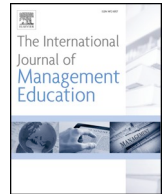


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Understanding Academic dishonesty among business school students in France using the theory of planned behavior

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ABSTRACT

In this study, we examined the Theory of Planned Behavior (TPB, Ajzen, 1991) and conscientiousness as antecedents of academic dishonesty using a sample of 178 undergraduate and graduate business students in France. The results provided support to Giluk and Postlethwaite's (2015) meta-analysis that conscientiousness was a valid predictor of academic dishonesty. Further, the three constructs of the TPB, namely subjective norms, perceived behavioral control, and attitude mediated the conscientiousness-academic dishonesty relationship. Contrary to expectation, justification of cheating did not mediate the three constructs of the TPB and academic dishonesty relationships. Altogether, the constructs of the TPB, subjective norms, perceived behavioral control, and attitude toward cheating explained 33% of variance in self-reported cheating behavior. Conscientiousness added 4.2% of unique variance in self-reported academic cheating behavior. Implications for ethics education and research are discussed.

1. Introduction

Academic dishonesty, defined as any deviant behavior taking place during an academic exercise, has gained attention among organizational researchers in recent years because it is a wide spread phenomenon in college campuses around the world. This is an important issue of concern because those who cheated in college will be likely to cheat at work (e.g., Sims, 1993). However, most studies of which we are aware are U.S. based (e.g., Stone, Jawahar, & Kisamore, 2010; Whitley, 1998; Williams, Nathanson, & Paulhus, 2010). In France, the magnitude of academic cheating is poorly studied and research studies concerning students who cheat are scarce. For example, one large scale study, based on polling 1815 students in a French business school, showed that 70.5% of students reported having cheated at least once. However, the proportion of students cheating in college was still low at 11.4% compared to 48.3% in grade schools (Guibert & Michaut, 2009). Cheating was found to be the most widespread between the ages of eleven and fifteen years old (Guibert & Michaut, 2009). According to an article in the U.K. Telegraph, the France's Education Ministry reportedly stepped up their efforts in catching exam cheaters as well as imposing harsher penalties in response to the wide spread cheating among high school students (Samuel, 2013). A more recent study found that cheating was more likely among popular French teenagers and that peer involvement encouraged cheating (Gentina, Tang, & Gu, 2015).

Cheating was found to exist in schools among French pre-teen and teenagers based on one large-scale study (Guibert & Michaut, 2009), however, almost no research exists that investigates whether the same phenomenon occurs among college students as well as the mechanism regarding why and how students cheat in France. Thus, the purpose of this study was to investigate why students

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cheat in a French business school using the Theory of Planned Behavior and personality as antecedents of academic cheating behavior.

1.1. Theory of planned behavior

The theory of planned behavior, developed by Icek Ajzen (Ajzen, 1991) is an extension of his earlier work with Martin Fishbein on the theory of reasoned action (Fishbein & Ajzen, 1975). According to the theory of planned behavior, the actual behavior is caused by its intention, which is caused by three constructs, i.e., attitude toward the behavior, subjective norms, and perceived behavioral control. Attitude toward the behavior refers to the cognitive and affective evaluation about a specific behavior (e.g., I believe cheating on an assignment is wrong; I don't like cheating on an exam). Subjective norms refer to the normative expectations of those people important to the individual regarding the behavior (e.g., I saw my friends cheat on an exam). Perceived behavioral control refers to the perceived ease or difficulty of performing the behavior (e.g., it's easy to cheat on an exam). It is the third factor, perceived behavioral control, that was added to and differentiates the Theory of Planned Behavior from the Theory of Planned Reason (Fishbein & Ajzen, 1975).

Academic dishonesty is predicted better by the Theory of Planned Behavior (TPB) than the Theory of Reason Action (TRA) as shown in prior research (e.g., Chang, 1998) because the former includes perceived behavioral control that considers the extent to which the individual has the opportunity and/or resources to perform the behavior (Ajzen & Madden, 1986). When it comes to academic dishonesty, restrictions or barriers to performing the behavior (e.g., strict proctoring on the exam; multiple versions of the same exam) make it difficult for students who have a favorable attitude toward cheating to cheat. Accordingly, perceived behavioral control has been reported to be a stronger predictor of academic cheating intention and behavior than attitude toward cheating and subjective norms in prior research (e.g., Beck & Ajzen, 1991; Stone et al., 2010).

