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Assessment of Causing Factors for Cheating During Examination

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Abstract

The basic purpose of the present study was to assess the root causes and provoking factors of cheating during an examination and to propose possible solutions to take corrective actions in public secondary schools in Gedeo zone, Southern Nations Nationalities and Peoples Region, Ethiopia. Because of the homogeneity of schools, five schools were randomly selected out of the 24 public secondary schools in the Zone. Similarly, 387 student samples were taken by using simple random sampling techniques to give equal chances to all respondents, while 10 school principals and 10 teachers were selected by availability sampling. The research adopted an embedded mixed (QUANT+qual) design. Questionnaires (quantitative data) for students and unstructured interviews (qualitative data) for principals and teachers were used as collecting instruments. Besides descriptive statistics, principal component analysis, multiple correlations, and multiple linear regression using model IBM SPSS Statistics 20 were used. The result of the study signifies the positive and direct relationships between cheating and the predictor variables. The study is expected to provide evidence-based information for curriculum developers, policy makers, educational officials, school principals, science teachers, and school communities as a whole. The report also adds new knowledge to the existing literature.

1 Introduction

1.1 Background of the Study

Academic institutions serve as environments where individuals are equipped to address various personal, professional, and societal challenges. For this reason, they place strong emphasis on upholding academic honesty and prohibit all forms of deceit or misconduct that may unjustly or unlawfully influence a student's grade on any task or course (Smita, Namrata, Apurva, & Bahubali, 2016). According to Adams and Esther is examination system is

Adams and Esther (2013) observed that examination malpractice has unfortunately become a persistent problem across many nations. According to Obimba (2002), such malpractice refers to unethical or dishonest actions by candidates or examination officials occurring before, during, or after an exam, whether inside or outside the examination venue. In the same vein, Wilayat (2009) described examination malpractice as any unlawful act undertaken by a student, either individually or in collaboration with others—such as peers, parents, teachers, invigilators, supervisors, or printers—to gain unearned or unfair academic advantages (Achio *et al*.,2012).

Cheating on an exam is one type of examination malpractice in which one can have a list of ac-

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tivities including copying from others, having or using notes, formulas, or other information in a programmable calculator or other electronic device without explicit teacher review and permission (Etter *et al*., 2006; Qaiser, G., A., & K., 2015). Moreover, cheating also includes having or using a communication device such as a cell phone, pager, or electronic translator to send or obtain unauthorized information. According to Stephen and Jude (2013), taking an exam for another student, or permitting someone else to take a test for somebody else, and asking another to give you improper assistance, including offering money or other benefits, is also considered exam cheating.

In many cases, the motivation behind students' dishonest or unlawful actions during examinations can be traced to individual characteristics such as jealousy, academic competition, fear of failure, parental expectations for high performance, and a general social tolerance for unethical conduct—all of which can increase the tendency toward cheating (Abbas & Naeemi, 2011). Many parents focus solely on the grades their children achieve, pressuring schools to produce better results without considering the methods used to attain them. In this regard, scholars note that the prevalence of cheating has risen alongside the expansion of high-stakes testing systems. Moreover, both schools and parents often fail to communicate clearly what behaviours are acceptable or prohibited (The New York Times, September 7, 2012). Simkin and McLeod (2009) describe cheating as "widespread," while the Los Angeles Times (1992) observed that although the act itself is not new, it has become normalized in today's academic culture.

Cheating is not limited to students; some teachers also engage in explicit forms of academic dishonesty. Such practices include altering students' answers, giving them correct responses during tests, or illegally obtaining examination papers beforehand and using that knowledge to prepare students (Gareth, Daniela, Trevor, & Robert, 2013). Cheating is disliked to a great extent because it breaks a rule and teachers take it as a personal offence. Thomas Lickona (2004) defines five reasons why cheating is wrong: Cheating will ultimately lower your self-respect because you will never be proud of anything you got by cheating. Cheating is a lie because it deceives other people into thinking you know more than you do. It also violates the teacher's trust that you will do your own work. Furthermore, it undermines the whole trust between the teacher and his or her class. Cheating is unfair to all the people who aren't cheating. If you cheat in school now, you'll find it easier to cheat in other situations later in life-perhaps even in your closest personal relationships. To the extent of the knowledge of researchers, to date, there is scarcity of studies conducted on the causes of school exam cheating in the Gedeo zone and the Southern Nations, Nationalities, and Peoples Region in general.

1.2 Statement of the Problem

Recently, in Ethiopian schools, exam cheating has been encouraged by school communities such as educational leaders, teachers, administrative workers, and students themselves (Dejene, 2021). As a result, it is now considered a common trend among students (MoE, 2017). The Ministry of Education also states that school students are promoted more towards exam cheating since there are weak or no legal charges and proportional punishments taken over bribery by public leaders and individuals by the government. According to the researchers' observations and preliminary interviews, during an examination, students tried to copy from other students near to them using communication devices (like mobile phones) and asked them to give improper assistance, including offering money or other benefits, etc. Therefore, this study attempted to assess the root causes or provoking factors of students' seeking to cheat during an examination in public secondary schools in the Gedeo zone. According to Lucifora & Tonello (2012) and Dejene (2021) studies, it is hard to deny that students are increasingly less able to perform well on national exams even though passing grades are constantly kept in the lower quadrant of the percentile (Aderogba, 2011; Isao & Emmanuel, 2014). On all academic levels, the growing acceptance of a variety of cheating strategies is a difficulty.

Based on the researchers' own classroom experiences, examination cheating in Ethiopia has become increasingly sophisticated, making it challenging to detect. Many students who engage in such practices

often evade punishment; some even respond casually, expressing mild regret or amusement while viewing the invigilator as overly strict or disruptive. Academic dishonesty has become a global issue affecting students at all educational levels—from primary and secondary schools to higher education institutions. In the Ethiopian context, incidents of cheating appear to be rising, a trend that may be linked to factors such as large class sizes, classroom conditions, technological access, diverse student backgrounds, and pressure exerted by teachers, parents, or peers (Adeyemi, 2010; Oko & Adie, 2016).

