



Original Article

Using Statistical Models to Investigate Academic Cheating in Kurdistan Universities

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ABSTRACT

Academic dishonesty, particularly exam cheating, is a persistent issue in education. This study examines the influence of socio-demographic and educational factors on exam cheating, alongside student motivations, methods, attitudes, and reasons for abstaining. An online questionnaire in the Kurdistan Region of Iraq yielded 409 responses, analyzed using ordinal logistic regression. Results show that 52.6% of students cheated at least once during university. Fear of failure emerged as the main motivator for cheating, while religious beliefs were a significant deterrent. Common cheating methods included copying answers from another student's paper. Analysis revealed that older students and females cheat less often, while students in higher academic years cheat more frequently. Those satisfied with their academic achievements are less likely to cheat. Additionally, students attending private universities and those perceiving poor teaching quality are more prone to cheating. The study highlights the strong influence of socio-demographic factors on academic dishonesty and underscores the complexity of motivations and methods behind exam cheating.

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Keywords: Cheating; Exams; Academic Dishonesty; Socio-Demographic; Logistic Regression.

1 Introduction

The influence of enrolling in challenging, daunting, or disliked courses can lead undergraduate students to grapple with overloaded schedules, marked by extensive coursework and projects [1,2]. Consequently, this situation often leaves them with insufficient time and an inability to rely on specific timeframes for comprehensive exam preparation. For this and various other reasons, undergraduate students face the problem of academic dishonesty, specifically cheating in exams, due to several factors, such as, excessive workload and demanding projects, which create a conducive environment for unethical behavior in pursuit of academic success. On the other hand, some students, despite their workloads, have never considered cheating. This scenario also has several underlying reasons, such as religious beliefs, feelings of shame, guilt, or remorse, a moral conviction that cheating is wrong or unethical, a sense of fairness toward fellow students, and concerns about its impact on their peers' rights and scores, among others [3].

Undergraduate students often struggle with overwhelming schedules, enrolling in several demanding courses that involve extensive coursework and numerous projects. As their academic calendars become increasingly packed, they frequently lack the

necessary time for thorough exam preparation, which may push some to consider cheating as a last resort [4]. What's more, another influential factor contributing to academic dishonesty is what's known as "Group Projects Gone Wrong", as focused on [5]. When a group of undergraduates is assigned a complex, semester-long project requiring in-depth research and collaboration, the substantial workload can easily overwhelm the group members. In response, some students similarly resort to cheating on their exams associated with the entire course to free up additional time for their increasingly burdensome project commitments [5].

Additionally, projects or case studies that go off track can also drive academic dishonesty. When students are burdened by demanding, semester-long assignments, the overwhelming workload may lead them to cheat on exams in order to free up time and focus on their projects. Falling behind academically only worsens this delinquent, as students in rigorous majors often cheat on exams to preserve their academic status. Moreover, the competitive landscape for scholarships adds to the problem, as some students, driven by the pressure to outperform their peers and secure scholarships, engage in exam cheating to attain perfect grades. In its entirety, the primary aim of this study is to explore various challenging scenarios that illustrate how factors such as heavy workload, demanding projects, academic pressure, and competition contribute to pushing undergraduate students toward academic dishonesty, especially exam cheating. These students' possibility to such actions to navigate these challenges and uphold their academic performance [6].

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Another influential factor is "The Fear of Falling Behind," which exacerbates the issue and contributes to cheating ^[7]. Undergraduate students, especially those pursuing demanding majors, face difficulty in keeping pace with the rigorous coursework. Their anxieties about subpar exam results potentially impacting their future opportunities compel them to resort to drastic measures, such as cheating in exams, to uphold their academic standings ^[8]. Likewise, adding a unique dimension to the issue is the fierce "Competition for Scholarships," where the allure of highly coveted scholarships for students with exceptional academic records motivates some to cheat in exams to achieve perfect grades, spurred on by the intense pressure to outshine their peers ^[9].

In some scenarios, we should explore the various forms of cheating that occur within and outside universities. There are similarities between collaborative cheating in academic and corruption settings, such as the cooperation between multiple individuals during on-campus exams, which is strictly prohibited, or the unauthorized acquisition of information without proper citation of sources. In both cases, those involved are driven to hide their actions from authorities, often acting in ways that go against the interests of the broader community. Additionally, participants in both situations face the risk of being detected and facing punishment. As a result, there are also potential connections between academic cheating and dishonesty in the workplace, which can effect on individuals' assessments and overall integrity ^[10].

These cases have shown that the effects of student academic dishonesty extend beyond educational institutions. Still, it also has a correlation with unethical behaviours in workplaces and corruption in countries. For example, it has been found that cheating during studies was followed by manipulation of clinical data, such as recording patients' vital signs that were not taken or medicines that were never administered. Therefore, a worldwide increase in disciplinary measures is being witnessed by the medical boards against doctors who engage in unprofessional, incompetent, or improper medical behavior ^[11,12].

Recent studies have indicated that cheating or academic dishonesty rates among students from Chinese cultures were elevated ^[13]. Nevertheless, some researchers have found that Chinese students report lower rates of involvement in academic dishonesty compared to students in other countries. The differing findings on the prevalence of cheating across various studies have sparked researchers' interest, as these variations could offer valuable insights into dishonest behaviors among undergraduate students from different countries ^[14,15].

According to Colnerud and Rosander, cheating is a widespread form of academic dishonesty prevalent in university settings. It has become so pervasive that it has sparked research efforts around the globe ^[16]. Numerous studies have explored its causes, including factors like demographics. These studies have been conducted in various regions, including but not limited to Australia, the United Kingdom, Singapore, central European

countries, Western Europe, and Tunisia ^[17]. Consequently, this academic issue also exists in Middle Eastern countries and regions such as Iraq, Iran, Saudi Arabia, etc. Several statistics have been compiled to assess this academic dishonesty based on circumstances ^[18].

Various academic perspectives emphasize the presence of distinct taxonomies for dishonest behavior in educational settings ^[19–21]. These classifications encompass a range of actions that influence students' academic conduct. Firstly, there is the issue of cheating, which involves the improper use of unauthorized materials during assessments ^[22]. In contemporary contexts, this cheating behaviour is further divided into two categories: the use of physical materials, such as paper-based resources ^[17], and the utilization of digital resources associated with smart devices known as electronic cheating (E-cheating) ^[23]. This division reflects the evolving nature of academic dishonesty in the digital age, highlighting its influence on students' examination practices. Secondly, there is the matter of unauthorized collaboration, where students engage in joint efforts on assignments originally designed to be completed individually ^[24]. This behaviour can undermine the integrity of individual assessments and impact how students interact academically. The last one which is the third type is focused on the taxonomy encompasses plagiarism and fabrication ^[17], characterized by the uncredited use of another person's written work and the submission of identical papers for multiple courses. These types of dishonesty impact more than just academic performance—they also cast doubt on the ethical standards and integrity of students' academic efforts.

These diverse dishonest behaviors have a significant influence on the academic landscape, shaping the way students approach their studies and the ethical considerations surrounding their actions. Understanding these influences is crucial for addressing and mitigating academic dishonesty effectively. Besides, E-cheating has become a prominent concern in academic education. Modern technology, including smart devices, plays a dual role: it hinders cheating by detecting devices like smartphones and watches and identifies plagiarism through text analysis ^[25]. However, students often exploit technology for e-cheating, prompting faculty to explore strategies for reducing academic dishonesty. Notably, a survey by Common Sense Media found that 35% of teens admit to using personal mobile devices for cheating, with 65% witnessing others doing the same ^[26]. This improper utilization of smart devices has played a significant role in a 42% surge in cheating incidents involving gadgets such as mobile phones in the UK since 2012, as reported by the British newspapers, *The Guardian* ^[27]. Additionally, technology-related cheating is rising among university students in Australia, particularly in engineering and among international students ^[28].

