



# **FORMAN CHRISTIAN COLLEGE**

**(A CHARTERED UNIVERSITY)**

## **Determinants of Academic Dishonesty among students at Forman Christian College University (FCCU)**

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## **Abstract**

This research aims at understanding the determinants of academic dishonesty using Ajzen's modified theory of Planned Behavior (TPB). Previous studies have shown that engagement in academic dishonesty takes place as a planned behavior and is influenced by four factors including subjective norms, attitude towards academic dishonesty, their sense of moral obligation and perceived behavior control which impact one's intention to engage in a behavior. This study employs these four variables of TPB in our research in the context of a Mid-level university of Pakistan. This is a quantitative, cross-sectional survey-based study which uses convenience-based sampling, the data collected is analyzed using SPSS. The sample includes undergraduate students from the program majors including Natural Sciences, Social Science, Management, Education, Public policy and Governance, Humanities, Computer and Mathematical Sciences at Forman Christian College and University (FCCU) in Lahore. This study helps to understand how these students portray the relationship between these constructs of TPB and their influence on students' intention to engage in academic dishonesty. Results of this research show that from the constructs of TPB, subjective norms, moral obligation, and attitude towards academic dishonesty along with intention have a significant impact on students' engagement in academic dishonesty while perceived behavior control does not show a significant impact. Among the socio-demographic variables age, gender, CGPA, current semester and program major of students, only gender has a significant impact with males showing a higher chance to involve in academic dishonesty. TPB suggests that academic dishonesty can be understood as a belief-based behavior. It emphasizes that inculcating a culture of honesty can help deal with the problem of academic dishonesty.

*Keyw:*Academic Dishonesty, TPB, Universities, Determinants

## **Introduction**

Previous research has confirmed that the cheating is prevalent across different cultural contexts and educational levels (Marques et al., 2019). But the interpretation for the same act of cheating varies from educators, students to the researchers (Barnhardt, 2016). Academic dishonesty takes place in many forms (Stephens & Nicholsan, 2008) including ghostwriting, plagiarism, cheating or lying about assignment. Cheating has taken different forms specially with technological advancements as in contract cheating by connecting the buyers and sellers of academic work. Mostly the concern for cheating was limited to the unsupervised assignments such as reports or essays but, research has also revealed that supervised assignments such as the invigilated exams to be a basis of concern (Bretag et al., 2019; Curtis & Clare, 2017; Nagy, 2021).

Although there is a consensus on what constitutes academic dishonesty which is prevalent throughout cultures, there might be varied perception and dealing strategies. Such as, in some cultures it might be considered an act of serious academic misconduct while in other dealt with leniency (Kobierski, 2006). There have been a lot of changes which require this issue to be highlighted to improve the ethics of the academic institutions and professional environments. Specially, due to technological advancements (Harding et al., 2007) and covid-19 pandemic which made several institutions choose a completely online study mode resulting in changes in the examination and learning strategies, as a result students' engagement in academic dishonesty has also been impacted (Daty, 2022).

The purpose of this study is to test if the factors of Ajzen's model (subjective social norms, moral obligation, attitudes, and perceived behavioral control) explain the academic dishonesty among undergraduate students in Pakistan specifically those studying at Forman

Christian College and University (FCCU) Lahore. This concept has been understood in the light of multiple theories including rational choice theory, general strain theory, social learning theory, deterrence theory, routine activity theory, institutional anomie theory, social support, and theories but in this research, the research employs the Planned Behavior Theory (TPB) as Ajzen's Model (1991, 2012) is the most appropriate model for explaining academic dishonesty (Chudzicka-Czupala et al., 2016).

### **Research Question**

Does academic dishonesty occur as a planned behavior among the students at Forman Christian College and University (FCCU) Lahore, Pakistan?

### **Hypothesis**

#### **Conceptual Hypothesis**

#### ***Independent Variables with Academic Dishonesty***

Cheating occurs as a planned behavior among the undergraduate students at Forman Christian College and University (FCCU) Lahore, Pakistan.

The expected relation between engagement in cheating behavior and the different factors of TPB such as attitude towards academic dishonesty, subjective norms, perceived behavior control and moral obligation are as follows:

- (1) The unfavorable attitudes of students toward academic dishonesty will be less likely to engage in academic dishonesty.
- (2) Students' subjective norms which do not approve academic dishonesty will be less likely to engage in academic dishonesty.

(3) Students' high perceived behavioral control in performing academic dishonesty will be more likely to engage in academic dishonesty.

(4) Students with a strong moral obligation sense will be less likely to engage in academic dishonesty.

### ***Independent Variables with Intention***

(1) The unfavorable attitudes of students toward academic dishonesty will have a lower intention to engage in academic dishonesty.

(2) Students' subjective norms which do not approve academic dishonesty will have a lower intention to engage in academic dishonesty.

(3) Students' high perceived behavioral control in performing academic dishonesty will have higher intention to engage in academic dishonesty.

(4) Students with a strong moral obligation sense will have a lower intention to engage in academic dishonesty.

### **Operational Hypothesis**

#### ***Independent Variables with Academic Dishonesty***

(1) Students with higher score on the attitude towards behavior construct will have higher score on the academic dishonesty scale.

(2) Students with high subjective norm score will score low on the academic dishonesty scale.

(3) Student with higher score on perceived behavior-control will have higher score on the academic dishonesty scale.

- (4) Students with higher moral obligation score will likely have lower score on the academic dishonesty scale.

***Independent Variables with Intention***

1. Students with higher score on the attitude towards behavior construct will have higher intention score.
2. Students with high subjective norm score will have lower intention score.
3. Student with higher score on perceived behavior-control will have higher intention score.
4. Students with higher moral obligation score will have lower intention score.



## Literature Review

### Academic Dishonesty

The concept of academic dishonesty/cheating and its definition has received a significant extent of disagreement. A study indicated that use of conflicting methodologies, definitions and overlapping terminologies has impacted the accurate determination of academic misconduct among the students (Nagy, 2021).

In 2003 Dick and colleagues defined cheating as “being the breach of defined rules and accepted standards whereby cheaters apparently gain an unfair advantage over those who do not cheat” (Marques et al., 2019). While Cizek (2004) defines cheating as “any intentional action or behavior which violates the established rules governing the completion of a test or assignment, giving one student an unfair advantage over the other students on an assignment or test, or decreases the accuracy of the intended inferences arising from a student’s performance on an assignment or a test” (Putarek & Pavlin-Bernardić, 2020). McCabe et al. (2012) defined “academic misconduct/cheating as student engagement in a list of specific behaviors generally understood as cheating. These behaviors are students’ purposeful participation in “deceptive practices regarding one’s academic work or the work of another” (Gaberson, 1997; Yu et al., 2021). However, this research relying on one of the previous research projects by Anitha and Sundaram also does not specifically define academic dishonesty and leaving this to the perception of respondents to respond with aspect to what they consider as academic dishonesty (Anitha & Sundaram, 2021).

Academic dishonesty although blamed yet a frequent and to some extent an acceptable act among students. The most common behavior included in cheating are using leaflet during examination, receiving more than the acceptable help, plagiarism, helping/ allowing others to

cheat while the least common is to submit the ready-made papers entirely written by someone else (David, 2015). Such acts can become a mark of other complications including reputational risks for tertiary institutions because public trust can be affected if institutions confer degrees to students who have been guilty of plagiarism or cheating. Further, challenging the social legitimacy of the lawyers, doctors, psychologists, physicians, or nurses who are expected to gain expertise. Sims (1993) revealed that Students who engage in such acts are likely to show dishonesty in professional settings (Daty, 2022)

### **Prevalence in Pakistan**

Research has revealed that the prevalence of academic cheating is beyond a specific culture, society, region, institution, or levels of academic studies from schools to universities (Balbuena & Lamela, 2015). And this serious dilemma is equally prevalent in Pakistan. Although, the institutions' role is questionable in directing the engagement with cheating yet, the practice itself also reflects the psychological, social, and ethical norms of students (Iqbal et al., 2021). As a study focusing the postgraduate students in the universities of Lahore revealed that the students who show greater religiosity develop a stronger sense of right and wrong, resultingly are less likely to act unethically or engage in academic misconduct (Ullah Khan et al., 2019). A Pakistani study based on investigating the role of online examination system with increase in cheating of Pakistani students revealed around 66% of students believed that students engage more in cheating during online exams (Rehman, 2021). Another, study in 2010 by Nazir and Aslam revealed that in some Pakistani universities, cheating was very frequent during examination and assignment, attributing it to the difficulty in understanding of the questions. (Nazir et al., 2010).

