Investigación empírica y análisis teórico

Do the Theory of Planned Behavior, and Perceived Cheating predict academic dishonesty?

¿La Teoría del Comportamiento Planeado y la prevalencia percibida predicen la Deshonestidad Académica?

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Abstract:

Academic Dishonesty is associated with general corruption, workplace dishonest actions, and a bad reputation for schools. However, few articles have studied the role of perceived cheating prevalence. Therefore, using the Theory of Planned Behavior and Perceived cheating prevalence, this paper proposes a structural equation model to explain academically dishonest actions. Using questionnaires, the following variables were measured: perceived cheating prevalence, self-reported cheating, and the TPB variables (intention, attitudes, subjective norms, perceived behavioral control, & moral obligation). Results show the TPB's attitudes and moral obligation as significant predictors of academic dishonesty, and perceived prevalence being an important mediator. These results show that perceived prevalence, attitudes, moral obligation should be included in future interventions aimed at reducing cheating behaviors.

Resumen:

La deshonestidad académica se asocia con corrupción general, acciones laborales deshonestas, y la mala reputación escolar. Sin embargo, pocos artículos han estudiado el rol de la prevalencia percibida de la trampa escolar. Por lo tanto, utilizando la Teoría del Comportamiento Planeado, y la prevalencia percibida, este artículo propone un modelo de ecuaciones estructurales para explicar las acciones de deshonestidad académica. Por medio de cuestionarios se midieron las siguientes variables: Prevalencia percibida de la trampa escolar, deshonestidad académica auto reportada, y las variables del TCP (intención, actitudes, norma subjetiva, control conductual percibido, y obligación moral). Los resultados muestran que las actitudes y la obligación moral de la TCP son predictores significativos de la deshonestidad académica, mientras que la prevalencia percibida es un mediador relevante. Estos resultados muestran que la prevalencia percibida, las actitudes, y obligación moral deberían de incluirse en las intervenciones futuras que busquen reducir la deshonestidad académica.

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Academic dishonesty (AD), also known as cheating, is present around the world with many academic institutions reporting that over 50% of their students have cheated during their academic careers (Díaz Castellanos et al., 2015; Passow et al., 2006; Reskala, 2022; Yardley et al., 2009) for different reasons (Amigud & Lancaster, 2019). Also, Academic Dishonesty is a relevant problem because it has been associated with general corruption (Magnus et al., 2002; Ayala Gaytán & Quintanilla Domínguez; 2014), dishonest actions at the workplace (Graves, 2008; Nonis & Owens, 2001), a bad reputation for academic institutions (Sattler et al., 2013 ; Wei et al., 2014), and a worse learning experience for students in general (Macfarlane et al., 2012; Meng et al., 2014). For these reasons, several projects have researched academic dishonesty in order to identify the factors that promote cheating among students and institutions (ex.: Lee et al., 2020). This has led to many models being used to improve academic dishonesty research including achievement goal theory (Tas & Tekkaya, 2010), academic motivation model (Friedman et al., 2016), Bandura's Moral disengagement theory (Diez-Martínez, 2015), among many others.

However, one model that has been consistently used to research academic dishonesty is the Theory of Planned Behavior (Beck and Ajzen, 1991). The Theory of Planned Behavior (TPB) is comprised of several components including: Attitudes, Subjective Norms, Perceived Behavioral Control, Moral Obligation and Intentions. Attitudes refer to the degree to which the participant has a favorable or unfavorable view of the behavior in question. For example, in a TPB based academic dishonesty questionnaire, attitude items would ask participants if they view cheating as pleasant or unpleasant, useful or useless,

and beneficial or detrimental to themselves.

Subjective norms are the degree in which a participant believes a behavior would be seen as appropriate or inappropriate by "important people" for him/her. In particular, academic dishonesty subjective norms items ask about how does the participant thinks that "important persons", such as teachers or family members, would react if he/she cheated. Perceived behavioral control refers to the participant's perceived difficulty on performing a behavior. Specifically, the perceived behavioral control items for academic dishonesty ask the participant if he/she could easily perform the cheating behavior, if he/she would be willing to cheat, and if he/she would avoid doing the dishonest behavior. Moral Obligation questions reflect if the behavior is compatible/incompatible with the person's values and principles. In particular, Moral obligations cheating items estimate the participant's emotions of guilt, reluctance or responsibility if he/she decided to engage in academically dishonest behaviors. Finally, Intention is the immediate antecedent of actual behavior and suggests how committed a person is to perform a given behavior. For instance, academic dishonesty Intention items ask how willing the participant is to cheat when the opportunity arises (Beck & Ajzen, 1991; Chudzicka-Czupala et al., 2015, Mayhew et al., 2009).

