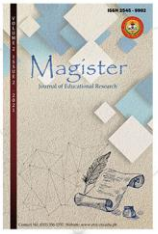

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Self-efficacy in Online Learning Environment as Antecedent Factor on Students' Academic Misconduct: A TPB Model

[a]Trixie Ann Abayon, [a]Jorelyn Lerasan, [a]Jessie Moncada, [a]Jeffrey Pepito, [a]Apple Mae Pilapil, [a,b]Gerly Alcantara, [a]*Meljun Barnayha

[a] College of Education of Danao Campus, Cebu Technological University, Cebu, Philippines
[b] Graduate School at Danao Campus, Cebu Technological University, Danao City, Cebu, Philippines

*Corresponding author: meljun.barnayha@ctu.edu.ph

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Abstract

COVID-19 disrupted the education sector and led educational managers to adapt to the flexible and online learning environment. One of the primary concerns among educators in online learning is the control and prevention of academic misconduct, especially during learning assessment. This paper aimed to examine how self-efficacy in online learning form part and overall variations of attitude toward academic misconduct using Ajzen's (1985) empirically-driven model of the theory of planned behavior (TPB). A sample of 1,248 college students in the Visayas region in the Philippines voluntarily took part in the survey. Covariance-based structural equation modeling (CB-SEM) was used to test the proposed model. Results revealed that among eight (8) hypothesized paths, six (6) were found significant. Attitude toward cheating directly explains students' behavioral intentions to cheat. Self-efficacy beliefs towards achieving goals in an online learning environment inversely affect subjective norms and directly affect perceived behavioral control. Additionally, the multigroup variable, type of school (i.e., public and private), moderates the association of behavioral control and intention. These variances have not been accounted for in the context of academic misconduct in an online learning environment. The study concluded that teachers' pedagogical skills must include moral orientation to remind learners of their moral obligation towards genuine learning.

Keywords: *self-efficacy, academic misconduct, online learning, TPB*

1. Introduction

The COVID-19 pandemic impacts all aspects of human life, including education. Governments enforced lockdowns and strict controls on movement to avoid the spread of the disease, particularly in the field of education, wherein most face-to-face activities have been closed. This sudden transition from face-to-face teaching mode to online education brings challenges and issues in Higher Education Institutions (HEIs) (Bao, 2020; Carillo & Flores, 2020). For example, Eberle and Hobrecht (2021) and Mishra et al. (2020) stated that not all learners have good internet connectivity, and others suffer from network problems and lack high-quality learning devices. These challenges are more pronounced, most especially in developing countries. In the context of the Philippine higher education system, the Commission on Higher Education (CHED) issued flexible learning guidelines in response to the unprecedented disruptions brought about by the pandemic. The guidelines urged tertiary institutions to utilize available distance learning, e-learning, and other alternative modes of delivering synchronous and asynchronous classes. Pedagogical insufficiencies and limited resources are some of the challenges that HEIs are facing (Teräs et al., 2020). Among other difficulties, measuring student performance became one of the instructors' main concerns due to cheating and academic misconduct (Bilen & Matros, 2021).

Academic misconduct refers to any behavior done by the individual to represent one's scholarly work as original and can take many forms, including deception, using unauthorized resources, plagiarism, and cheating (Golden & Kohlbeck, 2020). One of the basic concepts related to this is stealing the ideas of others. Other reasons students report include the need to help others, procrastination, the desire to pass the class, and course difficulty (Melgaard et al., 2022). This problem has been an educational concern since then and has become a rampant issue since the emergence of online education (Adzima, 2020; Djokovic et al., 2022). Similarly, this may also result from perceptions that geek students manipulate technology to ace online assessments with minimal effort (Dendir & Maxwell, 2020).

Due to the emergence of online education, some researchers have posed concerns about cheating, like the students' insufficient educational preparedness to behave with academic integrity and their understanding of integrity policies on campus (Gamage et al., 2020; Guangul et al., 2020). With students taking advantage of online learning to earn their degrees, it is necessary to examine current students' ideas about academic integrity relative to cheating and plagiarism (Gamage et al., 2020; Maryon et al., 2022). Hence, various studies have been completed related to cheating intention in live classes, but only a few studies have been undertaken on cheating in online courses (Lanier, 2006; Stuber-McEwen et al., 2009). The cheating problem in higher education has existed since its advent (Muhammad et al., 2020, Khan et al., 2022). Still, little work related to violations of academic integrity in e-learning is available in the literature. Also, no study is looking into the case of developing countries whose infrastructure on internet connectivity is still a problem, and lack of money and facilities are still evident. Furthermore, this study intends to broaden the research on cheating concerning online classes.

This paper investigates and tests cheating behavior along with the behavioral constructs of Ajzen's (1985) theory of planned behavior (TPB) during the COVID-19 pandemic. This was carried out using multivariate data analysis of structural equation modeling (SEM) to answer which level the universities and college students' attitudes,

perceived behavioral controls, moral obligations, subjective norms, and behavioral intentions toward cheating. Through the literature review, factors that contribute to this behavior have been identified. These factors were hypothesized to determine the possible associations of paths on a proposed model, as presented in Section 2. The rest of the papers include Section 3-the methods, Section 4-results, Section 5-discussions, and Section 6-conclusion.