Likewise, Ramzan et al. (2012) highlighted the condition of some private and public sector universities in Pakistan where a large proportion of students were involved in academic misconduct. The acts included plagiarism and falsifying data during their projects and exams. Hafeez et al. (2013) outlined that in three medical colleges of Karachi, students' engagement in acts of cheating such as copying during exams was very common. Ghias et al. (2014) noted multiple practices of cheating in the medical colleges of Pakistan including falsifying data, writing others' assignments, and copying (Iqbal et al., 2021). A study based on the private and public medical colleges revealed the differences in behavior and attitudes of students towards cheating depending on seniority status, gender, and type of institution of the students. The study noted that 23% of females admit to cheating as compared to the 42% of male students (Ghias et al., 2014).

## **Theoretical Framework**

### **The Theory of Planned Behavior (TPB)**

Over past years TPB has been used in understanding academic dishonesty (Bagraim et al., 2014; Harding et al., 2007; Hendy & Montargot, 2019; Stone et al., 2010). TPB suggests that there such behavior can be predicted by three factors such as subjective norms, attitudes and perceived behavior control impact the intentions to indulge in a behavior. Individual's control on those situations or factors which might impact behavior and their self-control determines their behavior and indulgence (Ajzen, 1991; Mayhew et al., 2009). Whitley initially provided support for Theory of Planned Behavior whose metanalysis including 107 academic dishonesty studies showed that TPB model is predictive for cheating (Whitley, 1998; Whitley & Kieth-Spiegel, 2002).

Whitley reported that amid other results: (1) students who hold a perception of cheating being an acceptable social norm permit involve in it to a larger degree (subjective norm), (2) students who have unfavorable attitudes (attitude toward behavior) remain less likely to engage in cheating than the ones with favorable attitudes and (3) students have greater likelihood of cheating if they perceive themselves as more effective at cheating (perceived behavioral control). Mayhew et al. (2009) study of academic misconduct among college students through TPB confirmed that student's attitude towards cheating influence their behavior such as a positive outlook would increase their likelihood of cheating. Additionally, Beck and Ajzen (1991) also showed TPB model can predict cheating as this model effectively anticipated the majority of systematic variance among decisions of student to engage in cheating (Harding et al., 2007).

This theory is used for three main reasons firstly, earlier research revealed Theory of Planned Behavior by Ajzen explains variance in measures of cheating and other unethical

conduct among students in significant amounts (Beck & Ajzen, 1991). As Ajzen's Model (1991, 2012) has been seen to be the most suitable model for explaining academic dishonesty (Chudzicka-Czupała et al., 2016). Secondly, it is assumed that academic dishonesty is a rational choice of an individual under volitional control. Third, prior research revealed that in measures of students' academic dishonesty and unethical behaviors, theory by Ajzen has revealed to describe variance in significant amounts (Beck & Ajzen, 1991).

Despite of Pakistan being a collectivist culture can be applied to the pockets of free spaces such as university campuses, which are found even in collectivist cultures. This research focuses on the students at Forman Christian College and University (FCCU) which is a liberal arts institute in Pakistan and a good example of a space where students can freely express their choice and individuality. Hence, as such institutions structurally promote a freedom of choice, and TPB can effectively explain the engagement of cheating as a student's free choice. Therefore, it is presumed regarding such behavior as predictable and can be explained through statistical analysis.

### **Individual factors Associated with Academic Dishonesty**

There are multiple individual factors associated such as subjective norm, lacking self-control, perceived behavior control and attitudes towards academic misconduct such as the students with favorable or a less serious attitude towards cheating increase the likelihood of engagement in cheating. Among these students' attitude is seen as the most influential factor (Bowers, 1964; Haines et al., 1986; McCabe & Treviño, 1993; McCabe et al., 2012; Siemen, 2009; Whitley, 1998 as cited in Yu, 2021) and as a mediator between academic cheating and lack of self-control, which is also related with academic misconduct (Bolin, 2004; Yu et al., 2018). But as self-control being harder to change (Bolin, 2004), institutions can rather focus on

controlling attitude towards misconduct (Yu et al., 2021). Research has also shown that students' perception of acceptability of cheating, motivation to ensure good grades and fear of failure can contribute to engagement in cheating (Iqbal et al., 2021).

Moreover, academic cheating has been found to be correlated with various attributes such as in his analysis Whitley (1998) found five categories including (1) ability indicators (2) academic behavior (3) academic beliefs (4) demographic characteristics and (5) extracurricular activities. Along the above-mentioned McCabe et al. (2012) later found a sixth category of ethically desirable traits. The study also showed that when getting away with academic cheating is perceived to be easy it increases the likelihood of engagement (Yu et al., 2021). The research suggests that the students with a relatively higher optimism and stronger belief in human nature less likely engage in cheating, but there was no connection between cheating and the cynic ones. Also, research did not show relation between probability and sex differences (David, 2015).

But other studies have shown other characteristics like gender as males with more likelihood for academic dishonesty (DeAndrea et al., 2009; Hensley et al., 2013; Newsteade et al., 1996 as cited in Anderman, 2019). Moreover, students who had lower achievement or history of academic cheating showed greater likelihood for repeated engagement (e.g., Hensley et al., 2013; Moberg et al., 2008 as cited in as cited in, Anderman, 2019). Development of a personal bond/rapport with instructor reduces cheating (e.g., Bluestein, 2015; Stearns, 2001 as cited in, Anderman, 2019). Yet, there are number of other factors associated with this behavior that need to be considered such as size/type of school, moral and cognitive development, reasons why students are attending college. (Miller et al., 2007 as cited in, Anderman, 2019). Moreover, Beasley, 2014 showed that higher grades or time pressures to increase cheating but it could also

be simply unawareness of rules and consequences of their acts which impact cheating behavior (Anderman, 2019).

Some personality traits increase likelihood of academic dishonesty, the literature has focused mainly two of these which are impulsivity such as one's tendency to decide quickly without much forethought which was studied by McTernan et al. (2014). The second one is sensation seeking such as engaging in exciting and emotionally charged activities both were found to have a positive relation with academic cheating. (e.g., De Bruin & Rudnick, 2007; McTernan et al., 2014 as cited in, Anderman, 2019),

## **Methodology**

It is a survey-based, cross-sectional study that aims at understanding cheating as a planned behavior and how students' beliefs regarding cheating influence their engagement in this behavior. This quantitative research particularly focuses the undergraduate students at Forman Christian College and University (FCCU) Lahore, Pakistan.

### **Socio-Demographic/ Control variables**

The students participating in this research are asked several demographic variables which are expected to have an impact on the students' engagement in cheating behavior. These variables include gender, age, Program Major, CGPA and current semester of the individuals participating in this research.

### **Dependent Variable**

As was done by Anitha and Sundaram, 2021 academic dishonesty is not specifically defined in this study, it is worth noting because this avoids the difficulty of defining cheating. Academic dishonesty is be measured by a standardized Academic Dishonesty Scale (ADS) consisting of 23 behavioral items. The above-mentioned items do not define the term "academic dishonesty" for respondents rather only measures the extent to which these students acknowledge their engagement in behaviors that they assume to as "cheating" and thus, (by assumption) unethical. It is a structure with six-factors that helps to understand academic dishonesty types including examination, outside help, plagiarism, prior cheating, falsification and lying about academic assignments. The items are constructed to understand general acts of academic dishonesty like "I give false explanations when I miss deadline of my educational project.", "During examination I use signals to fetch answers from my friends.". the response for these items is given on a Likert Scale comprising "never", rarely, "sometimes", "often" and "always"



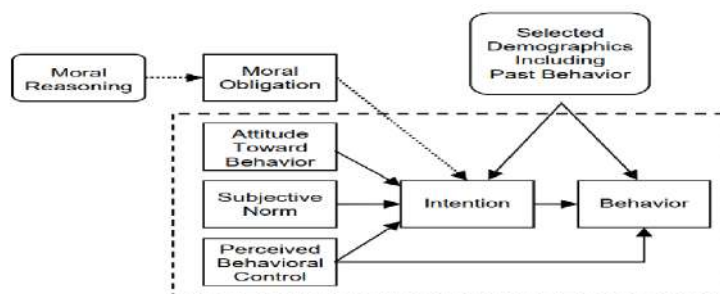
(Anitha & Sundaram,2021). The factor “cheating in examination” is measured by the five items but the fifth item is not included in the analysis as it is the same statement asked in the fourth item.

### Independent Variables

This research relies on the modified form of the Theory of Planned Behavior, it is the model explaining the decision-making process that students use while forming cheating intention and engaging in this behavior (Ajzen, 1991; Ajzen, 2002).

TPB argues that individuals make rational decisions that individuals indulge in behaviors because of their rational choice. Which is based on their beliefs regarding that behavior and their expectation of a positive outcome of that behavior. Ajzen (2002) accordingly showed that there are three factors determining an individual’s intention to involve in a behavior: subjective norm, attitude towards a behavior, perceived behavior control and moral obligation (Harding et al., 2007).