The TPB model has been used in different studies to better analyze and explain Academically Dishonest behaviors. For example, Beck and Ajzen (1991) successfully predicted intentions to cheat and self-reported cheating behavior using the attitudes, subjective norms, perceived behavioral control, and moral obligation from the TPB model in two separate surveys six months apart. In their results the authors explain that over 47% of the participants had cheated in the last six

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months, and this cheating experience helped students to better identify when there are less chances of being caught while cheating. Also, this past cheating experience influenced how participants perceived their chances to cheat successfully; measured by the TPB's perceived behavioral control items. More recently, Alleyne and Phillips (2011) used the TPB to predict academic dishonesty and found that attitudes, perceived behavioral control, and moral obligation were significant predictors of the students' intentions to cheat. For this reason, the authors mention that the TPB model could be used reliably to predict cheating. Also, Yang (2012) used the TPB model in a longitudinal design of 205 Chinese business students that seek to explain the Chinese student's decision to cheat. Yang (2012) found that the TPB is useful in explaining Chinese business students' cheating behavior. More specifically, the TPB's intention component was the most effective predictor of cheating, with the attitude and subjective norms components influencing the cheating behavior through the effects of intention. Similarly, Chudzicka-Czupala et al. (2015) examined different TPB's based models and compared the TPB's explanatory power across seven countries. Specifically, they estimated how the TPB's variables predicted the intentions to cheat, and they found that Moral obligation and Subjective norms were the strongest predictors of behavioral intentions. In short, these studies show the TPB can explain, and possibly predict, academically dishonest behaviors.

However, even though the TPB's attitudes, subjective norms, perceived behavioral control, moral obligation, and intentions can successfully explain dishonest behaviors in the academia, many researchers have added different variables in order to increase the TPB's explanatory power. For example,

Stone et al. (2009) added a variable to the TPB called "Justification" which used a Likert scale to ask students what was the main reason they would consider for executing cheating behaviors. More specifically, Stone et al. (2009) used the TPB's attitudes, subjective norms, and perceived behavioral control to predict the cheating intentions and justifications, and then used cheating intentions and justifications to explain the self-reported dishonest behavior of 271 participants from a mid-western public university in the USA. Results show that some of the reasons to cheat are "to help a friend", "time pressure" and "peer pressure". Also, results show that attitudes, subjective norms, and perceived behavioral control allowed to explain the intention to cheat, and consequently the intention to cheat and the justifications could explain the student's self-reported cheating behaviors. For these reasons Stone et al. (2009) believe that their results show that the TPB model can be used as a basis for predicting academic dishonesty, and that adding a variable could improve the prediction and explanation capabilities of the TPB. In another study that added variables to the TPB, Mayhew et al. (2009) included the variables of moral reasoning and high school cheating to the TPB model. In their study Mayhew et al. (2009) separated the participants in two groups according to Kohlberg's theory of moral reasoning. On the first group there were students with a transitional moral reasoning, while on the second group there were students with consolidated moral reasoning. However, the stage of the participant's moral reasoning (transitional or consolidated) did not improve significantly the TPB's explaining power for academically dishonest behaviors, but the authors found that high school cheating was highly predictive of college cheating.

More recently, Lonsdale (2017) added

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the Behavioral approach, behavioral inhibition, and need for achievement variables to the TPB model. Lonsdale (2017) also asked separately for the attitudes towards cheating of participant's friends and parents. The author found that the TPB model with the added variables is a viable model for predicting cheating intentions with the friend's attitudes as the one of the best predictors, but more importantly he also found that the added variable "need for achievement" increased the prediction capabilities of the TPB in a significant manner. Additionally, Al-Dossary (2017) and Cronan, et al., (2018) added the past behavior variable to the TPB model in order to increase its explanatory power. Al-Dossary (2017) found that adding the influence of cheating in high school to the TPB enhanced the its's predictive capabilities for dishonest actions in college, and similarly Cronan et al. (2018), found that Moral Obligation and past cheating behavior heavily influenced the intention to commit academically dishonest actions. Likewise, Curtis, et al. (2018) modified the TPB model in two studies in order to better predict the students' intentions to plagiarize. More specifically, subjective norms were divided in descriptive and injunctive norms, while the variable of self-control was added to the model. Attitudes and perceived behavioral control measures remained similar to past studies. The results show that the components of the TPB model along with the new self-control variable were able to predict the participant's intentions to plagiarize.

Overall, the revised studies show that different authors have added several variables to the TPB model with positive results, but one important variable that has been rarely added to the TPB model is Perceived prevalence of academic dishonesty. More specifically, perceived prevalence refers to how much does the participant perceives that his/her peers are cheating and, unsurprisingly, these perceptions can influence the student's cheating behavior and intentions (Hendy & Montargot, 2019).