The Kurdistan Region of Iraq is experiencing a newly emerging situation within its academic universities. Cheating circumstances have not yet been explored in research or case studies within the region. This factor has served as the impetus for our research, primarily aiming to shed light on the issue and encourage academic integrity in this locale. Consequently, our

study has unveiled the root causes of undergraduate cheating, various cheating methodologies, and the underlying motivations that drive students to attempt academic dishonesty. Additionally, the aforementioned points highlight the need for research within universities to understand the factors motivating undergraduate students to engage in cheating behaviours. This study aims to address this issue by collecting data through targeted surveys, focusing on identifying the conditions that lead to cheating and those that deter it. Furthermore, the research delves into various case scenarios, providing insights into different aspects of this overarching problem. Utilizing questionnaires, we have gathered data from specific samples of undergraduate students. In essence, this study also aims to shed light on emerging issues, particularly highlighting how factors such as high workloads, project demands, academic challenges, and the pressure to excel can drive undergraduates to cheat in exams to maintain their academic standing in the face of academic pressures.

Based on these scenarios, the research unfolds a tapestry of contributions, each unveiled in a sequence of distinct points:

- The collected data emphasizes the influence of socio-demographic factors on academic performance and cheating frequency.
- The study also delves into the motivations behind cheating, cheating methods, reasons for abstaining from cheating, and students' attitudes toward academic dishonesty among undergraduates.
- Categorical variables in the selected data are used to analyze the impact of cheating by summarizing them with counts and percentages, thus revealing the prevalence of cheating among undergraduate students.
- The collected dataset has been carefully analyzed to identify relationships between different features and the occurrence of academic dishonesty, shedding light on the factors that motivate students to engage in such behaviour.
- Students' perspectives on cheating are examined by analyzing a range of concepts previously investigated in academic research.

The paper's structure follows: Section 2 discusses the research approach and dataset significance depending on cheating motivations. In Section 3, we provide the result overview of the dataset's findings and comparisons. Section 4 explores the discussion of cheating predictors among undergraduates. The final section presents a concise conclusion summarizing our findings.

2 Materials and Methods

2.1. Methodology and Participant Selection

After categorizing various types of cheating among undergraduate students in a sequential manner, it becomes evident that academic dishonesty has left a substantial imprint on those students, affecting various facets of their educational journey. This influence is particularly pronounced in the context of the evolving electronic technology landscape, encompassing both positive and negative dimensions. To explore the influence of these factors on the educational process, we administered an online survey through a Google Form, collecting data from a diverse and randomly selected group of undergraduate students across universities in the KRI. The survey was conducted over 62 days, spanning from May 12, 2023, to July 13, 2023. Before participating in the study, we obtained informed consent from all participants.

The electronic approach for data collection employed two distinct sampling methods. The initial method is simple random sampling, a dependable probabilistic technique^[29] widely utilized across diverse domains, including the social sciences and marketing, and its application in data collection via social technologies. In this method, researchers employ a sampling frame to randomly select individuals, frequently from within social network groups. The second method is snowball sampling, a non-probabilistic approach, also referred to as Convenience Sampling^[30,31]. It emphasizes accessibility and convenience over random selection, resulting in a quicker data collection. Nonetheless, it can introduce bias by favoring easily accessible individuals or groups. In snowball sampling, researchers start with a particular group and request them to recommend others with similar characteristics to participate. For instance, distributing a questionnaire to friends who, in turn, suggest similar participants for the study. A novel model, depicted in Figure 1, posits the choice to participate in academic dishonesty and methodological presentation.

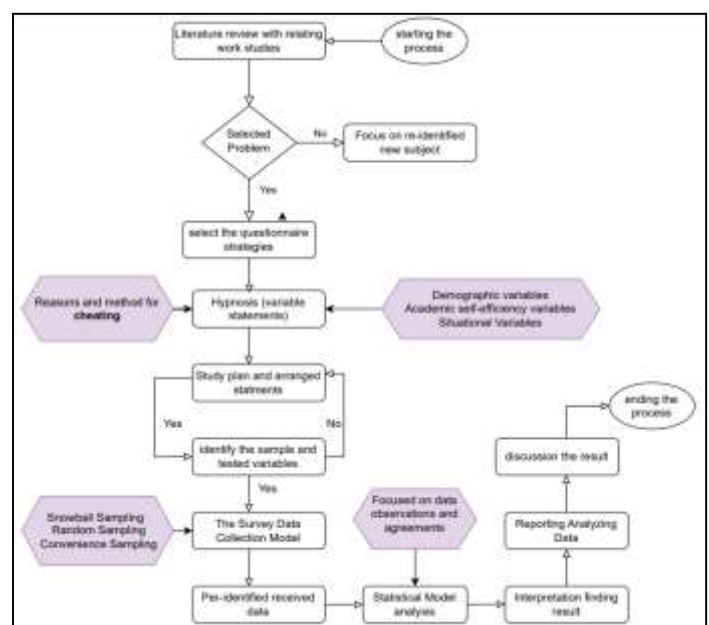


Figure 1: Overview of the study methodology steps.

2.2. Measures

The structured questionnaire was divided into two main sections. The initial section gathered socio-demographic information, including gender, age, college specialty (science/engineering/technology/mathematics, social sciences, humanistic & art, medical & health sciences, business, other), and year of study (from first year to sixth year), type of university (government, private), academic performance (least satisfied, satisfied, very satisfied), are you a dormitory student? (yes, no) and how many times have you cheated on exams during your university years? (Never, 1-3 times, 4-7 times, 8-10 times, >10 times). These metrics are determined based on the findings of the art-related research studies [32].

The second section is divided into four parts. The first part focuses on reasons for cheating and includes 15 items that identify the main motivations behind this behavior. The second part, which contains 11 items, examines the methods of cheating. The third part, with 9 items, explores the reasons for not cheating. Finally, the fourth part consists of 9 items that investigate attitudes toward cheating. Overall, the questionnaire comprises a total of 44 items.

Except for the second part of the second section, all participants are permitted to respond. For the second part of the second section, only those who have cheated at least once are invited to provide their answers, revealing the methods they had used for cheating.