Many meta-analyses have been accumulated to document the efficacy of the TPB in predicting a variety of human behavior ranging from socially responsible behavior (e.g., Han & Stoel, 2017); job searching (e.g., Liu, Huang, & Wang, 2014); dieting (e.g., McDermott, Oliver, Simnadis, Beck, Coltman et al., 2015); and exercising (e.g., Schüz, Li, Hardinge, McEachan, & Conner, 2017) to name a few.

Although the TPB is one of the most influential psychological theories in predicting a wide range of behavior, its application in predicting academic dishonesty has been less studied. Of the studies that we found in the literature search, most were conducted in the U.S. (e.g., Beck & Ajzen, 1991; Scrimshire, Stone, Kisamore, & Jawahar, 2017; Stone et al., 2010; Stone, Jawahar, & Kisamore, 2009) with only one study examining the TPB across 7 countries including the U.S., Poland, Turkey, Romania, New Zealand, Switzerland, and Ukraine (Chudzicka-Czupała et al., 2016). No studies have investigated academic dishonesty using the TPB in France. Further, in this study, we investigated the actual self-reported dishonesty behavior, not cheating intention as examined in prior research (e.g., Chudzicka-Czupała et al., 2016). Based on the above discussion, we hypothesize:

Hypothesis 1. The TPB constructs of attitude toward cheating, subjective norms, and perceived behavioral control will be related to cheating behavior. In other words, students who have a favorable attitude toward cheating; who perceive a norm that their peers also cheat; and think that cheating is easy will be more likely to cheat among French business students than others.

According to the Theory of Reasoned Action (TRA; Fishbein & Ajzen, 1975); personality may influence behavior such that the personality – behavior relationship would be mediated by the two components of TRA including attitude toward the behavior and subjective norms. Extending this suggestion to the TPB, it is expected that perceived behavioral control would mediate the personality – academic cheating behavior relationship.

Despite a plethora of research examining the effect of personality on academic dishonesty, very limited research examined the personality – academic dishonesty relationship in relation to the TPB. Stone and colleagues (Stone et al., 2010) reported a fully mediated model of academic cheating in which the three TPB constructs fully mediated the relationship between prudence and cheating intention. According to Hogan and Hogan (1995); individuals scoring high on prudence are reliable; detail-oriented, and rule following, suggesting that prudence shares some similarities with conscientiousness, a Big Five personality trait. Conscientiousness refers to the extent to which people are hard-working, rule-following, organized, and reliable. Of the Big Five personality traits, conscientiousness is the most valid predictor of academic dishonesty based on a recent meta-analysis (Giluk & Postlethwaite, 2015). Specifically, conscientiousness was negatively related to academic dishonesty ($Rho = -.20$ with 95% CI of -0.27 to -0.16) as shown in Table 2 of Giluk and Postlethwaite (2015) based on 17 independent samples. This means that students scoring high on conscientiousness were not likely to cheat in college compared to those scoring low on conscientiousness. Further, a recent study showed that among a sample of French college students, conscientiousness was found to be the most valid predictor of academic performance (Kertechian, 2018).

Students scoring high on conscientiousness are expected to have a positive attitude toward honesty and thus a negative attitude toward cheating because in an earlier study, prudence, a personality scale most like conscientiousness, was found to be inversely related to attitude toward academic misconduct ($\beta = -0.27$; Stone et al., 2010). Similarly, we expect that conscientious students will be able to resist the bad influence of social norms and peer pressure to cheat because conscientiousness was found to be positively related to rule conformity according to a recent meta-analysis (Parks-Leduc, Feldman, & Bardi, 2015). Empirically, Stone et al. (2010) reported that prudence was negatively related to both subjective norms ($\beta = -0.26$) and perceived behavioral control ($\beta = -0.29$) in a sample of U.S. students. Thus, we expect that the three TPB constructs to mediate the conscientiousness – academic dishonesty

relationship. Therefore, we hypothesize:

Hypothesis 2. Attitude toward cheating, subjective norms, and perceived behavioral control will mediate the conscientiousness and academic dishonesty relationship among French business school students.