Ethiopia's Minister of Education now places a high value on educational quality and has been working to reduce exam cheating among students by implementing various preventive measures. Even if the government has been doing this, cheating has continued progressively rather than come to an end (MoE, 2017). Researchers believe that it must be much better to focus on corrective actions than preventive actions to minimize exam cheating. It is impossible to achieve the objective of improving the quality of education without taking corrective actions. According to the information obtained from Zone educational office stakeholders in the preliminary interview, currently, academic cheating is at a very aggressive stage. Students, in large numbers, are attempting to obtain exam answers from other students rather than completing the task themselves. They also ask their teachers for help, especially in regional and national examinations. Thus, this study tried to determine the reasons why school students are involved in exam malpractices.

1.3 Study Objectives

The major objective of this study was to evaluate the root causes and/or provoking factors of students' cheating during an examination and to propose possible solutions for cheating in public secondary schools in the Gedeo Zone, Southern Nations Nationalities and Peoples Region.

The primary focus of the study was to achieve the following explicit objectives:

- To identify the contribution of school environment for exam cheating,
- To investigate the impact of students' level of consciousness towards exam cheating,
- To describe the societal level of awareness concerning exam cheating,
- To determine the impact of exam management and poor exam preparation on exam cheating,
- To investigate the impact of dishonest actions of public leaders and prominent individuals on students' exam cheating,
- To describe the contribution of students' seeking to higher institutions for exam cheating.

1.4 Research Questions

The following research questions guided this study:

- To what extent does the school environment contribute to students' exam cheating?
- Does the level of consciousness of students have an impact on exam cheating?
- To what extent does the societal level of awareness contribute to students' exam cheating?
- Does the weak preparation of students have an influence on exam cheating?
- To what extent do the dishonesty actions of public leaders and public-figure individuals contribute to students' exam cheating?
- Does a student's desire to attend a higher education school have an impact on exam cheating?

2 Methodology

2.1 Research Design

This study has adopted a concurrent mixed (QUAN+qual) design. The study focused on an investigation of the root causes of students' cheating during an examination, especially in Gedeo public secondary schools. Finally, this study provided suggestions and recommendations for stakeholders on how to prevent students from cheating on school exams.

2.2 Sources of the Data

In this study, the primary sources of data were used. The data was collected from school teachers, principals, and students of public secondary schools in the Gedeo zone. This study considered students (target populations) as the main data sources, while teachers and principals were considered supportive data sources.

2.3 Sampling Techniques and Sample Size

In Gedeo zone, there are 24 public secondary schools. According to Creswell (4^{th} ed., 208), it is possible to select certain sites or people if they possess a similar trait or characteristic. Since schools were assumed to be homogenous in nature, five schools were selected by simple random sampling (SRS) techniques.

Student samples were also taken by using simple random sampling techniques to give equal chances to all respondents. Ten (5-male and 5-female) teacher participants, two from each school, having at least five years of work experience, were taken.

Table 1: Sample size and sampling techniques

SN	Respondents	Tot population	Sample size	Sampling technique
1	Schools	24	5	SRS
2	Principals	24	5	Availability
3	Ac/V/ Principals	24	5	"
4	Teachers	751	10	"
5	Students (G10)	12,000	387	SRS

All the teachers were first-degree holders. Ten (main and vice) principals (2 from each school) participated in the study, and all of them were first-degree holders and had more than 5 years of experience. Table 1 illustrates the summary of population and sample size, and sampling techniques used by the study.

2.4 Data Collecting Instruments

Questionnaires were used as tools to collect quantitative and qualitative data. It was prepared by the researchers by referring to different sources. The tools contained both close-ended (for quantitative data) and open-ended (for qualitative data) questions and were developed with a five-point Likert scale type, which ranges from "strongly agree" (5) to "strongly disagree" (1). Before administration to participants, the tools were validated by experts and tested by a pilot study for reliability at Damma secondary school (a non-sample school). The reliability of instruments was done by using reliability analysis at Cronback's alpha of 0.05, and it was found to be.78, which shows acceptable reliability. After some corrections had been made, we distributed 450 questionnaires to students. The return questionnaires were 387. The questionnaires consisted of 31 items. In addition to the open-ended part of the questionnaire, semi-structured interviews were conducted with school principals and teachers after validating by three judges. The interview guide was composed of six (6) items, which were in line with the basic research questions. This data was used to triangulate the findings obtained from quantitative data. Individual interviews were conducted for 15 minutes each.

2.5 Methods of Data Analysis

To analyse the quantitative data, researchers used descriptive analysis (frequencies, mean values, standard deviations, and percentages) and inferential statistics such as principal component analysis (PCA), multiple correlations, and principal component (or multiple linear) regressions using the model IBM SPSS Statistics 20. Variable reduction methods (principal component analysis) was a variable reduction method that was very important to apply to the data to reduce the number of variables, 31 items, into a manageable number and to do

further analysis, multiple regressions. With a sample of more than 200 participants, PCA was more appropriate (Dabone, Graham, & Fabea, 2015).

Multiple linear regressions were the best choice to predict the behavior of one dependent variable (cheating) with a set of continuous independent variables. Firstly, PCA was applied to reduce many "observed" items into a few suitable "artificial" variables (Sabine & Brian, 2004).

The newly named artificial variables were then analysed by using multiple regressions. Besides these, supportive qualitative data collected from school teachers and principals was discussed and embedded within the students' data.

3 Results and Discussions

3.1 Demographic Statistics

Table 2 below shows that female students (57.1%) were slightly greater in number than their counterparts. The average score of the two semesters for most of them were below 70.00. However, a few of them have average results of 80 (15%) and 90 (3.1%).