2.3. Data Analysis

The descriptive analysis was conducted using Python 3.11.3 programming within Anaconda 23.5.2, notably employing Jupyter Notebook 6.5.4. In terms of descriptive statistics, frequencies and percentages were computed using Eq. (1). Additionally, the mean and standard deviation (SD) were calculated to describe the central tendency and variability of continuous variables, such as age, as shown in Eqs. (2) and (3), respectively. The Pearson chi-square test was also used, as it is presented in Eq. (4).

$$\text{Percentage} = \left(\frac{\text{Total number of observations}}{\text{Frequency of a category}} \right) \times 100 \quad (1)$$

$$\text{Mean} = \frac{\sum_{i=1}^n X_i}{n} \quad (2)$$

$$\text{Standard Deviation} = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n - 1}} \quad (3)$$

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i} \quad (4)$$

Data processing and visualization were done using Python-based data analysis libraries such as Pandas, Seaborn, and Matplotlib. Following the descriptive analysis, an ordinal logistic regression model was implemented in SPSS v.27 to investigate the relationships between sociodemographic predictor variables and the response variable, the frequency of cheating. This choice was made because the dependent variable has ordinal values. pseudo-R-squared measures were calculated to evaluate the explanatory power of the ordinal logistic regression model. Unlike the traditional R-squared used in linear regression, pseudo-R-squared measures are adapted for categorical and ordinal outcomes. These measures indicate how well the model explains the variance in the dependent variable (cheating frequency) relative to a null model (a model with no predictors). The following pseudo-R-squared measures were computed using Eqs. (5), (6), and (7) [33]. The Wald test was used to assess the significance of individual predictor variables, as illustrated in Eq. (8). To prepare the dataset for ordinal logistic regression, no methods for handling missing values were needed since there were no missing values in the socio-demographic and educational factors. Next, categorical variables were transformed into ordinal or numerical form; for example, gender was encoded as binary values (0 for Male, 1 for Female), while ordinal variables like Academic Performance (e.g., least satisfied to most satisfied) were assigned ordered numerical values (1, 2, 3).

$$R_{Cox \text{ and } Snell}^2 = 1 - \left(\frac{\hat{L}(M_{intercept})}{\hat{L}(M_{full})} \right)^{2/n} \quad (5)$$

where M_{full} = model with predictors, $M_{intercept}$ = model without predictors, and $\hat{L}$ = estimated likelihood.

$$R_{Nagelkerke}^2 = 1 - \frac{1 - \left(\frac{\hat{L}(M_{intercept})}{\hat{L}(M_{full})} \right)^{2/n}}{1 - \hat{L}(M_{intercept})^{2/n}} \quad (6)$$

$$R_{McFadden}^2 = 1 - \frac{\ln \hat{L}(M_{full})}{\ln \hat{L}(M_{intercept})} \quad (7)$$

$$\text{Wald Statistic} = \left(\frac{\hat{\beta}}{SE(\hat{\beta})} \right)^2 \quad (8)$$

Exploratory factor analysis (EFA) was performed using principal component analysis (PCA) as the extraction method and Varimax

rotation to uncover the latent factors underlying attitudes toward cheating. The appropriateness of the factor analysis was assessed using Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. Bartlett's test was used to examine the assumption of no correlation between variables, while the KMO test evaluated the suitability of the data for factor analysis. Varimax rotation was chosen under the assumption of an orthogonal structure among the underlying factors

2.4 Ordinal Logistic Regression: Theoretical Framework

The study employs an ordinal logistic regression model to analyze the relationship between socio-demographic factors and the frequency of exam cheating. Ordinal logistic regression is particularly suited for this analysis because the dependent variable (cheating frequency) is ordinal, with categories ranging from "Never" to "More than 10 times" [34,35]. This model appropriately captures the ordered nature of the response variable while accounting for the proportional odds assumption, which ensures that the relationship between predictor variables and cheating behavior remains consistent across different response categories. Unlike linear regression, which assumes a continuous outcome, ordinal regression allows for more accurate estimation of the probability of a student falling into a particular cheating frequency category based on predictor variables such as gender, age, academic year, and university type. Previous studies have focused on and emphasized that this method allows for a nuanced understanding of the factors influencing academic dishonesty, while also offering a robust statistical framework for analyzing ordinal data [36]. The model is expressed as represented in Eq. (9).

$$\log \left(\frac{P(Y \leq j)}{P(Y > j)} \right) = \alpha_j - (\beta_1 X_1 + \beta_2 X_2 + \dots + \beta_p X_p) \quad (9)$$

Where:

- Y is the ordinal dependent variable (cheating frequency: never, 1-3 times, 4-7 times, 8-10 times, >10 times).
- $Y \leq j$ is the cumulative probability of the response being in category j or lower.
- α_j are the threshold (cut-point) parameters for each category j .
- $\beta_1, \beta_2, \dots, \beta_p$ are the regression coefficients for the predictor variables $X_1, X_2, \dots, X_p$.

2.5 Analyzing and Interpreting Statistical Findings

In this study, statistical significance was determined using p-values and confidence intervals (CI) to assess the reliability and impact of predictor variables on cheating frequency.

P-values were used to determine the statistical significance of the predictor variables. A p-value less than 0.05 was considered statistically significant, indicating that the predictor variable has a significant effect on the cheating frequency. For example, the p-value for gender ($p < 0.001$) indicates that gender is a significant predictor of cheating frequency, with females being less likely to cheat compared to males.

CI were used to estimate the range within which the true odds ratio lies with 95% confidence. For example, if the odds ratio for a predictor variable is 1.5 with a 95% CI of [1.2, 1.8], it suggests that the variable increases the odds of cheating by 50%, and we can be 95% confident that the true odds ratio lies between 1.2 and 1.8.

3 Results

3.1 Exam Cheating Frequency

Figure 2 provides insight into the prevalence of cheating among university students based on their self-reported frequencies. Remarkably, a significant portion of students (47.4%) claimed they never cheated on exams during their university years. On the other hand, a substantial minority acknowledged various levels of academic dishonesty, with 27.4% admitting to cheating 1-3 times, 9.8% between 4-7 times, and a smaller fraction of 1.7% cheating 8-10 times, and 13.7% cheating more than 10 times, indicating a persistent issue that may warrant closer examination and intervention to foster academic integrity within the university community. Overall, these findings highlight the urgent need for educational institutions to actively address cheating behaviors by implementing comprehensive strategies that promote academic integrity, foster ethical decision-making, and create supportive learning environments that reduce the pressures leading to dishonesty.

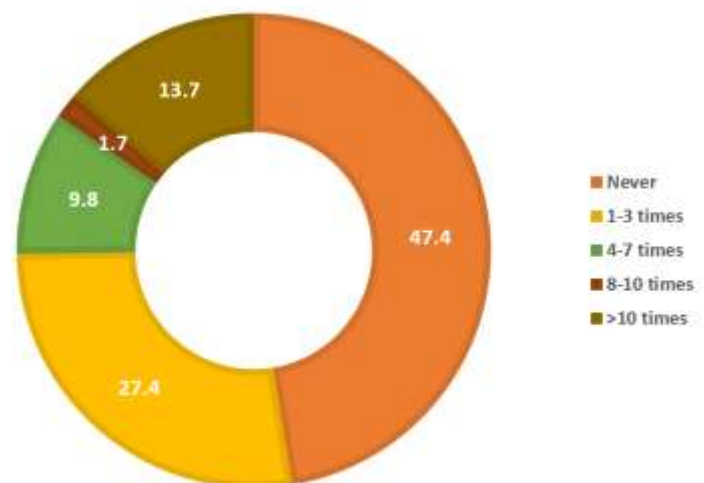


Figure 2: Frequency of cheating at the exams.

Table 1: Exam cheating frequency by demographic and academic factors.