1.2. Academic dishonesty and its justification

Previous research in academic dishonesty showed that students engaged in academic cheating even though they knew it was wrong to cheat (e.g., Jordan, 2001). Further, most students including those who admitted to cheating in college reported being “satisfied with their own ethics and character” and that they were “better than most people they know” (Josephson Institute of Ethics, 2012). According to the theory of cognitive dissonance (Festinger, 1975); those students who cheated would experience cognitive dissonance, defined as the psychological discomfort resulted from engaging in a behavior that is inconsistent with one’s values. The discomfort will motivate students to avoid or reduce the cognitive dissonance. Festinger (1975) proposed two ways to reduce cognitive dissonance. The first way is to change the behavior, i.e., stop the academic dishonesty behavior; and the second way is to change the cognition, i.e., stop thinking or believing that academic dishonesty is wrong to bring the thought and behavior into consonance. Because most students did not stop cheating as per Festinger’s (1975) first suggestion; it is believed that Festinger’s (1975) second suggestion was followed (Stephens, 2017).

Students’ justification of cheating is to reduce the psychological discomfort experienced when the cheating behavior conflicts with their moral values. Specifically, students who engaged in academic cheating will rationalize their cheating behavior as being okay, i.e., “it’s not illegal to cheat”; or observing their friends cheat so they should cheat as well, thus justifying the cheating behavior, consistent with the Festinger’s (1975) second route to reduce dissonance. According to prior research, student perception that others cheat was found to be a significant predictor of cheating. For example, if students observe that their peers cheat, they will justify their own cheating behavior as one way to promote their self-interests by leveling the playing field (e.g., McCabe, Trevino, & Butterfield, 2002). This suggests a positive correlation between subjective norms and justification. Students may also rationalize by telling themselves that it is in their best interest to cheat to increase their course grade (e.g., Stone et al., 2009). Thus, justification as a thought process occurs before engaging in the actual cheating behavior.

Students may also rationalize cheating by thinking that cheating is not illegal whereas in fact it is illegal in France. For example, in 2013, a French woman was caught taking a pre-university English exam in her daughter’s place (Samuel, 2013). The consequences for the mother were up to 9000 euro fine and three-year jail term for fraud. As for the daughter, she would be banned from taking all official exams for up to five years (Samuel, 2013). The justification that cheating is not illegal or wrong suggests a positive relationship between attitude toward cheating and justification of cheating.

Finally, students may think that their parents will support them in their cheating behavior to pass a class. In fact, one study showed that parental acceptance of academic dishonesty was the second-best predictor of academic cheating behavior after attitude toward cheating among a sample of Chilean students (Koljatic, Silva, & Ardiles, 2003). This suggests a positive correlation between justification and perceived behavioral control. Based on the above research findings, it is expected that justification of cheating will add incremental variance to the prediction of actual cheating behavior. Justification was found to partially mediate the relationships between the three TPB constructs and academic cheating behavior in one study (Stone et al., 2009). Thus, we wanted to replicate the above mediation effect in a sample of French business students and hypothesize:

Hypothesis 3. Justification or rationalization of academic dishonesty will mediate the relationships between attitude toward cheating; subjective norms, and perceived behavioral control and cheating behavior.

2. Method

2.1. Participants and procedure

Data were collected entirely online. A total of 190 students from a Business School in Southwestern France participated in this study on a voluntary basis. They were invited to participate in this study via email that contained a link to a Qualtrics website where they read and signed a consent form prior to completing the research questionnaire. Most of the sample was female (124 or 71.3%) with 50 male students (28.7%). 16 students did not provide their sex information. In terms of age, the average age of the students in this study was 21.94 ranging from 15 to 30 years of age. Of 190 students, nearly half (91) were graduate students in Master 1 and Master 2 levels; 12 students were reported to be Bachelor 1; 24 – Bachelor 2; and 49 – Bachelor 3. 14 students did not report their academic standing. There were no statistically significant mean differences in academic cheating behavior between undergraduate and graduate students in this study ($M = 4.73$ vs. $M = 4.92$, $t = -0.466$; $p = .64$). Thus, we used the combined sample in subsequent analyses. Due to missing data, the final sample for all subsequent statistical analyses was 178.

2.2. Measures

2.2.1. Conscientiousness

Ten items from the International Personality Inventory Pool (IPIP) were used to measure conscientiousness. We adapted the French version of this Big Five dimension posted at the IPIP website at ipip.ori.org translated by Kerri Gibson at New Brunswick

University in Canada for use in this study. Sample items include “I am exacting in my work”; “I follow a schedule”; and “I get chores done right away”. Students were asked to indicate the extent to which each item accurately described them on a 5-point scale with “1” being “very inaccurate” and “5” being “very accurate”. The Cronbach’s alpha for this variable was 0.69.