2. Hypothesis Development

Ajzen (1985) proposed the theory of planned behavior (TPB), which came from the theory of reasoned action to foresee a person's intention and engross in a behavior at a specific time and place. TPB expands the boundaries of TRA by including a belief factor that concerns the possession of requisite resources and opportunities to perform a particular behavior. Researchers have used it to create an understanding of academic misconduct, investigate factors influencing unethical behaviors, and provide effective means to restrain such behaviors (Harding et al., 2007; Whitley, 1998). This theory delineates the behavioral intention to perform a certain behavior as the primary antecedent of the action (Ajzen, 1991).

The TPB has been widely utilized in studies whose primary goal is understanding how intention impacts people's actions, with moral obligation, attitude towards cheating, subjective norm, and perceived behavioral control as antecedent variables. This theory emphasizes that behavioral intention is the immediate predictor of the actual action (Ajzen & Madden, 1986). In the context of academic misconduct, the attitude toward cheating is an individual's view to perform a particular behavior, whether favorable or unfavorable judgment towards actuality. Subjective norm refers to the perceived social pressure that an individual must possess whether to act or not a specific behavior. Accordingly, perceived behavioral control refers to the individual's perception of how easy or difficult the given action is (Beck and Ajzen, 1991). Moreover, Ajzen (1991) added moral obligation that talks about the individual's feelings about whether they must perform or not perform the action. The figure presents the original model for the TPB with an additional variable, self-efficacy.

2.1 Self-Efficacy

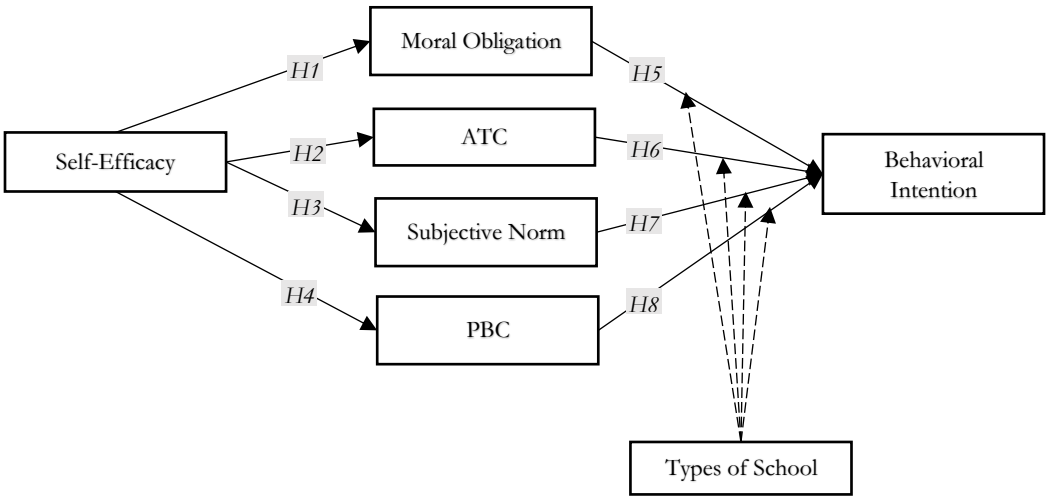
Self-efficacy refers to an individual's perceptions of one's ability to carry out an intended action (Bandura, 1977). In an academic setting, self-efficacy relates to achievements, grade point average, and learning strategies. Students with low self-efficacy, having little confidence in their ability to maintain high grades and achieve academic success, is likely to engage in academic cheating as an alternative way instead of making an effort and learning on their own (Farnese et al., 2011). Fida et al. (2018) found that self-efficacy negatively affected the moral obligation to commit academic dishonesty. On the contrary, Fatima et al. (2020) and Krou et al. (2021) revealed that self-efficacy affects students' moral obligation to commit plagiarism, where pressure because of deadlines can make them perform such an action.

Du Rocher (2020) and Fu et al. (2022) also found that increased self-efficacy was positively associated with attitudes toward cheating. It implies that when a student feels a low level of engagement, they might be engaged in cheating behaviors, including plagiarism. Other scholars also reported a positive association between self-efficacy and

attitude toward cheating among university students (Anderman & Won, 2019; Wang et al., 2022). Additionally, several studies also found an association between self-efficacy and subjective norms. For instance, Santos and Liguori (2019) reported that self-efficacy positively affects subjective norms among entrepreneurial students. The study by Mihelič et al. (2022) revealed that self-efficacy influences subjective norms wherein if students lack the motivation to learn the lesson on their own, the referent people will approve of their behavior to do cheating instead once an online quiz or test is conducted.

