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Abstract Building on the modified theory of planned behavior (TPB), this study examined the underlying psychological motives for academic dishonesty in a sample of 250 undergraduates drawn from three selected Malaysian public universities. The results yielded additional supports for usefulness of modified TPB model in predicting academic misconduct. All components of the model exerted statistically significant effects on intention towards academic misconduct, and intention itself exerted a statistically significant impact on academic dishonesty. This suggests that students' academic misconducts could be addressed effectively if proper attention is given to the underpinning factors. Further, the findings revealed that the hypothesized relationships among variables of the modified model were all statistically significant. The uniqueness of this study lies in the large amount of variance (69 % and 75 %) explained by components of the model (in the prediction of intention and academic dishonesty respectively). These variances have rarely been accounted for in the previous studies. Implications of the findings are discussed and suggestions advanced for future studies.

Keywords Academic dishonesty · Theory of planned behavior · Ethical belief · Higher education · Path analysis

Introduction

Going by various research reports, the phenomenon of academic dishonesty is ubiquitous across the globe. It is a widespread phenomenon (McCabe et al. 2001; Newstead et al. 1996) occurring at an alarming rate (Bertram Gallant and Drinan 2006; Davis et al. 2010; Lambert et al. 2003). This phenomenon has become endemic in many academic institutions (Davis et al. 2010; Lambert et al. 2003; Hutton 2002). That probably explains why academic dishonesty is a subject of great interest to educators, school administrators, and even the student

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populace (Simon et al. 2004). Researchers have shown that academic misconducts portend serious consequences for students, institutions, and society at large (Bertram Gallant and Drinan 2006; Center for Academic Integrity - CAI 1999; Petress 2003; Whitley and Keith-Spiegel 2002). The costs of disregarding this issue are enormous (Kidwell et al. 2003; Rawwas et al. 2004; Williams and Hosek 2003). The college cheats are more likely to cheat on the job (Swift and Nonis 1998); and perpetuate the same unethical behaviors at future work places (Harding et al. 2004; Rakovski and Levy 2007; Whitley and Keith-Spiegel 2002).

Besides, academic dishonesty brings about proliferation of incompetent graduates (i.e., graduates without required skills and knowledge associated with the awarded degree) at labor markets (Harding et al. 2004). This leads to diminish of self-worth of students (Kelly et al. 2008; Lambert et al. 2003), and may consequently damage the image of an academic institution (Petress 2003; Whitley and Keith-Spiegel 2002). It could also cause loss of value for college education (Harding et al. 2004). Worse still, academic dishonesty may facilitate recycling of fake knowledge which other may rely upon erroneously in future research. This may result in serious intellectual and physical damage to others and cause the youngsters to develop active interest in more venal cheating of all kinds (Petress 2003). Thus, academic dishonesty bears discordant effect for development of people and society.

Over the years, researchers have invested concerted efforts on the rate/frequency of academic dishonesty among students' populace (Bowers 1964; CAI 1999; McCabe 1992; McCabe and Trevino 1993; McCabe et al. 2001; Kelly et al. 2008), causes of academic dishonesty (McCabe and Trevino 1996; McCabe et al. 1999; 2001), the demographic correlates of students who cheat (Baird 1980; Dawkins 2004; Hutton 2002; McCabe et al. 2001; McCabe and Trevino 1997; Whitley 1998; Wideman 2008), the rationales/motivations for academic dishonesty (Ajzen 1991, 2002; Beck and Ajzen 1991; Whitley 1998; Whitley and Keith-Spiegel 2002), its various forms (Bowers 1964; McCabe and Trevino 1996; McCabe et al. 1999; McCabe 2001), methods of cheating (McCabe and Bowers 1996), honor codes (McCabe 1993; McCabe and Trevino 1993; 1997; McCabe et al. 1999; McCabe 2001; Prenshaw et al. 2001), and intervention strategies (Aluede et al. 2006; CAI 1999; Hutton 2002; McCabe and Trevino 1997).