2.2.2. Attitude toward cheating

Ten items were used to measure participants’ attitude toward cheating, which assesses their willingness to report cheating by other students, helping other students cheat off their work/exam, etc. and their belief in having faculty report student cheating as used in Scrimpsire et al.’s (2017) study. Sample items include “It is important for me to report cheating by other students”; “it is important for faculty and staff proctoring the exam to report cheating by other students”; “it is always wrong to cheat”; “I allow another student to cheat from my exam”. Cronbach’s alpha for this variable was 0.77.

2.2.3. Perceived behavioral control

Four items were used to measure the participants’ perception of ease or difficulty of cheating following Scrimpsire et al.’s (2017) study. Sample items of this measure include “It is easy to cheat on homework assignments”; “It is easy to cheat on exams”. Cronbach’s alpha of this variable was 0.57.

2.2.4. Subjective norm

One question was used to measure the behavior of peer cheating. Participants were asked to report the number of times they observed their peers cheat during an assignment, an exam or on a test during the past academic year. Scale anchors included “1” being “never”; 2 “1 to 5 times”; 3 “from 5 to 10 times”; 4 “from 10 to 20 times”; to 5 “more than 20 times”. Because this measure was a one-item variable, no internal consistency estimate was available. For this study, the average peer cheating frequency was 2.24 (SD = 1.19); suggesting that on average, French business students reported observing their peers cheat more than 5 times over the past academic year.

2.2.5. Justification of cheating

Five items were created to measure student rationalization of their cheating behavior. Sample items include “cheating is really not illegal”; “no one will ever know about it”; “cheating is in my best interest”. Cronbach’s alpha for this variable was 0.63.

2.2.6. Academic dishonesty

We adapted the Academic Dishonesty Inventory (ADI) developed by Newstead, Franklyn-Stokes, and Armstead (1996) and later modified by Koljatic and Silva (2002) to measure academic dishonesty behavior. Sixteen Yes-No items constitute this scale. Participants were asked to indicate whether in the past two years they had engaged in any of the 16-listed behavior at least once. Scale items were coded as “0” for not yet engaged in the behavior and “1” for having engaged in unethical behavior at least once over the previous two years. Sample items include “paraphrased material from a book without acknowledging the source”; “fabricated reference or a bibliography”; “copied from a neighbor during an examination”. Internal consistency reliability coefficient for this variable was 0.72.

2.2.7. Analyses

We performed all statistical analyses using MPlus version 7.0 (Muthén & Muthén, 1998–2012).

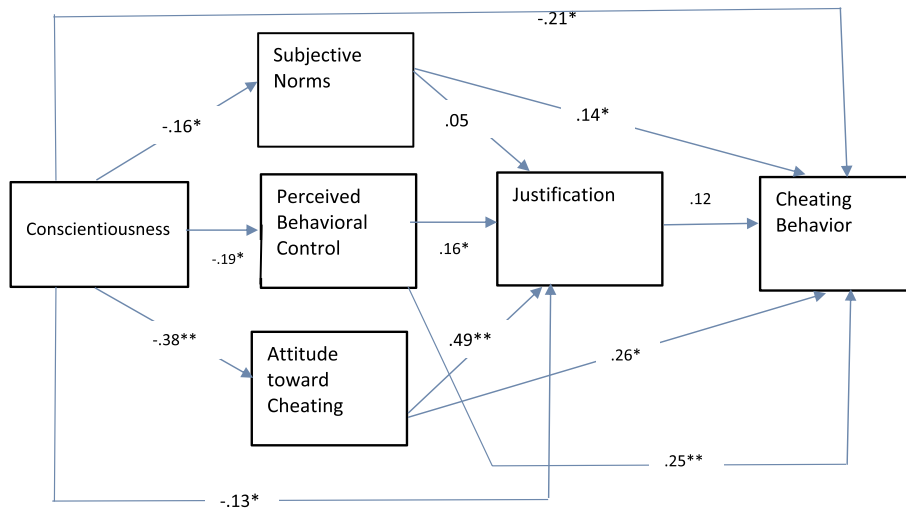
3. Results

Table 1 shows the descriptive statistics and inter-correlations of variables in the study. An examination of this Table shows that demographic variables including sex and age did not have any significant relationships with self-reported academic cheating ($r_s = -0.10$ and -0.02 respectively, *n.s.*) as shown in prior studies conducted using U.S. students. Thus, we excluded these variables from subsequent statistical analyses.