Classification Features	Total Sample 409	Never 194	1-3 Times 112	4-7 Times 40	8-10 Times 7	>10 Times 56
Gender						
Male	203 (49.6%)	79 (38.9%)	58 (28.6%)	24 (11.8%)	6 (3.0%)	36 (17.7%)
Female	206 (50.4%)	115 (55.8%)	54 (26.2%)	16 (7.8%)	1 (0.5%)	20 (9.7%)
Age						
(years, mean $\pm$ SD)	21.59 $\pm$ 3.01	21.75 $\pm$ 3.78	21.42 $\pm$ 2.25	21.45 $\pm$ 2.1	22 $\pm$ 2.24	21.38 $\pm$ 1.72
College specialty						
Science/Engineering/Technology/Mathematics	103 (25.2%)	41 (39.8%)	28 (27.2%)	13 (12.6%)	5 (4.9%)	16 (15.5%)
Social Sciences	20 (4.9%)	8 (40.0%)	4 (20.0%)	3 (15.0%)	1 (5.0%)	4 (20.0%)
Humanistic & Art	30 (7.3%)	16 (53.3%)	13 (43.3%)	0 (0.0%)	0 (0.0%)	1 (3.3%)
Medical & Health Sciences	92 (22.5%)	44 (47.8%)	24 (26.1%)	9 (9.8%)	0 (0.0%)	15 (16.3%)
Business	10 (2.4%)	6 (60.0%)	2 (20.0%)	0 (0.0%)	1 (10.0%)	1 (10.0%)
Other	154 (37.7%)	79 (51.3%)	41 (26.6%)	15 (9.7%)	0 (0.0%)	19 (12.3%)
Year of study						
First year	87 (21.3%)	53 (60.9%)	22 (25.3%)	7 (8.0%)	0 (0.0%)	5 (5.7%)
Second year	114 (27.9%)	55 (48.2%)	26 (22.8%)	15 (13.2%)	1 (0.9%)	17 (14.9%)
Third year	102 (24.9%)	43 (42.2%)	30 (29.4%)	14 (13.7%)	2 (2.0%)	13 (12.7%)
Fourth year	90 (22.0%)	38 (42.2%)	31 (34.4%)	4 (4.4%)	3 (3.3%)	14 (15.6%)
Fifth year	10 (2.4%)	3 (30.0%)	2 (20.0%)	0 (0.0%)	0 (0.0%)	5 (50.0%)
Sixth year	6 (1.5%)	2 (33.3%)	1 (16.7%)	0 (0.0%)	1 (16.7%)	2 (33.3%)
Type of University						
Government	370 (90.5%)	179 (48.4%)	101 (27.3%)	32 (8.6%)	7 (1.9%)	51 (13.8%)
Private	39 (9.5%)	15 (38.5%)	11 (28.2%)	8 (20.5%)	0 (0.0%)	5 (12.8%)
Academic Performance						
Least satisfied	102 (24.9%)	34 (33.3%)	38 (37.3%)	9 (8.8%)	3 (2.9%)	18 (17.6%)
Satisfied	255 (62.3%)	135 (52.9%)	59 (23.1%)	27 (10.6%)	2 (0.8%)	32 (12.5%)
Very satisfied	52 (12.7%)	25 (48.1%)	15 (28.8%)	4 (7.7%)	2 (3.8%)	6 (11.5%)
Are you a dormitory student?						
Yes	139 (34.0%)	68 (48.9%)	36 (25.9%)	14 (10.1%)	2 (1.4%)	19 (13.7%)
No	270 (66.0%)	126 (46.7%)	76 (28.1%)	26 (9.6%)	5 (1.9%)	37 (13.7%)

3.2 Cheating in Examinations Linked to Socio-Demographic Characteristics

Table 1 presents a comprehensive overview of the sample population's characteristics and their reported frequency of cheating on exams during their university years. It is categorized into different intervals: 1-3 Times, 4-7 Times, 8-10 Times, >10 Times, and never. The sample size comprises 409 individuals, with an almost equal distribution of 203 males and 206 females. Out of 409 individuals, 194 (47.4%) have never cheated, while approximately 215 (52.6%) have cheated at least once. Regarding gender, a higher percentage of females (55.8%) reporting never

having cheated, as opposed to males (38.9%). On the other hand, amongst male students, the proportion of those who have engaged in cheating is significantly higher across various frequency ranges: 1-3 times at 28.6%, 4-7 times at 11.8%, 8-10 times at 3.0%, and >10 times at 17.7%. In contrast, for female students, the corresponding percentages are notably lower: 26.2%, 7.8%, 0.5%, and 9.7% respectively.

In a broader perspective, as students advance in their academic journey, a noticeable shift in cheating patterns becomes evident. The frequency of cheating on exams during university years increases across most categories, with a notable rise from the first to the fourth year of study. The percentage of students claiming they've never cheated gradually declines to approximately 42.2% in the fourth year and drops to 33% in the sixth year. It's important to note that the fifth and sixth years have a smaller sample size, which may explain the reduced numbers.

In the academic performance analysis, interesting patterns emerged among participants. Of the entire sample, 62.3% reported satisfaction with their academic performance, while 24.9% expressed the least satisfaction, and 12.7% were very satisfied. Those least satisfied showed higher percentages of cheating in all categories except "Never" compared to those satisfied or very satisfied. Additionally, a larger percentage of

Table 1 reveals that most students, accounting for 66%, are non-dormitory students. Interestingly, the percentages of students who have never cheated are fairly similar among both dormitory and non-dormitory students.

Table 2 illustrates the reasons for cheating among students, along with their respective frequencies and percentages. When comparing the reasons for cheating presented in the table, it's evident that certain factors are more significant contributors to academic dishonesty than others. The primary cause of cheating is the fear of failure, cited by 14.7% of students who resort to cheating for this reason. Subsequently, the second most prevalent reason is the lack of preparedness for the exam, with 11.2% of students acknowledging it as their motivation. These factors suggest that the psychological pressure and anxiety related with

Table 2 outlines additional factors contributing to cheating, but they are less prevalent than reasons as mentioned earlier. Notably, competition with classmates and the desire for academic or social

individuals satisfied or very satisfied with their academic performance (52.9% and 48.1%, respectively) reported never cheating, in contrast to those least satisfied (33.3%).

Regarding participants' college specialties, it's worth noting that the largest group falls into the "Other: it refers to various cases." category, accounting for 37.7% of the respondents. However, it's worth noting that cheating is particularly prevalent among students majoring in Science, Engineering, Technology, or Mathematics, with only 39.8% reporting that they have never engaged in cheating. Concerning university type, a significant proportion of participants, approximately 90.5%, are enrolled in government universities, with 48.4% stating they have never cheated. In contrast, private university attendees constitute a smaller segment, around 9.5%, and 38.5% of them claim to have never engaged in cheating. The result in

3.3. Reasons and Methods of Cheating

the fear of failing, as well as inadequate preparation, are significant drivers of academic dishonesty.

Other factors like the 'workload' being too high (10.5%), the difficulty of exams (9.6%), and laziness towards studying (8.3%) occupy intermediate positions in the hierarchy of reasons. While these reasons are notable contributors, they still fall behind the dominant influence of fear of failure and lack of preparedness.

recognition stand out as the least common motivators, with only 1.8% and 1.3% of respondents, respectively, indicating that they engaged in cheating for these purposes.

Table 2: Causes of cheating at exams.

Causes of cheating at exams	N	%
Fear of failure	201	14.7%
Lack of preparedness for the exam	153	11.2%
The workload is high and cannot be coped with	144	10.5%
The exam's difficulty	132	9.6%
Laziness or apathy towards studying	113	8.3%
Lack of time to study	92	6.7%
The course is not significant.	83	6.1%
Experiencing stress during the exam	72	5.3%
Other reasons	70	5.1%
Not liking teacher because of unfairness and strictness.	66	4.8%
Poor exam management and organization.	58	4.2%
A lack of attendance in lectures and insufficient effort.	52	3.8%
Prepared for the exam but seeking a higher score.	49	3.6%

Little punishment for cheating	40	2.9%
Competition with classmates	25	1.8%
Desire for academic or social recognition	18	1.3%

(Abbreviations: N—frequency. % — percentage).