The number of participants in F/Genet S.S.S. is higher than the other schools, while Chechu S.S.S., Dilla S.S.S., and Wonago S.S.S. and Y/Cheffe S.S.S. are comparable to each other.

Table 2: Demographic characteristics of student respondents

Criteria	Responses	Students	
		Frequency	Percentage
Sex	Female	221	57.1
	Male	166	42.9
Age	16-20	387	100
G9 results	50-59	125	32.3
	60-69	112	28.9
	70-79	79	20.4
	80-89	59	15.2
	90-100	12	3.1
School name	Chechu S.S.S.	81	20.9
	Dilla S.S.S.	86	22.2
	F/Genet S.S.S.	105	27.1
	Wonago S.S.S.	53	13.7
	Y/Cheffe S.S.S.	62	16.0

Table 3: Students feeling for exam cheating during examinations

"I have a positive attitude to get answers (or any assistance from others) during examination"

	Frequency	%	Valid %	Cumulative %
Never	36	9.3	9.3	9.3
Seldom	47	12.1	12.1	21.4
Some times	27	7.0	7.0	28.4
Frequently	50	12.9	12.9	41.3
Always	227	58.7	58.7	100.0
Total	387	100.0	100.0	

As it is depicted in Table 3, students were asked to express their approach towards exam cheating. This shows that most students, except 9.3%, freely express their feelings as they seek to cheat or need assistance (or favour) from others to receive answers during examinations. This implies that, in one or another way, most students (90.7%) are delighted if they get answers during examinations. They do not worry about their futures or the knowledge they have. They will be delighted if they get answers from their classmates or teachers.

Testing the Model

The model of data analysis was tested with various tests such as the Kaiser–Meyer–Olkin (KMO) test, Model Fitting Information, Goodness-of-Fit Test, Pseudo R-Square and Test of Parallel Lines. All tests verify that the data fits well with the model.

Table 4: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.909
Bartlett's Test of Sphericity	Approx. Chi-Square	4413.506
	Df	465
	sig.	.000

The KMO test (Table-4) proves that the adequacy of sampling for-analysis (KMO is 0.91) is found to be marvellous, which is well above acceptable-limit of 0.5 (Field, 2009). Moreover, the p-value (.001) of Bartlett's test of sphericity 2 indicated that correlations between items were large sufficiently for PCA and the sample was randomly drawn from the population.

Table 5: Fitting Information of the Model

Model	**-2 Log Likelihood**	**Chi-Square**	**df**	**sig.**
Intercept Only	951.394			
Final	746.461	204.934	19	.000
Link function: Complementary Log-log.				

From Table-5 the model fit the test results, the statistically significant chi-square value of the baseline/intercept-only model is.0005 (p .0005). This tells us the model is going to give better predictions for the dependent variable cheating (Ari and Yildiz, 2014).

Table 6: Goodness-of-Fit Test

	Chi-Square	**df**	**sig.**
Pearson	1350.806	1417	.894
Deviance	742.302	1417	1.000
Link function: Complementary Log-log.			

Similarly, as observed above in (Table-6), the Goodness of Fit Test insures that the observed significance levels for both Pearson's and Deviance chi-square statistic values are very large, which is greater than .0005 (.894 and 1.000). Hence, the data is consistent with the model; the model fits the data well (Elamir, 2010). And according to Field (2009), If the model appropriately fits the data, the test statistic is expected to be non-significant, meaning the significance value (p-value) should exceed 0.05. This means that the model allows the variance of the underlying variable (cheating) to vary as a function of the independent variables. Thus, the regression model fits well with the data.

Table 7: Pseudo R-Square

Cox and Snell	.412
Nagelkerke	.450
McFadden	.214
Link function: Complementary Log-log.	

Furthermore, the pseudo R^2 value of Nagelkerke (Table-7) is large enough (.450) to show the model fits well with the data (Elsayed Elamir, 2010). As a result, the value denotes that the explanatory factors adequately describe the dependent (cheating) variable.

Table 8: Test of Parallel Lines

Model	**-2 Log Likelihood**	**Chi-Square**	**df**	**sig.**
Null Hypothesis	746.461			
General	671.146[b]	75.314[c]	57	.053

In addition, the p-value (.053) of the Test of Parallel Lines (Table-8) is found to be large enough. Then the data and the model predictions are similar and you have a good model (Sarita, 2015). As a result, all of these indicate that the PCA and regression model are well-suited to the data to be used in the data analysis.

3.2 Multiple Correlation and Regressions

Association statistical inference techniques were used, which included correlation and regression among the explanatory and outcome variables.

3.3 Multiple Correlations

The researchers discovered how much the variables are linked together by using correlations. correlation was run to determine the relationship between the explanatory and outcome variables, as shown in the table below (Table-9). We can see that all the six explanatory variables are positively correlated with the exam cheating. All the factors such as school environment (r =.701, p =.000), students' level of consciousness (r =.840, p =.000), societal level of awareness for cheating (r =.533, p=.000), poor exam management and weak preparation by students (r =.614, p=.000), dishonesty actions of public leaders and figures (r =.667, p=.000), and students' seeking higher institutions (r =.589, p =.000) are statistically significant.

The assumption of multicollinearity among the explanatory variables was also checked (Table-10) as it makes it hard to interpret the coefficients and reduces the power of the model to identify independent variables that are statistically significant.