Furthermore, other studies reported a positive relationship between self-efficacy and behavioral control. For example, Surahman and Wang (2022) investigated the relationships among beliefs about the use of the Internet and the trustworthiness of online assessment, along with assumptions that students exhibit behavioral control to cheat because of low self-efficacy. This suggests that self-efficacy positively affects perceived behavioral control. Additionally, it indicates that awareness of one's self-efficacy can positively influence perceived behavioral control (Onu et al., 2021). In this manner, a student will confidently believe that cheating on a test or exam is easy, particularly in the environment he adapts to (Krienert et al., 2022; Meccawy et al., 2021). Therefore, the arguments above lead to the following hypotheses.

H1: Self-Efficacy positively affects moral obligation.
H2: Self-Efficacy positively affects attitude towards cheating.
H3: Self-Efficacy positively affects subjective norms.
H4: Self-Efficacy positively affects perceived behavioral control.



Legend: ATC – Attitude towards cheating, PBC – Perceived behavioral control

Figure 1. TPB Model

2.2 Moral Obligation

Moral obligation refers to individuals' feelings about performing or refusing to perform a specific behavior (Beck & Ajzen, 1991). It implies one's guilt or responsibility to moral principles related to engaging or not engaging in the behavior (Uzun & Kilis, 2020). This construct is considered a helpful factor in explaining the behavioral intention to engage in academic dishonesty behaviors such as homework cheating and plagiarism, which contain moral aspects that lead individuals to feel guilt or to consider their obligations to moral values (Cronan et al., 2018). Several studies found that moral obligation holds a significant impact on intention. Cronan et al. (2018) claimed that moral obligation negatively affects behavioral intention. The studies of Koc (2020) and Juan et al. (2022) also found a negative yet non-significant effect on behavioral intentions to cheat. It can be argued that students who see cheating as moral behavior do not intend to cheat.

On the contrary, Kam et al. (2018) found that moral obligation is the most significant factor in predicting the intention to cheat. Thus, this is similar to AL-Dossary (2017), which concludes that this association is positively affected. With the arguments presented, here is the proposed hypothesis.

H5: Moral obligation positively affects behavioral intention.

2.3 Attitude toward cheating

Beck and Ajzen (1991) defined attitude towards cheating (ATC) as the degree to which an individual has a favorable or unfavorable judgment of the behavior of academic dishonesty. This variable plays a significant role in the total effect of satisfaction on behavioral intention (Huang & Hsu, 2009). It implies that an individual who enjoyably acts a particular behavior is likelier to show intentions towards the action and engage in actuality. Most behavioral research suggests that attitude is one of the most significant factors influencing behavioral intention. For instance, Curtis & Tindall (2022) found that attitude positively affects behavioral intention in the context of contract cheating.

Additionally, Farooq & Sultana (2022) emphasized that students' attitude toward plagiarism affects their intention to plagiarize. Accordingly, Kam et al. (2018) maintained that favorable attitudes positively affect academic cheating. Several findings have found that attitude was a significant predictor of behavioral intention (Hamnadi, 2020; Yusliza et al., 2020; Juan et al., 2022). Therefore, the arguments above lead to the following hypothesis.

H6: Attitude towards cheating will positively affect behavioral intention.

2.4 Subjective Norm

Beck and Ajzen (1991) defined subjective norm as the perceived social pressure an individual perceives whether to perform or not from that specific behavior. People were always influenced by the behavior of others (Bandura, 1986). Thus, if the person thinks that people important to him would be okay to perform the behavior, he would likely anticipate executing it without thinking about the consequences that might happen to him. Emerging literature revealed that positive support from referent people affects the individual's behavioral intention to perform a particular behavior. The study by Awang et al. (2019) found that the influence of others affects students' behavioral

intention to commit academic fraud. Their findings imply that the more students favor academic fraud and perceive that their significant people would support the behavior, the stronger their behavioral intentions to engage in it. Several findings have found that subjective norm affects behavioral intention to commit academic cheating (Camara et al., 2017; Cronan et al., 2018; Yusliza et al., 2020). With the discussions presented, here is the proposed hypothesis.

H7: Subjective norm will positively affect behavioral intention.

2.5 Perceived Behavioral Control

Perceived behavioral control (PBC) refers to students' perception of how easy or challenging to perform the desired behavior (Beck & Ajzen, 1991). Generally, it is a perceived ease of performing the behaviors based on past experiences and anticipated impediments. Emerging literature revealed the association between perceived behavioral control and behavioral intention. For instance, Nguyen et al. (2019) emphasized that the students' behavioral control in knowledge-sharing behavior directly impacts intention. In addition, Yusliza et al. (2020) reported that perceived behavioral control is shown to be significantly related to intention. It implies that when students find cheating very easy, while the consequences of being caught or severely punished are low, especially in this online learning, they tend to form their behavioral intentions to cheat. Accordingly, the study by Kam et al. (2018) reported that perceived behavioral control is the essential latent variable in predicting behavioral intentions in the context of academic dishonesty. Other studies have found support for perceived behavioral control as a predictor of intention (AL-Dossary, 2017; Lonsdale, 2017; Cronan et al., 2018). Therefore, the arguments above lead to the following hypothesis.