In particular, O'Rourke et al. (2010) proposed that directly knowing that their peers were engaging in Academic dishonesty could influence students to cheat because dishonest behaviors seem more acceptable, and therefore would make it easier for students to accept cheating actions. As anticipated, their results indicated that cheating behavior was affected by knowing directly if their peers were cheating, but they also found direct knowledge of academically dishonest actions had a much bigger impact on the behavior of someone who had a positive view of dishonest actions. Similarly, McCabe et al. (2012) mentioned peer behavior as one of the key factors for explaining student's cheating. For example, when peers are seen cheating, these cheating actions will be viewed as an acceptable way of behaving. Also, because students see their peers getting better grades by cheating this can also create competitive pressure in which students may feel compelled to do the same. Additionally, Kam et al. (2018) reported very similar findings. They examined academic dishonesty among secondary school students in Hong Kong using the TPB model and they found that positive attitudes, perceived behavioral control, and moral obligation significantly and positively predict the intention to cheat. However, Kam et al. (2018) also found that subjective norms moderate the relationship between intention and self-reporting cheating behaviors. This means that students intentions and behaviors were influenced by the perceived norms of their social groups, meaning if a student perceives that the norm in his/her social group is to cheat, he/she is more likely to do so. Overall, these studies show that the perceived preva-

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lence can be an important influence in the student's intentions and cheating behavior.

Furthermore, there are other studies that have arrived to similar conclusions about perceived prevalence by including similar variables to perceived prevalence into the TPB model. One of these studies is Rajah-Kanagasabai & Roberts (2015) research. In their research the authors examined how justifications and descriptive norms could augment the TPB's predictive capabilities. In Rajah-Kanagasabai and Roberts (2015) study, justifications were considered as acts to reduce cognitive dissonance through devaluating the importance of the dissonance while descriptive norms represent the individual's perception of other people's behavior. Based on this definition of descriptive norms they can be considered very similar to the perceived prevalence reported in other studies. In their results, Rajah-Kanagasabai and Roberts (2015) explain that descriptive norms, attitudes, subjective norms, and perceived behavioral control have an effect in justifications which in turn affects the intention to cheat, and intention influences self-reported academically dishonest behaviors. Rajah-Kanagasabai and Roberts (2015) mention that the results show the usefulness of the TPB in order to predict research misconduct, questionable research practices, and show that the additions of justification and descriptive norms increased the TPB's predictive capabilities. Finally, Maloshonok and Shmeleva (2019) research which took place in eight Russian universities and aimed to identify the most relevant factors that influence the student's decisions to cheat. Maloshonok and Shmeleva (2019) used a structural equation model including attitudes, subjective norms, and perceived behavioral control, in order to better explain academically dishonest behaviors such as plagiarizing, allowing someone

to copy your answers, and using crib sheets. The authors' results show that positive attitudes and negative subjective norms towards academically dishonest behaviors significantly contribute to the student engaging in cheating practices. Also, Maloshonok and Shmeleva (2019) state that subjective norms outperform the effects of attitudes, which the authors argue means that Russian students are influenced by the perception of what their peers are doing and what they think about cheating.

So, these few studies provide some evidence that perceived prevalence can be a relevant variable to add to the TPB model which could in turn in order to increase its predictive and explanatory capabilities. However, even though in past research the theory of Planned Behavior has accurately explained academic dishonesty intentions and actions, only a few studies have mentioned the role of perceived prevalence of peer cheating within a TPB framework. Therefore, this paper proposes a structural equation model using the Theory of Planned Behavior variables (Beck & Ajzen, 1991) and perceived prevalence of cheating among peers to better explain the prevalence of academic dishonesty in a sample of Mexican students.

Method

Research design was a transversal non-experimental correlational survey. This research design allows to test and quantify the correlation between the TPB variables, perceived cheating prevalence, and Academic Dishonesty.

Questionnaire

DA Frequency and Perceived Prevalence

All participants answered a seven-point Likert scale questionnaire measuring the estimated frequency of four academic dishonesty be-

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haviors during college. The academic dishonesty behaviors that were included are: 1. Using a cellphone to get the exam answers without the professor's authorization. 2. Copy someone else's sentences and presenting them as your own. 3. Studied of the copy of an exam that was obtained without the professor's authorization. 4. Copied the exam's answers from a peer. In addition to the items about the estimated frequency, in order to estimate the perceived prevalence of academic dishonesty participants also answered four Likert-scale items that measured during college how much they had seen their other students engage in the four cheating behaviors mentioned previously.