**Figure 1**



Note. Modified version of Ajzen’s Theory of Planned Behavior (Ajzen, 1991; Ajzen, 2002) (Harding et al., 2007).

**Intention** is defined by Ajzen as “...indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior” (p. 113). This survey measures intention with 5 items (1) I will try to cheat on an in-class test or exam\* during the current academic term (2) I intend to cheat on an in-class test or exam\* during the academic term (3) I do NOT plan to cheat on an in-class test or exam\* during the academic term (4) I will NOT cheat on an in-class test or exam\* during the current academic term (5) If I had the opportunity, I would cheat on an in-class test or exam\* during the current academic term. These were measured on a 5-point scale: From 1 = Strongly agree to 5 = strongly disagree (Harding et al., 2007). The five items measuring intention are categorized in two categories and the last two items are dropped as they do not load together in the factor analysis and are the negative statements of the same question asked in the other three items. During data collection the variable of intention was by mistake measured using the 5-point Likert scale “Never, rarely sometimes, often and always” while the original instrument used the other 5-point Likert scale “Strongly agree, agree, neutral, disagree and strongly disagree”.

**Subjective norm** can be considered the individual’s perception that other individuals who are important to the respondent think the respondent should engage in the behavior of interest. It is measured by eight items (1) If I cheated on an in-class test or exam\*, most of the people who are important to me (e.g., my family, friends, colleagues, teachers, etc.) would approve of my behavior (2) The people in my life whose opinions I value (e.g., my family, friends, colleagues, teachers, etc.) would be willing to cheat on an in-class test or exam\* if they were in my situation (3) Most people who are important to me (e.g., my family, friends, colleagues, teachers, etc.) would be willing to cheat on an in-class test or exam\* if they were in my situation (4) The people in my life whose opinions I value (e.g., my family, friends, colleagues, teachers, etc.) would

NOT approve if I cheated on an in-class test or exam\* ® . (5) Most people who are important to me (e.g., my family, friends, colleagues, teachers, etc.) think I should NOT cheat on an in-class test or exam\* ® (6) People whose opinions I value (e.g., my family, friends, colleagues, teachers, etc.) expect me to cheat on an in-class test or exam\*, (7) Most people who are important to me (e.g., my family, friends, colleagues, teachers, etc.) will look down on me if I cheat on an in-class test or exam\* ®, (8) NO ONE who is important to me (e.g., my family, friends, colleagues, teachers, etc.) thinks it is OK to cheat on an in-class test or exam\*®, on a 5-point scale: From 1 = Strongly agree to 5 = strongly disagree (Harding et al., 2007). Last two items do not load in any dimension in factor analysis and so they were dropped. One of the reasons is the cultural factor as cheating in academic institutes of Pakistan is common and so although the participants responded in the 7th question unfavorably as it is not considered a favorable act yet as the responses to 8th item show that being a common practice it is also not condemned.

**Attitude towards a behavior** can be defined as “a disposition to respond favorably or unfavorably to an object, person, institution, or event.” (p.4). It was measured by five items (1) Positive to Negative, (2) Good to Bad, (3) Pleasant to Unpleasant (4) Superior to Inferior and (5) Thrilling to Boring on a 7-point semantic differential scale: From 1 = extremely closely related to 7=extremely closely related (Harding et al., 2007).

**Perceived behavioral control** is the “perceived ease of performing the behavior based on experience and anticipated impediments” (p.132). It is be measured by four items (1) I believe that I would have a great deal of control over whether I get caught attempting to cheat on an on-class or test exam\*, (2) I believe that I have the skills needed to cheat on an in-class test or exam\* in all circumstances (3) It is mostly up to me whether or not I successfully cheat on an in-class test or exam\* and (4) Even if I wanted to, I could NOT cheat on an in-class test or exam\* ®

on a 5-point scale: From 1 = Strongly agree to 5 = strongly disagree (Harding et al., 2007). The items which load together on the factor analysis are categorized separately with first category including 1<sup>st</sup> and 2<sup>nd</sup> item which measure the ability to cheat. While those two items which loaded together are categorized separately including 3<sup>rd</sup> and 4<sup>th</sup> items which measure the choice to cheat.

### **Moral Obligation**

Moral obligation, variable was added in the model provided by Ajzen (1991), so that predictive capabilities of the TPB model can be enhanced (Harding et al., 2007). Moral obligation is defined by Ajzen (1991) as “personal feelings of ... responsibility to perform, or refuse to perform, a certain behavior” (p.289). It is followed by one’s moral reasoning, which can be defined as “a psychological construct that characterizes the process by which people determine that one course of action in a particular situation is morally right and another course of action is wrong” (Rest et al.,1997). It will be measured by three items (1) Cheating on an in-class test or exam\* is against my principles ®, (2) I would feel guilty if I cheated on an in-class test or exam\*® and (3) It would NOT be morally wrong for me to cheat on an in-class test or exam\* on a 5-point scale: From 1 = Strongly agree to 5 = strongly disagree (Harding et al., 2007).

### **Target Population and Sample**

This study focuses on the undergraduate students in Lahore, Pakistan. Our target population is undergraduate students at FCCU. It consists of a Non-Random convenience sample of 243 students from the Natural Sciences Departments including Pharmacy, Environmental Sciences, Physics, Chemistry Departments, KAM School of Life Sciences and Departments of Social Sciences including Psychology, Sociology, Economics, Political History, Geography and History, Faculty of Computer and Mathematical Sciences, Faculty of Education, Center for

Public policy and Governance, Faculty of Humanities and School of Management at Forman Christian College and University (FCCU) in Lahore. It includes both male and female students. The data is collected by sharing the questionnaire online in summers and Fall semesters through email, Facebook page of Sociology department, WhatsApp groups including Major/Minor sociology group and other groups of the departments.

### **Ethics**

This research is done following all the ethical considerations. A consent form is attached with the survey, to ensure voluntary participation. The participants were informed regarding the purpose of this study before they responded to the survey. The participants were free to leave being part of this study, whenever they wanted to. The information is kept confidential, and the identity of the respondents is kept anonymous.

## Findings

This study employs statistical analysis for data analysis using SPSS. The Linear Tests of Association depending on value of variable T-test, ANOVA or Bivariate Analysis are used. Further, for the assessment of the construct validity of the scales, factor analysis is also conducted.

**Table 1s**

*Frequency of socio-demographic variables used for the study*

Variable	Frequency	Percentage
<b>Gender</b>		
Female	154	63.4
Male	89	36.6
<b>Program Major *</b>		
Social Science	87	35.7
Science	67	27.5
Other Program Major	78	32.0
<b>CGPA *</b>		
1.000 thru 1.500	1	
1.600 thru 2.000	4	1.6
2.100 thru 2.500	6	2.5
2.600 thru 3.000	30	12.3
3.100 thru 4.000	181	74.2

<b>Age *</b>		
18 - 20	79	32.4
21 - 23	114	46.7
24 and above	45	18.4

*\*Missing values are not included*

**Table 2**

*Factor Analysis and Reliability (Academic Dishonesty Scale)*

Variable	Factor Analysis		Reliability
<b>Cheating in Examination</b>			
Item 1	.811	-.585	.856
Item 2	.811	-.585	
Item 3	.759	.332	
Item 4	.844	.386	
Item 5	.816	.454	
<b>Outside Help</b>			
Item 1	.716		.783
Item 2	.621		
Item 3	.941		

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Item 4	.941	
<b>Prior Cheating</b>		
Item 1	.770	.708
Item 2	.783	
Item 3	.836	
<b>Falsification</b>		
Item 1	.803	.754
Item 2	.840	
Item 3	.843	
<b>Lying about Academic Assignments</b>		
Item 1	.757	.816
Item 2	.890	
Item 3	.890	
Item 4	.780	

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Note. Items numbers are used in place of the complete statements of items measuring the variable to save the space.

All the items measuring different types of academic dishonesty are computed together as most of the items loaded together as one dependent variable 'academic dishonesty'. The values for academic dishonesty scale range from 22 to 110. The mean value for dependent variable 'academic dishonesty' is 31.79 which is slightly more than the center of data as the median is



29.00 The standard deviation is 11.24 which shows that although the mean value is representative yet there is a small amount of dispersion due to some of the extreme values cause positive skewness and effect the mean by making it higher than the most repeated values and the average value. The academic dishonesty scale measure six types of academic dishonesty cheating in examination, falsification, lying about assignments, plagiarism, outside help and prior cheating.

### **Cheating in Examination**

The factor loadings for items measuring cheating in examination are above 0.6. Their reliability is above 0.7 with the Cronbach alpha value of 0.836.

### **Plagiarism**

The factor loadings of items measuring plagiarism are above 0.6. The reliability of the items is above 0.7 with the Cronbach alpha value of 0.751.

### **Outside Help**

The factor loadings of items measuring outside help are above 0.6. The reliability of the items is 0.7 with the Cronbach alpha value of 0.783.