The findings from the prevalent studies appear to be unanimous on the point that academic dishonesty occurs at an alarming rate in institutions of higher education (Meade 1992; Wideman 2008). Most reports in this direction maintain that as low as 40 %, and as high as 90 % of their studied populations have engaged in academic dishonesty (CAI 1999; McCabe et al. 2001; McCabe and Trevino 1993, 1996). On the other hand, studies on causes of academic dishonesty have identified factors such as institutional deficiencies (McCabe 1993, 2005; McCabe et al. 2001; 1999), faculty's unconcerned attitude (McCabe 1993, 2005; Nuss 1984), absence of honor codes or academic honesty policies (McCabe and Trevino 1993), poor implementation of academic honesty policies or honor codes (McCabe 2005; McCabe and Trevino 1993, 1997; McCabe et al. 1999), among other reasons.

In addition, the literature is replete with information on rationales for students' academic misconduct. Some of the reports in this regard include factors such as desire to pass or tendency for high grades (McCabe et al. 2001; Odunayo and Olujuwon 2010; Petress 2003), societal influences such as high emphasis on certificate (Odunayo and Olujuwon 2010; Wideman 2008), desire to level the "playing field" (Kelly et al. 2008; McCabe et al. 2001, 2002), economic concerns such as desire for a high paid job (McCabe et al. 2001; Whitley 1998; Wideman 2008), ignorance of what constitutes academic misconducts (McCabe et al. 2001; McCabe 1993; Petress 2003), peer influence (McCabe and Trevino 1993; McCabe et al. 2001; Whitley 1998), favorable disposition of the academic environment to academic misconducts (Levy and Rakovski 2006; Whitley 1998; Nadelson 2007), difficult academic workload (Kelly et al. 2008), corruption in educational system (Whitley 1998; Odunayo and Olujuwon 2010), and so on.

The aforesaid points reinforce the fact that students' academic dishonesty has received great scholarly attentions in the literature. These attentions notwithstanding, academic dishonesty still occurs rapidly at institutions of higher education (Aluede et al. 2006). The persistence of this phenomenon could be due to paucity of literature with solid theoretical bases on psychological motives for this problem (Bertram Gallant and Drinan 2006; Harding et al. 2007; Stone et al. 2007; 2010). In a comprehensive literature review, findings revealed that only few studies have sought to develop model to explain academic misconduct among students (Crown and Spiller 1998). A solid theoretical model is necessary for adequate understanding of rationales underlining academic dishonesty (Stone et al. 2007; 2010), and determining most effective measures to curtail such behaviors (Harding et al. 2007; 2012). Harding et al's. (2007) study further contended that strong theory is a necessary catalyst to understand the mechanisms involved in students' decision making and subsequent behaviors.

In this regard, Ajzen's (1991) theory of planned behavior (TPB) shows promise in predicting intention and academic dishonest conducts (Beck and Ajzen 1991; Passow et al. 2006). The main purpose of this study, therefore, is in twofold: (1) To test the modified model of Ajzen's (1991) Theory of Planned Behavior (TPB) on academic misconduct of undergraduates from three of the Malaysian public universities; (2) To examine the relationships among major components of the modified TPB model.

Theoretical Framework

Grounded in the modified Theory of Planned Behavior (TPB), this study seeks to examine psychological mechanisms involved in student's academic misconduct. The TPB was an extension of the Theory of Reasoned Action (TRA) developed by Fishbein and Ajzen (1975) to identify antecedents to engagement in a particular behavior. The major difference between the traditional TRA and the new TPB was the inclusion of an additional component known as "Perceived Behavioral Control" (PBC) in TPB (Beck and Ajzen 1991; Ajzen 2002).