H8: Perceived behavioral control positively affects behavioral intention.

2.6 Types of School

Academic dishonesty is an increasing problem among public and private universities (Cheung et al., 2016; Amazalag et al., 2022). Emerging literature showed how the type of school (i.e., public or private) affects moral obligation, attitude towards cheating, subjective norm, and perceived behavioral control to behavioral intention. For instance, Maeda (2019) claimed that private schools implemented stricter rules than public schools during tests or exams. It suggests that moderation exists between the association of moral obligation and behavioral intention. Moreover, the study by Catacutan (2019) emphasized that in private universities, students perceived cheating on a test or an exam as serious. Thus, moderating between attitude and behavioral intention exists.

Additionally, Ghanem and Mozahem (2019) reported a case in a private university where most students intended to cheat because their peers influenced them. Furthermore, Dejene (2021) revealed that public and private school students reported a similar level of engagement in academic cheating. It implies their perceptions of how easy or difficult it is to act the behavior involving behavioral control. With the discussions presented, here are the proposed hypotheses.

H9a: Types of school moderates the relationship between moral obligation and behavioral intention.

H9b: Types of school moderates the relationship between attitude towards cheating and behavioral intention.

H9c: Types of school moderates the relationship between subjective norm and behavioral intention.

H9d: Types of school moderates the relationship between perceived behavioral control and behavioral intention.

2.7 Behavioral Intention

The intention of cheating is not coincidental nor accidental, for it is one's free will to do so. This variable is the immediate antecedent and a motivational component of actual behavior (Ajzen, 1991). Like any other behavior, an individual can predict academic cheating by determining their behavioral intention and purpose. All latent variables of the proposed model significantly affected behavioral intention and influenced the actual behavior. Thus, the likelihood of performing the behavior increases the strength of intention (Imran & Nordin, 2013).

3. Methods

This quantitative study uses an online survey questionnaire as the main instrument for data collection. This section comprised of the following: (1) the demographic characteristics of the participants, (2) instruments along with Cronbach's alpha for each construct, and (3) the data analysis in which the researchers utilized Structural Equation Modeling (SEM).

3.1 Participants. A total of 1,248 students from Regions 6,7, and 8 in the Philippines participated in the study. In the data quality audit, we excluded 76 responses due to duplication, missing data, and failure to hold the sincerity test. Thus, there were 1,172 total number respondents included in the analysis. Table 1 presents the demography of the final participants.

Table 1. Demographic Characteristics of the Participants n = 1,172

Category	n	%
Gender		
Male	432	37.6
Female	716	62.4
Year Level		
First Year	257	22.4
Second Year	343	29.9
Third Year	525	45.7
Fourth Year	18	1.6
Fifth Year	5	0.4
Types of School		
Public	711	60.7
Private	461	39.3

3.2 *Instrument.* The questionnaire has two parts. The researcher created the first part to gather the student-participants demographic information (name/nickname, sex, age, course and specialization, school, and year level). In contrast, the second part of the questionnaire was the indicators of the constructs presented in the study. The measurement tool for each indicator is in the form of a 5-point Likert scale, which is phrased according to "1 = strongly agree", "2 = agree", "3 = neutral", "4 = disagree", and "5 = strongly disagree". Table 2 presents the instruments, references, and Cronbach's alpha for every construct.

3.2.1. Self-Efficacy. Developed based on Farnese et al. (2011), the self-efficacy of the students is measured by the following items: "I will finish my assignment by copying my classmate's work." "I used the Internet to search for my assignment." "I searched the Internet for answers during our online quiz." "I can provide an alternative solution to find the correct answer if we have an online assignment." "I can always cheat during our tests/exams in this online learning." "I will not answer about my school activities alone; instead, I will ask my classmates/friends." On a five-point Likert scale, responses ranged from "strongly agree" (1) to "strongly disagree" (5). The scale's Cronbach's alpha was 0.757.

3.2.2. Moral obligation. Developed based on Simon et al. (1996) and Doll & Torkzadeh (1988), the moral obligation of the students is measured using the following items: "I would feel guilty if I cheated during our online quiz." "I would not feel guilty if I cheated during our online quiz." "Cheating on a test, especially in this online learning, goes against my principle." "I would feel guilty if I sent my answers to my classmates to finish our assignment." "It is morally wrong to cheat on a test or exam, especially in this online learning. On a five-point Likert scale, responses ranged from "strongly agree" (1) to "strongly disagree" (5). The scale's Cronbach's alpha was 0.708.

3.2.3. Attitude Towards Cheating (ATC). Developed based on Beck and Ajzen (1991), Alleyne & Phillips (2011) and Stone et al. (2010) the attitude towards cheating of the students is measured using the following items: "Reporting students who cheated is a must." "It is never right to cheat." "Habitual cheating in schoolwork, especially in this online learning context, will also lead to cheating in future jobs." "It is necessary to report students' academic dishonesty." "Students must report the cheating incidence to uphold fairness." On a five-point Likert scale, responses ranged from "strongly agree" (1) to "strongly disagree" (5). The scale's Cronbach's alpha was 0.806.