### **Prior Cheating**

The factor loadings of items measuring prior cheating are above 0.6. The reliability of the items is 0.7 with the Cronbach alpha value of 0.708.

### **Falsification**

Their factor loadings of items measuring falsification are above 0.6. The reliability of the items is 0.7 with the Cronbach alpha value of 0.754.

### Lying about academic assignments

The factor loadings of items measuring lying about assignments are above 0.6. The reliability of the items is 0.7 with the Cronbach alpha value of 0.816.

**Table 3**

*Factor Analysis and Reliability (The Theory of Planned Behavior Scale)*

Variable	Factor Analysis		Reliability
Intention			
Item 1	.842	-.383	.840
Item 2	.837	-.352	
Item 3	.566	.772	
Item 4	.518	.807	
item 5	.760	-.312	
Attitude towards Academic Dishonesty			
Item 1	.880		.902
Item 2	.880		
Item 3	.909		
Item 4	.898		
Item 5	.686		
Subjective Norms			

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Item 1	.749	-.191	.841
Item 2	.807	-.354	
Item 3	.782	-.417	
Item 4	.644	.465	
Item 5	.771	.251	
Item 6	.656	-.256	
Item 7	.502	.427	
Perceived Behavior Control			
Item 1	.966		.697
Item 2	.966		
Item 3	.424		
Item 4	.499		
Moral Obligation			
Item 1	.881		.747
Item 2	.895		
Item 3	.676		

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## **Intention**

The values for intention range from 3 to 15 majority values are between 3 and 8. The mean value for the independent variable 'intention' is 4.64 which is more than the center of data as the median is 4.000. The standard deviation is 2.44 which shows that the mean is not representative as there is a lot of dispersion in values due to extreme values that cause positive skewness of value 2.000. The mean is more than the average and most repeated values in the data. The factor loadings for the 1<sup>st</sup>, 2<sup>nd</sup> and 5<sup>th</sup> item measuring intention are above 0.6 and the reliability is above 0.7 with the with the Cronbach alpha value of 0.840.

## **Subjective Norms**

The values for subjective norms range from -12 to 11 with most of values in between -12 and 2. The value of mean is -5.69 which is less than the center id data as value of median is -6.00. The standard deviation is 4.85, which shows that the mean is not representative as there is a lot of dispersion in values due to extreme values that cause positive skewness of value of 0.46. the mean is less than the average and the most repeated value. The factor loadings of items measuring subjective norms are above 0.6 and reliability of these items is above 0.7 with the Cronbach alpha value of 0.841.

## **Perceived Behavior Control**

The values for the first category of perceived behavior control range from -4 to 4. The value of mean is -1.55 which is less than the center of data as the value for median is -2.00. The standard deviation is 2.28., which shows that the mean is not representative as there is a lot of dispersion in values due to extreme values that cause positive skewness of 0.72. the mean is less than the average and the most repeated value of the data. Values of the second category also

range from -4 to 4. The value of mean is -0.48 which is more than the center of data as the value of median is 0.00. The value for standard deviation is 1.69, which shows that the mean is not representative due to dispersed values that cause negative skewness of 0.97. The factor loadings for the first two items measuring perceived behavior control are above 0.6 and for the other two is lower than 0.6. The reliability of the first two items is above 0.7 with the with the Cronbach alpha value of 1.000. For the last two items is lower than 0.7 with the with the Cronbach alpha value of 0.026.

### **Moral Obligation**

The values for independent variable 'moral obligation' range from -6 to 6. The value of mean is -3.03 which is almost equal to the center of data as the value of median is -3.0. the value of standard deviation is 2.74, which shows that the mean is not representative of the data and there is a lot of dispersion due to extreme values which cause positive skewness of 0.66. The mean value is closer to the average but is less than the most repeated value. The factor loading of the items measuring moral obligation is above 0.6 and reliability is above 0.7 with the with the Cronbach alpha value of 0.747.

### **Attitude Towards Academic Dishonesty**

The values for independent variable 'Attitude Towards Academic Dishonesty' range from 5 to 25. The value of mean is 19.33 which is closer to the center of data as the value of median is 20.00. The value of standard deviation is 5.32 which shows that the mean is representative of the data and there is less dispersion. There is a negative skewness in the data with a value of -7.52. The value of mean is closer to the average but is less than the most

repeated value. The factor loading for attitude towards academic dishonesty is above 0.6 and reliability is above 0.7 with the with the Cronbach alpha value of 0.902.

### **Age**

For bivariate analysis regression is run between the control variable 'Age' and dependent variable 'academic dishonesty'. The value of R square is 0.001 (Adjusted R square is -0.004) and the value of standard error is 1.042. It must be noted that due to non-random sampling the value of significance should be interpreted conservatively. As the beta value is negative it shows that one unit change in this variable leads to -0.359 unit change in dependent variable 'academic dishonesty'. It proves that these two variables have a negative relation.

### **Gender**

For bivariate analysis regression is run between the control variable 'Gender' and dependent variable 'academic dishonesty'. The value of R square is 0.052 (Adjusted R square is 0.049) and the value of standard error is 1.460. It must be noted that due to non-random sampling the value of significance should be interpreted conservatively. As the beta value is positive it shows that one unit change in this variable leads to 5.336 unit change in dependent variable 'academic dishonesty'. It proves that these two variables have a positive relation.

### **Current Semester**

For bivariate analysis regression is run between the control variable 'Current Semester' and dependent variable 'academic dishonesty'. The value of R square is 0.00 (Adjusted R square is -0.004). The p value is 0.963 (p value > 0.05) and the value of standard error is 0.588. It must be noted that due to non-random sampling the value of significance should be interpreted conservatively. As the beta value is positive it shows that one unit change in this variable leads to

0.027 unit change in dependent variable 'academic dishonesty'. It proves that these two variables have a positive relation.

### **Program Major**

For bivariate analysis regression is run between the control variable 'Program Major' and dependent variable 'academic dishonesty'. The value of R square is 0.011 (Adjusted R square is 0.007). The p value is 0.111 ( $p > 0.05$ ) and the standard error is 0.422. It must be noted that due to non-random sampling the value of significance should be interpreted conservatively. As the beta value is positive it shows that one unit change in this variable leads to 0.676 unit change in the dependent variable 'academic dishonesty'. It proves that these two variables have a positive relation.

### **CGPA**

For bivariate analysis regression is run between the control variable 'CGPA' and dependent variable 'academic dishonesty'. The value of R square is 0.022 (Adjusted R square is 0.017). The p value is 0.00 ( $p < 0.05$ ) which is significant. The value of standard error is 1.211. It must be noted that due to non-random sampling the value of significance should be interpreted conservatively. As the beta value is positive it shows one unit change in this variable 'CGPA' leads to 44.5 unit change in the dependent variable 'academic dishonesty'. It proves that these two variables have a positive relation.

### **Theory of Planned Behavior Scale**

#### **Intention**

For bivariate analysis, regression is run between the independent variable “Intention” and the dependent variable “Academic Dishonesty”. The value of R square is 0.548 (Adjusted R square is 0.546). The p-value is 0.000 ( $p < 0.05$ ) which is significant. The value of standard error which is 0.234. It must be noted that due to non-random sampling the value of significance should be interpreted conservatively. As the beta value is positive it shows one unit change in the independent variable “intention” leads to 3.401 unit change in dependent variable ‘academic dishonesty’. It proves that these two variables have a positive relation as suggested in the theory of planned behavior.

### **Subjective Norms**

For bivariate analysis, regression is run between the independent variable “Subjective Norms” and the dependent variable “Academic Dishonesty”. The value of R square is 0.175 (Adjusted R square is 0.172). The p-value is 0.000 ( $p < 0.05$ ) which is significant. The value of standard error is 0.136. It must be noted that due to non-random sampling the value of significance should be interpreted conservatively. As the beta value is positive it shows one unit change in the subjective norms of respondents lead to 0.967 unit change in dependent variable ‘academic dishonesty’. They have a positive relation. It disproves the hypothesis that these two variables will have a negative relation and individuals who will score high on subjective norms will have a lower score on academic dishonesty scale.

### **Perceived Behavior Control**

The items of this variable are divided in two categories based on their factor loadings. For bivariate analysis, regression is run between the independent variable “Perceived Behavior Control” and the dependent variable “Academic Dishonesty”. For the first category of items of



this variable, the value of R square is 0.046 (Adjusted R square is 0.042). The p-value is 0.001 ( $p < 0.05$ ) which is significant. The value of standard error which is 0.302. It must be noted that due to non-random sampling the value of significance should be interpreted conservatively. As the beta value is positive it shows one unit change in the perceived behavior control of respondents leads to 1.013 unit change in dependent variable 'academic dishonesty'. They have a positive relation which proves the hypothesis that individuals with higher perceived behavior score will also score higher on the academic dishonesty scale.