Table 9: Correlations between explanatory and the outcome variables

		School environment	Students' level of consciousness	Societal level of awareness for cheating	Poor exam management & weak preparation	Dishonesty actions of public leaders & figure individuals	Seeking to higher Institution
Exam cheating	Pearson corr.	.701	.840	.533	.614	.667	.589
	sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	387	387	387	387	387	387

Table 10: Multicollinearity statistics

	Collinearity statistics			
	t	**sig.**	**Tolerance**	**VIF**
School environment	2,609	.012	.541	1.956
Students' level of consciousness	2,782	.003	.541	1.956
Societal level of awareness for cheating	2,851	.001	.541	1.956
Poor exam management & weak preparation	3,438	.010	.541	1.956
Dishonesty actions of public leaders & figure individuals	3,943	.000	.541	1.956
Seeking to higher institution	3, 356	.000	.541	1.956

Based on the coefficients output-collinearity statistics, they obtained a VIF value of 1.956, meaning that the VIF value obtained is between 1 and 10. Then, it can be concluded that there are no multicollinearity symptoms. After the multicollinearity test was completed, the linearity, multivariate normality, and homoscedasticity of the data were checked with appropriate test statistics, and there were no violations of assumptions.

Multiple Linear Regressions

Through regression, we find the perfect relationship equation of dependent and independent variables that help us predict the cause and effect relationship between variables. Principal component regression (PCR) was adopted in constructing the first 6 principal components and then using these components as the predictors in a linear regression model that is fit using least squares. The key idea is that often a small number of principal components suffices to explain most of the variability in the data, as well as the relationship with the response. Principal component analysis (PCA) was done before PCR was used because it is a popular approach for deriving a low-dimensional set of features from a large set of variables (James, Witten, Hastie, & Tibshirani, 2013). Then, using orthogonal rotation, PCA was performed on the 31 factors (items) in the student data (varimax).

The principal components are determined by eigenvalues (> 1) from these analysis results (Field, 2009; Gareth, Daniela, Trevor, & Robert, 2013).From 31 variables, only 6 components have initial eigenvalues of equal or greater than 1 and cumulative loadings of 62.19% of the total variance explained (Table-11) as depicted above. So, these components are retained for further analysis and multiple regressions of the data.

Table 11: Total variance explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	8.547	27.570	27.570	8.547	27.570	27.570	4.724	15.239	15.239
2	2.285	7.372	34.943	2.285	7.372	34.943	3.898	12.573	27.811
3	1.485	4.789	39.731	1.485	4.789	39.731	3.198	10.315	38.126
4	1.196	3.858	48.030	1.196	3.858	48.030	1.363	4.396	47.065
5	1.129	3.643	55.457	1.129	3.643	55.457	1.161	3.744	54.954
6	1.024	3.302	62.185	1.024	3.302	62.185	1.099	3.546	62.185
etc.									

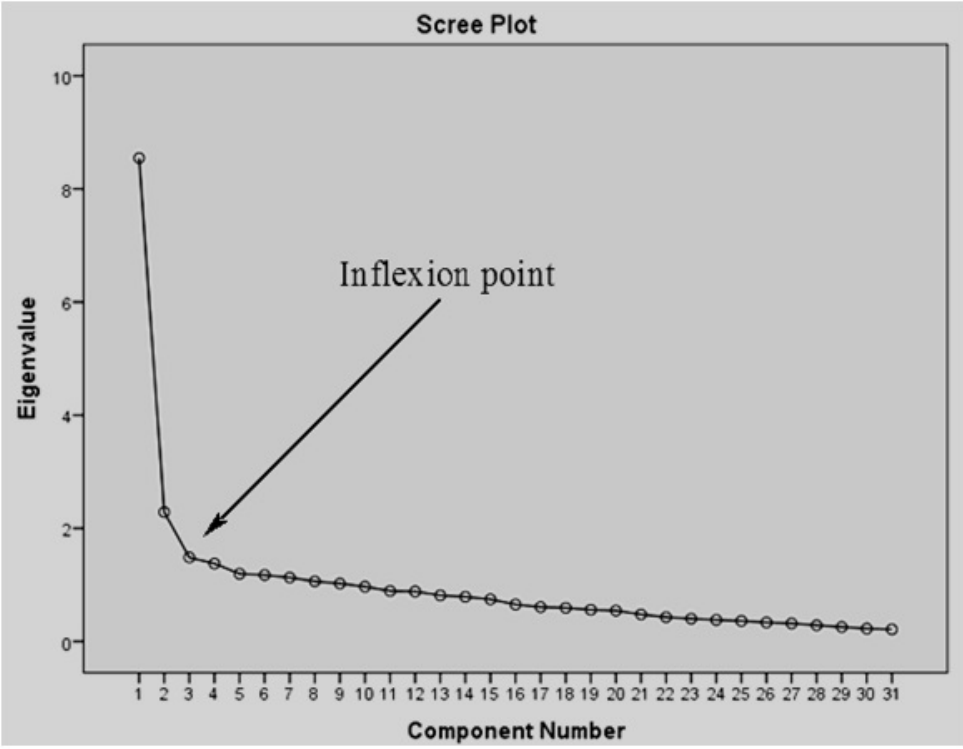

Figure 1: Scree Plot- a graph plotting each component (X-axis) against its associated eigenvalues (Y-axis)

Similarly, the scree plot (Figure-1) of the PCA shows the inflexion point happens at the third component/factor. However, given-large sample- size and Kaiser's recommendation, stating that all factors with eigenvalues larger than one should be retained, and as it is also noted from the total variance explained, the researchers chose 6 components for the final analysis.

The rotated component matrix shows the factor loadings after rotation (Table-12). It involves identifying the variables or items that demonstrate high loadings for a given component and determining what these variables have in common. The researchers retained those variables having loading values greater than their absolute values. 40. According to James *et al*. (2013), loadings greater than absolute value 0.4 represent substantive values. In such a way, similar items (observed variables) cluster together to form six principal components (PCs). These components (or artificial variables) were given new names as provided in the parentheses: component-1, PC1 (weak school environment), component-2, PC2 (low consciousness of students), component-3, PC3 (low societal awareness of cheating), component-4, PC4 (poor exam management and weak preparation), component-5, PC5 (dishonesty actions of public leaders and notable individuals), and component-6, PC6 (students seeking higher institutions).

