

Self-Control, Injunctive Norms, and Descriptive Norms Predict Engagement in Plagiarism in a Theory of Planned Behavior Model

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Abstract The Theory of Planned Behavior (TPB) predicts that a combination of attitudes, perceived norms, and perceived behavioral control predict intentions, and that intentions ultimately predict behavior. Previous studies have found that the TPB can predict students' engagement in plagiarism. Furthermore, the General Theory of Crime suggests that self-control is particularly important in predicting engagement in unethical behavior such as plagiarism. In Study 1 ($N = 229$), we incorporated self-control in a TPB model and tested whether norms, attitudes, and self-control predicted intention to plagiarize and plagiarism behavior. The best statistical fit for the path-analytic model was achieved when a direct path from self-control to plagiarism engagement was specified. In Study 2 ($N = 320$), we added a measure of perceived behavioral control and split the measurement of norms into descriptive (normal behavior) and injunctive (good behavior) components. This study found that both self-control and perceived-behavioral control additively contributed to the prediction of plagiarism and the path-analytic model achieved its best fit when direct paths from perceived norms to plagiarism behavior were specified. These studies suggest that setting strong anti-plagiarism norms, such as by the use of honor codes, and seeking to enhance students' self-control may reduce engagement in plagiarism.

Keywords Plagiarism · Self-control · Theory of planned behavior · Norms · Attitudes

Rates of plagiarism in higher education have remained persistently high despite a range of technological and educational innovations aimed at improving academic integrity among

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students (Curtis and Vardanega 2016). The continuing prevalence of plagiarism, despite the existence of text-matching software, suggests that further interventions are needed. However, to design optimal anti-plagiarism interventions more research is needed to understand why students engage in plagiarism. Recently, two reviews have been published that help to bring together the empirical findings on factors that predict plagiarism, particularly psychological factors (see Husain et al. 2017; Moss et al. 2018). These reviews do an excellent job of highlighting both what is known, and what is not yet known, about the reasons why students engage in plagiarism. More importantly, these reviews highlight the fact that much of the previous work has lacked an overarching robust theoretical framework.

Two notable exceptions to the more a-theoretical research on predictors of plagiarism are studies that have examined a Theory of Planned Behavior (TPB; Ajzen 1991, 2005) model of plagiarism and those that have examined self-control as a predictor of plagiarism. Indeed, Moss et al. (2018) divide their initial analysis of past literature into the factors that compose the predictor variables in the TPB, and Husain et al. (2017) focus specifically on attitudes, which are a key component of the TPB. In this paper we report two studies that attempted to integrate the TPB and self-control as predictors of students' engagement in plagiarism.

Theoretical Background

The TPB is a model that attempts to define the connection between attitudes and behavior (Ajzen 1991). As can be seen in Fig. 1, the TPB suggests that attitudes (knowledge and feelings concerning the subject) combine with subjective norms (expectations concerning others' behavior in the same context) and perceived behavioral control (feelings of self-efficacy in relation to the behavior) to predict intentions (Ajzen 1991). Intentions predict behavior well, but imperfectly (Ajzen 1991). For example, a student may intend to cheat on an assignment but may be unable to find a viable way to do so. In addition, depending on the situation and the behavior in question, perceived behavioral control may directly predict behavior as well as predicting intentions; this relationship is stronger when the behavior is

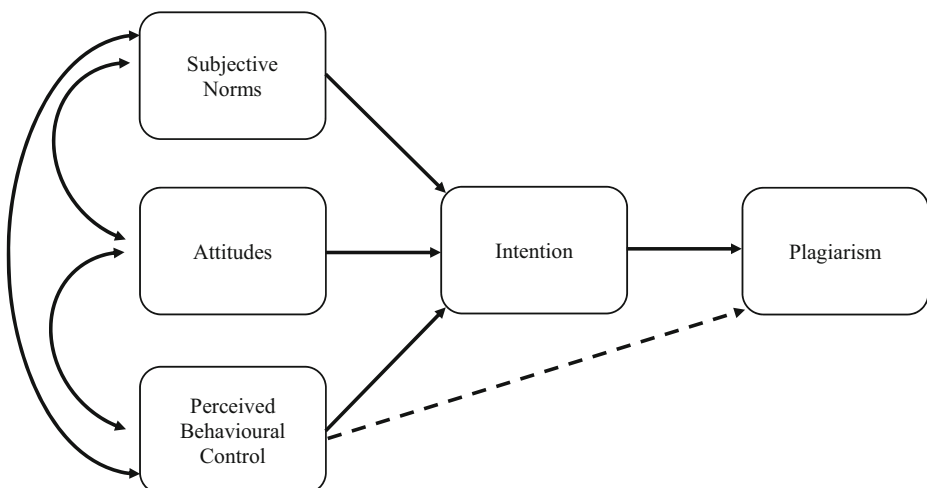


Fig. 1 The theory of planned behavior (Ajzen 1991)