3.2.4. Subjective Norms. Developed based on Alleyne & Phillips (2011); Stone et al. (2009) the subjective norm is measured using the following items: "If I cheated on a test, especially in this online learning, the most influential people of mine would not care." "If I cheated on a test, especially in this online learning, the most influential people of mine would care." "If I cheated on a test, especially in this online learning, the most influential people of me would approve of my action." "Most people who are important to me would favor it if I cheated during our online quiz/test." On a five-point Likert scale, responses ranged from "strongly agree" (1) to "strongly disagree" (5). The scale's Cronbach's alpha was 0.706.

3.2.5. Perceived Behavioral Control (PBC). Developed based on Beck & Ajzen (1991), the students' perceived behavioral control is measured using the following items: "For me, cheating on an exam/test in this online learning is very easy." "Once I have an assignment given by the teacher, I easily cheat." "Cheating, for me, in this online learning, is entirely within my control." "If someone knows I am attempting to cheat, I can easily manage my actions." On a five-point Likert scale, responses ranged from "strongly agree" (1) to "strongly disagree" (5). The scale's Cronbach's alpha was 0.825.

3.2.6. Behavioral Intention. Developed based on Stone et al. (2010); Chudzicka-Czupala et al. (2016) the students' behavioral intention is measured by the following items: "If I had a chance, I would cheat on a test or exam." "I intend to search on the Internet if I have an online quiz/test." "I am letting my classmates copy my work by sending it to our group chats before submitting it." "I intend to contact my classmates to ask for some answers during the online quiz/test." "I intend to collaborate with my friends regarding the assignment, so I can finish it earlier." "I intend to copy my classmate's work so I can finish it immediately." "I might try to cheat in an exam or test." On a five-point Likert scale, responses ranged from "strongly agree" (1) to "strongly disagree" (5). The scale's Cronbach's alpha was 0.709.

3.3. Data Analysis

Before starting the data analysis, the researchers performed tests to ensure the instruments' reliability and discriminant validity. First, the researchers computed Cronbach's Alpha for every construct using the SPSS version 21.0. Then, through confirmatory factor analysis (CFA), we examine each multi-item scale's convergent validity by specifying a single-factor model for each construct. After testing every factor, all factor models were included in a final model to examine the joint reliability and validity of measurement items.

4. Results

The TPB research model and its hypothesized relationships are empirically tested using the structural equation modeling (SEM) approach to delineate factors affecting students' perceptions of academic cheating. This study can be done by doing some tests: (1) preliminary analysis of each construct, (2) testing the confirmatory factor analysis (CFA) through AMOS 21.0 software, and (3) presenting the final model of the study, which is shown in Figure 2.

4.1 Preliminary Analysis. The preliminary analysis is about finding the internal reliability indices of each construct using Cronbach's alpha of the original survey items. Reflected in the instruments are the indices ranging from 0.706 to 0.825. All indices showed good evaluation. The next part of the analysis involves visualizing multicollinearity and discriminant validity using the correlation matrix as showed in Table 3.

Intercorrelations among the constructs ranged from –0.158 to 0.379. The results show good discriminant validity because the study variables' correlation indices are less than 0.90 (Hair et al., 2014). All correlation coefficients were significant at 0.01 (**) alpha levels. SE and BI (0.379) were the strongest positive correlations, while SE and

MO (–0.158) were the strongest negative correlations. We also found moderate positive correlations ranging from 0.284 to 0.053. All other coefficients have low correlations ranging from –0.110 to –0.019.

Table 3. Zero-order correlations and descriptive statistics of the study variables

Study Variables	1	2	3	4	5	6
SE	1.00					
MO	.053*	1.00				
ATC	–.158**	.151**	1.00			
SN	–.110**	.201**	.093**	1.00		
PBC	.131**	–.054	.238	–.019*	1.00	
BI	.379**	–.084	.284**	–.073*	.363**	1.00
Mean ($\bar{x}$)	3.34	3.00	2.35	3.59	3.24	2.69
Standard Deviation (s)	0.76	0.66	0.73	0.90	0.89	0.88

*Correlation is significant at **ρ 0.01; SE – self-efficacy, MO – moral obligation, ATC – attitude towards cheating, SN – subjective norms, PBC – perceived behavioral control, BI – behavioral intention*

4.2. Testing the Model by CFA. We tested the model using CFA. The fit indices that we applied to determine the model strength were: the chi-square test ($\chi 2$), standardized root mean square residual (SRMR), root mean square error of approximation (RMSEA), comparative fit index (CFI), and the Tucker-Lewis index (TLI). The following cut-off scores were implemented to provide a good measurement model (Hu & Bentler, 1999; Hair et al., 2014): RMSEA should be ≤ 0.060, SRMR should be ≤ 0.080, CFI should be ≥ 0.900, and TLI must be ≥ 0.900. In addition, the average variance extracted (AVE) estimates must be with values greater than 0.50 (Fornell & Larcker, 1981). Table 4 shows the standardized loadings, composite reliability (CR), average variance extracted (AVE), and Cronbach's alpha of the final model.