Central to the TPB was the idea that intention to engage in a conduct is shaped by three components namely, attitude towards behavior (ATB), subjective norms (S/Ns), and perceived behavioral control (PBC). ATB relates to a person's dispositions about a behavior or its consequences; S/Ns refer to the normative expectations of other people regarding a particular behavior; and PBC denotes the perceived difficulty or ease of performing an action or a behavior.

TPB has been proven useful in predicting intention and behavior. Its predictive ability has been confirmed in many studies (Stone et al. 2007; 2010; Mayhew et al. 2009; Harding et al. 2007; 2012; Kisamore et al. 2007) and meta-analyses (Armitage and Conner 2001; Whitley 1998). Armitage and Conner, in a meta-analysis of 185 independent studies published through 1997, reported that TPB accounted for 27 % and 39 % variances in behavior and intention respectively. Also, in a meta-analysis of 107 studies on academic dishonesty, Whitley reported the following findings: (a) Students with favorable attitudes toward cheating are more likely to cheat than their counterparts with unfavorable attitudes (ATB); (b) Students who perceive that social norms permit cheating do so to a greater extent than other students (S/Ns); and (c) Students who perceive themselves as effective cheats are likely to do more cheating than their counterparts who feel otherwise (PBC). The aforementioned reports are proofs that TPB is effective in predicting an array of intentions and behaviors.

The present study added ethical belief (ETB) to the TPB components. Ethical belief is constituted by two key terms (ethics and belief). Ethics relates to the judgment of goodness or badness and/or right or wrong of an action or a conduct (McShane and Von Glinow 2005). Belief on the other hand, refers to value system that guides individual's moral conducts and

behaviors. Hence, ethical belief can be construed as a set of internalized value systems that guide human behaviors with respect to moral and mundane issues. ETB has been reported as having significant influence on academic dishonesty (UNAL 2011). Decisions to act dishonestly or otherwise are inherently moral/ethical issues. It follows that ethical considerations may be more significant than situational factors (Harding et al. 2012). Though, Rawwas and Isakson (2000) noted that pressures that lead students to unethical conducts are greater than factors that encourage ethical behaviors.

In a survey on ethical beliefs and attitudes of business students, Johns and Strand (2000) reported that though students believed that taking a test for someone and copying someone's exam are most unethical, they were uncertain about failing to report unfavorable errors in grading. Similarly, Whitley (1998) and McCabe and Trevino (1997) succinctly argued that students' belief about cheating affect cheating behavior. All these point to the fact that students' internalized value system is a force to reckon with in issues involving academic dishonesty. Thus, it is not out of place to hypothesize that ethical belief would exert a significant influence on intention towards academic misconduct, and actual academic dishonesty. Figure 1 presents the current hypothesized model (the modified version of Ajzen's 1991 TPB model).

Hypotheses

1. The modified TPB components (perceived behavioral control, subjective norms, attitude towards behavior, and ethical belief) would exert significant effects on intention towards academic dishonesty.
2. Intention would exert a significant influence on actual academic dishonesty.
3. Significant co-variances would exist among the variables of the modified TPB model.

Methods

Participants

This study comprised 250 undergraduates drawn from three of the Malaysian public universities (corresponding to 15 % of the total public universities in Malaysia). A

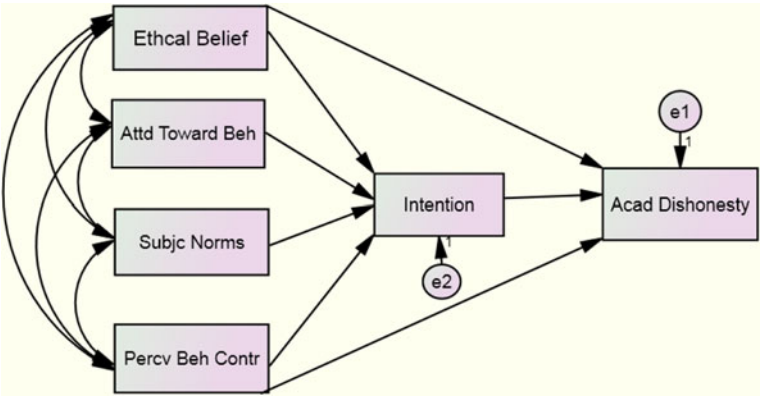

Fig. 1 The hypothesized model (Modified Ajzen's 1991 TPB Model)