Table 12: Rotated component matrix

Items	Components					
	1	2	3	4	5	6
Schools compound, buildings and chairs are not attractive	**.805***	.214	.180	.033	.088	-.062
Shortage of text books and other teaching materials	**.753***	.189	.196	.000	.092	-.008
Making students busy by different extra-curricular activities	**.751***	.254	.225	.041	.091	.069
Exam items are conducive for cheating	**.739***	.328	.170	.120	.097	.044
Teachers are not committed to minimize cheating	**.728***	.204	.217	.055	.233	.074
Overcrowded/ large class size classroom	**.721***	.207	.335	-.018	.009	.057
Tight exam schedule	**.636***	.297	.356	.030	-.007	.043
They dislike the subject	.161	**.822***	.103	.142	-.035	.005
They spent much of their time by television set, on internet surfing, face book conversation and or computer games	.182	**.752***	.094	.017	.019	.025
They find studying challenging or boring	.237	**.725***	.137	.127	.034	.007
Carelessness	.267	**.721***	.085	.005	.098	.158
Peer influence	.312	**.697***	.072	-.054	.177	.061
Competition among students	.221	**.645***	.069	.021	.157	.145
Society encourages exam cheating	.300	.106	**.782***	.023	-.019	.063
Fear of criticism from society members if they fail in the exam	.223	.113	**.709***	.008	.013	.015
Their participation in other economic activities such as agriculture, commerce, and transportation	.213	.098	**.658***	.166	.000	.138
They have too much work to do at home and not enough time to study	**.406***	.146	**.637***	-.091	-.167	-.014
Lack of intimate relationship between schools and parents	.235	.044	**.594***	.085	.229	.076
Their parents have no enough understanding about the consequence of cheating	.120	.123	**.449***	.089	.411	-.045
Laissez-faire leadership concerning exam administration	.015	.071	.119	**.745***	-.177	-.065
Weak rules and regulation concerning exam administration	.059	.136	.038	**.690***	.250	.052
Ineffective supervision and control during examination	.239	.243	.190	.182	**.559***	-.124
Need good grades to get into college	.193	.079	-.145	-.040	**.473***	.181
Their parents expect better result from them	.102	.137	.205	-.069	-.070	**.683***
Low preparation for exam	-.066	.213	.043	.052	.191	**.658***
Their parents burden them with home activities	.117	.038	-.144	.111	-.179	**. 740***
Everyone else is cheating such as sports stars, movie stars, leaders	-.093	.082	.132	-.156	**.411***	**.621***
Their parents encourage cheating	.114	-.007	.043	.120	**. 829***	.020
Their parents only expect completing grade ten(10) from them	.160	-.050	.032	.383	**. 561***	.112
Fear of failure	.086	-.038	-.059	.100	.001	.173
Unable to fulfil necessary educational materials such as reference books and others educational materials	-.106	.217	.193	-.121	.149	**-.427***

Multiple Linear Regressions for the Student Data

Multiple regressions are being used to predict the behavior of dependent variables (cheating) with a set of independent variables (James, Witten, Hastie, & Tibshirani, 2013). Because of having a well-fit regression model, it is straightforward to apply and predict the response variable, cheating, on the basis of a set of values for the artificial variables (the six PCs).

The p-value (.870) of the students' age is greater than.05 (Table-13, above). This suggests that students are seeking to cheat irrespective of their age differences (i.e., age doesn't appear to be related to cheating). Regarding grade 9 results, students with lower previous grade scores are less likely to be labeled as higher exam cheaters than those students with better results. That is, there are no significant differences among them regarding cheating. This implies that those high-scoring students have either a tendency to cheat or to give answers for others. Moreover, when comparing schools to each other, Dilla secondary school is likely to assign cheating signifies more (.036) than the baseline category (Y/Cheffee). While the three schools are similar in these regards, F/Genet, Wonago, and Chichu have no significant difference.

Table 13: Parameter Estimates for schools, students gender, age and their grade-9 results

	Estimate	Std. Error	Wald	df	sig.	95% Con. Interval	
						Lower Bound	Upper Bound
Chechu	-.054	.289	.035	1	.851	.620	.512
Dilla	.660	.315	4.398	1	.036	.043	1.277
F/Genet	-.300	.266	1.267	1	.260	.821	.222
Wonago	.223	.308	.525	1	.469	.380	.826
Y/Cheffe	.	.	.	0	.	.	.
Sex=1	-.326	.175	3.471	1	.062	.668	.017
Sex=2	.	.	.	0	.	.	.
Age=1	.076	.464	.027	1	.870	.834	.985
Age=2	.	.	.	0	.	.	.
G9Result=1	.190	.444	.183	1	.669	.681	1.061
G9Result=2	-.020	.404	.002	1	.961	.811	.771
G9Result=3	.064	.391	.027	1	.870	.703	.831
G9Result=4	.388	.402	.929	1	.335	.401	1.177
G9Result=5	.	.	.	0	.	.	.

Table 14: Parameter Estimates for PCs

	Estimate	Std. Error	Wald	df	sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PC-1	.510	.087	34.447	1	.000	.339	.680
PC-2	.911	.094	94.519	1	.000	.727	1.095
PC-3	.094	.041	5.256	1	.012	.014	.174
PC-4	.246	.071	12.104	1	.001	.108	.385
PC-5	.075	.032	5.493	1	.019	.012	.138
PC-6	.188	.075	6.246	1	.012	.041	.335

The parameter estimate tables (Table 14) form the core of the outputs, specifically telling us about the association between explanatory variables and an outcome-variable (Sarita, 2015). The table shows the degrees and directions to which cheating is affected by the six explanatory variables. One can see that the estimate b and the Wald statistical values are different significantly from 0, and then it can be stated that all predictors (PCs) are make a big influence to the forecast of cheating (Field, 2009). The Wald statistics for all predictor variables are less than the standard.05 (with one degree of freedom) and the regression coefficients (b) are positive. We are 95% confident that the true b-values (e.g., b1, b2, etc.) are found in ranges (like.339, -.680,.727, -1.095, etc., respectively). That is, all six variables are statistically significant and predict cheating significantly.