more controllable (Kiriakidis 2015). Numerous studies, taken together, have provided evidence that the individual components of the TPB can predict students' engagement in plagiarism (e.g., Brown and Howell 2001; Curtis and Popal 2011; Franklyn-Stokes and Newstead 1995). Moreover, studies specifically testing TPB models in the context of academic integrity have found that this model can predict plagiarism (e.g., Alleyne and Phillips 2011; Harding et al. 2007).

Because plagiarism can be considered to be an unethical, and in some cases criminal, act, it is possible that engagement in plagiarism may be explained by criminological theories. The General Theory of Crime proposes that self-control (people's ability to inhibit negative behavioral tendencies) may explain why people do, or do not, engage in criminal behavior when the opportunity arises (Gottfredson and Hirschi 1990). For example, a student may see a peer's completed assignment left unattended on a desk, which they could steal and copy; a student with high self-control may resist this temptation but a student with low self-control may find that their resistance is futile. Although individuals' self-control can vary depending on situational factors such as mood, fatigue, and hunger, there are also relatively stable personality-like differences in self-control (Baumeister and Tierney 2012). In other words, some people have more self-control more often than other people (Tangney et al. 2004). Again, several studies indicate that self-control, or lack thereof, can predict students' engagement in plagiarism (e.g., Cochran et al. 2006; Muraven et al. 2006; Stone et al. 2009).

A notable overlap between TPB and the General Theory of Crime is the active role of *control* in people's psychological make-up as a potential predictor of unethical behavior. In the context of plagiarism, perceived behavioral control, in the TPB, is someone's sense that they *can* engage in a behavior that constitutes plagiarism, whereas self-control is their sense that they can *stop themselves* from engaging in a behavior that constitutes plagiarism. As far as we can find, only one study, which examined college student drinking behavior (Wolfe and Higgins 2008), has examined the potential role of self-control within a TPB model. However, no research had integrated both self-control and TPB in specifically attempting to predict plagiarism.

The Present Studies

We conducted two studies that examined whether self-control could be integrated into a TPB-based model to predict students' engagement in plagiarism. In Study 1, we tested a modified TPB-self-control model where self-control was simply substituted in the TPB in place of perceived behavioral control. Thus, Study 1 measured students' attitudes toward plagiarism, their perception of their peers' engagement in plagiarism (norms), their self-control, their intention to engage in plagiarism, and their plagiarism behavior. We hypothesized: (H1) that the standard TPB variables (attitudes, norms, intentions, and engagement in plagiarism) would significantly positively correlate with each other, (H2) that self-control would correlate with engagement in plagiarism, and (H3) that a TPB model where self-control was included in place of perceived behavioral control would provide good statistical fit for the data.

In Study 2, we extended Study 1 in two ways that broadened the theoretical and predictive model of engagement in plagiarism. First, in their study of college student drinking, Wolfe and Higgins (2008) suggested that self-control and perceived behavioral control can additively predict undesirable behavior. Thus, we included a measure of perceived behavioral control

along with the measure of self-control that was used in Study 1. Second, in Study 2, we sought to separate perceived norms into two components: descriptive and injunctive. Descriptive norms are what people expect others *will do* in the same situation (i.e., what is *normal* behavior), whereas injunctive norms are what people believe are the shared expectations concerning what people *should do* in the same situation (i.e., what is *good* behavior; Locke et al. 2017). We are only aware of one study that has separated descriptive and injunctive norms in predicting any form of academic dishonesty. Rajah-Kanagasabai and Roberts (2015) used a modified TPB to predict data falsification and research misconduct, and found both descriptive and injunctive norms significantly contributed to the model. However, their study did not simultaneously test whether self-control could add to the prediction of academic dishonesty as in the present studies. Therefore, for Study 2 we hypothesized: (H4) that the standard variables in the TPB model would significantly positively correlate with each other, (H5) that a TPB model including both self-control and perceived behavioral control would provide better statistical fit for the data than a model with one of these variables alone, and (H6) that both descriptive and injunctive norms would separately contribute to the ability of the model to predict engagement in plagiarism.