TPB's Attitudes, Subjective Norms, Perceived Behavioral Control, Moral Obligation & Intentions

Also, in the same questionnaire participants answered several 7-point Likert scale questions regarding the TPB variables which were based on the questionnaires by Beck and Ajzen (1991); and Chudzicka-Czupala et al. (2015). Regarding the reliability scores for these scales, it's worth pointing out that Beck and Ajzen's (1991) scale report Cronbach's alphas (α) ranging from .66 to .87 for the TPB components. Also, Beck and Ajzen (1991) report that 33% to 61% of the explained variance of the intention to cheat could be explained using the TPB's variables. Similarly, Chudzicka-Czupala et al. (2015) report Cronbach's alphas ranging from .72 to .90 for each of the TPB components, and they also report explained variances ranging from 28% to 71% for predicting cheating intentions.

More specifically, for the current study the TPB variables were attitudes, subjective norms, perceived behavioral control, moral obligation, and intentions. Attitudes were measured using five Likert-scale items which

asked if the participant believed if certain academically dishonest behavior was bad or good, unpleasant or pleasant, foolish or smart, useless or useful, detrimental or beneficial. Subjective norms items were measured using two Likert-scale items which asked about if important people for him/her would accept or reject if he/she performed the academically dishonest behavior and if they would agree or disagree to his/her actions. For perceived behavioral control participants were asked if they were able to perform the academically dishonest behavior and if they found this performance easy or hard. Moral obligation questions measured if the participant would have feelings of guilt when cheating, if they perceived the academically dishonest behaviors as an action that goes against their principles, and if they considered this dishonest behavior morally incorrect. Finally, Intention items asked if the participants measured if the participant might perform the academically dishonest behavior, how likely was that the participant performed the academic dishonesty actions, and if they would avoid carrying out the behavior.

The TPB questions for attitudes, subjective norm, perceived behavioral control, moral obligation, and intention were asked for each of the four academically dishonest behaviors. Therefore, for each one of the four academically dishonest behavior participants were asked about their attitudes using five items (20 attitude items in total for the four cheating behaviors), two subjective norms items (8 items in total), two perceived behavioral control items (8 questions in total), three moral obligation items (12 questions in total) and three intention items (12 items in total). As a result, the questionnaire had 60 items measuring TPB variables, plus four items measuring the self-reported prevalence of academic dishonesty behaviors, and four

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Table 1. *Number of items asking for perceived prevalence, self-reported cheating, and the TPB variables: Attitudes, Subjective Norms, Perceived Behavioral Control, Moral Obligations, and Intentions*

	Attitudes	Subjective Norms	Perceived Behavioral Control	Moral Obligations	Intentions	Perceived Prevalence	Self-Reported cheating
1. Using a cellphone to get the exam answers without the professor's authorization.	5 items	2 items	2 items	3 items	3 items	1 item	1 item
2. Copy someone else's sentences and presenting them as your own.	5 items	2 items	2 items	3 items	3 items	1 item	1 item
3. Studied of the copy of an exam that was obtained without the professor's authorization.	5 items	2 items	2 items	3 items	3 items	1 item	1 item
4. Copied the exam's answers from a peer.	5 items	2 items	2 items	3 items	3 items	1 item	1 item
Total	20 items	8 items	8 items	12 items	12 items	4 items	4 items

Note: 68 total items. (Original table)

items about the prevalence of cheating among their peers (68 total ítems). The questionnaire design can be seen more explicitly in Table 1.

Procedure & Sample

To take part in the study participants had to currently attend the Mexican public college and respond the questionnaire willingly. Participants from other colleges, and former students, were not considered. Sample for this study was a non-probabilistic accidental sample as participants were recruited trough social media posts on different Facebook groups from different careers from a Mexican public

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college. Social media posts were published two times a week (or at least once a week) from March 2018 to April 2018 on Facebook groups for 53 different careers including Accounting, Administration Architecture, Arts, Biology, Chemistry, Engineering, Law, Math, Medicine, Music, Physics, Psychology, Pedagogy, Social Sciences, Politics, etc. Groups to post were selected based on 1. If they mentioned being aimed at students from the Mexican public college, 2. If they had posts or interactions on the past month. 3. They allowed for research to be conducted. Most posts recruiting for participants were published from Monday to Friday to increase engagement. Still, some of the Facebook groups had rules about the number of posts, or on what day a post could be published. These rules did not affect recruitment significantly.

On the published posts on the Facebook groups the researcher explained the research topic, clarified that the questionnaire was anonymous, and shared a link to an online questionnaire using Google Forms. The translated into English Facebook post can be seen on the Appendix 1 of this article. As a result of this procedure 426 participants were recruited from 53 different careers on a Mexican public college with 63.1% of them being women and a mean age of 21.66 years (SD =3.8).