This result is firmly in alignment with the interview responses given by school principals and teachers. Principals and teachers believe that the principal components may cause students to cheat during taking tests and exams and when doing homework and assignments. Predictors with lower levels of significance values possess higher estimates and are considered to have enhanced effects on students' attitudes towards exam cheating. The linear combination of predictors that correlate maximally with cheating is provided as:

Cheating=$\beta_0 + \beta_1(PC1) + \beta_2(PC2) + \beta_3(PC3) + \beta_4(PC4) + \beta5(PC5) + \beta_6(PC6) + \epsilon_i$

$=\beta_0 + .510(PC1) + .911(PC2) + .094(PC3) + .246(PC4) + .075(PC5) + .188(PC6) + \epsilon_i$

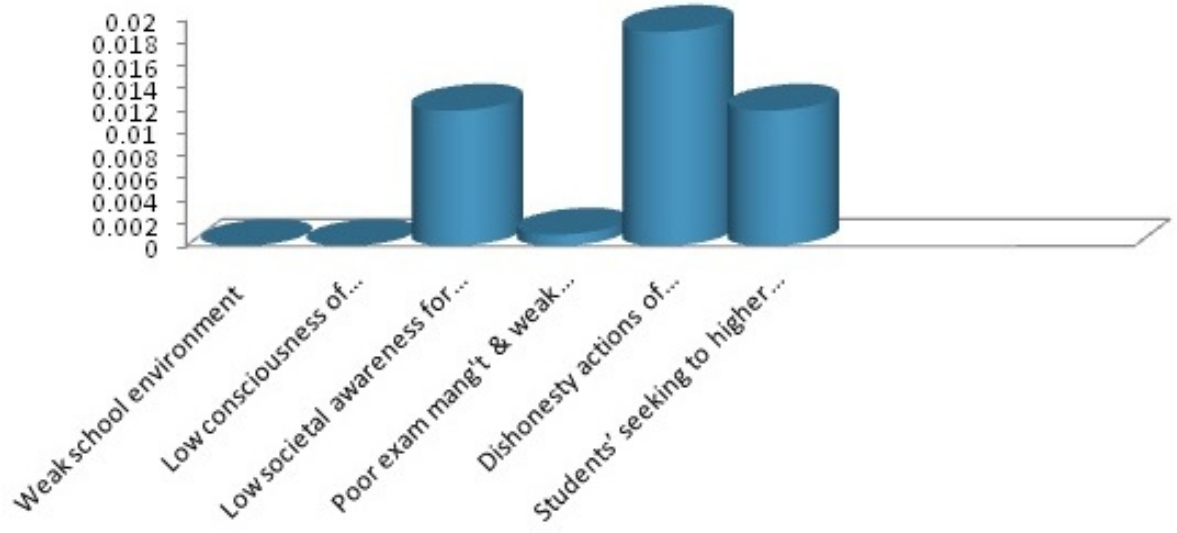

Figure 2: Significance values of the Wald statistics- the entire predictor variables have Wald statistics with levels of significance less than .05

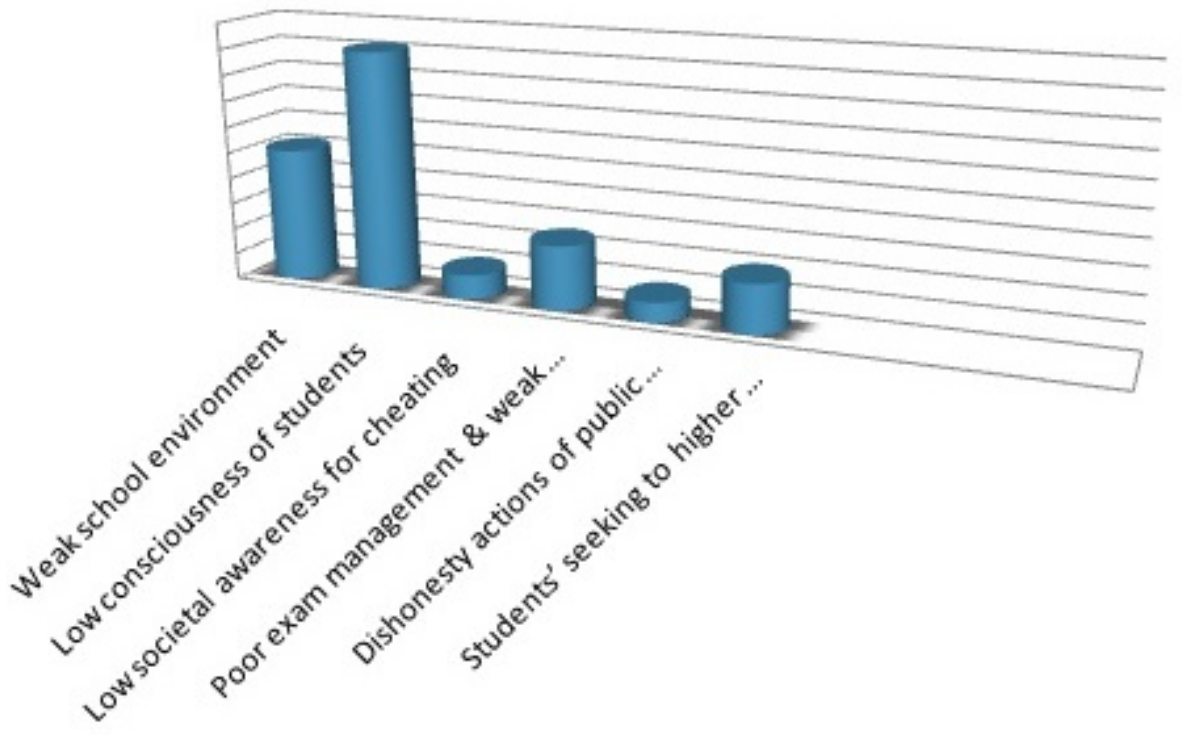

Figure 3: Regression coefficients- degree of increment of cheating for 1 increment of each predictor