Study 1

Method

Participants and Design

A sample of 276 Australian university students' responses was collected through an online survey. The survey consisted of measures of plagiarism behavior engagement, attitudes, intentions, and perceived norms, and a measure of self-control. Participants were recruited through the Murdoch University Psychology Research Participation Portal, social media, and lecture campaigns in April–July 2015. Seventeen responses were excluded due to incomplete data; nine were removed due to minimal variation in responses and/or had an unreasonably short completion time; and a further 21 were excluded due to scores which fell outside the acceptable range of 1.5 standard deviations from the mean on the Constructive Thinking Inventory of the Lie scale (Epstein 2001). These exclusions resulted in a final sample size of 229.

The sample consisted primarily of female participants (76.4%) and had a mean age of 24.52 ($SD = 8.02$). The majority of participants (89%) identified as native English speakers. Participants were fairly evenly distributed across academic year levels (1st-year: 31.6%; 2nd-year: 24%; 3rd-year: 26%, 4th-year and post-graduate: 18.2%). Participants were predominantly Murdoch University students (94.8%) with the remainder mostly recruited from University of Western Sydney and University of Western Australia. Participants were primarily enrolled in Psychology (75.5%) and Business (10.0%) majors. Participants enrolled at Murdoch University were able to elect to receive research participation credit for Psychology course requirements. Other participants were offered the opportunity to enter a prize draw for one of five \$50 gift cards.

Measures

Plagiarism Scale A measure of plagiarism that captured the TPB elements of attitudes, intentions, perceived norms, and behavior was developed based on Maxwell et al. (2008) and

Zafarghandi et al.'s (2012) instruments. Three scenarios were chosen from among 8 used by Zafarghandi et al. (2012) because they produced the most statistically normal results. Participants were presented with hypothetical scenarios representing: sham paraphrasing (representing a quote as paraphrased), illicit paraphrasing (not citing the source of paraphrased material), and sham primary citation (representing a secondary citation as a primary source; Walker 1998; Zafarghandi et al. 2012). For example, sham paraphrasing was represented with the following scenario: "A student copies a sentence directly from a journal article into his assignment. The student writes the name of the author and date of publication in brackets after the sentence, but does not include quotation marks or a page number". Participants were then presented with a series of questions relating to the scenario based on: attitudes toward plagiarism, previous engagement in plagiarism, future intention to plagiarize, and perceived norms.

For each of the three plagiarism scenarios, attitudes toward plagiarism were measured on a 3-point scale (Maxwell et al. 2008) regarding the perceived severity of the behavior, with response options: 1 = *not at all serious*, 2 = *moderately serious*, 3 = *very serious*. Participants were asked if they had engaged in a similar behavior (Maxwell et al. 2008), with response options: 1 = *never*, 2 = *rarely*, 3 = *occasionally*, 4 = *often*, 5 = *all the time*. Future intention to engage in plagiarism was assessed with participants indicating how likely they would be to engage in the behavior in the future, with response options: 1 = *not at all*, 2 = *unlikely*, 3 = *perhaps*, 4 = *likely*, 5 = *very likely*. Perceived norms were measured by participants indicating how frequently they believe other students engage in a similar behavior, with response options: 1 = *never*, 2 = *rarely*, 3 = *occasionally*, 4 = *often*, 5 = *all the time*. The mean attitude, engagement, intention, and norm scores were calculated across the three scenarios for each participant.

Brief Self-Control Scale Individual differences in self-control were measured using Tangney et al.'s (2004) Brief Self-Control Scale. Participants were asked to indicate the extent to which each of the items reflect their general behavior, with response options: 1 = *not at all*, 2 = *a little*, 3 = *moderately*, 4 = *a lot*, 5 = *very much*. Items included "I say inappropriate things" and "I never allow myself to lose control". Four items are positively worded and nine items are negatively worded and reverse coded before averaging to produce a mean score of items on the scale for each participant. The internal consistency of the scale in this study was good, with a Cronbach's alpha of .81.

Lie Scale Items from Epstein's (2001) Constructive Thinking Inventory Lie Scale were included in order to screen out participants who were likely to be attempting to present themselves unrealistically positively. This 8-item scale includes items such as, "I am not bothered in the least when people insult me for no good reason". Participants' response options were: 1 = *definitely false*, 2 = *mostly false*, 3 = *undecided or equally true and false*, 4 = *mostly true*, 5 = *definitely true*.

Demographics Participants were asked to complete a series of demographic questions regarding their age, gender, university, major, year level, and language.