Data Analysis

SPSS v.25 and AMOS were used for all the reported analysis in this paper. Reliability for each variable of this questionnaire was estimated using Cronbach's Alpha with the following coefficients: Attitudes: .916; Subjective Norms: .813; Perceived Behavioral Control: .800; Moral Obligation: .912; Intentions: .896; Perceived Cheating Prevalence: .746; Self-reported cheating prevalence: .713.

Results

In Table 2 we see the prevalence of the 4 cheating behaviors researched in this study. In this table peer's perceived prevalence had a higher mean in comparison to the mean on self-reported cheating behavior. These differences are statistically significant for the four behaviors measured in this study. Similarly, percentages of perceived prevalence of dishonest behaviors were higher in comparison to self-reported dishonest behavior. This means students perceive their peers as more frequent cheaters in comparison to their own self-reported frequency of academically dishonest behaviors.

In Table 3 we see the correlation between the TPB's variables, self-reported Academic Dishonesty, and perceived prevalence of Academic Dishonesty among peers. All correlations between variables are significant and are in the expected direction. For example, Attitudes are positively correlated with subjective norms, perceived behavioral control, and intention; but negatively correlated with moral obligation. Similarly, the correlation between Intentions and self-reported Academic dishonesty is positive showing that intention to cheat could potentially predict self-reported cheating behaviors.

Still, the correlations between perceived Academic Dishonesty and the TPB variables are of special interest for this paper. For example, we can see a positive correlation between the Perceived Academic Dishonesty among peers, Self-Reported Academic Dishonesty, Intention to perform academic dishonesty actions, Attitudes, Subjective norms, and Perceived Behavioral Control. Additionally, the correlation between perceived prevalence and Moral obligation was negative meaning when perceived prevalence increased the feelings of Moral Obligation decreased.

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Table 2. Comparison between Self-reported and Perceived prevalence of Academic Dishonesty Behaviors

Behavior	Self-reported behavior			Perceived Prevalence			t (425)	p	Cohen's d
	% Done	Mean	SD	% Seen	Mean	SD			
1. Using a cellphone to get the exam answers without the professor's authorization	45.50%	1.78	1.10	85.40%	3.34	1.49	22.25	.000	1.19
2. Copy someone else's sentences and presenting them as your own.	45.10%	1.77	1.10	82.90%	3.15	1.55	18.82	.000	1.02
3. Studied of the copy of an exam that was obtained without the professor's authorization.	44.10%	1.92	1.30	56.30%	2.53	1.69	8.81	.000	.40
4. Copied the exam's answers from a peer	56.10%	2.01	1.19	88.00%	3.59	1.49	22.09	.000	1.17

Note: Academic dishonesty own behavior, perceived prevalence frequency, percentage, mean, and standard deviation. Responses were collected using a 1-7 Likert scale. (Original table).

Model Comparison

For the prediction of self-reported academic Dishonesty two SEM models were compared. First, the "original model" reported by Beck and Ajzen (1991, Figure 1) and used by many other researchers (e.g.: Chudzicka-Czupala et al., 2015), and second, the "modified model", which adds perceived prevalence as a mediator between intention and self-reported prevalence (Figure 2).

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Table 3. *Pearson Correlations between Theory of Planned Behavior Variables, self-reported and perceived peer prevalence of academic Dishonesty*

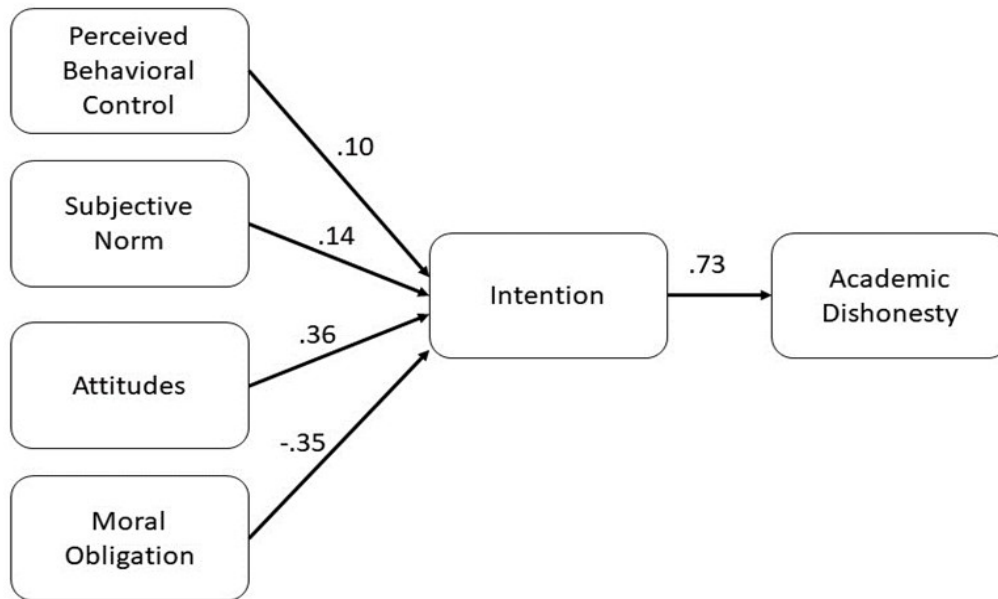|	1. Attitudes	2. Subjective Norms	3. Perceived Behavioral Control	4. Moral Obligation	5. Intention	6. Academic Dishonesty	7 Perceived AD Prevalence
1. Attitudes	-						
2. Subjective Norms	.524**	-					
3. Perceived Behavioral Control	.481**	.328**	-				
4. Moral Obligation	-.730**	-.548**	-.413**	-			
5. Intention	.733**	.551**	.459**	-.728**	-		
6. Academic	.560**	.431**	.397**	-.534**	.730**	-	
7. Perceived AD preva-	.187**	.250**	.224**	-.150**	.399**	.541**	-
Mean	2.39	2.78	3.20	5.68	2.74	1.87	3.15
SD	.94	1.17	1.21	1.17	1.20	.86	1.17