The above figures (Figure-3 and 4) illustrate that, particularly, weak school environments (p =.000), low consciousness of students for cheating (p =.000), and poor exam management and weak preparation (p =.001) have very low p-values (Figure-3) and higher regression coefficients (Figure-4). They can be considered as strong causes or provoking factors for public secondary school students' dishonesty behaviours on examinations. Since the remaining factors have p-values lower than the standard and what sound like higher estimate values, they are plausibly the main causes of exam cheating in schools.

In other words, multiple regression results show that there is a high positive correlation of cheating with all the causing factors (the six PCs). When each of the predictor variables exists and becomes strong, so does exam cheating. That is, when the existence of the predictor variables increases, the chance of the occurrence of exam cheating by students also increases. On the other hand, minimizing the causing factors leads to a reduction in the attitudes of students towards exam cheating. The figure displays the plausible increment of cheating when each predictor increases by a factor of 1. Exam cheating, for example, increases by a factor of 0.911 for every one increase in poor school environments, and so on.

As it can be seen from the foregoing figures, one can perceive that the lower the levels of the significance values of the Wald statistics, the higher the bi values and that these are strong causing factors for deceptive behaviors of students during school examinations. And also, the lower the significance values of predictors, the stronger the provoking factors for cheating are and vice versa.

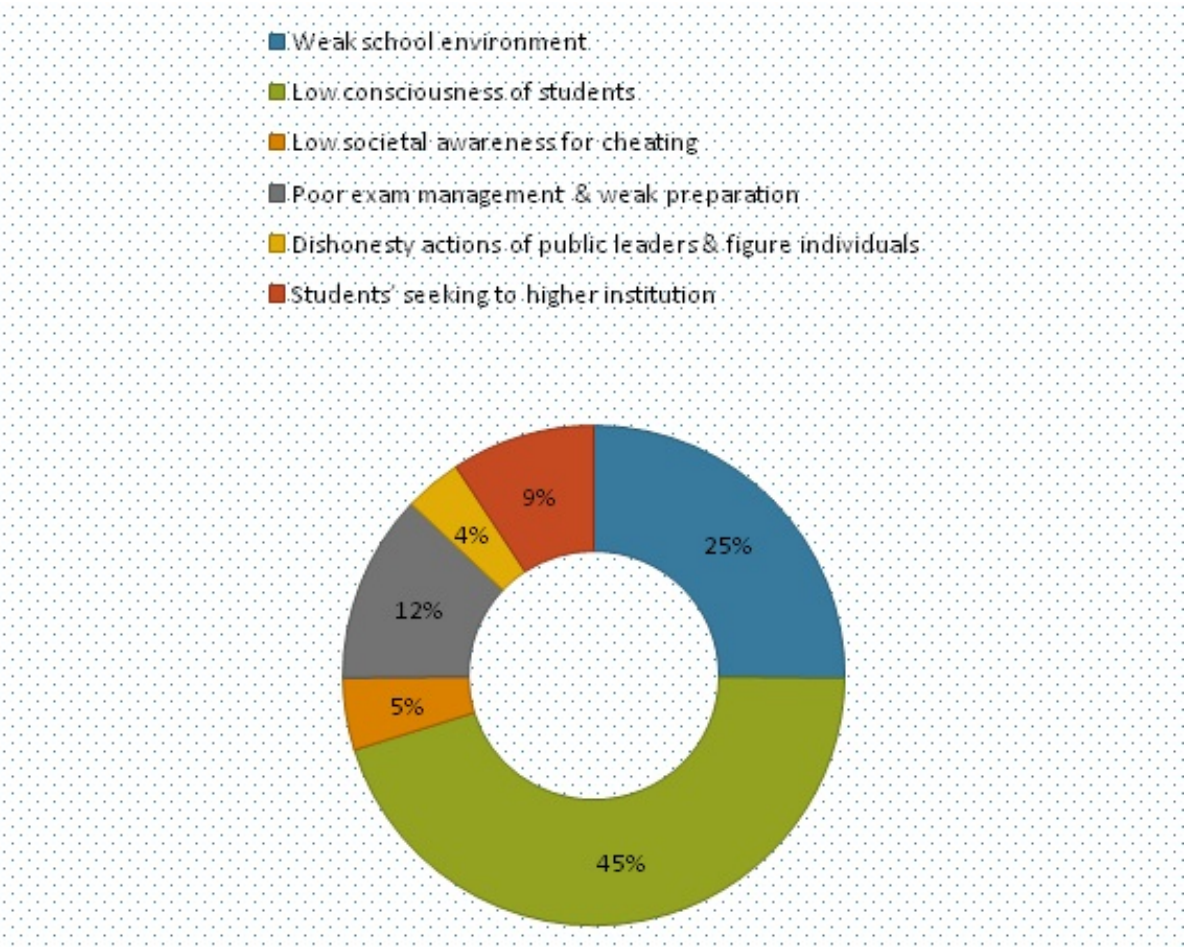

Figure 4: Degree of effect of causing/provoking factors upon students exam cheating

Specifically, 45%, 25%, 12%, 9%, 5%, and 4% of cheating incidents are attributed to students' lack of moral awareness, an unsupportive school environment, weak examination management, inadequate student preparation, the desire to gain access to higher education, limited public understanding of academic dishonesty, and the unethical conduct of influential figures, respectively. Consistent with this finding, most interview participants in the present study emphasized that both students and their parents often fail to recognize the negative consequences of examination malpractice. They noted that even when students achieve high scores through dishonest means, such success holds little real value, as the knowledge and skills required for practical application are absent.