For bivariate analysis, regression is run between the independent variable "Perceived Behavior Control" and the dependent variable "Academic Dishonesty". For the second category of items of this variable, the value of R square is 0.011 (Adjusted R square is 0.007). The p-value is 0.110 ( $p > 0.05$ ) which is not significant. The value of standard error is 0.421. It must be noted that due to non-random sampling the value of significance should be interpreted conservatively. As the beta value is positive in the second category of items one unit change in this variable leads to 0.675 unit change in dependent variable 'academic dishonesty'. They have a positive relation which proves the hypothesis that individuals with higher perceived behavior score will also score higher on the academic dishonesty scale.

### **Moral Obligation**

For bivariate analysis, regression is run between the independent variable "Moral Obligation" and the dependent variable "Academic Dishonesty". The value of R square is 0.227 (Adjusted R square is 0.224). The p-value is 0.000 ( $p < 0.05$ ) which is significant. The value of

standard error is 0.229. It must be noted that due to non-random sampling the value of significance should be interpreted conservatively. As the beta value is positive it shows one unit change in the moral obligation of respondents lead to 1.893 unit change in dependent variable ‘academic dishonesty’. They have a positive relation which proves the hypotheses that individuals with higher moral obligation score will also score higher on the academic dishonesty scale.

### **Attitude Towards Academic Dishonesty**

For bivariate analysis, regression is run between the independent variable “Attitude Towards Academic Dishonesty” and the dependent variable “Academic Dishonesty”. The value of R square is 0.086 (Adjusted R square is 0.082). The p-value is 0.000 ( $p < 0.05$ ) which is significant. The value of standard error is 0.134. It must be noted that due to non-random sampling the value of significance should be interpreted conservatively. As the beta value is positive it shows One unit change in the attitude towards academic dishonesty of respondents lead to -0.626 unit change in dependent variable ‘academic dishonesty’. They have a negative relation which disproves the hypothesis that individuals who score higher on the attitude towards academic dishonesty will also score higher on academic dishonesty scale.

### **Table 4**

#### *Univariate Analysis*

Variable	Mean	Median	Mode	Range	St-Deviation
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Age		2.0000	2.00	2.00	
Gender			1.00	1.00	
Program Major		2.0000	1.00	8.00	
Current Semester		3.0000	2.00	7.00	
CGPA		5.0000	5.00	4.00	
Intention	4.6461	4.0000	3.00	12.00	2.44743
Subjective Norms	-5.6971	-6.0000	-12.00	23.00	4.85922
Perceived Behavior Control (1)	-1.5570	-2.0000	-4.00	8.00	2.28711
Perceived Behavior Control (2)	-.4872	.0000	.00	8.00	1.69126
Moral Obligation	-3.0340	-3.0000	-6.00	12.00	2.74386
Dependent Variables					
Cheating in Examination	6.3292	6.0000	4.00	16.00	2.66261
Plagiarism	6.5309	6.0000	5.00	16.00	2.70790
Outside Help	5.6790	5.0000	5.00	16.00	2.17894
Prior Cheating	4.0494	3.0000	3.00	12.00	1.85576
Falsification	3.5844	3.0000	3.00	12.00	1.51715
Lying about Academic Assignments	5.6255	5.0000	4.00	16.00	2.51682

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### Bivariate Analysis

## **Independent sample t-test**

### **Gender**

Gender is a two-category variable and there is a difference in their means with males 35.17 and females 29.84 representing the tendency of both genders to involve in academic dishonesty. The total mean difference is -5.33 and the p value is 0.05 which is nearly significant. It shows that academic dishonesty is significantly more common among males as compared to women. But as the standard deviation for males is 14.73 and for females it is 8.02 it shows that means are representable. Although the results show a significant difference among both genders, the results cannot be completely relied as this study does not have a random sample and their results might have some systematic error.

### **Age**

Age is a two-category variable with first category of students from 18 to 21 years of age while in the second category students from 22 to 32 years of age were included. The first category has a mean of 32.36 and the second category has a mean of 31.31, the means of these categories represent their tendency to involve in academic dishonesty which is slightly greater in students under 22 years of age. The total mean difference is 1.053 and the p value is 0.748 (p.0.05) which is not significant. Standard deviation for the first category of students is 12.8 and for the second category it is 9.7, which shows that their means are representable. It should be noted that the results cannot be completely relied as this study did not have a random sample and their results might have some systematic error.

### **CGPA**

CGPA is a two-category variable with first category of students with a CGPA of 1.00 to 3.4 and the second category with CGPA of 3.5 to 4.00. The first category has a mean of 34.11 and the second category has a mean of 29.67. The means of these categories represent their tendency to involve in academic dishonesty which is higher in students with a lower CGPA than 3.5. The total mean difference is 4.435 and the p value is 0.053 which is nearly significant. Standard deviation for the first category of students is 11.61 and for the second category is 11.00, which shows that means are representable. It should be noted that the results cannot be completely relied as this study did not have a random sample and their results might have some systematic error.

### **One-way Anova**

For bivariate analysis, Anova is run on dependent variable 'academic dishonesty' and independent variable 'Program Major', a three-category variable which included social science, science, and other program majors. The mean value for social science is 30.00 with a standard deviation value of 10.9, for science 32.00 with a standard deviation value of 9.5 and for other majors it is 33.00 with a standard deviation value of 13.9. Although, the values of standard deviation for each major are lower than the half of mean yet they are large enough to cause an overlap in their critical regions of science and social science majors overlap as there is not a large gap between their confidence intervals.

The comparison of mean values shows that there is not a significant difference in any of the program majors. The mean difference between the social science and science majors is -1.4, between social science and other majors is -2.7. The mean difference between science and other majors is -1.3. The p values for all the categories are between 0.1 to 0.7 ( $p \text{ value} > 0.05$ ). The

results show that there is no significant impact of program major on the dependent variable ‘Academic Dishonesty’.

### Multivariate Analysis

**Table 5**

*Linear Regression (Model 1: Individual effects of Independent and Socio-demographic Variables on the Dependent Variable)*

<b>Variable</b>	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
(Constant)	18.097	2.897		6.247	.000
Intention	3.150	.267	.659	11.81	.000
Subjective Norms	.132	.129	.056	1.023	.308
Perceived Behavior Control (1 <sup>st</sup> category)	.328	.254	.067	1.290	.199
Perceived Behavior Control (2 <sup>nd</sup> category)	-.308	.340	-.047	-.906	.366
Moral Obligation	.285	.241	.070	1.183	.238
Attitude towards Academic Dishonesty	-.007	.109	-.003	-.064	.949
Program Major (Social Science and Science)	1.163	1.329	.046	.875	.383
Program Major (Social Science and others)	.530	1.232	.022	.430	.667
Age	-.238	1.049	-.011	-.227	.821
CGPA	-.295	1.139	-.013	-.259	.796
Gender	2.701	1.136	.117	2.376	.018

### Regression

For multivariate analysis linear regression was run which included the dependent variable ‘academic dishonesty’, four control variables age, gender, CGPA, Program majors and five independent variables from the theory of planned behavior scale. The value of R square 0.581

(Adjusted Square is .559). It shows that the theory of planned behavior along with other factors like age, program major and CGPA explains 55 to 58 percent of variation in the academic dishonesty among students and this model is significant. The value of Durbin Watson is 1.79 which is between the threshold level 1.5 to 2.5 showing that there is no auto correlation in the residuals of predicted line.

### **Intention**

Results show that when all the other variables were kept constant in the model than one unit change in the independent variable 'intention' leads to 3.15 unit change in the dependent variable 'academic dishonesty' and they have a positive relation. The value of standard error is 0.267. P value is 0.000 ( $p \text{ value} < 0.05$ ) which shows that the impact of this variable is significant in the model. The collinearity statistics show that the value of tolerance is 0.666 which is above 0.25 threshold value and the value of VIF is 1.5 which is below the threshold value 4. It shows that it does not have a correlation with other independent variables.

### **Subjective Norms**

Results show that when all the other variables were kept constant in the model than one unit change in the independent variable 'subjective norms' leads to 0.132 unit change in the dependent variable 'academic dishonesty' and they have a positive relation. The value of standard error is 0.129 which is close to the beta value. P value is 0.308 ( $p \text{ value} > 0.05$ ) which shows that the impact of this variable is not significant in the model. The collinearity statistics show that the value of tolerance is 0.689 which is above 0.25 threshold value and the value of VIF is 1.452 which is below the threshold value of 4. It shows that it does not have a correlation with other independent variables.

### **Perceived Behavior Control**

Results show that when all the other variables were kept constant in the model than one unit change in the first category of items of independent variable 'Perceived Behavior Control' leads to 0.328 unit change in the dependent variable 'academic dishonesty' and they have a positive relation. The value of standard error is 0.254 which is close to the beta value. P value is 0.199 ( $p$  value  $>0.05$ ) which shows that the impact of this variable is not significant in the model. The collinearity statistics show that the value of tolerance is 0.764 which is above the threshold value of 0.25 and the VIF value is 1.309 which is below the threshold value of 4. It shows that it does not have a correlation with other independent variables.