Note: Original table

The first SEM model has the same variables as Beck and Ajzen (1991) and is referred as the "original model" (Figure 1). In the original model all variables significantly contribute to predict the intention to cheat and the intention to cheat predicts the academic dishonesty self-reported behavior. More specifically the attitudes, moral obligation, subjective norm, and perceived behavioral control variables significantly predicted the intention to cheat, which in turn significantly predicted the self-reported Academic Dishonesty behaviors. Also, Figure 1 shows that Attitudes are the strongest predictor of the intention to cheat with a higher positive attitude towards cheating being associated with a higher intention to cheat. Likewise, we can see that Moral obligations predict the intentions to cheat with a higher Moral obligation predicting a lower intention to cheat.
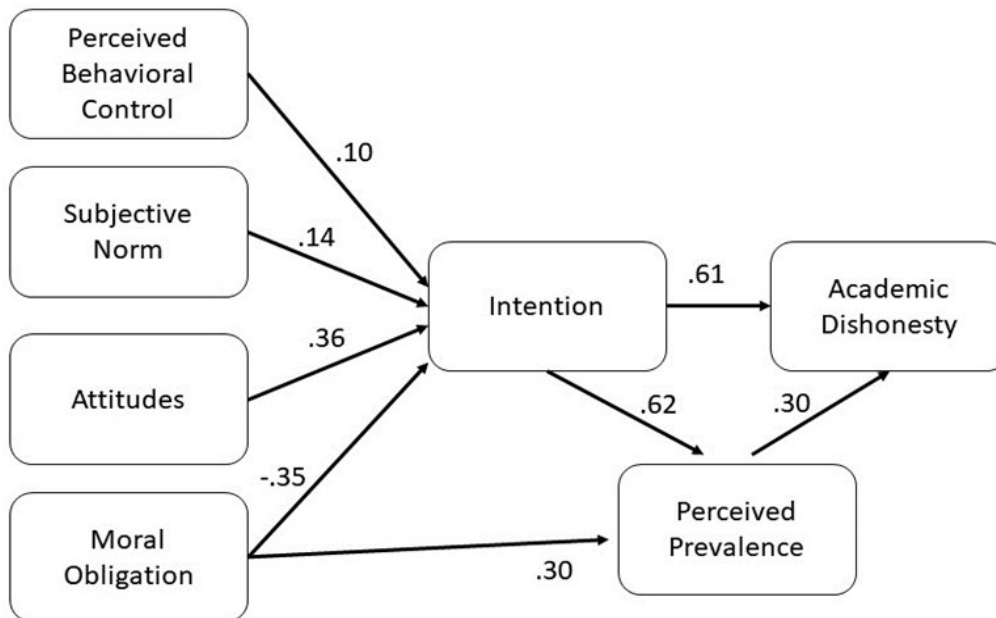
The second SEM model is similar to Beck and Ajzen (1991) model but it has the perceived prevalence variable as a mediator between the intention to cheat and self-reported Academic Dishonesty, and is referred as the "modified model" (Figure 2). In the modified model, and similar to the original model, all of the TPB variables predicted the intention to cheat, which again which again significantly predicted the self-reported academic

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Figure 1. Standardized Coefficients for the original model proposed by Beck and Ajzen (1991)

Note: Original figure

Figure 2.. Standardized coeffiecients for the modified model with perceived prevalence as a mediator

Note: Original figure

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dishonesty behaviors. Additionally, Perceived prevalence is significantly predicted by moral obligations.