Procedure

Upon accessing the online survey, the participants were presented with an information letter relating to the purpose of the study, participant anonymity, and consent. The

participants were informed that submission of their responses would be accepted as consent to participate in the study.

The measures were completed in order of the three scenarios and their related questions, the Brief Self-Control Scale, the Lie Scale, and the demographic questions. Once the survey was complete, the participants were given the choice to receive research participation credit or to enter the prize draw. A separate survey was used to capture participants' details for the research credit and prize draw in order to ensure anonymity within the survey.

Results and Discussion

Data Screening and Assumption Testing

Means for attitudes, engagement, intention, and norms were calculated from the scores across the three types of plagiarism and are presented in Table 1. The data were screened for violations of statistical assumptions. The plagiarism engagement and intention variables were significantly positively skewed, and this skew was corrected via square root transformations (Tabachnick and Fidell 1996). For ease of interpretation, untransformed data was used to calculate the descriptive statistics.

Correlations and Structural Equation Modelling

Pearson's correlations were calculated for the relationships among the components of the TPB model (attitudes, norms, intentions, and engagement in plagiarism) and self-control; see Table 1. As expected, the components of the TPB model were all significantly intercorrelated. Moreover, as the TPB would predict, the strongest observed correlation was between intentions to plagiarize and engagement in plagiarism behavior. In addition, self-control correlated significantly with all variables in the TPB model except for norms.

Given that attitudes were operationalized as perceived seriousness of plagiarism, the negative correlation between attitudes, norms, intentions, and engagement in plagiarism indicates that students with more negative attitudes toward plagiarism perceived it as less common among their peers, intended to do it less, and also reported engaging in plagiarism less often. By the same token, because higher self-control scores reflect a greater ability to restrain behavior, the negative correlation between self-control and

Table 1 Descriptive statistics and correlations for Study 1

Scale	Mean (SD)	Correlations			
		1	2	3	4
1. Attitudes	1.82 (.41)				
2. Norms	3.37 (.71)	-.14*			
3. Self-Control	3.05 (.59)	.25**	-.07		
4. Intention	1.75 (.66)	-.46**	.29**	-.38**	
5. Engagement	1.73 (.62)	-.42**	.24**	-.39**	.76**

$N = 229$, * $p < .05$, ** $p < .001$ (2-tailed)

plagiarism attitudes, intentions, and engagement indicate that students with higher levels of self-control perceived plagiarism as more serious, intended to engage in it less often, and did engage in it less often. In short, the directions of the correlations observed among the variables, as measured, is what would theoretically be expected.

To test the fit of the TPB model in predicting plagiarism behavior, where self-control was included instead of perceived behavioral control, we calculated path-analytic structural equation models using IBM AMOS 24.0. Models were calculated with, and without, a direct path from self-control to engagement in plagiarism; see Fig. 2. Without a direct path from self-control to engagement in plagiarism, the statistical model fit was mediocre ($\chi^2(3) = 9.94$, $p = 0.019$, GFI = 0.983, CFI = 0.978, RMSEA = 0.101). However, the model fit was reasonable-to-good when a direct path from self-control to engagement in plagiarism was specified ($\chi^2(2) = 3.52$, $p = 0.172$, GFI = 0.994, CFI = 0.995, RMSEA = 0.058). These results demonstrate that the modified TPB model that substitutes self-control in place of perceived behavioral control can predict reported engagement in plagiarism. We also examined whether better model fit could be achieved with any data-driven revisions to the model. However, no other arrangements of the relationships among the variables achieved a better model fit than the modified TPB model presented in Fig. 2.

Study 2

Study 1 found that a modified TPB model that replaces perceived behavioral control with self-control can be used to predict engagement in plagiarism. As stated earlier, Study 2 was designed to extend on Study 1 by measuring both perceived behavioral control and self-control, and by splitting norms into their descriptive (normal behavior) and injunctive (good behavior) components. In Study 1, norms were operationalized as what students expected other students would do, i.e., descriptive norms only were assessed. The additions to Study 2 make this the only study, of which we are aware, that has examined perceived behavioral