convenience sampling method was employed in selecting the participants. Convenience sampling technique is a sampling method wherein the researcher chooses participants who are willing and available to be studied. The strength of this method lies in flexibility which permits the researcher choosing rich sample that are more willing to provide useful responses towards addressing the goals of a research (Creswell 2008). The demographic analysis of the participants showed that 75 % were local, and the remaining, international students. Also, 60 % were females while 40 % were males. Ages ranged from 17 years to 26 years, with mean of 19 years. Most of the respondents (85 %) were single, while 15 % were married. There was no promise of incentives to students only that the instrument was administered during the leisure hour of the respondents with the assistance of some known lecturers in each university. Besides, an appeal was made to respondents prior to administration of the instrument for their cooperation and sincere responses to the survey items.

Instruments

PACES-2

This study adapted survey items from "PACES-2," a measure developed by Harding et al. (2007) to assess frequency of academic dishonesty in class test and homework, as well as test components of modified theory of planned behavior. The adapted items included the five items measuring intention; eight items measuring subjective norms; and four items for perceived behavioral control. Later on, two self-constructed items were added to intention, one to perceived behavioral control, and one item dropped from subjective norms to enhance effective measure of the constructs in the context of the present study.

Measure of Attitude Towards Behavior

The attitude towards behavior (ATB) was measured with five items adapted from the Stone et al.'s (2007) study. All the items were slightly modified to suit the context of the present study. Unlike the main source where items were measured on a 5-point Likert scale, the present study used 7-point Likert scales (ranging from 1=strongly disagree, to 7=strongly agree) to enable a wider variation in the participants' responses.

Measure of Ethical Belief

Ethical belief (ETB) was measured with 11 items adapted from Kirkland's (2009) study. The items were originally developed by Josephson Institute of Ethics (2004), to collect data on the ethics of American youth. According to Kirkland (2009), several studies had used this measure to solicit data on issues relating to moral and ethical conducts of the youth population.

Measure of Academic Dishonesty

As for academic dishonesty, the same approach used in Harding et al. (2007) was applied. The dependent variable (academic dishonesty) which corresponds to behavior in the original TPB model was measured on a 7-point Likert scale. Respondents were asked the following

questions: ["During the previous academic terms, how frequently did you engage in the following acts: cheating on in-class tests or exams; cheating on homework assignments; unapproved collaboration on assignments; writing a paper for another student; and plagiarizing a paper using the internet?"]. Response options ranged from 1 equals never, to 7 equals everytime.

Scores and Interpretation Procedures

All the variables except ethical belief were measured on a 7-point Likert scale with options ranging from '1' (strongly disagree) to '7' (strongly agree) for the first four constructs (intention, attitude towards behavior, perceived behavioral control, and subjective norms), and from '1' (never) to '7' (everytime) for academic dishonesty. Ethical belief was measured on a 5-point scale with options ranging from '1' (strongly disagree) to '5' (no opinion). Besides, a total of seven items were subjected to reverse coding. These included item 11 from ethical belief; items 3, 4, 6 and 7 from subjective norms; item 5 from perceived behavioral control; and item 4 from attitude towards behavior. The reverse coding was done due to the negative wording of the items involved. A high score for intention (INT) means that the respondents' likelihood of engaging in academic dishonesty was high and vice versa for a low score. For attitude towards behavior (ATD), a high score on the scale means low/negative disposition towards academic dishonesty and vice versa for a low score. On the other hand, a low score for perceived behavioral control (PBC) implies that the respondents have low perceived ability to succeed with academic misconduct, and vice versa for a high score. Concerning subjective norms (S/Ns) and academic dishonesty (AD), a high score implies high supportive environment for and high involvement in academic misconducts respectively for the two constructs. However, a high score for ethical belief (ETB) denotes that respondents were high in moral capability and/or self-restraint and vice versa for a low score.