These methods emphasize the variety of tactics students employ to cheat, highlighting the need to address academic integrity comprehensively.

Table 3 provides a comprehensive overview of the various methods students have employed to cheat in exams, along with the corresponding frequency and percentages. According to the results, it's clear that the most common method reported is looking at and copying answers from another student's paper, with 23.1% of respondents admitting to this practice. This highlights the prevalence of cheating through direct copying during exams.

The methods ranked as the second, third, and fourth most common are asking for answers by whispering/talking to nearby students, helping a fellow student to cheat, and signaling or gesturing to other students, accounting for 15.1%, 12.1%, and

11.4% of respondents, respectively. These behaviours highlight a collaborative approach to cheating, where students work together to undermine the integrity of the examination process.

While less common, a variety of other cheating methods are still used, including writing answers on a small piece of paper or a cheat sheet, using electronic devices, writing on the body, switching answers on pencils, changing exam papers, taking unauthorized materials, and paying someone else to take the exam. These methods emphasize the variety of tactics students employ to cheat, highlighting the need to address academic integrity comprehensively.

Table 3: Methods employed for cheating among university students.

What methods have you employed to cheat in exams?	N	%
Looking at and copying answers from another student's paper.	132	23.1%
Asking for answers by whispering/talking to nearby students.	86	15.1%
Assisting a fellow student to cheat	69	12.1%
Signaling or gesturing to other students.	65	11.4%
Writing answers on a small piece of paper or a cheat sheet	53	9.3%
Using electronic gadgets and communication technologies such as texting, hands-free, etc.	40	7.0%
Other ways	30	5.3%
Writing answers on the body or clothing	27	4.7%
Switching answers written on a pencil or eraser	24	4.2%
Changing exam papers after the exam	22	3.9%
Taking unauthorized materials (such as textbooks or course notes) to the test	19	3.3%
Paying someone else to take the exam for you	4	0.7%

3.4 Reasons to Avoid Cheating

3.5. Attitudes Toward Cheating

Analyzing the attitudes toward cheating presented in Figure 3 reveals a spectrum of opinions among students regarding the ethical implications of cheating under various circumstances. By comparing the responses, we can determine which attitudes students consider the most and least important. The analysis

Table 4 provides a comprehensive analysis of reasons why students refrain from cheating. It is evident that a diverse set of factors influence their commitment to academic integrity. The most predominant reason, cited by 20.1% of the respondents, is

reveals a strong consensus against cheating, with students overwhelmingly agreeing that it is wrong regardless of the circumstances. The most interesting thing compared to other situations is that, a large number of students believed that cheating is wrong even if they only aim to pass the exam, even if they do not get caught, or even if others do it (these three circumstances received 227, 218, and 212 votes, respectively).

the religious perspective. This state highlights the profound influence of personal ethics and moral values on their behaviour. Reputation concerns also emerge as a powerful deterrent, with 14.5% of students expressing the fear of damaging their

reputation if caught, and 13.4% reporting feelings of shame and guilt associated with cheating. These statistics shed light on the powerful social and psychological consequences that act as strong deterrents against dishonest behaviour.

Additionally, 13.1% of students view cheating as inherently wrong, suggesting that personal values and moral considerations play a crucial role in their decision-making. It's also noteworthy that 11.6% of students mention the fear of being caught and punished as a significant factor, indicating the role of consequences in deterring cheating.

Furthermore, the data highlights that while various reasons influence students, including a sense of respect for teachers and concerns about progress, fairness to peers, and stress, these motivations received less than 10% of responses, suggesting that the more morally and socially oriented factors carry greater weight in deterring cheating among the surveyed students.

Table 4: Reasons for not cheating among university students.

What are your reasons for not cheating?	N	%
It is not acceptable from a religious perspective.	240	20.1%
It can damage my reputation if I get caught	173	14.5%
I would feel ashamed, guilty or remorseful	160	13.4%
I believe it is wrong or immoral	157	13.1%
I fear being caught and punished	138	11.6%
I have respect for my teachers	104	8.7%
It hampers progress	82	6.9%
It is unfair to fellow students and affects their rights and scores	79	6.6%
It causes stress.	61	5.1%

In contrast to the other situations, a smaller number of students express strong agreement with the statement that cheating is wrong when the instructor has not taught the course effectively (142 strongly agree) or when the instructor has assigned excessive material (162 strongly agree). These statements reflect scenarios where some students might rationalize cheating due to perceived inadequacies in teaching or overwhelming workloads.

To examine latent attitudes toward cheating, an exploratory factor analysis was conducted ($KMO = 0.94$, Bartlett's $p < 0.01$), confirming the data's suitability for analysis. The analysis reveals three distinct factors underlying attitudes toward cheating. The first factor reflects a strong moral opposition in all circumstances, including when others engage in it, when it has no impact on other students' scores, and even if it helps fellow students. The second factor highlights concerns about fairness and instructional quality, emphasizing situations where the instructor has not taught the course well enough or has assigned excessive material. The third factor captures situational justifications, focusing on challenges such as the difficulty of the exam, insufficient time to study, and the goal of merely passing. These findings suggest that

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Analyzing the attitudes toward cheating presented in Figure 3 reveals a spectrum of opinions among students regarding the ethical implications of cheating under various circumstances. By comparing the responses, we can determine which attitudes students consider the most and least important. The analysis reveals a strong consensus against cheating, with students overwhelmingly agreeing that it is wrong regardless of the circumstances. The most interesting thing compared to other situations is that, a large number of students believed that cheating is wrong even if they only aim to pass the exam, even if they do not get caught, or even if others do it (these three circumstances received 227, 218, and 212 votes, respectively).

while some individuals reject cheating outright, others consider external pressures and fairness when shaping their attitudes.

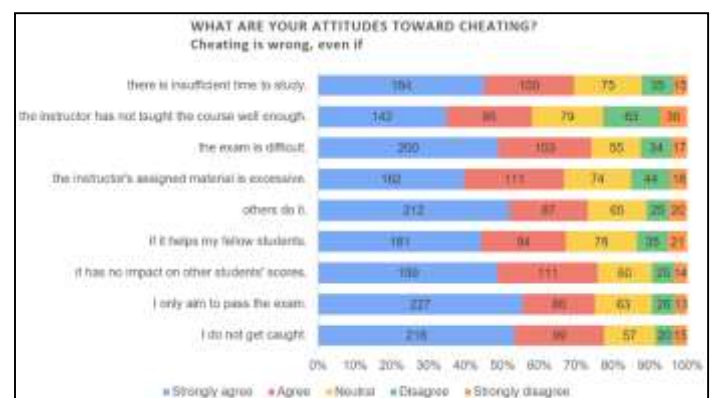


Figure 3: Attitudes of university students toward cheating.

3.6. Gender-Based Analysis of Exam Cheating Frequency

The analysis of exam cheating frequency by gender reveals notable trends. Among the respondents, a higher proportion of males reported engaging in academic dishonesty more frequently than females. In the categories of cheating one to three times, four to seven times, and eight to ten times, males exhibited higher numbers than females. However, the most significant difference emerged among respondents who admitted to cheating more than ten times, with 36 males compared to 20 females. Conversely, a larger number of females, 115 in total, indicated they had never cheated, compared to 79 males. These findings suggest that while both genders engage in academic dishonesty, males tend to do so more frequently, whereas females are more likely to report never having cheated.