Convergent validity must be done in two ways: (1) the factor loadings must be higher than 0.5 (Hair et al., 2014), and (2) the AVE for every factor must be greater than 0.5 (Fornell & Larcker, 1981). Hence, Table 4 shows that all factor loadings, which range from 0.649 to 0.958, were acceptable and reported to have an excellent evaluation. No issues were found in the composite reliability (CR), as all the indices met the required value greater than 0.7 (Hair et al., 2014). In addition, Cronbach's alpha for every latent variable substantially meets the recommended level (Pallant, 2007). The overall measurements model shows an excellent fit measure of the RMSEA (0.030), SRMR (0.026), CFI (0.987), and TLI (0.984).

4.3. Exploring the Relationship between the Latent Variables for SEM. The researcher conducted the correlational analysis through the Pearson correlation coefficient to support the path analysis of the SEM. This study followed the r-value guidelines (Schober et al., 2018): 0.00–0.09, "negligible correlation;" 0.10–0.39, "weak

correlation;" 0.40–0.69, "moderate correlation;" 0.70–0.89, "strong correlation;" and 0.90–1.00, "very strong correlation." Table 5 reflects the correlation matrix among the constructs included in the CFA.

Table 4. CFA Results

Construct	Items	Standardized loadings	CR	AVE	α
Self-Efficacy	SE4	0.675	0.891	0.673	0.887
	SE3	0.810			
	SE2	0.914			
	SE1	0.864			
Moral Obligation	MO5	0.751	0.839	0.635	0.836
	MO3	0.787			
	MO1	0.850			
Attitude Towards Cheating	ATT5	0.790	0.825	0.615	0.817
	ATT4	0.895			
	ATT1	0.649			
Subjective Norm	SN4	0.674	0.902	0.758	0.888
	SN3	0.958			
	SN2	0.949			
Perceived Behavioral Control	PBC3	0.799	0.838	0.634	0.838
	PBC2	0.791			
	PBC1	0.798			
Behavioral Intention	BI5	0.794	0.926	0.714	0.925
	BI4	0.902			
	BI3	0.834			
	BI2	0.824			
	BI1	0.866			

Table 5. Correlation Results among the constructs in CFA

Study Variables	1	2	3	4	5	6
SE	1.00					
MO	–0.117**	1.00				
ATC	–0.255**	0.145*	1.00			
SN	–0.124**	0.183*	0.258**	1.00		
PBC	0.156**	–0.198**	–0.049	0.089	1.00	
BI	0.459**	–0.188**	0.401*	–0.096	.417**	1.00

*Correlation is significant at **ρ < 0.01; SE – self-efficacy, MO – moral obligation, ATC – attitude towards cheating, SN – subjective norms, PBC – perceived behavioral control, BI – behavioral intention*

Table 5 presents the correlation matrix among the variables in CFA. It shows that the correlation between SE and MO is significant and weak (r = –0.113, ρ < 0.01), SE and MO is significant and weak (r = –0.255, ρ < 0.01), SE and PBC (r = 0.156, ρ <

0.01), SE and BI is significant and moderate (r = 0.459, ρ < 0.01), MO and PBC is significant and weak (r = –0.198, ρ < 0.01), MO and BI is significant and weak (r = –0.188, ρ < 0.01), ATC and BI is significant and moderate (r = 0.401, ρ < 0.05), ATC and SN is significant and weak (r = 0.258, ρ < 0.01), and PBC and BI is significant and moderate (r = 0.417, ρ < 0.01). Notably, all negligible correlations are not significant. There are five weak-negative, four weak-positive, and three moderate-positive correlations. As expected, the correlation between these latent variables was higher than the zero-order correlation, as reflected in the preliminary analysis.

4.4 SEM. The relationship among the constructs is empirically tested using SEM and is reflected in Table 6, its standardized regression weights. We applied the fit indices to determine the model strength: the CMIN, chi/df, TLI, CFI, and RMSEA. All of the fit measures of the final model were acceptable (CMIN = 504.928, chi/df = 2.790, TLI = 0.974, and CFI = 0.978). The RMSEA of 0.039 shows an excellent fit between the hypothesized and observed data (Hu & Bentler, 1999). In the final model, the relationship among variables was tested by connecting the exogenous variable (SE) to the mediating variables (MO, ATC, SN, and PBC) and the endogenous variable (BI). Thus, Figure 2 displays the final model of the study.