Validity and Reliability

Regarding validity and reliability issue, Harding et al. reported that all the methods employed in developing their instruments were reviewed and approved by a Behavioral Sciences Institutional Review Board. Besides, they obtained high correlations (.90 and .82) for the frequency and number items, which according to them, served as evidence for validity of the frequency items. Also, the internal consistency score for each of the scales ranged from moderate to high, with the least Cronbach's alpha reliability reaching 0.67. For Stone et al.'s (2007) items, an internal consistency score of .70 was reported for the items.

The researcher sought permission for adaptation of the afore-mentioned instruments. Thereafter, some amendments were made. After all necessary amendments and modifications had completed, the researcher again re-examined the validity and reliability estimates of the modified instrument. Only a total of 231 responses were considered valid to be included in the analysis. Both Cronbach's alpha, descriptive statistics and confirmatory factor analysis (CFA) procedures were employed in this respect. These procedures yielded very good outcomes. All the scales examined produced statistically reliable and valid outcomes. The overall result showed that the modified instrument consists of 40 items. The break-down analysis revealed that the six constructs of the modified model (ETB, INT, ATB, S/Ns, PBC, & AD) have eleven, seven, five, seven, five, and five items respectively, with Cronbach's alpha reliability coefficients ranging from .90 to .93. Besides, the goodness of fit statistics and parameter loadings of the CFA showed that each of the scales is a valid

measure of its construct. Table 1 presents all the tested constructs, internal consistency scores, descriptive (means and standard deviations) and CFA fit statistics. Figure 2 presents

Table 1 Cronbach's alpha, descriptive, CFA loadings and fit statistics

Constructs	Items	C'alpha	M	SD	Loadings	p	cmin/df	CFI	RMSEA
1. Intention (INT)	INT1	.925	32.9	9.1	.79	.087	1.54	.993	.049
	INT2				.74				
	INT3				.79				
	INT4				.87				
	INT5				.81				
	INT6				.78				
	INT7				.82				
2. Attitude Towards Behavior (ATB)	ATB1	.934	22.7	6.8	.91	.192	1.45	.997	.043
	ATB2				.72				
	ATB3				.89				
	ATB4				.83				
	ATB5				.91				
3. Subjective Norms (S/Ns)	S/Ns1	.902	32.9	8.5	.88	.289	1.24	.999	.032
	S/Ns2				.92				
	S/Ns3				.87				
	S/Ns4				.92				
	S/Ns5				.88				
	S/Ns6				.88				
	S/Ns7				.68				
4. Perceived Behavioral Control (PBC)	PBC1	.922	23.9	6.2	.85	.104	1.82	.995	.060
	PBC2				.88				
	PBC3				.85				
	PBC4				.86				
	PBC5				.75				
5. Ethical Belief (ETB)	ETB1	.924	52.6	11.5	.60	.001	3.05	.980	.094
	ETB2				.86				
	ETB3				.75				
	ETB4				.86				
	ETB5				.87				
	ETB6				.78				
	ETB7				.78				
	ETB8				.76				
	ETB9				.84				
	ETB10				.79				
	ETB11				.84				
6. Academic Dishonesty (AD)	AD1	.927	22.2	6.9	.82	.354	1.11	.999	.022
	AD2				.88				
	AD3				.89				
	AD4				.89				
	AD5				.76				