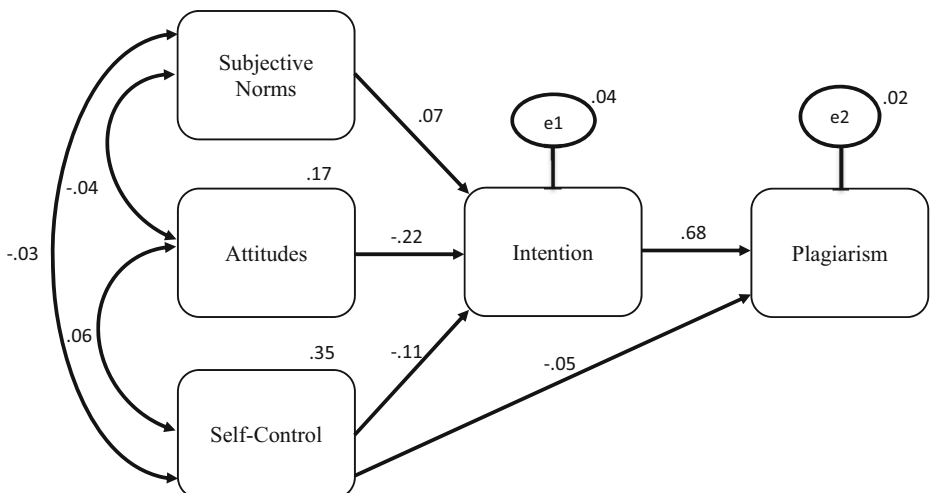


Fig. 2 The best fitting modified TPB structural equation model with estimated parameters, Study 1

control, self-control, injunctive, and descriptive norms in a TPB model to predict plagiarism behavior, or, indeed, to predict any kind of behavior.

Method

Participants and Design

A sample of 350 Australian university students completed our online survey. As in Study 1, the survey consisted of a measure of self-control, and measures of past engagement in plagiarism, attitudes, and intentions. In addition, we included a measure of perceived behavioral control, and perceived norms were separated into descriptive and injunctive components. Participants were recruited through the Murdoch University Psychology Research Participation Portal, Curtin University, social media, and various Australian student discussion forums. Data were collected between October 2015 and March 2016. From the 350 responses, 13 were excluded due to duplicate responses identified by identical Internet Protocol (IP) addresses; nine participants were excluded due to failure to complete the survey up to and including the self-control scale; and a further eight responses were disallowed due to: reporting non-university or international institutions of study, having an unreasonably short completion time, or surveys with dubious response patterns (e.g., selecting the same response for all items). These exclusions resulted in a final sample size of 320.

The sample consisted primarily of female participants (65.9%) and had a mean age of 26.82 ($SD = 9.15$). The participants were predominantly Murdoch University students (60.6%). The students were fairly evenly distributed across year levels of study (1st-year: 35.1%; 2nd-year: 19.6%; 3rd-year: 14.2%, 4th-year and post-graduate: 31.1%). Over half of the participants were enrolled in Psychology (53.3%). Over 90% of participants identified as native English speakers, and only nine (3.8%) reported experiencing previous disciplinary action relating to plagiarism.

Participants studying Psychology at Murdoch University could elect to receive research participation credit as a part of their course requirement. Other participants were offered the opportunity to enter a prize draw for a \$50 gift voucher.

Measures and Procedure

The plagiarism scale again presented students with the three scenarios used in Study 1 and asked for their responses to each scenario in turn. However, some changes were made to the plagiarism scale between Studies 1 and 2. In Study 2, a question pertaining to perceived behavioral control was added for each scenario: "How easy or difficult would it be for you to do something similar to this?". Additionally, the norms variable was divided into descriptive and injunctive norms. As in Study 1, descriptive norms were assessed by the question, "How often do you think other students do something similar?". Injunctive norms were assessed with the question, "How often do you think it is acceptable for other students to do something similar?". Response options for all questions were extended to 5-point Likert-type scales.

As in Study 1, the Brief Self-Control Scale (Tangney et al. 2004) was used to assess participants' self-control, and again it had a good Cronbach's alpha of .84. The demographic questions for Study 2 were the same questions as in Study 1 with the addition of a question regarding history of disciplinary action in relation to plagiarism. The procedure for Study 2 was the same as for Study 1.

Results and Discussion

Data Screening and Assumption Testing

As in Study 1, means for attitudes, norms (descriptive and injunctive), perceived behavioral control, intention, and engagement were calculated for each participant across the three types of plagiarism covered by the scenarios. A mean score for 'subjective norms' was calculated by averaging students' scores across the descriptive and injunctive norms items for the three plagiarism types. A per-item scale mean was also calculated for the Brief Self-Control Scale. The data were screened for violations of statistical assumptions. Injunctive norms, intentions, and engagement in plagiarism were significantly positively skewed. This skew was resolved with square root transformations for injunctive norms and plagiarism engagement and a logarithm transformation for intentions. For ease of interpretation, untransformed descriptive statistics are presented in Table 2.