Results show that when all the other variables were kept constant in the model than one unit change in the second category of items of independent variable 'Perceived Behavior Control' leads to -0.308 unit change in dependent variable 'academic dishonesty' and they have a negative relation. The value of standard error is 0.340 closer to the beta value. P value is 0.366 ( $p$  value  $>0.05$ ) which shows that the impact of this variable is not significant in the model. The collinearity statistics show that the value of tolerance is 0.785 which is above the threshold value of 0.25 and the VIF value is 1.274 which is below the threshold value of 4. It shows that it does not have a correlation with other independent variables.

### **Moral Obligation**

Results show that when all the other variables were kept constant in the model than one unit change in the independent variable 'Moral Obligation' leads to 0.285 unit change in the dependent variable 'academic dishonesty' and they have a positive relation. The value of standard error is 0.241, close to the beta value. P value is 0.238 ( $p$  value  $>0.05$ ) which shows that



the impact of this variable is not significant in the model. The collinearity statistics show that the value of tolerance is 0.585 which is above the threshold value of 0.25 and the VIF value is 1.709 which is below the threshold value of 4. It shows that it does not have a correlation with other independent variables.

### **Attitude towards Academic Dishonesty**

Results show that when all the other variables were kept constant in the model than one unit change in the independent variable 'Attitude towards academic dishonesty' leads to -0.007 unit change in the dependent variable 'academic dishonesty' and they have a negative relation. The value of standard error is 0.109. P value is 0.949 (p value >0.05) which shows that the impact of this variable is not significant in the model. The collinearity statistics show that the value of tolerance is 0.785 which is above the threshold value of 0.25 and the VIF value is 1.274 which is below the threshold value of 4. It shows that it does not have a correlation with other independent variables.

### **Program Major**

Results show that when all the other variables were kept constant in the model than one unit change in the control variable 'Program Major' including science and social science majors leads to 1.163 unit change in the dependent variable 'academic dishonesty' and they have a positive relation. The value of standard error is 1.329 close to the beta value. P value is 0.383 (p value > 0.05) which shows that the impact of this variable is not significant in the model. The collinearity statistics show that the value of tolerance is 0.742 which is above the threshold value of 0.25 and the VIF value is 1.347 which is below the threshold value of 4. It shows that it does not have a correlation with other independent variables.

Results show that when all the other variables were kept constant in the model than one unit change in the control variable 'Program Major' including social science and other majors leads to 0.530 unit change in the dependent variable 'academic dishonesty' and they have a positive relation. The value of standard error is 1.232. P value is 0.667 ( $p \text{ value} > 0.05$ ) which shows that the impact of this variable is not significant in the model. The collinearity statistics show that the value of tolerance is 0.770 which is above the threshold value of 0.25 and the VIF value is 1.299 which is below the threshold value of 4. It shows that it does not have a correlation with other independent variables.

### **Age**

Results show that when all the other variables were kept constant in the model than one unit change in the control variable 'Age' leads to -0.238 unit change in the dependent variable 'academic dishonesty' and they have a negative relation. The value of standard error is 1.049. P value is 0.821 ( $p \text{ value} > 0.05$ ) which shows that the impact of this variable is not significant in the model. The collinearity statistics show that the value of tolerance is 0.943 which is above the threshold value of 0.25 and the VIF value is 1.063 which is below the threshold value of 4. It shows that it does not have a correlation with other independent variables.

### **CGPA**

Results show that when all the other variables were kept constant in the model than one unit change in the control variable 'CGPA' leads to -0.295 unit change in the dependent variable 'academic dishonesty' and they have a negative relation. The value of standard error is 1.139. P

value is 0.796 (p value >0.05) which shows that the impact of this variable is not significant in the model. The collinearity statistics show that the value of tolerance is 0.800 which is above the threshold value of 0.25 and the VIF value is 1.259 which is below the threshold value of 4. It shows that it does not have a correlation with other independent variables.

## Gender

Results show that when all the other variables were kept constant in the model than one unit change in the control variable 'Gender' leads to 2.701 unit change in the dependent variable 'academic dishonesty' and they have a positive relation. The value of standard error is 1.136. P value is 0.018 (p value <0.05) which shows that the impact of this variable is significant in the model. The collinearity statistics show that the value of tolerance is 0.853 which is above the threshold value of 0.25 and the VIF value is 1.172 which is below the threshold value of 4. It shows that it does not have a correlation with other independent variables.

## Table 6

*Linear Regression (Model for Interaction effect of Independent and Socio-demographic Variables on the Dependent Variable)*

Variable	B	Std. Error	Beta	
(Constant)	20.156	3.015		6.686
Subjective Norms	.098	.124	.042	.792
Perceived Behavior Control (1 <sup>st</sup> category)	.472	.246	.097	1.914
Perceived Behavior Control (2 <sup>nd</sup> category)	-.270	.327	-.041	-.827
Moral Obligation	.393	.236	.097	1.665
Attitude towards Academic Dishonesty	.002	.106	.001	.019
Intention	2.718	.364	.569	7.456
Age	-.098	1.014	-.004	-.097

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Program Major (Social Science and Science)	.971	1.291	.039	.752
Program Major (Social Science and others)	.593	1.189	.025	.499
CGPA	-.186	1.100	-.008	-.169
Gender	2.540	1.101	.110	2.307
Subjective Norms and Intention	.369	.601	.035	.613
Moral Obligation and Intention	1.298	.608	.149	2.134
Attitude towards Academic Dishonesty and Intention	2.473	.613	.189	4.037

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For multivariate analysis a second linear regression test was run to test the impact of subjective norms, moral obligation, attitude towards academic dishonesty and perceived behavior control as independent variable on the intention as an independent variable. This is done to understand the impact of these four variables on intention as a mediating variable between academic dishonesty as suggested by the theory of planned behavior. Those variables which are found to be significant ( $p \text{ value} < 0.05$ ) and were in their original form were further converted to z scores to only include the variation effect of these variables and remove their units. These variables are multiplied with intention to understand the interaction effect except the variable “perceived behavior control” which was not in its original form as we divided its items in two categories.

In our original model intention mediates the effect between the dependent variable “academic dishonesty” and other four variables included in theory of planned behavior. It means that intention hasz an interaction effect on academic dishonesty. Thus, another linear regression was run on the “intention” as a dependent variable and subjective norms, perceived behavior control, moral obligation, and attitude towards academic dishonesty as independent variables. Those variables which showed a significant effect on the intention and were in their original forms were

converted into z scores so that variable only represented the variation in the variable, and the effect of unit is removed.

This, linear regression test included these computed variables, independent variables (subjective norms, perceived behavior control, moral obligation, attitude towards academic dishonesty and intention) and control variables (gender, age, CGPA and program majors). This test helped to understand their interaction effect when combined in one model. The value of R square is 0.619 (Adjusted Square is 0.592). It shows that the theory of planned behavior along with other factors like age, program major and CGPA explains 61 to 59 percent of variation in the intention and this model is significant. The value of Durbin Watson is 1.803 which is between the threshold level 1.5 to 2.5 showing that there is no auto correlation in the residuals of predicted line.

### **Intention and Subjective norms**

Results show that when all the other variables were kept constant in the model than one unit change in the independent variable “Subjective norms” leads to 0.369 unit change in the dependent variable “intention” and they have a positive relation. The value of standard error is 0.601. P value is 0.540 ( $p \text{ value} > 0.05$ ) which shows that the impact of this variable is not significant in the model. The collinearity statistics show that the value of tolerance is 0.601 which is above the threshold value of 0.25 and the VIF value is 1.664 which is below the threshold value of 4. It shows that it does not have a correlation with other independent variables.

### **Intention and Moral Obligation**

Results show that when all the other variables are kept constant in the model than one unit change in the independent variable “Moral Obligation” leads to 1.298 unit change in the dependent variable “intention” and they have a positive relation. The value of standard error is

0.608. P value is 0.034 ( $p \text{ value} < 0.05$ ) which shows that the impact of this variable is significant in the model. The collinearity statistics show that the value of tolerance is 0.391 which is above the threshold value of 0.25 and the VIF value is 2.560 which is below the threshold value of 4. It shows that it does not have a correlation with other independent variables.

### **Intention and Attitude towards Academic Dishonesty**

Results show that when all the other variables were kept constant in the model than one unit change in the independent variable ‘Attitude towards academic dishonesty’ leads to 2.473 unit change in the dependent variable “Intention” and they have a positive relation. The value of standard error is 0.613. P value is 0.000 ( $p \text{ value} < 0.05$ ) which shows that the impact of this variable is not significant in the model. The collinearity statistics show that the value of tolerance is 0.870 which is above the threshold value of 0.25 and the VIF value is 1.149 which is below the threshold value of 4. It shows that it does not have a correlation with other independent variables.