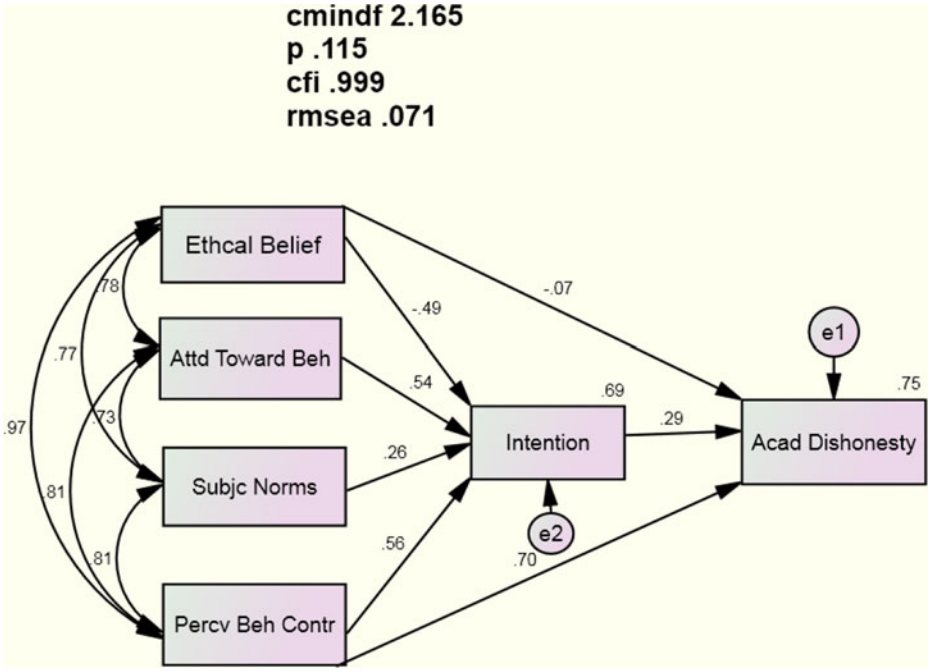

Fig. 2 The modified model with calculated path effects

the hypothesized model with generated results. A complete set of items for all constructs of the instrument is provided in the appendix.

Results

Upon validating the measures of constructs of the present data set, the hypothesized model was tested using the path analysis technique of the structural equation modeling. As could be seen from Fig. 2 above, the modified model produced a moderately good fit statistics. According to Bollen (1989), a model is said to have a good fit if the Normed Chi-square (Cmin/df) is less than or equal to 5.0, and p-value greater than .05. Also, the closer the value of the Root Mean Squared Error of Approximation (RMSEA) to .05, the better it is (Browne and Cudeck 1993). Any major deviation from these standards requires researcher to either reject or respecify a model (Byrne 2010; Kline 2005).

The goodness of fit statistics obtained for the present model is moderately adequate. These include a Normed Chi-square of 2.17, p-value .115, RMSEA .071, and Comparative Fit Index (CFI) .999. Besides, the path effects estimates for the prediction of intention were all statistically significant (critical ratio values>1.96, at an alpha level of $p<.001$), practically important (path coefficients were .2 and above), and logically meaningful. The intention itself exerted a statistically significant effect (.29) on academic dishonesty. The model estimates further revealed that the co-variances among the tested constructs were moderately adequate and statistically significant. Moreover, the four hypothesized predictors in the model altogether explained 69 % variance in the prediction of intention, and intention also explained 75 % variance in the prediction of academic dishonesty. In a nutshell, this

study found the modified TPB model adequately useful in predicting both intentions toward academic dishonesty and actual academic misconducts. It was evident, thus, that the three hypotheses highlighted for this study were supported by the present data. Tables 2, 3, and 4 present the correlation matrix and standardized causal effect estimates for all tested constructs, as well as total variances explained in the prediction of the two endogenous variables of the model (intention and academic dishonesty).

Discussion

The prevalence of academic dishonesty is a phenomenon that is well documented. However, the gaze of empirical studies into the matter is largely confined within the Western world especially in the U.S. Not much has been done outside the West. Besides, most studies so far conducted were not guided by established theoretical frameworks. The present research filled parts of the vacuums by examining the underlining factors of academic dishonesty using a well established theory from social psychology. The study examined the efficacy of a modified theory of planned behavior in predicting academic dishonesty among undergraduates at the selected Malaysian public universities. The hypotheses were formulated to confirm whether the variables of the modified model are significantly useful for predicting intention towards academic dishonesty; whether intention itself would exert significant effect on actual academic dishonesty; and whether significant relationships exist among constructs of the modified model.