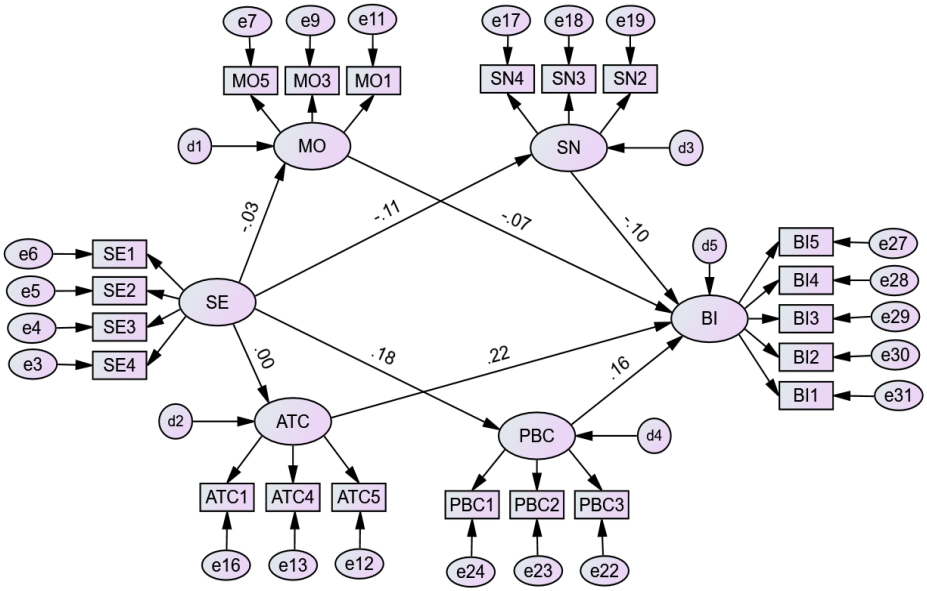


Figure 2. The Final Study

Table 6. SEM Results

Hypothesis	Path	β	SE.	CR.	Label
H1	SE → MO	–0.029^{ns}	0.034	–0.837	Not supported
H2	SE → ATC	0.002^{ns}	0.031	0.057	Not supported
H3	SE → SN	–0.112***	0.033	–3.419	Supported
H4	SE → PBC	0.204***	0.039	5.277	Supported
H5	MO → BI	–0.076*	0.036	–2.134	Supported
H6	ATC → BI	0.272***	0.040	6.883	Supported
H7	SN → BI	–0.107**	0.034	–3.170	Supported
H8	PBC → BI	0.157**	0.033	4.831	Supported

Table 6 shows that all hypothesized relationships except H1 and H2 in the proposed model do not denote significant predictors in the specified path model. Notably, H1, "Self-efficacy positively affects moral obligation," and H2 "Self-efficacy positively affects attitude towards cheating," failed to get substantial results, resulting in non-significant. The above results indicate that SE negatively and significantly affected SN ($\beta = –0.112$; $\varrho < 0.001$) and SE positively and significantly affected PBC ($\beta = 0.204$; $\rho < 0.001$). In addition, MO negatively and significantly affected BI ($\beta = –0.076$; $\rho < 0.05$), ATC positively and significantly affected BI ($\beta = 0.272$; $\rho < 0.001$), SN negatively and significantly affected BI ($\beta = –0.107$; $\rho < 0.01$) and PBC positively and significantly affected to BI ($\beta = 0.157$; $\rho < 0.01$).

4.5 Analysis of Moderating Effects. This study aims to investigate whether the multigroup variable, types of school (i.e., public or private), moderates the relationship of the TPB's latent variables to behavioral intention. The researcher divides the group comparison into public (N = 711) and private (N = 461). Moderating effects were analyzed using multigroup analyses in AMOS version 21, where each moderation was divided into two groups and analyzed using critical ratios (Byrne, 2010). Table 8 shows the comparison of the multigroup variable together with the z-scores.

Table 7. Effects of Moderating Variables

Types of School	Public Estimates	Private Estimates	z-scores
MO → BI	–0.052	–0.109	–0.798
ATC → BI	0.309***	0.202***	–1.734
SN → BI	–0.118*	–0.084	0.509
PBC → BI	0.158***	0.157**	–0.016*

$^{***}\rho < 0.001$, $^{**}\rho < 0.01$, $^{*}\rho < 0.05$, MO – moral obligation, ATC – attitude towards cheating, SN – subjective norms, PBC – perceived behavioral control, BI – behavioral intention

As shown in Table 7, the moral obligation, attitude towards cheating, and subjective norm were not moderated by types of schools in the context of behavioral intention on academic misconduct. Although not moderated by the type of schools as a multigroup variable, the result reveals that the association of attitude towards cheating

and behavioral intention is positively significant for both students in public and private schools in developing economies. The path from perceived behavioral control and behavioral intention displays a moderate effect among the hypothesized differences. This effect is significant for public and private institutions, indicating that students in public schools were more likely to perform their behavioral control than in private ones.