Correlations and Structural Equation Modelling

Pearson's correlations were calculated for the relationships among the components of the TPB model (attitudes, norms, intentions, and engagement in plagiarism) and self-control; see Table 2. As expected, the components of the TPB model all correlated significantly with each other. Self-control also correlated significantly with all variables in the TPB model except for attitudes.

The strongest correlations were between subjective norms and both descriptive and injunctive norms. However, these correlations are due to the subjective norms measure being the composite of descriptive and injunctive norms. To avoid issues of multicollinearity, no structural equation model analyses contained the subjective norms variable alongside either descriptive or injunctive norms. Only a moderate positive relationship was found between descriptive and injunctive norms, suggesting these norms measured distinct constructs. As in Study 1, the strongest correlation between independently-measured variables was that between intentions and plagiarism behavior.

An interesting and notable finding is the strength of the correlations between injunctive norms, plagiarism intentions, and plagiarism behavior. Steiger's (1980) *Z* test indicated that injunctive norms were significantly more strongly correlated than descriptive norms with both

Table 2 Descriptive statistics and correlations for Study 2

Scale	Mean (SD)	Correlations						
		1	2	3	4	5	6	7
1. Attitudes	2.89 (.68)							
2. Subjective Norms	2.57 (.57)	-.42**						
3. Descriptive Norms	3.22 (.60)	-.17*	.78**					
4. Injunctive Norms	1.93 (.77)	-.48**	.87**	.35**				
5. Perceived Behavioral Control	3.08 (1.04)	.31**	-.43**	-.31**	-.38**			
6. Self-Control	3.24 (.65)	.01	-.17*	-.12*	-.15**	.25**		
7. Intention	1.81 (.74)	-.38**	.61**	.36**	.62**	-.49**	-.27**	
8. Engagement	1.84 (.64)	-.31**	.58**	.38**	.56**	-.42**	-.22**	.74**

N = 320, **p* < .05, ***p* < .001 (2-tailed)

plagiarism intentions ($Z = 5.03, p < .001$) and engagement in plagiarism ($Z = 3.38, p < .001$). The strength of the relationship between injunctive norms and both plagiarism intentions and plagiarism engagement is reflected in the parameter estimates of the best fitting path-analytic structural equation model for the data.

As in Study 1, to test the fit of the TPB model in predicting plagiarism engagement, we calculated structural equation models using IBM AMOS 24.0. Initially, we tested a modified standard TPB model with injunctive norms, descriptive norms, attitudes, self-control, and perceived behavioral control as predictors of intentions, and intentions as the direct predictor of engagement in plagiarism. This model was a mediocre fit to the data: $\chi^2(3) = 17.74, p = 0.003, GFI = 0.985, CFI = .981, RMSEA = 0.089$. Next, we added paths from self-control and perceived behavioral control directly to engagement in plagiarism, but this provided no better fit for the data: $\chi^2(3) = 13.55, p = 0.004, GFI = 0.988, CFI = .984, RMSEA = 0.105$. Thus, we took an iterative data-driven approach looking at regression weights to attempt to find a best fitting model for the data. Through these analyses we tested H5 and H6, and found that the inclusion of both types of norms and both self-control and perceived behavioural control produced better fit than when any one of these variables was omitted. The eventual best fitting model, as shown in Fig. 3, was the same as the first model tested, but with the addition of direct paths from both types of norms to engagement in plagiarism. This model had superlative statistical fit: $\chi^2(3) = 2.20, p = 0.457, GFI = 0.998, CFI = 1.000, RMSEA < 0.001$.

Discussion

We conducted two studies to test whether self-control and perceived behavioral control as well descriptive and injunctive norms predicted students' intentions and plagiarism behavior in a modified TPB. As hypothesized (H1 and H4), the components of the TPB correlated significantly with each other (i.e., attitudes, norms, intentions, perceived behavioral control, and engagement in plagiarism). Self-control also correlated significantly with all but one TPB component in each study, (descriptive) norms in Study 1 and