Table 1

Descriptive statistics and zero-order correlations among variables in the study (N = 178). Note: Correlations ≥ 0.14 are significant at $p < .05$; correlations ≥ 0.20 are significant at $p < .01$ (two-tailed).

Variables	Mean	Std	1	2	3	4	5	6	7	8
1. Age	21.94	2.14	–							
2. Sex	–	–	-.22	–						
3. Conscientiousness	3.34	.54	.07	.07	.69					
4. Subjective norms	2.24	1.19	.04	-.08	-.34	–				
5. Perceived behavioral control	4.77	1.07	.11	.11	-.20	.33	.57			
6. Attitude to cheating	4.50	.90	.04	-.14	-.38	.12	.22	.77		
7. Justification	2.83	1.03	.10	-.05	.15	.18	.28	.56	.63	
8. Academic dishonesty	4.84	2.80	-.02	-.10	-.38	.30	.44	.47	.41	.72



Note: estimates shown are completely standardized coefficients. *: significant at $p < .05$; **: significant at $p < .01$

Fig. 1. Path analysis of the hypothesized model.

Note: estimates shown are completely standardized coefficients. *: significant at $p < .05$; **: significant at $p < .01$.

We tested all three hypotheses using path analysis with 1000 bootstraps in Mplus version 7 (Muthén & Muthén, 1998–2002). Bootstrapping is considered the preferred method in detecting a mediational effect according to MacKinnon, Lockwood, and Williams (2004) when the distribution of two regression coefficients needed to test for the statistical significance of the intervening variable is non-normal.

Fig. 1 shows the path analysis with all standardized coefficients. Hypothesis 1 states that all three components of the TPB including attitude toward cheating, subjective norms, and perceived behavioral control are positively related to academic cheating. As shown in Fig. 1, attitude toward cheating was positively related to self-reported cheating behavior ($\beta = 0.26, p < .01$); subjective norms were also positively related to self-reported cheating behavior ($\beta = 0.14, p < .05$); and perceived behavioral control was also positively related to self-reported cheating behavior ($\beta = 0.16, p < .01$). Further the 95% confidence intervals for the above coefficients did not include zeros, providing further evidence of their significant substantive relationships to cheating behavior. Taken together, Hypothesis 1 was fully supported. Students who had a favorable attitude toward cheating; who observed that their peers also cheated; and think cheating was easy were found to reportedly engage in academic cheating among French business students.

Hypothesis 2 states that the three TPB constructs, namely subjective norms, attitude toward cheating, and perceived behavioral control, will mediate the conscientiousness – academic dishonesty relationship. To test this mediation hypothesis, we followed Baron and Kenny’s (1986) causal step approach. Table 2 shows the standardized estimates of the path coefficients of the hypothesized mediation model along with bias corrected limits of 95% confidence intervals. Specifically, in step 1, we regressed the constructs of the TPB, i.e., mediators onto conscientiousness. As shown in Table 2, all three path coefficients associated with conscientiousness and subjective norms ($\beta = -0.16$); conscientiousness and perceived behavioral control ($\beta = -0.19$); as well as conscientiousness and attitude toward cheating ($\beta = -0.38$) were negative and statistically significant because their 95% confidence intervals using 1000 bootstraps did not include zero. Next, in step 2, we examined the mediator – dependent variable (DV) relationships. As shown in Table 2, all three relationships were statistically significant. Specifically, the subjective norms – academic dishonesty path was positive and significant ($\beta = 0.14$); as was the perceived behavioral control – academic dishonesty path ($\beta = 0.25$); and the attitude toward cheating – academic dishonesty path was also positive and significant ($\beta = 0.26$). Again, none of these 95% confident intervals include zeros providing support for Baron and Kenny’s (1986) step 2 of mediation testing. In step 3, we examined the total effect of conscientiousness on academic dishonesty. As shown in Table 2, this effect was strong and statistically significant ($\beta = -0.42, 95\% \text{ CI} = -0.327 \text{ to } -0.090$). In step 4, we examined the indirect effect of conscientiousness on academic dishonesty controlling for the mediator, i.e., the constructs of the TPB including subjective norms, perceived behavioral control, and attitude toward cheating. As shown in Table 2, whereas the indirect effects of conscientiousness on academic dishonesty via perceived behavioral control ($\beta = -0.05; 95\% \text{ CI} = -0.463 \text{ to } -0.001$) as well as via attitude toward cheating ($\beta = -0.10; 95\% \text{ CI} = -0.795 \text{ to } -0.150$) were both statistically significant, the indirect effect of conscientiousness on academic dishonesty via subjective norms failed to reach statistical significance ($\beta = -0.04; 95\% \text{ CI} = -0.263 \text{ to } 0.050$). Taken altogether, the above findings provided support for the full mediation of subjective norms on the conscientiousness – academic dishonesty relationship whereas both perceived behavioral control and attitude toward cheating partially mediated the conscientiousness – academic dishonesty relationships. Thus, Hypothesis 2 was supported.