5. Discussion

Using the SEM, the proposed model involving the latent variables: self-efficacy, moral obligation, attitude towards cheating, subjective norm, perceived behavioral control, and behavioral intention is valid and acceptable. All fit measures met the required threshold values used by SEM researchers (Hair et al., 2014; Hu & Bentler, 1999; Pallant, 2007). SEM results show that self-efficacy negatively impacts subjective norms (H3). This finding was supported by the study of Fu and Tremayne (2022), indicating that students with low self-efficacy will not cheat, especially when they want to learn on their own to achieve that goal. In addition, self-efficacy positively affected perceived behavioral control. Therefore, our H4 is supported. This finding affirmed our hypothesis, as Onu et al. (2021) reported.

Moreover, moral obligation negatively impacts behavioral intention. The finding of this study was supported by Cronan et al. (2018). This implies that when the action goes against one's feeling of moral obligation, an individual has a lower intention to perform the specific behavior. Thus, our fifth hypothesis (H5) of this study was confirmed. Similarly, attitude towards cheating affects behavioral intention (H6). The findings of this study are similar to the other scholars who utilized TPB (AL-Dossary, 2017; Yusliza et al., 2020; Juan et al., 2022). It indicates that students had a highly favorable attitude toward performing the behavior without knowing the consequences that may happen (Amida et al., 2022).

Furthermore, subjective norm negatively affects behavioral intention. Our seventh hypothesis in the proposed model was verified. The present result contradicts some TPB studies (Cronan et al., 2018; Yusliza et al., 2020) showing a positive relationship; however, the study of Sharma et al. (2022) affirmed our hypothesis reported to have a negative association between the influence of others to behavioral intention. Also, perceived behavioral control positively and significantly affects behavioral intention (H8). The finding of this study was supported by Lonsdale (2017) and Juan et al. (2022), which demonstrates that students who considered themselves to have more control (effectiveness or perceived ease) regarding academic cheating were more likely to perform their behavioral intention.

Additionally, this study further investigated whether types of school (i.e., public or private) moderate the association of moral obligation, attitude towards the cheating, subjective norm, and perceived behavioral control for behavioral intention. The result shows that the types of schools moderated the association of perceived behavioral control and behavioral intention. These findings imply that students from a public school or university tend to lose their behavioral control to engage in the actual behavior of cheating compared to private school students. These findings add to the body of literature, specifically in the case of developing countries where academic cheating is still a rampant and heated issue.

6. Implication

The findings of this study showed several implications. First, the TPB model clearly explains the students' academic misconduct. The results provide empirical support to work which found that this theory effectively predicts and explains the students' academic cheating. All of its latent variables significantly predicted behavioral intention. Similarly, the addition of the antecedent variable, self-efficacy, could be a significant factor in predicting students' academic misconduct. Thus, this will induce discussions in the case of developing economies that were less prepared for the sudden transition of modes of teaching (Batucan et al., 2022).

Second, the student's attitude towards cheating directly explains the behavioral intention to perform that behavior. Students' attitudes toward academically dishonest behaviors were reported to be an essential variable of intention. This supports the findings that students with highly favorable attitudes toward engaging in academic misconduct are more likely to intentionally perform the behavior without minding the threats or possible consequences that may happen (Curtis and Tindall, 2022). In addition, Farooq and Sultana (2022) also noted that individuals with a firm intention to plagiarize are more likely to have a positive attitude toward plagiarism. Higher education institutions must know the underlying factors contributing to students' academic misconduct. Therefore, it seems essential to conduct educational interventions to prevent and decrease cheating behavior in educational settings.

Lastly, types of schools moderate the association between perceived control and behavioral intentions to cheat. The student's behavioral control to engage in a specific behavior, how easy or difficult it is, posed different effects in a public or a private school. Thus, future research must be further investigated primarily on the multigroup techniques to determine the quantitative variables that will explain its differences.

7. Conclusion

This paper validated the theory of planned behavior (TPB) with the addition of an antecedent variable, self-efficacy, to explain academic misconduct among college students, especially in the case of a developing economy. In addition, the moderating effect of types of schools (i.e., public and private) is further investigated because students in public or private schools perform the actual behavior intentionally. The proposed model generates eight (8) hypotheses, and six (6) were supported based on the results. The following significant findings were obtained from the analysis:

1. Attitude towards cheating positively and significantly affects behavioral intentions ($\beta = 0.272$, $\rho < 0.001$).

2. Self-efficacy is positively and significantly affected by perceived behavioral control ($\beta = 0.204$, $\rho < 0.001$).

3. Perceived behavioral control positively and significantly affects behavioral intention ($\beta = 0.157$, $\rho < 0.001$).

4. Types of school moderate the association between perceived behavioral control and behavioral intention.

To summarize, educators must become more technologically savvy to develop alternative means of assessment for online classes to lessen students' attitudes toward

engaging in unethical behavior. They must employ more complex and innovative techniques in aiming to mitigate cheating. Hence, this model will guide future researchers in developing countries like the Philippines in explaining academic misconduct. Adding another antecedent variable, such as moral norms, is recommended to demonstrate students' engagement with cheating. Teachers' pedagogical skills must include moral orientation to remind learners of their moral obligation toward genuine learning.

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