of instructional delivery, and the implementation of formulated policies. This study implies that future acts of sharp practices depend on the way they are managed in the present day. This has further implications on the need for urgent attention to be paid to grey areas (such as the need to enforce policies, punish offenders and formulate implementable policies) to address the shortcomings in distance education institutions. The study also proved that students' indulgence in one form of sharp practice is connected to their indulgence in other sharp practices. This study has contributed to the distance education literature by providing evidence of the predictive parameters of students' indulgence in sharp practices. The study has also opened up some grey areas where distance education institutions can focus to promote ethical behaviors among students. Based on the study's conclusion, it is recommended that:

- i. Distance education institutions in Nigeria reduce enrollment figures during admission processes to a level that guarantees a lecturer-student ratio of 1:35. More facilities, infrastructures, and personnel should be recruited where prominent enrollment figures are recorded to reduce class sizes and properly monitor students' behaviors.
- ii. During lesson delivery, lecturers should ensure that they communicate the benefit of hard work and the dangers of students' engaging in sharp practices. This will help in sensitizing students on the correct values to adopt and the ones to shun.
- iii. All policies to guide students' behavior should be enforced with all amounts of rigor. Guidelines should be developed on the discipline administered to any offender of particular offences. This will help minimize incidences of academic fraud. Enforceable policies should be formulated, and the discipline of erring students should be publicly communicated to serve as a deterrent to others.

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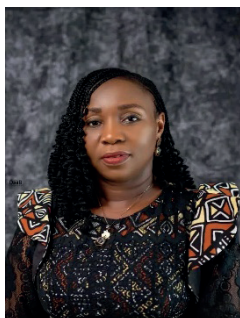
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