Table 2
Mediation model estimates and bias corrected limits of 95% confidence intervals for standardized coefficients.

Step	Path coefficient	Lower bound	β	Upper bound
<i>Conscientiousness</i> → <i>TPB constructs</i> → <i>Academic dishonesty model</i>				
1	<i>Independent variable (IV) to mediator</i>			
	Conscientiousness – subjective norms	-.319	-.16	.001
	Conscientiousness – perceived behavioral control	-.330	-.19	-.050
	Conscientiousness – attitude toward cheating	-.518	-.38	-.240
2	<i>Mediator – dependent variable (DV)</i>			
	Subjective norms – academic dishonesty	.006	.14	.260
	Perceived behavioral control – academic dishonesty	.115	.25	.390
	Attitude toward cheating – academic dishonesty	.115	.26	.390
3	<i>IV on DV (total effect)</i>			
	Conscientiousness – academic dishonesty	-.327	-.42	-.090
4	<i>IV on DV controlling for mediator (indirect effect)</i>			
	Conscientiousness – dishonesty subjective norms	-.263	-.04	.050
	Conscientiousness – dishonesty perceived behavioral control	-.463	-.05	-.001
	Conscientiousness – dishonesty attitude toward cheating	-.795	-.10	-.150
<i>TPB constructs</i> → <i>Justification</i> → <i>Academic dishonesty Model</i>				
1	Subjective norms - Justification	-.069	.05	.141
	Perceived behavioral control - Justification	.018	.15	.261
	Attitude toward cheating - Justification	.422	.55	.666
2	Justification – academic dishonesty	-.128	.12	.684
3	Subjective norms – academic dishonesty	-.016	.33	.616
	Perceived behavioral control – academic dishonesty	.348	.68	1.010
	Attitude toward cheating – academic dishonesty	.575	.94	1.296
4	Subjective norms – academic dishonesty justification	-.033	.01	.061
	Perceived behavioral control – academic dishonesty justification	-.042	.05	.136
	Attitude toward cheating – academic dishonesty justification	-.082	.17	.430

Hypothesis 3 was about the proposed mediation effect of justification of academic cheating on three TPB constructs and academic dishonesty relationships. To test this hypothesis, we followed the same procedure recommended by Baron and Kenny (1986). Specifically, in step 1, we examined the relationships between three constructs of the TPB and the mediator, i.e., justification. As shown in Table 2, only 2 out of 3 relationships were statistically significant. Whereas the perceived behavioral control and academic dishonesty relationship was significant ($\beta = 0.15$; 95% CI = 0.018 to 0.261); as was the attitude toward cheating and academic dishonesty ($\beta = 0.55$; 95% CI = 0.422 to 0.666); the relationship between subjective norms and cheating justification was not significant because the 95% confidence interval contained zero ($\beta = 0.05$; 95% CI = -0.069 to 0.141). In step 2, we examined the relationships between the mediator, justification, and the dependent variable, academic dishonesty. As shown in Table 2, this relationship, albeit in the expected direction, was not statistically significant because the 95% confidence interval contained zero ($\beta = 0.12$; 95% CI = -0.128 to 0.684). Based on these two steps, justification of cheating was not a mediator between the 3 TPB constructs and academic dishonesty. Thus, Hypothesis 3 was not supported.