According to Figure 5, the second strongest causing factor for exam cheating is a weak school environment (25%). A child's "school environment" refers to all the human and material resources available in the school which a child can see, hear, touch, smell, taste, feel and respond to (Chapman, 2003). It influences the physical, mental, social, and emotional development of schoolchildren. School is more than just a place where children go to study. Rather, it is a place where a child lives. The entire child-body, mind, heart, and soul-is immersed in the school environment and is dynamically interacting, influencing, and being influenced by its various aspects (Hopkins, 2001: 3).

The qualitative data collected through interviews and open-ended questionnaires indicates that there was a shortage of laboratories, laboratory equipment, facilities, and well organized libraries, and in some areas there was also a shortage of trained manpower to run laboratories and other school facilities. Based on the above figure, the next strongest causing factors for exam cheating were poor exam management and weak preparation of students for exams (12%). In line with this, the interview informants involved in the study forwarded the problem to the government. When they mention the problem, school performance evaluation mainly focuses on students' exam achievement rather than the teaching learning process and other critical aspects of school. Similarly, some non-governmental organizations (NGOS) that work with schools also use students' achievement in national examinations and the rate of promotion from one grade to another as the major criteria for supporting schools. As a result, some schools pursue high examination outcomes by any means possible. In certain cases, schools even organize events or social gatherings intended to appease invigilators and supervisors during national examinations. This suggests that examination malpractice is often carried out in a systematic and coordinated way, involving multiple stakeholders such as school leaders, administrators, and other officials.

Related studies in the area also assure the existence of similar things throughout the country. Recently, in Ethiopian schools, exam cheating has been encouraged by school communities such as educational leaders, teachers, administrative workers, and students themselves (Dejene, 2021). As a result, it is now considered a common trend among students (MoE, 2017).Based on Figure 5, another factor contributing to exam cheating was the dishonesty of public leaders and figures. In line with this, some respondents noted in their open-ended questions that cheating has become normal. Because everyone is cheating, like sports stars, top politicians, public leaders, and others who work in different top positions. Students in high schools can easily model those individuals because they were children.

Weak preparation of students during exams and non-discouraging behaviors of parents were other causes of exam cheating. With regard to this, the interview informants forwarded that the study area is known for cash crops like coffee, chat, and others. Thus, some students engage themselves in cash crop trades. Worse, during coffee collection season, they did not even attend the class lesson. Besides, since the majority of the students were from rural areas, they actively participate in agricultural work to support their families and to lead their lives. Beyond this, some students were from rural areas far away from the school. According to the informants, the above-listed problems were the major challenges for students in exam preparation. Similarly, low societal awareness and fear of students' failures were other causing factors for exam cheating. Consistent with this, responses

to the open-ended questions revealed that many students experience a lack of confidence during examinations for various reasons, even when they have adequately prepared or studied hard. Related literature in the area under consideration also shows similar things. In many circumstances, the driving force for dishonest or illicit students' behaviour during an exam may be found in some personal traits such as envy, competitive pressure, fears of failure, parents' demand for good grades, and a widespread acceptance of illegal behaviour may increase the likelihood of dishonesty within students (Abbas & Naeemi, 2011).

4 Conclusions and Recommendations

This study identifies the significant root causes of public secondary school students' deceptive attitudes and engagements during examinations.The root causes of exam cheating, based on this study, are identified to be the weak school environment, low student consciousness of cheating, low societal awareness of cheating, poor exam management and weak preparation, dishonesty actions of public leaders and prominent individuals, and students' seeking higher institutions. The result of this study is in alignment with the studies conducted by Adeyemi (2010) and Achio, Ameko, Kutsanedzie, Alhassan, & Ganaa (2012). Most of them have a direct and strong relationship with exam cheating.

Moreover, the analysis of teachers' and school principals' interview data shows that the predictor variables are serious causing factors, and this is in alignment with the students' data. Most of the teachers and principals, in most of the items, believe that the so far mentioned factors are the key factors causing and/or provoking issues of exam cheating by public secondary school students in Gedeo Zone. In particular, teachers agree that these factors could be barriers to achieving the quality of education in the country.

Thus, main and vice principals' and teachers' responses are found to be in full alignment with the responses of students. Based on the results of this study, the researchers need to recommend the following possible solutions:

- District and school officials should build conducive learning environments in classrooms and school compounds.
- School management should develop exam regulations and guidelines.
- Establishing strong exam management and supervision systems is also mandatory in schools.
- Officials need to work on multidimensional awareness creation about the negative impact of exam cheating on students' lives and careers.
- The school should establish and conduct school-parent forums regularly to create strong relationships with the community and/or student parents. This will give a chance for discussion about the impact of exam cheating on students.
- The government needs to give more emphasis and take corrective actions against public leaders who have bribery attitudes and actions, as they are bad role models for school students and younger generations in general.

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Conflict of interest

Minale Demelash and Giorgis Chinasho declare that they have no conflict of interest.

Ethical Statement

The authors believe that ethical issues are very important and should be preserved, as well as that moral practices should be engaged in.The authors have kept important ethical responsibilities such as: a manuscript should not be submitted to more than one journal for simultaneous consideration; the submitted work should be original and should

not have been published elsewhere in any form; a single study should not be split into several parts; results should be presented clearly, honestly, and without fabrication, falsification, or inappropriate data manipulation; and no data, text, or theories by others should be presented as if they were the author's own. Therefore, the authors certify that this manuscript is free from any ethical dishonesty and treat it for publication.

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