The findings of the study (Fig. 2 and Tables 2, 3, and 4 above) provided additional support for the use of TPB as a basis for predicting and understanding the psychological underpinnings of students' academic dishonesty. The results showed that all variables of the modified model were statistically useful and effective in predicting intention towards academic dishonesty. Meanwhile, intention also exerted a significant impact in the prediction of academic dishonesty. Further, the hypothesized relationships in the model were all statistically significant.

It is evident from the present findings, therefore, that the hypothesized modification of the TPB fits the data in the current study. Only a few previous studies (e.g., Beck and Ajzen 1991; Harding et al. 2007; Passow et al. 2006; Stone et al. 2007; 2010) have applied TPB model to academic dishonesty. However, unlike the previous studies, this study extended the predictive ability of TPB by adding a component (ethical belief) to the key predictors in the model.

The findings of this study are relatively consistent with the previous studies and the central thesis of the TPB model which postulated that intention precedes engagement in an action or a behavior, and knowing factors that influence states of the mind (intention) would enrich knowledge of motives behind students' conducts. These findings, in tandem with the

Table 2 Co-variance estimates among constructs

			Estimate	S.E.	C.R.	P	Label
SNs	<—>	PBC	.808	.129	9.530	***	par_8
SNs	<—>	ATB	.733	.140	8.970	***	par_9
ATB	<—>	ETB	.777	.703	9.303	***	par_10
ATB	<—>	PBC	.809	.141	9.539	***	par_11
SNs	<—>	ETB	.769	.638	9.248	***	par_12
PBC	<—>	ETB	.972	.688	10.573	***	par_13

Table 3 Standardized regression weights

			Estimate	S.E.	C.R.	P	Label
INT	<---	SNs	.255	.072	3.944	***	par_2
INT	<---	ATB	.537	.065	8.299	***	par_3
INT	<---	PBC	.556	.203	3.105	.002	par_4
INT	<---	ETB	−.489	.036	−3.068	.002	par_5
AD	<---	INT	.294	.046	6.043	***	par_1
AD	<---	PBC	.699	.167	4.496	***	par_6
AD	<---	ETB	−.071	.031	−.493	.622	par_7

previous studies (Beck and Ajzen 1991; Harding et al. 2007; Passow et al. 2006; Stone et al. 2010; Whitley 1998), imply that where there is a highly favorable disposition towards academic misconducts, a highly supportive environment for such conducts, and a highly perceived ability to succeed with academic dishonesty (on the part of students), all things being equal, the rate of academic misconducts would be high. It also denotes that student's ethical belief is a factor to reckon with in any measure to address academic dishonesty. Meaning, if students are high in ethical consciousness and understanding, the tendency is high that they will engage less in academic misconducts.

Of great importance are the path effects of all tested variables of the modified model (PBC, ATD, S/Ns, ETB, & INT) which are not only statistically significant, practically important, but also logically meaningful. This indicates that these variables possess high predictive values for academic dishonesty. PBC has been described as perceived ease of performing a behavior (i.e., mostly shaped by past experience and/or anticipated barriers) (Ajzen 2002). Ajzen contended that PBC and self-efficacy are related because both reflect the perceived ability to perform a behavior. The impact of the PBC on academic dishonesty has been well researched (Bunn et al. 1992; McCabe et al. 2002; Stone et al. 2010). In McCabe et al.'s (2002) study, degree of certainty of succeeding in a conduct or a behavior predicted extent of involvement in academic dishonesty. In effect, a large number of students would probably indulge in academic dishonesty if severe sanctions are not imposed to counteract the potential benefits of dishonest conducts (Kisamore et al. 2007; Stone et al. 2010).