In terms of the relative strength of predictive power of the three TPB constructs in explaining academic cheating behavior, subjective norm was the weakest predictor of academic dishonesty in this study ($\beta = 0.33$) followed by perceived behavioral control ($\beta = 0.68$); and attitude toward cheating ($\beta = 0.94$). Together, they accounted for 33% of the variance in self-reported academic cheating behavior. Conscientiousness alone explained 17% of variance in self-reported academic dishonesty. When combined with the three TPB constructs, together they explained 37.2% of variance in self-reported academic dishonesty. Thus, conscientiousness added 4.2% unique variance in explaining academic dishonesty behavior.

4. Discussion

In this study, we found that both undergraduate and graduate business students at a French business school engaged in academic cheating. Using the personality trait of conscientiousness as an antecedent of academic dishonesty, we found that highly conscientious students were less likely to cheat than those scoring low on this personality trait, thus extending the validity of Giluk and Postlethwaite’s (2015) meta-analysis to French business school students. Our study results further validated Stone et al.’s (2010) study on examining prudence as an antecedent of the TPB constructs. We found conscientiousness as measured by the International Personality Item Pool (IPIP) to be as valid a predictor of academic cheating behavior ($r = -0.38$) as was prudence ($r = -0.25$) as reported in Stone et al. (2010). The two correlations were not statistically significantly different using significance test of two independent correlations ($r = -0.38$ vs. $r = -0.25$; $t = 1.62$, *n.s.*). This adds to the body of growing literature supporting the freely available measure of conscientiousness in terms of predicting academic dishonesty compared to proprietary measures such as the Hogan Personality Inventory (HPI) (Hogan & Hogan, 1995).

We found that conscientiousness adds incremental validity to the TPB constructs in predicting academic dishonesty, consistent with Stone et al.’s (2010). One reason conscientiousness measured by the IPIP or prudence measured by the HPI is a well-established predictor of academic dishonesty because conscientiousness has “the closest conceptual connection to cheating” (Williams et al.,

2010, p. 295) compared to other personality traits such as extraversion or agreeableness.

We also found that in general, the theory of planned behavior (TPB) received empirical support. This further validates the theory in predicting academic dishonesty in a sample of French undergraduate and graduate business school students in addition to business students in the U.S. (e.g., Stone et al., 2010) and non-business students in Eastern European countries (e.g., Chudzicka-Czupala et al., 2016). We found that the TPB constructs together explained 33% of variance in academic dishonesty; which is comparable to meta-analytic estimates evaluating the TPB in predicting a wide range of behavior (e.g., Liu et al., 2014; McDermott et al., 2015). One significant finding in this study was that perceived behavioral control was the second strongest predictor of academic dishonesty behavior, after attitude toward cheating. This provides further support to the TPB in that for behavior that is constrained by contextual factors such as academic dishonesty (e.g., strict honor code enforcement; exam proctoring protocol; etc.) perceived behavioral control is a better predictor of academic cheating than subjective norms as shown in this study. We found that observing peers cheat as an indicator of subjective norms, was a significant predictor of actual cheating behavior, which was consistent with Gentina et al.'s (2015) study showing that peer involvement in cheating encouraged actual cheating behavior among French teenagers.

Contrary to our expectation of previous research (e.g., Stone et al., 2009), we did not find justification as a mediator of the TPB constructs and academic dishonesty. There are several reasons as to why we failed to replicate the mediational finding reported in Stone et al. (2009). First, the multicollinearity between the TPB constructs and justification, especially the correlation between attitude toward cheating and justification ($r = 0.56$; $p < .001$) with self-reported academic dishonesty may have reduced the strong and significant zero-order correlation of justification and academic dishonesty from ($r = 0.41$; $p < .001$) to ($r = 0.12$ $p > .05$). In Stone et al. (2009), the correlation between attitude toward cheating and justification was smaller ($r = 0.31$) and thus the magnitude of multicollinearity was a non-issue. Second, our sample size was much smaller (178 vs. 438); which renders a lower statistical power to detect a relationship if one exists. Third, our measure of justification taps different content domains than the one used in Stone et al. (2009). For example, in our justification measure, we included parental support and friends support whereas Stone et al. (2009) did not. This might have explained why justification in this study may have a differential relationship with academic dishonesty. Future research is needed to replicate our study to confirm this possibility.