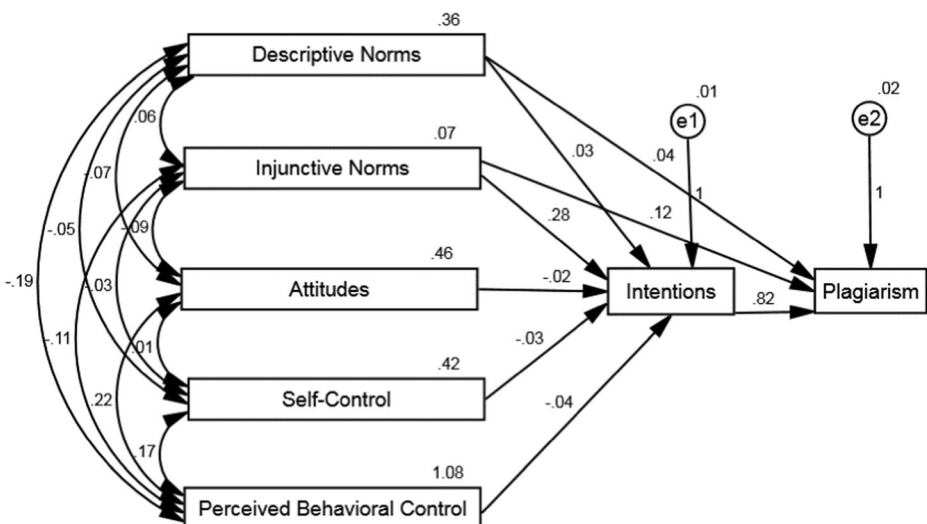


Fig. 3 Best fitting structural equation model with estimated parameters, Study 2

attitudes in Study 2. These results for self-control supported the hypothesis that it would correlate with plagiarism behavior (H2). Again, as predicted for Study 1 (H3), a TPB model where self-control was included in place of perceived behavioral control provided good statistical fit for the data. Furthermore, the addition of perceived behavioral control and the splitting of norms into descriptive and injunctive components enhanced the prediction of students' engagement in plagiarism (H5 and H6).

The results of the present studies are broadly consistent with previous studies that have found that the TPB, the components of the TPB, and self-control can predict engagement in plagiarism (e.g., Alleyne and Phillips 2011; Moss et al. 2018; Stone et al. 2009). Where these studies extend on previous research is in the substitution (in Study 1) and addition (in Study 2) of self-control as a significant predictor of plagiarism engagement within the TPB. Moreover, Study 2 extends, in two ways, on the research of Rajah-Kanagasabai and Roberts (2015), who found that both injunctive and descriptive norms added to the prediction of research misconduct. First, as noted, we found that self-control also adds prediction (in this case of plagiarism behaviour). Second, unlike Rajah-Kanagasabai and Roberts, we found a direct effect of perceived descriptive and injunctive norms provided a best-fitting model.

Theoretically, both studies presented in this paper show that the variables included as predictors of plagiarism behavior together predicted engagement in plagiarism behavior in ways that are mostly consistent with the TPB and the General Theory of Crime. Where the studies differed interestingly in their outcomes was in which variables, in addition to their impact on intentions, directly predicted plagiarism behavior. Intentions represent a consciously predetermined (planned) impetus for behavior. Thus, the direct predictors of plagiarism may either bypass planning (i.e., happen on the spot; Ajzen 1991) or bypass consciousness (i.e., occur outside of students' awareness, Kahneman 2011).

In Study 1, self-control directly predicted plagiarism behavior, whereas in Study 2 norms, most strongly injunctive norms, directly predicted plagiarism behavior. The direct path of self-control to engagement in plagiarism in Study 1, we believe, may be akin to the direct path often found between perceived behavioral control and behavior in TPB studies, and represents an on-the-spot unplanned conscious decision (Ajzen 2005). For example, students may engage in plagiarism, without a plan to do so, if they find that they cannot stop themselves from doing it if the opportunity arises. This is, in fact, very much as the General Theory of Crime would predict (Gottfredson and Hirschi 1990). We believe, however, that the direct path between norms and plagiarism in Study 2 does not represent a lack of conscious planning, but instead may represent a sidestepping of consciousness in engagement in plagiarism.

Psychology research demonstrates that people's behavior may be directly and non-consciously influenced by their perception of both descriptive norms (i.e., Cialdini et al. 1990) and injunctive norms (e.g., Aarts and Dijksterhuis 2003). Moreover, it is possible for plagiarism behavior, specifically, to occur without awareness or intention (Macrae et al. 1999). Simola (2017) has argued that academically dishonest behavior may be guided by environmental cues, such as norms, without conscious awareness on the part of the student. Although, Study 2 found that injunctive norms did influence conscious intentions to plagiarize, the path estimates in the structural equation model indicated a strong direct relationship between injunctive norms and plagiarism engagement that was unmediated by intentions. This finding is broadly consistent with evidence that injunctive norms are a strong predictor of behavior across situations and cultures (Locke et al. 2017).