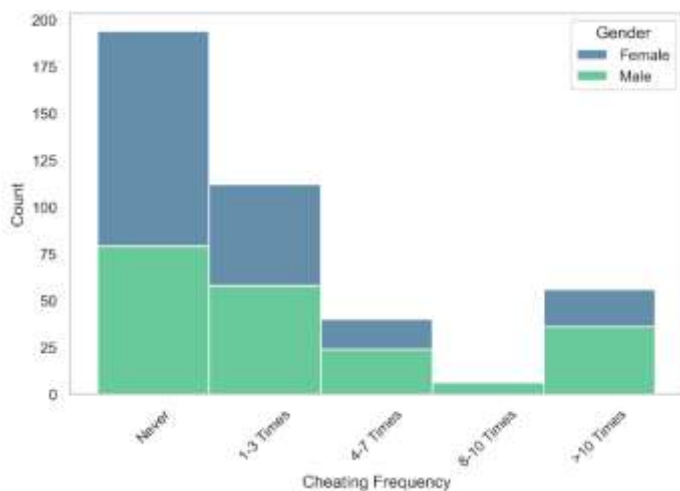


Figure 4: Exam Cheating Frequency by Gender.

3.7. Cheating Frequency by Year of Study

The frequency of cheating varies significantly across different years of study, as illustrated in Figure 5. In the first year, most students report never cheating, with only a small percentage admitting to occasional or more frequent cheating. As students' progress to their second and third years, there is an increase in the number of students who cheat between one to seven times, though a significant portion still claims to have never cheated. In the fourth year, there's a further increase in the number of students

Table 5. Threshold values are critical points that distinguish categories within the dependent variable [37]. In 5 Discussion

Academic dishonesty, particularly cheating on exams, is a pressing concern in the realm of higher education. In this discussion, we delve into the multifaceted aspects of academic

Table 5, there are five ordered categories for the dependent variable, ranging from never to more than 10 times. These thresholds indicate when a one-unit change in the independent variable leads to a shift in the predicted category of the dependent variable. The log-likelihood ratio test outcome presented in Table 6 provides insights into how including specific variables enhances the model fit when compared to a model with only an intercept. The incorporation of the variables leads to a significant improvement in the model fit, as indicated by p-values below 0.05 in Table 6 and Table 7. Table 7 demonstrates that both the nonconformity and Pearson chi-square tests are not statistically significant, suggesting that the model fits the data effectively.

who cheat between one to three times, and a notable proportion report cheating more than ten times. In the fifth and sixth years, despite the smaller sample size, a higher percentage of students report cheating, with many admitting to cheating one to three times or more than ten times

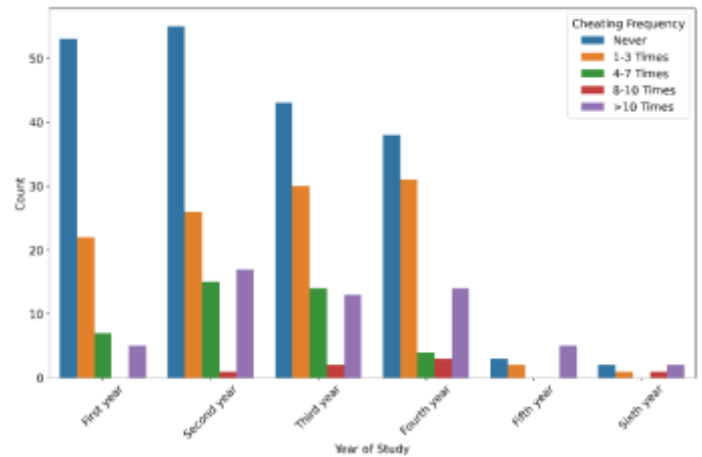


Figure 5: Cheating Frequency by Year of Study.

4 Ordinal Regression

We conducted an ordinal regression analysis to assess the connections between exam cheating and factors including gender, age, college specialization, academic year, university type, academic performance, and residence in a dormitory. The findings are detailed in 5 Discussion

Academic dishonesty, particularly cheating on exams, is a pressing concern in the realm of higher education. In this discussion, we delve into the multifaceted aspects of academic dishonesty among university students, exploring the influence of socio-demographic factors, reasons for cheating, methods employed, and the attitudes students hold towards this unethical behaviour.

dishonesty among university students, exploring the influence of socio-demographic factors, reasons for cheating, methods employed, and the attitudes students hold towards this unethical behaviour.

Table 8 displays the goodness-of-fit indices, with values of 0.142, 0.154, and 0.060 for the Cox and Snell, Nagelkerke, and McFadden pseudo-R square, respectively. This outcome suggests that the best-fit model represents a modest improvement over the null model. The regression coefficients for age, gender, year of study, type of university, academic performance, and, notably, the "Humanistic & Art" college specialty, are statistically significant.

5 Discussion

Table 5 presents the estimates, standard errors, Wald statistics, degrees of freedom, p-values, odds ratios, and confidence intervals for each predictor variable, helping to assess their significance and impact on cheating frequency. For example, age has an estimate of -0.148, indicating that older students are less likely to cheat. The standard error of 0.051 suggests the estimate is precise, while the Wald statistic of 8.412 confirms its significance ($p < 0.05$). The odds ratio of 0.862 means that with each additional year, students are 13.8% less likely to cheat, highlighting the role of maturity and ethical awareness in reducing academic dishonesty.

Table 5, gender also plays a significant role, with female students 41.9% less likely to cheat than male students (OR = 0.419, $p < 0.001$). This aligns with

Table 1, where 55.8% of female students reported never cheating, compared to 38.9% of males. Prior research suggests males may be more risk-tolerant, while females tend to be more ethical and risk-averse. Academic year correlates positively with cheating frequency. Compared to first-year students, second-years are 2.27 times more likely to cheat ($p = 0.006$), third-years 3.02 times more likely ($p < 0.001$), fourth-year students are 3.4 times more likely ($p = 0.001$), fifth-year students are 11.73 times more likely ($p < 0.001$), and sixth-year students are 10.06 times more likely ($p = 0.006$).

The relationship between academic performance and cheating frequency is statistically significant, showing that students who

Table 5, satisfied students have an odds ratio of 0.533, making them 46.7% less likely to cheat than the least satisfied group ($p = 0.005$), while very satisfied students have an odds ratio of 0.510, meaning they are 49% less likely to cheat ($p = 0.042$). This

Table 1 supports this trend, showing that 33.3% of the least satisfied students have never cheated, compared to 52.9% of satisfied students and 48.1% of very satisfied students. Furthermore, Figure 6 visually represents this pattern.

5 Discussion

Academic dishonesty, particularly cheating on exams, is a pressing concern in the realm of higher education. In this

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According to 5 Discussion

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are satisfied with their performance are less likely to cheat. As shown in 5 Discussion

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suggests that academic satisfaction acts as a protective factor against dishonesty, possibly because content students feel less pressure to achieve higher grades through unethical means. Conversely, dissatisfied students may resort to cheating to improve their grades or avoid failure.

discussion, we delve into the multifaceted aspects of academic dishonesty among university students, exploring the influence of socio-demographic factors, reasons for cheating, methods employed, and the attitudes students hold towards this unethical behaviour.