The addition of these interaction variables resulted in an increase in the multicollinearity of these variables, increasing their tolerance and VIF values with the intention variable as they are multiplied together. It means that the addition of these variables results in the inflation of values thus, results of the tests need to be interpreted conservatively. The interaction effect of the variable “perceived behavior control” is not explored because of two reasons firstly, it does not have a significant impact on the intention and secondly, the items measuring this variable are not in their original form as the items measuring it are divided in two categories based on their factor loadings. After the addition of these three combined variables the value of R Square increased to, and the model turned out to be significant. Results showed that out of three interaction variables two of the variables including moral obligation with intention and attitude towards academic dishonesty with intention have a significant combined effect on the academic dishonesty.



## Discussion

This research aims at understanding the student's engagement in academic dishonesty and the factors determining it. It explains this behavior through the Ajzen's' modified theory of planned behavior (TPB), it suggests that students' intention to engage in academic dishonesty is determined by four factors. These factors include subjective norms, attitude towards it, sense of moral obligation and perceived behavior control (Whitley, 1998; Whitley & Kieth-Spiegel, 2002). The prevalence of academic dishonesty is measured by a standardized Academic Dishonesty Scale (ADS) consisting of 23 behavioral items. These items measured academic dishonesty types with six-factors which include examination, outside help, plagiarism, prior cheating, falsification and lying about academic assignments.

The main research question that this research explains is that “does academic dishonesty occurs as a planned behavior among the students at Forman Christian College and University (FCCU) Lahore, Pakistan?”. This is a quantitative, survey-based cross-sectional study which uses gender representative quota-based convenience sampling. It consists of a Non-Random Quota based convenience sample of 243 male and female students from science, social science and other program majors offered at Forman Christian College and University (FCCU) Lahore, Pakistan.

This research did two main analyses firstly to understand the independent effect of the five independent variables included in the theory of planned behavior and then a second analysis was done to understand the mediating effect of the intention between the other four independent variable and academic dishonesty. Previous literature has shown that students who have a higher intention are more likely to involve in the behavior and it also has been seen that factors such as subjective norms, attitudes and perceived behavior control impact the intentions to indulge in a



behavior (Ajzen, 1991; Mayhew et al., 2009). In this research results show that when the independent and interaction effects of variables of theory of planned behavior on academic dishonesty are checked the effect of intention on the academic dishonesty is found to be significant in both the models.

Previous research highlighted that students have greater likelihood of academic cheating if they perceive themselves as more effective at doing (Whitley, 1998; Whitley & Kieth-Spiegel, 2002). But the results of this research do not show perceived behavioral control either directly on academic dishonesty, intention to involve in such behavior or an interaction effect on it. Thus, it disproves the hypothesis that students' high perceived behavioral control in performing academic dishonesty will be more likely to engage in academic dishonesty or Students' high perceived behavioral control in performing academic dishonesty will have higher intention to engage in academic dishonesty.

Regarding subjective norm research showed that students who have a perception of cheating being an acceptable social norm have a higher chance to involve in it (Whitley, 1998; Whitley & Kieth-Spiegel, 2002). This research shows that when subjective norm does not have a significant effect on academic dishonesty individually or even when it was checked for interaction effect along with intention. But it does have a significant effect when intention was kept as a dependent variable. Thus, both our hypothesis based on its individual or interaction effect on academic dishonesty are disproved which are "Students' subjective norms which do not approve academic dishonesty will have a lower intention to engage in academic dishonesty" and "Students' subjective norms which do not approve academic dishonesty will be less likely to engage in academic dishonesty."

A study by Mayhew et al. (2009) showed that students with a positive attitude towards cheating have a higher likelihood of involving in it and in this research this variable showed a significant interaction effect on the academic dishonesty and a significant individual effect on the intention as a dependent variable. But it does not show an individual effect on the academic dishonesty as a dependent variable. Thus, one of our hypotheses which is based on the interaction effect of this variable “attitude towards academic dishonesty” is proven that “The unfavorable attitudes of students toward academic dishonesty will have a lower intention to engage in academic dishonesty.” But the other hypothesis which is based on analyzing its individual effect is disproved, that was “The unfavorable attitudes of students toward academic dishonesty will be less likely to engage in academic dishonesty.”

Research suggests that moral obligation is a strong predictor of one’s intention to engage in cheating, the results of this research show that moral obligation does have a significant interaction effect on the academic dishonesty and has an individual effect on intention as a dependent variable, but it does not have an individual effect on the academic dishonesty in one of the models. Thus, the hypothesis that “Students with a strong moral obligation sense will have a lower intention to engage in academic dishonesty” is proved but the hypothesis that “Students with a strong moral obligation sense will be less likely to engage in academic dishonesty” is disproved.

Among the control variables of this research program majors, CGPA, Current Semester, age, and gender, only gender is found to be significant showing that males have a higher chance of getting involved in academic dishonesty as compared to females. In the previous research there have been overlapping results in this regard as some studies do not show any sex differences and their involvement in academic dishonesty (David, 2015) while some research

shows the evidence that males have a more likelihood for involving in academic dishonesty as compared to females. (DeAndrea, Carpenter, Shulman, & Levine, 2009; Hensley et al., 2013; Newstead, Franklyn-Stokes, & Armstead, 1996 as cited in, Anderman, 2019).

## **Implications**

The theoretical significance of this theoretical framework is both for sociology. Previous research that applied this theoretical framework of “The Theory of Planned Behavior” has been applied to understand several behavioral engagements. A number of these research also focused on understanding the student’s engagement in academic dishonesty, mainly in the western social context. This research helps to understand the academic dishonesty in the context of Pakistan and specifically the students at Forman Christian College and University (FCCU) Lahore, Pakistan, which has not been explored before. This theory is relevant to social context of Pakistan as this theory explains academic dishonesty because of factors like one’s subjective norms and moral obligation which are relevant in collectivist cultures like Pakistan where social ties are greatly emphasized which might impact one’s perception regarding such behaviors.

This research is beneficial in understanding the problem of academic dishonesty at a root level as not only a structural problem but a problem at an individual level, which can help in suggesting relevant policies at educational level. The results of this research show that it is a matter of individual choice and is significantly determined by one’s moral obligation and attitudes towards academic dishonesty which calls for highlighting the moral aspect of this behavior among students. This theory emphasizes that to ensure honest academic behavior of students a culture of honesty and integrity needs to incorporate in the academic institutions rather than just enforcing rules and regulations so that values can be reinforced among students.

As attitude and moral obligation are found to be significant in our results that impact one’s intention to engage in academic dishonesty, it suggests focusing and positively reinforce which are not just structural changes and are not just directly related to academic work but relevant to the training and culture of institutions. As much as the values of honesty are

reinforced and the students are encouraged to believe that they should not conduct academic dishonesty because they are morally obliged, they will be less likely to involve in such behavior. Moreover, the type of test, examination or any assigned work can also impact the involvement in such behavior as the individual effect of intention is also found to be significant on the academic dishonesty. So, the subjective type exams that have a lower chance of similar answers can result in lower chance to involve in academic dishonesty.

### **Limitations**

The statistical limitation of this research has a nonrandom sample of only 243 students which is quite a small sample size that cannot be generalized on a larger population. Moreover, some variables included in this research are not normally distributed. As the main theory of inferential statistics is based on random samples, and as inferences have not been taken of the findings which are found to be significant should be interpreted restrictively because it has not been taken from the random sample. So, it is only significant in the biased sample of this research. This research is a cross-sectional study, and it is not easier to establish a causal relation in onetime studies as longitudinal studies are better in this regard.

Another limitation is that the surveys, questionnaires, and theory that this research used in this research were not suggested in this context. So, there can be questions asked during this research which might not be culturally relevant or have a need to be grounded in the specific cultural context for the respondents. As a pilot test was not done before this research to make sure if all the questions asked during survey are culturally consistent or not. Considering all these limitations the results cannot be generalized and require to be interpreted conservatively

## **Future Research**

As the sample size of this research is small a broader sample from multiple universities and using a random sample can help for better understanding the academic dishonesty among students in Pakistan. Longitudinal studies to understand the academic dishonesty in universities of Pakistan can help understand the causal relationship better which could not be established in this cross-sectional study.

## **Limitations**

Although, this research helps in understanding the determinants of academic dishonesty but as the academic dishonesty have not been defined rather leaving it on subjective perception of students, might result in some confusion. Also, due to certain limitations such as short period of time available, a survey based cross-sectional study is opted due to which this research is not able to establish causality between variables. With that as it has violated the random sampling assumption in statistical analysis, resulting in reduced generalizability of the results. Further, this research does not consider some of the significant factors such as external determinants of academic dishonesty like lack of administrative control or attitude of faculty members, other categories such as students' English proficiency, social class or the differences between hostilities and non-hostilities which might influence the engagement in the behavior of interest has not been included. Moreover, there are other theories which might have provided significant explanation for this behavior such as rational choice or structural theories which have not been applied in this research.