Implications

The present studies indicated that all of the variables tested in the modified TPB models contributed to the prediction of students' intentions and engagement in plagiarism behaviors. Because of this, we think there are four key conclusions and practical messages that can be taken away from these studies to guide higher education teachers and policy makers. We list and then briefly expand on these four points below.

1. Self-control is important: strengthen it.
2. Perceived control is important: design assessments to make plagiarism difficult.
3. Descriptive norms are important: emphasize data on low or falling rates of plagiarism in information and education for students.
4. Injunctive norms are important: consider honor codes.

Studies suggest that self-control can be developed with practice (e.g., Muraven 2010) including developing students' self-control in an academic context (Oaten and Cheng 2006). In short, these studies find that exercising self-control in one context regularly, over time, strengthens self-control in other contexts. Thus, planned classroom activities, assessments, and extra-curricular activities that require the exercise of self-control by students could all be used to enhance students' self-control in relation to academic integrity behaviors.

The General Theory of Crime proposes that self-control only moderates engagement in unethical behavior when it corresponds with an *opportunity* to engage in unethical behavior (Gottfredson and Hirschi 1990). Opportunity, we contend, is a key component of the relationship between perceived behavioral control and intention to plagiarize. Students will feel less able to engage in plagiarism with well-designed assessments that limit their opportunities to engage in plagiarism. Thus, the lesson for educators is that assessment designs that minimize plagiarism opportunities will help to counteract plagiarism regardless of students' level of dispositional self-control.

Simola (2017) recommended the use of "social norming campaigns" to educate students in order to "correct false perceptions students might hold about the prevalence and severity of dishonesty" (p. 45). Social norming campaigns are planned education and information drives that seek to modify both descriptive and injunctive norms. Injunctive norms, as a representation of the "right thing to do", can also be set by leadership, rules, and policies. In the context of academic integrity, honor codes are a way that injunctive norms can be established and made salient to students, with research suggesting that their implementation reduces breaches of academic integrity (McCabe and Treviño 1993).

Limitations

There are two important methodological limitations that should temper readers' interpretation of our findings and the implications of them. First, although it is typical of studies that test TPB-like models, the data we collected from students was entirely self-reported. Solely self-report data may provide inflated correlations due to common methods variance (Conway and Lance 2010).

Second, due to changes in the research team between Study 1 and 2, the lie scale used in Study 1 was not included in Study 2. As the significance and direction of correlations for Studies 1 and 2 were similar for the same variables, we believe its exclusion from Study 2 is likely to have made little difference to the results of Study 2. Nevertheless, in general, we

consider it desirable to include a measure of participants' tendency toward socially desirable responding for survey measures that include undesirable behaviors, which people may under-report even when anonymous (MacDonald and Nail 2005).

Future Directions

As noted, Study 2 was the first study of which we are aware to attempt to split norms into injunctive and descriptive forms *and* to include self-control within a TPB model. Because Study 2 produced the interesting result that a direct connection of norms to plagiarism engagement optimized the model fit, we believe that replication of this study's design, using a range of measures, and assessing both plagiarism and other target behaviors, is warranted.

Psychologists are always interested in building better models of behavioral prediction, and educators too are interested in better predicting the behavior of their students. To this end, we might ask the question, what psychological variables and individual differences have we left out of the modified TPB model that may aid in the prediction of plagiarism? It has been suggested that the TPB overlooks the role of moods and emotions in predicting behavior (Tindall and Curtis 2018). Indeed, Tindall and Curtis (2018) have found that, even allowing for known predictors of plagiarism, emotionality, particularly negative emotionality, can significantly predict attitudes toward plagiarism. Thus, we believe that a viable direction for future research is to attempt to incorporate measures of students' emotional states and tendencies within a TPB model to potentially better predict plagiarism.

Conclusion

In this paper we reported two studies where self-control was included in a TPB model to predict students' engagement in plagiarism. This research examined the idea, suggested from the General Theory of Crime, that self-control could substitute for and/or add to the prediction of plagiarism using a TPB model. In both studies, we found that plagiarism could be predicted using TPB models that included self-control. An interesting extension of these results was found in Study 2, where norms, particularly injunctive norms, were direct predictors of students' engagement in plagiarism. These findings extend on past research into both the prediction of plagiarism behavior and the TPB more generally. Based on our findings, we recommend that to reduce plagiarism, educators and educational institutions should use targeted educational interventions and honor codes to enhance students' self-control and shape their perceptions of acceptable academic behavior.

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