Table 4 shows the fit indices comparison from both models. In this table we can see that both models have a good fit but the original model reported by Beck and Ajzen (1991) has a better fit in all indices. More specifically, the original model (Figure 1) reported by Beck and Ajzen (1991), has a CFI of .999, TLI: 995, and RMSEA of .033. Acceptable values for the CFI & TLI indices are above .90, while RMSEA acceptable values should be under .05 for a good fit, and under .08 for an acceptable fit (Collier, 2020) For the Akaike Information Criterion (AIC) criterion for this model is 1387.848, while the Bayesian Information Criterion (BIC) is 1412.174. The modified model (Figure 2) which has the perceived prevalence variable as a mediator between intention and self-reported prevalence has a good fit with a CFI of .989, TLI: 968, and a RMSEA .074. The AIC for the modified model is 1576.608 and the BIC is 1604.989. However, even though the modified model has a worst fit it has an explained variance of 61%, while the original model has an explained variance of 53%.

Discussion

This paper proposed a structural equation model using the Theory of Planned Behavior variables (Beck and Ajzen, 1991) and the perceived prevalence of cheating among peers in order to better explain the prevalence of academic dishonesty in a sample of Mexican students. The proposed model with perceived prevalence as a mediator is important for several reasons.

First, all of the TPB variables significantly predicted self-reported Academic Dishonesty, but with Perceived Prevalence as a mediator the explanatory power of the TPB model improved. This mediation goes in line with McCabe et al. (2012); and Kam et al. (2018) results in which they report that the ethical decision-making process is affected substantially by the perceptions of what peers do. Taking this into account, and based on McCabe's (2012) explanation, it's possible that when students are thinking about being dishonest, they will look at their peers, and if they see them cheating, these actions will be viewed as an acceptable way of behaving which in turn will increase their intentions to cheat. Similarly, Kam et al. (2018) found that the intention to cheat and

Table 4. *Fit indices comparison between the original and modified models*

	df	Chi.sq	CFI	TLI	RMSEA	AIC	BIC	Explained Variance
1.Original Model	4	5.839	.999	.995	.033	1387.848	1412.174	53%
2.Modified Model	7	23.306*	.989	.968	.074	1576.608	1604.989	61%

Note: Original table

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academically dishonest behaviors were influenced by their learning environment, and they mention that establishing a culture of zero tolerance is of a very high priority to reduce cheating. Similarly, Maloshonok and Shmeleva (2019); explain that the academically dishonest behaviors are influenced by the respondent's self-attitudes, and by how much the student perceives his/her peers are cheating. Finally, O'Rourke et al. (2010) results indicated that cheating behavior was affected by knowing directly if their peers were cheating, but they also found direct knowledge of academically dishonest actions had a much bigger impact on the behavior of someone who has a more positive view of dishonest actions. Therefore, it is very likely that in this paper's results perceived prevalence influenced the intentions to cheat and the self-reported cheating behavior. For example, it's possible that when a student has the intention to cheat, he/she looks at his/her peers and based on what he/she sees he/she will decide. If the student sees many other students being academically dishonest, this will increase the likelihood that he/she will be dishonest, but if he/she sees that no one is cheating he/she will be less inclined to cheat.

Second, perceived prevalence as a mediator on the model is a relevant addition because perceived prevalence can influence intentions to cheat and self-reported cheating behavior. Therefore, this mediation could be an important foundation for people planning interventions to reduce academic dishonesty. For example, many students perceive that cheating is more prevalent than it really is (Brimble, et al., 2005; Stone, et al., 2014) and the results of the t test show a similar trend (Table 2). For this reason, Mayhew et al. (2009) proposed that exposing students to actual statistics of the cheating prevalence could reduce the erroneous perception that

everyone is cheating, and therefore reduce their intention to cheat. This goes in line with Stone et al. (2014) results which show that participants usually report seeing other students cheat, but their self-reported cheating behavior was lower in comparison. Similarly, Cronan et al. (2018) proposed to influence the Moral Obligation and Attitudes by several interventions including exposing corporate and academic scandals, using role models to promote academic integrity, influencing students through their personal identities and group memberships, and having teacher-student open conversations about Academic dishonesty. Therefore, perceived prevalence should be taken into account when designing interventions that aim to reduce academic dishonesty because if students perceive that cheating is happening around them, regardless if this is true or not, they will be more likely to cheat. For this reason, perceived prevalence could be a key variable for future academic dishonesty interventions.

In short, that the perceived prevalence variable could add an important perception factor to the TPB, which could be relevant in different countries and cultures in which students frequently interact with their peers and therefore could be influenced by them. So, adding Perceived Prevalence as a mediator to the TPB model is considered an important recommendation for future studies and interventions that seek to curb cheating.