Table 5: Estimated parameters for predicting cheating on exams.

Sepecification	Classification Features	Estimate	Std. Error	Wald	df	p	Odds Ratio	95% Confidence Interval	
								LB	UB
	Exam Cheating Frequency								
Threshold	Never	-4.217	1.186	12.650	1	0.000	0.015	-6.541	-1.893
	1-3 Times	-2.879	1.176	5.991	1	0.014	0.056	-5.185	-0.574
	4-7 Times	-2.197	1.175	3.499	1	0.061	0.111	-4.499	0.105
	8-10 Times	-2.046	1.175	3.034	1	0.082	0.129	-4.348	0.256
	>10 Times	Reference							
Location	Age								
		-0.148	0.051	8.412	1	0.004	0.862	-0.248	-0.048
	Gender								
	Male	Reference							
	Female	-0.871	0.201	18.722	1	0.000	0.419	-1.265	-0.476
	College specialty								
	Science/Engineering/Technology/Mathematics	Reference							
	Social Sciences	0.457	0.456	1.007	1	0.316	1.580	-0.436	1.351
	Humanistic & Art	-1.022	0.421	5.887	1	0.015	0.360	-1.848	-0.197
	Medical & Health Sciences	-0.285	0.281	1.031	1	0.310	0.752	-0.837	0.266
	Business	-0.673	0.656	1.054	1	0.304	0.510	-1.959	0.612
	Other	-0.400	0.245	2.667	1	0.102	0.670	-0.881	0.080
	Year of study								
	First Year	Reference							
	Second year	0.820	0.299	7.503	1	0.006	2.270	0.233	1.406
	Third year	1.105	0.316	12.216	1	0.000	3.020	0.485	1.725
	Fourth year	1.225	0.353	12.030	1	0.001	3.405	0.533	1.917
	Fifth year	2.462	0.665	13.718	1	0.000	11.734	1.159	3.766
	Sixth year	2.308	0.843	7.490	1	0.006	10.055	0.655	3.961
	Type of University								
	Private	Reference							
	Government	-0.723	0.335	4.646	1	0.031	0.485	-1.380	-0.066
	Academic Performance								
	Least satisfied	Reference							
	Satisfied	-0.629	0.226	7.766	1	0.005	0.533	-1.072	-0.187
	Very satisfied	-0.673	0.330	4.154	1	0.042	0.510	-1.319	-0.026
	Are you a dormitory student?								
	Yes	Reference							
	No	0.126	0.204	0.382	1	0.537	1.134	-0.273	0.525

Table 6: model fitting information.

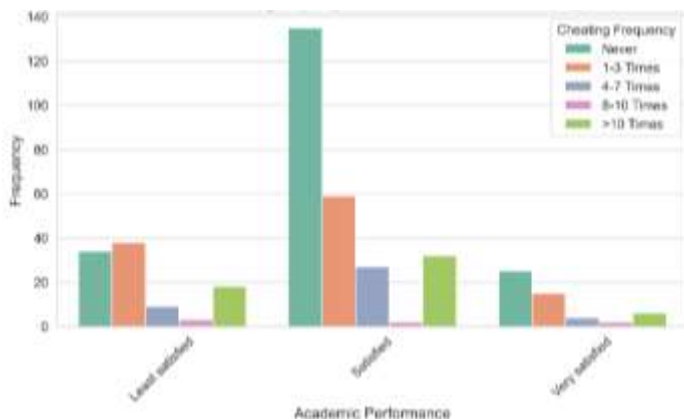
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	944.104			
Final	881.318	62.786	16	0.000
Link function: Logit.				

Table 7: Goodness-of-Fit.

Test Types	Chi-Square	df	Sig.
Pearson	1130.75	1204	0.935
Deviance	801.854	1204	1
Link function: Logit.			

Table 8: Pseudo R-Square.

Cox and Snell	0.142
Nagelkerke	0.154
McFadden	0.06

**Figure 6:** Cheating Frequency Across Academic Performance.

The findings reveal that socio-demographic factors such as gender, age, academic year, and university type are closely associated with the prevalence of academic dishonesty.

Table 1 highlights gender-based differences in ethical behaviour, with a greater percentage of females (55.8%) reporting never having cheated than males (38.9%). Conversely, male students exhibit a higher propensity for cheating across various frequency ranges, particularly in the higher categories (e.g., 17.7% of males reported cheating more than 10 times, compared to 9.7% of females). This aligns with prior research suggesting that males may be more inclined to engage in fraudulent activities due to a higher tolerance for risk or a lower perception of the consequences of cheating [14,38]. For instance, studies have shown that male students often perceive cheating as a means to achieve academic success without considering the ethical implications [14,39-41].

Table 1 shows that many first-year students have not cheated. However, this number decreases as students advance through their academic years, reaching its lowest point among sixth-year students. This is also supported by 5 Discussion

discussion, we delve into the multifaceted aspects of academic dishonesty among university students, exploring the influence of socio-demographic factors, reasons for cheating, methods employed, and the attitudes students hold towards this unethical behaviour.

Academic dishonesty, particularly cheating on exams, is a pressing concern in the realm of higher education. In this

Table 5, which shows that cheating is less common among students in earlier academic years. This decline could be attributed to the fact that younger students typically start with a lower inclination to cheat [41]. However, as they continue their college journey, accumulate experience with exams and assignments, and witness their peers participating in dishonest behaviors, their susceptibility to cheating appears to increase. Several studies support our findings, indicating that cheating is more prevalent among students at higher academic levels .

Academic dishonesty, particularly cheating on exams, is a pressing concern in the realm of higher education. In this discussion, we delve into the multifaceted aspects of academic dishonesty among university students, exploring the influence of socio-demographic factors, reasons for cheating, methods employed, and the attitudes students hold towards this unethical behaviour.

This research has identified academic performance as another significant factor strongly linked to cheating in exams. This is shown in 5 Discussion

Table 5, which indicates that cheating becomes more common as academic performance declines. Prior studies have demonstrated that students with low academic performance were more inclined to participate in academic misconduct behaviors [18][42].

Nonetheless, some studies propose that even students' content with their academic performance may resort to cheating to achieve higher grades [43,44].

Regarding age, the findings in 5 Discussion

Academic dishonesty, particularly cheating on exams, is a pressing concern in the realm of higher education. In this discussion, we delve into the multifaceted aspects of academic dishonesty among university students, exploring the influence of

Table 5 indicate that older students are less prone to cheating than their younger peers. Similarly, various studies have corroborated that cheating tends to be more prevalent among younger students than among their more mature counterparts ^[45,46]. This trend could be attributed to the fact that as students grow older, they often develop a stronger sense of responsibility and ethics, leading to a greater awareness of the consequences of cheating.

Various studies have identified distinct factors as primary causes of cheating, showcasing differences in their findings. For

Table 2 highlight the fear of failure and lack of preparedness as the most prevalent motivations for cheating among exam-takers. Additionally, several articles have substantiated that these two factors constitute the primary drivers of academic dishonesty ^[50-54].

Furthermore, in study ^[55], a lack of time for studying was indicated as the least frequent cause of cheating. However, our

Table 3, the primary methods of cheating on exams are as follows: looking at and copying answers from another student's paper, asking for answers by whispering/talking to nearby students, assisting a fellow student to cheat, and signaling or gesturing to other students. These four methods are particularly prominent for cheating, as they are easily executed and do not necessitate external resources. Furthermore, our results highlight that the most widely employed method of cheating among students is looking at and copying answers from another student's paper. This finding aligns with previous studies, represented by ^[17] and ^[50] that have identified this method as the foremost and widely adopted approach to cheating on exams.