## **Conclusion**

To conclude, the objective of this research is to understand the determinants of Academic Dishonesty among students at Forman Christian College and University (FCCU). It is assumed that academic dishonesty is one of those acts in which students engage according to their beliefs as the theory of planned behavior suggests (TPB). This study helps identify and understand the determinants of academic dishonesty which can provide a basis for creating future strategies to cope with this problem. It emphasizes that a culture of honesty needs to be inculcated among students to reduce the prevalence of academic dishonesty.

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## **Appendix A: Information Sheet for Participants**

Sociology Department

Forman Christian College (A Chartered University)

### **Information Sheet for Participants**

The aim of this research is to understand the students' engagement in academic dishonesty through the theory of Planned Behavior (TPB). Your participation in this research will be respected. The questionnaire booklet is comprised of three sections, one is for the demographics, the second section will be measuring prevalence of academic dishonesty and its determinants.

Instructions:

- There are no right or wrong answers to these questionnaire/statements.
- The total time for the procedure will be 15-20 minutes.
- You must answer all the questions by encircling the option which seems most suitable.

**Note:** Your contribution in this research is completely voluntary, if you don't want to be a part of this process you may leave anytime. Your identity will be anonymous, and information provided will be kept confidential. If you are interested in knowing the results of this research, please feel free to contact the researcher through the email address provide below.

Name of the researcher: Bakhtawar Fazal

Supervisor Name: Dr. Muhammad Vaqas Ali

Email: 231459847@formanite.fccollege.edu.pk

**Written Informed Consent**

I understand all the details and the aim of this research as it is provided; thus, I approve and provide my consent to participate in this research.

I accept, that my participation in this research is completely intentional and I am free to leave anytime I want to.

After this approval, I also recognize that data provided in this research will be used for the analysis and publication. After understanding all the directions, I am signing for my approval

Signature \_\_\_\_\_

## **Appendix B: Questionnaire**

### *Questionnaire*

Hello, I'm a student of Sociology in Forman Christian College and University (FCCU) Lahore and doing research on the determinants of academic dishonesty among the students at FCCU.

Kindly spare a few minutes to fill this questionnaire. Thank you!

### **Section 1**

#### **Socio-Demographics**

Gender \_\_\_\_\_

Age \_\_\_\_\_

Program Major \_\_\_\_\_

CGPA \_\_\_\_\_

Current Semester \_\_\_\_\_

### **Section 2**

#### **Academic Dishonesty Scale (Anitha, 2021)**

Likert Scale comprising “never”, rarely, “sometimes”, “often” and “always” (Anitha,2021).

<b>Prevalence of academic dishonesty behaviors</b>						
<b>Types of dishonesty</b>						
<b>Cheating in examination</b>						
		Never	Rarely	Sometimes	Often	Always
1	During examination I use signals to fetch answers from my friends.					
2	I use prohibited things like hidden notes, calculators, and other electronic devices during examination					
3	I interchange my allotted answer book with other student in examination room.					
4	During an examination, I solve answers on question paper and handover to my classmates					
5	During an examination, I solve answers on question paper and handover to my classmates.					
<b>Plagiarism</b>						



		Never	Rarely	Sometimes	Often	Always
6	I copy summary of a story/poem/chapter from a textbook & claim it as completed by me.					
7	For submitting assignment, I copy and change few sentences/lines/words and phrases from other sources					
8	I use online resources in my personal educational assignment/project without citing the author					
9	For personal comments I manipulate scientific information on internet and claim it as written by me					
Outside help						
		Never	Rarely	Sometimes	Often	Always
10	I attempt to make special considerations to attain or getting favors i.e. (bribery)					
11	In an individual work/assignment I take help from others to complete it.					
12	I use unfair means to obtain information about the content of the					

	test before it was given					
13	Before examination I try to know questions asked in paper.					
Prior cheating						
		Never	Rarely	Sometimes	Often	Always
14	I write expected answers on table/wall/hand/paper etc. in prior time					
15	I interchange my allotted seat near efficient student to get better grade in examination.					
16	Before examination I encourage other classmates to do cheating.					
Falsification						
		Never	Rarely	Sometimes	Often	Always
17	I submit the assignment in my name after getting it prepared by my friends.					
18	I damage library books so that classmates do not get required content.					
19	In a course I submit the same educational assignment more than					

	one time.					
Lying about academic assignments						
		Never	Rarely	Sometimes	Often	Always
20	I give false explanations when I miss deadline of my educational project.					
21	I buy a project/assignment/paper online & submit it as my individual effort.					
22	Before exam I pay someone to write a paper/homework for me					
23	I provide false excuses to teacher, to gain extra time on project/assignment.					

### Theory of Planned Behavior Scale (Harding et al., 2007)

\* Indicates wording change from in-class test or exam to homework assignment for questions asked for cheating in the context of homework (Harding et al., 2007).

® Indicates items that were reversed-scored.

a = 5-point scale: From 1 = Strongly agree to 5 = strongly disagree (Harding et al., 2007).

b = 7-point semantic differential scale: From 1 = extremely closely related to 7=extremely closely related (Harding et al., 2007).

Factor and Survey Items					
<i>intention</i> <sup>α</sup> (alpha)					
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I will try to cheat on an in-class test or exam* during the current academic term					
I intend to cheat on an in-class test or exam* during the academic term					
I do NOT plan to cheat on an in-class test or exam* during the academic term ®					
I will NOT cheat on an in-class test or exam* during the current academic term					

®					
If I had the opportunity, I would cheat on an in-class test or exam* during the current academic term					
Attitude toward behavior <sup>b</sup> (alpha)					
Positive	•	•	•	•	Negative
Good	•	•	•	•	Bad
Pleasant	•	•	•	•	Unpleasant
Superior	•	•	•	•	Inferior
Thrilling	•	•	•	•	Boring
Subjective norms <sup>a</sup> (alpha)					
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I cheated on an in-class test or exam*, most of the people who are important to me (e.g., my family, friends, colleagues, teachers, etc.) would approve of my behavior					

<p>The people in my life whose opinions I value (e.g., my family, friends, colleagues, teachers, etc.) would be willing to cheat on an in-class test or exam* if they were in my situation</p>					
<p>Most people who are important to me (e.g., my family, friends, colleagues, teachers, etc.) would be willing to cheat on an in-class test or exam* if they were in my situation</p>					
<p>The people in my life whose opinions I value (e.g., my family, friends, colleagues, teachers, etc.) would NOT approve if I cheated on an in-class test or exam* ®.</p>					

<p>Most people who are important to me (e.g., my family, friends, colleagues, teachers, etc.) think I should NOT cheat on an in-class test or exam* ®</p>					
<p>People whose opinions I value (e.g., my family, friends, colleagues, teachers, etc.) expect me to cheat on an in-class test or exam*</p>					
<p>Most people who are important to me (e.g., my family, friends, colleagues, teachers, etc.) will look down on me if I cheat on an in-class test or exam* ®</p>					
<p>NO ONE who is important to me (e.g., my family, friends, colleagues, teachers, etc.) thinks it is OK to cheat on an in-class test or exam*®</p>					

Perceived behavioral control <sup>α</sup> (alpha)					
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I believe that I would have a great deal of control over whether I get caught attempting to cheat on an on-class or test exam*					
I believe that I have the skills needed to cheat on an in-class test or exam* in all circumstances					
It is mostly up to me whether or not I successfully cheat on an in-class test or exam*					
Even if I wanted to, I could NOT cheat on an in-class test or exam* ®					
Moral obligation <sup>α</sup> (alpha)					
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Cheating on an in-class test or exam* is against my principles ®					
I would feel guilty if I cheated on an in-class test or exam*®					
It would NOT be morally wrong for me					



to cheat on an in-class test or exam*					
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**FORMAN CHRISTIAN COLLEGE**  
(A CHARTERED UNIVERSITY)

**INSTITUTIONAL REVIEW BOARD**  
**APPROVAL CERTIFICATE**

**IRB Approval Certificate**

IRB Ref: IRB-385/05-2022

Date: 18-05-2022

Project Title: Determinants of Academic Dishonesty among students at Forman Christian College and University.

Principal Investigator: Bakhtawar Fazal.

Supervisor: Dr Muhammad Waqas Ali

Institutional review board has examined your project in IRB meeting held on 18-05-2022 and has approved the proposed study. If during the conduct of your research any changes occur related to participant risk, study design, confidentiality or consent or any other change then IRB must be notified immediately.

Please be sure to include IRB reference number in all correspondence.

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