Several contributions of our study should be noted. First, our study was the first to examine academic dishonesty among both undergraduate and graduate business school students in France. Second, we looked at actual cheating behavior, rather than cheating behavioral intention. Although according to the theory of planned behavior, behavioral intention was the best predictor of the actual behavior; meta-analyses showed that the correlation was less than perfect such that a large sized change in behavioral intention was associated to only a small change in actual behavior (Webb & Sheeran, 2006). Thus, our study results were considered more relevant and applicable to policy making in college education than research investigating cheating intention *per se* (e.g., Chudzicka-Czupala et al., 2016).

4.1. Practical implications of this study

This study provided further support to the call for higher education institutions to profile students who are likely academic cheaters (e.g., Giluk & Postlethwaite, 2015). For example, high conscientiousness has been well established as a valid predictor of academic performance among French business/management students (Kertechian, 2018), and this study adds to that body of literature by showing that highly conscientious students will not likely engage in academic dishonesty. We think that French college-bound students can be screened using a personality-related test such as the IPIP used in this study. We found that attitude toward cheating the strongest predictor of academic dishonesty. This means that in addition to selecting in college students who are highly conscientious, educating those students about the honor code and the importance of upholding honesty values will help students form an honest attitude and one that is against academic dishonesty. For example, it was suggested in one study that having an honor code reminder alone might not be enough to reduce academic cheating, and that an explicit reminder of the honor code and a realistic course warning together will produce the greatest reduction in cheating (Bing, Davidson, Vitell, Ammeter, Garner et al., 2012). Our study provided empirical support to Bing et al.'s (2012) suggestion because explicitly and consistently applied, the honor code will serve to lower the perceived behavioral control that explains subsequent cheating. This consistent reminder of the honor code and its enforcement will also help students form a positive attitude toward academic honesty as suggested in our study.

When students observed other students and/or friends cheat, they were more likely to cheat as revealed in this study. This finding suggests that a cultural norm of honesty is important in combating cheating and promoting an ethical culture in business schools. Ethical cultural norm needs to be clearly established in school (Tang & Chen, 2008) to reduce academic cheating. The nature of teamwork sometimes caused non-cheating students to look the other way when observing their team members cheat because some student teams develop powerful group norms and high levels of cohesiveness. As a result, when a team member cheats, other team members are unlikely to prevent or report the behavior (McCabe, Butterfield, & Trevino, 2006).

The fact that perceived behavioral control was found to be the second strongest predictor of academic dishonesty deserves special attention. Business schools should consider adopting strategies to reduce students' perception of behavioral control when it comes to cheating. For example, creating multiple versions of the same exam, implementing a strict exam proctoring protocol in which no cell phones or any electronic devices as well as notes or textbooks are allowed into the exam room will make it harder for students to cheat as reported in previous research (e.g., Fendler, Yates, & Godbey, 2018).

Our study is not without limitations. First, all the data were collected in a cross-sectional fashion; preventing us from making any causal conclusions about the mediational effects of the TPB constructs. Future research should collect longitudinal data to replicate the findings reported in this study. Second, the subjective norm measure used in this study is different from the way this variable was originally conceptualized in the Theory of Planned behavior such that we viewed this variable as the actual peer frequency of

cheating behavior that constitutes the norm of cheating, rather than whether someone whom the students view as significant would cheat. Third, the one item measure of subjective norm prevented us from calculating the internal consistency estimate for this variable. In future research, a multiple item measure for this variable should be used to replicate and confirm our findings. Fourth and last, some of the scales used in this study had lower reliability estimates than traditionally considered acceptable based on the 0.7 cutoff proposed by Nunnally (1978, p. 245). For example, the perceived behavioral control only had an internal consistency estimate of 0.57 and that of conscientiousness was 0.69. Low reliability results in low statistical power to detect a significant relationship. In our study, although we found the preceding variables exhibit meaningful relationships with actual academic cheating behavior, the low reliability estimates of perceived behavioral control and conscientiousness results in larger error variance and wider confidence intervals for the relationships involving those two variables.

5. Conclusion

Academic dishonesty among students can damage both the reputation of the colleges as well as the larger society because students who cheated in college would be likely to cheat in the workplace (Sims, 1993). Our study is considered as a first step toward understanding the mechanism of why and how business students engaged in academic cheating in France. We hope future research continues this line of inquiry to reach a more affirmative conclusion of why business school students cheat so that we educators can successfully formulate policies and procedures to prevent academic cheating.

Authors' note

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ijme.2018.12.003>.

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