As indicated by the results presented in 3.5. Attitudes **Toward Cheating**

Table 4, the primary and notable reason for abstaining from cheating is rooted in religious beliefs. It is important to note that the vast majority of the Kurdish population in the Kurdistan region of Iraq practices Islam. This religious affiliation plays a significant role in shaping the cultural, social, and political dynamics of the region ^[56]. This observation underscores the significant influence of religion in shaping individuals' values and behaviours. This finding resonates with research conducted in Iran, another Islamic country, where religious perspectives ranked as the second most common reason for refraining from cheating ^[17]. Furthermore, the next three most prevalent reasons for eschewing cheating are: the fear of damaging one's reputation if caught, a sense of shame, guilt, or remorse that would result from dishonesty, and a belief that cheating is morally wrong or

socio-demographic factors, reasons for cheating, methods employed, and the attitudes students hold towards this unethical behaviour.

instance, in one study ^[47], cheating's main driver was attributed to the exam's level of difficulty, whereas in our research, this factor ranked fourth in significance as a cause for cheating. Similarly, the article ^[48] highlighted the insignificance of the course material as a major cheating motivator, while our investigation positioned it as the seventh most influential factor. Another study ^[49] emphasized the desire for good grades as the primary impetus for cheating, but our research placed it as the thirteenth most influential reason, with only 3.6% of students resorting to cheating for this purpose. In contrast to these previous studies, our results in

study ranks it as the sixth most significant factor motivating cheating behaviour. Notably, our research reveals that the desire for academic or social recognition is the least common reason for academic dishonesty.

Based on the findings presented in These methods emphasize the variety of tactics students employ to cheat, highlighting the need to address academic integrity comprehensively.

Analyzing the attitudes toward cheating presented in Figure 3 reveals a spectrum of opinions among students regarding the ethical implications of cheating under various circumstances. By comparing the responses, we can determine which attitudes students consider the most and least important. The analysis reveals a strong consensus against cheating, with students overwhelmingly agreeing that it is wrong regardless of the circumstances. The most interesting thing compared to other situations is that, a large number of students believed that cheating is wrong even if they only aim to pass the exam, even if they do not get caught, or even if others do it (these three circumstances received 227, 218, and 212 votes, respectively).

unethical. These findings highlight students' aversion to the social and psychological consequences of with dishonest conduct, including the dread of tarnishing their reputation, experiencing emotional turmoil, and violating their moral principles. These studies ^[57,58] emphasize this finding.

When examining students' perspectives on cheating, it's intriguing and heartening to note that the majority of participants strongly believe that cheating is unacceptable in all situations. However, compared to other aspects, the percentages are somewhat lower for two specific questions: when the assigned course material is excessively overwhelming and when the instructor's teaching quality is perceived as inadequate. This differs from earlier research ^[17], as it reveals that, in comparison

to other factors, a majority of students strongly affirmed that cheating is morally wrong, even when the instructor's teaching quality is perceived as inadequate. Based on our result, it is imperative for universities must prioritize the manageable volume of course material for students, and instructors should employ teaching methods that facilitate students' comprehension.

The study indicates that while some students firmly oppose cheating, others are more accepting in specific situations. For instance, students are more likely to tolerate cheating if they feel the instructor provided ineffective teaching or assigned an excessive workload. As shown in Figure 3, under these conditions, 93 and 63 students, respectively, either disagreed or strongly disagreed. This is in line with ^[59], suggesting that such factors can pressure students into cheating. This suggests that students' attitudes toward cheating may be influenced by their perception of fairness and the quality of instruction.

As highlighted in Table 3, 7% of respondents have admitted to using technology as a means of cheating. With the rapid advancement of technology, academic dishonesty has become more sophisticated, making it increasingly difficult to detect. In the past, students typically relied on handwritten notes or other basic methods to cheat. However, modern technologies, such as smartwatches, programmable calculators, and concealed earpieces, have made cheating during examinations both easier and more discreet. According to ^[60], the growing availability of these devices has significantly contributed to the rise in academic fraud. Traditional methods of invigilation are often inadequate in identifying digital cheating, and relying solely on human invigilators is no longer a practical or effective solution, particularly in large-scale exams. To combat this, ^[61] suggests an automated model that uses video analysis to identify mobile phone use during examinations. This innovative approach enables real-time monitoring, thereby enhancing the detection of academic dishonesty and mitigating the influence of technology-enabled cheating.

One proposed solution to academic dishonesty is a shift toward alternative assessment methods. Open-book exams, project-based evaluations, and oral examinations can mitigate the incentive to cheat. These methods emphasize critical thinking and application of knowledge rather than rote memorization. Critics of traditional assessment methods argue that high-stakes exams contribute significantly to cheating. A balanced approach that includes continuous assessment, collaborative learning, and competency-based evaluations may promote deeper learning and reduce reliance on dishonest practices.

This study has certain limitations that should be addressed in future research. Firstly, the relatively low number of private university students in the sample may limit the generalizability of the findings. Future studies should aim to include a more balanced representation of students from both public and private institutions. Secondly, the inclusion of additional factors, such as GPA, could provide a more comprehensive understanding of the motivations behind cheating and its impact on academic

performance. For example, students with higher GPAs may feel more pressure to maintain their academic standing, potentially leading to different cheating behaviors compared to those with lower GPAs. Additionally, the study focused on self-reported cheating behaviors, which may be subject to social desirability bias, where respondents underreport undesirable behaviors.

Conclusions

Academic dishonesty, particularly exam cheating, is a persistent issue in higher education, and this study provides a comprehensive analysis of its prevalence, motivations, and influencing factors among undergraduate students in Kurdistan universities. The findings indicate that over 50% of students have cheated at least once, with the primary motivation being the fear of failure. Additionally, factors such as academic workload, exam difficulty, and lack of preparedness contribute to students' decisions to engage in dishonest practices. Conversely, religious beliefs, moral values, and concerns about reputation serve as strong deterrents against cheating.

This study also highlights the role of socio-demographic variables in shaping cheating behaviors. Older students and females tend to cheat less frequently, while students in higher academic years and those enrolled in private universities exhibit a higher likelihood of engaging in academic dishonesty. Furthermore, students who report greater satisfaction with their academic performance are less likely to cheat, suggesting a link between academic self-confidence and ethical decision-making. These insights underscore the need for a multi-faceted approach to addressing cheating, one that considers both individual motivations and broader institutional influences.

Given these findings, universities must take proactive measures to combat academic dishonesty and foster a culture of integrity. Strategies such as revising assessment methods to reduce opportunities for cheating, incorporating ethical education into curricula, and improving teaching quality can help mitigate the factors that contribute to dishonest behavior. Additionally, providing academic support services, such as tutoring and time management training, may alleviate students' academic pressures and reduce the perceived necessity of cheating.

While this study offers valuable contributions to the understanding of academic dishonesty in Kurdistan universities, it also highlights areas for future research. Investigating the impact of digital advancements on cheating methods, exploring institutional policies' effectiveness in deterring dishonest practices, and examining cross-cultural variations in academic integrity can further enrich the discourse on this critical issue. Addressing academic dishonesty requires a continuous and collaborative effort among educators, administrators, and students to ensure a fair and ethical learning environment.

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