Furthermore, in the second model we can see that the variables of Moral Obligation and Perceived Prevalence have a positive association meaning that the student's moral beliefs could be influencing how students perceive the amount of cheating that is occurring around them. A similar relationship is mentioned by O'Rourke et al. (2010) results. In the O'Rourke et al. (2010) results

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the cheating behavior was affected by the direct knowledge of their peer's cheating, but they also found direct knowledge of cheating actions has a much bigger impact on the behavior of someone who has a more positive view of dishonest actions. Similarly, Sattler et al. (2013) explain that norms and morality are extremely important when explaining actions or intentions, including deviant behaviors such as academic dishonesty. About the positive relation between Moral Obligation and Perceived Cheating Prevalence, I propose two closely related explanations based on past studies. First, we could argue that a higher Moral Obligation could lead respondents to be more perceptive to cheating around them. For example, someone who thinks cheating is morally incorrect could be more likely to notice their classmates' dishonest actions, notice the benefits of cheating, and be more open to cheat in the future if the opportunity arises (as mentioned by Owunwanne et al., 2010). Second, as explained by Stone et al. (2009), the positive relationship between Moral Obligation and Perceived Prevalence could be explained by students trying to reduce their cognitive dissonance by adding cognitions consistent with their behavior. For example, students could think that academic dishonesty is morally wrong, but since they perceive their classmates to be cheating and benefiting from it, they could utilize this perception as a justification to support their own cheating behaviors, and in turn this justification for their dishonest behavior could increase their intentions to cheat ("I know cheating it's wrong, but my classmates do it anyways, so I might as well do it too"). Still, what is clear from this data is that the relationship of Moral Obligation and Perceived Prevalence could

influence Academic Dishonesty intentions. For this reason, future research should consider Moral Obligation and Perceived prevalence influence in other cheating-related variables.

Additionally, after including perceived prevalence to the TPB, other variables could also be added in order to improve the TPB's predictive accuracy. For example, Curtis et al. (2018) added self-control to the TPB and found that it improved the explanatory capacity of the model. Similarly, Mayhew et al. (2009) added high school cheating; Lonsdale (2017) added the variable "need for achievement"; and Cronan, et al., (2018) added the past behavior variable. All of these variables improved the predictive capabilities of the TBP in a significant manner. Therefore, future studies should include some of these variables, and the perceived prevalence variable in the TPB in order to better predict Academic Dishonesty or even other dishonest behaviors.

Also, both of the SEM models based on Beck and Ajzen (1991) theory of planned behavior revised in this paper accurately predicted self-reported cheating behaviors with the attitudes and moral obligation variables as the strongest predictors of the intention to cheat. These results are similar to the results reported by Chudzicka Czupala et al. (2015) who reported that Moral Obligation was the strongest predictors of intention to cheat with attitudes being the next best predictor across seven European countries. Similarly, Beck and Ajzen (1991) reported Perceived behavioral control as the most correlated predictor to the intention to cheat variable, while Moral Obligation and Attitudes were a close second and third best predictors. Therefore, based on the results of this study, and other studies results, attitudes and moral obligation predictors should be taken into account in future studies

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that aim to improve the predictive capabilities of the TPB for academically dishonest behaviors, or for future research projects that aim to predict or to explain similar behaviors.

Additionally, the results of this study show that the intention to cheat significantly predicted self-reported Academic Dishonesty behaviors. Similar results were reported by Beck and Ajzen (1991) and Yang (2012) in which the Intention to cheat was associated with self-reported cheating behaviors. So, the results of this study show once more that the TPB continues to be a good explanatory model for the intention to cheat and for self-reported Academic Dishonesty behaviors. Finally, the results of this paper could be used to improve school's intervention programs to reduce academic dishonesty by focusing on changing the attitudes, perceived prevalence, and moral obligation of students. If these intervention programs are successful, it is likely that general corruption and dishonest actions at the workplace could be reduced while improving the learning experience for students and improving the reputation of academic institutions employing these programs.

This study had several limitations, for example the sample was only from a Mexican public college. So, future studies could focus on comparing different Mexican, Latin American, or international schools to further provide information about the TPB's and perceived cheating prevalence's predictive capabilities. Also, only a handful of academically dishonest behaviors were measured. Future studies could look into different behaviors, survey more dishonest actions, or perhaps even put into test the TPB's predictive capabilities using interventions. However, the results show that the predictive and explanatory value of the Theory of Planned Behavior can be improved by adding the variable of perceived prevalence of cheating among peers. This can help to better understand the prevalence of academic dishonesty in Latin America and many other countries worldwide.

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