Hence, it is not surprising that PBC exerted direct significant effect both on intention and also academic dishonesty (as shown in Fig. 2). This possibility was anticipated by Ajzen (1991, 2002) when he argued thus: "to the extent that the individual's perception of behavioral control is in accord with the actual behavioral control that perceived behavioral control serves as a proxy for actual behavioral control therefore having a direct influence on both intention and the actual behavior." Consistent with the previous report (Beck and Ajzen 1991), the present study indicates that students' perceived ability to succeed with dishonest conduct is shaped by knowledge of measures instituted to curb academic dishonesty in their respective institutions.

Attitude towards behavior (ATB), on the other hand, denotes the amount of tolerance exhibits towards academic dishonesty. This disposition affects whether or not students would form intention towards an act of academic dishonesty (e.g. cheating or plagiarism). In a meta-analysis study, Whitley (1998) reported a large effect size (d=.81) for attitude

Table 4 Standardized total effects

	ETB	PBC	ATB	SNs	INT
INT	−.489	.556	.537	.255	.000
AD	−.215	.863	.158	.075	.294

towards cheating across 16 studies. Whitley submitted further that students who cheat have more positive attitudes and tolerance for cheating than their counterparts who shun it. Similarly, Stone et al. (2007) noted that reporting academic misconduct done by one's peers is a pointer to students' negative disposition towards academic misconduct. This is because students who display negative attitudes toward academic dishonesty would likely report more cheating than their counterparts who consider integrity policies as unfair (McCabe and Trevino 1997; Simon et al. 2004).

In the case of subjective norms (S/Ns), previous findings have shown that the prevailing social norms of the school environment have implication on level of academic misconducts (Kirkland 2009; Mayhew et al. 2009). S/Ns, in a simplest term, refer to individual's perceptions that others who are important to him/her believe he/she should perform the behavior of interest (Harding et al. 2007; 2012). The tendency to act a predominant behavior/culture is more pronounced among members of same group or clique. In the school setting, this practice is frequently described as peer influence. The evidence of relationship between academic dishonesty and "cheating culture" that exists on campus has been documented (McCabe et al. 2002). Hence, rampant cheating conducts may cause academic dishonesty to be viewed as a normal behavior (Whitley 1998); which may further cause students to construct "social realities" in a student culture that defines academic dishonesty as more acceptable and less serious than previously viewed (Payne and Nantz 1994). It is therefore not unexpected to find S/Ns exerting significant impacts on intention towards academic dishonesty.

The most impressive finding was the evidence of a statistically significant impact of ethical belief (ETB) on intention. This study found ETB exerting an effect of "−.49" on intention towards academic dishonesty. Logically, it is thinkable to expect such a direction of influence from ethical belief to intention towards academic dishonesty. The present result further approves this expectation. As denoted in the path effect from ETB to INT (Fig. 2), the level of ethical capability or moral development is very vital in determining a student's level of academic dishonesty. The higher the ethical consciousness and/or moral reasoning, the lower is the likelihood of a student's involvement in academic dishonesty. This position concurs with the findings of previous studies. Individuals with higher cognitive moral development (CMD) were said to make more ethical decisions (Trevino and Youngblood 1990); and students who rejected expense-padding practice were found to use higher level of CMD to support their decisions (Stratton et al. 1981). Thus, ETB proved a good predictor in the modified TPB model.

Implications and Recommendations

The findings of this study have several implications for theory and practice in higher education. The higher education policy makers and university administrators are urged to take cognizant of the psychological mechanisms behind students' academic misconduct. Consistent with Kidwell et al.'s (2003) remark, the first practical step to address academic dishonesty is understanding the circumstances attracting students to these conducts. In the context of this study, all components of the modified TPB model were significantly important and vital in determining intention towards academic dishonesty. Student's attitude towards academic misconduct is one of such components. The present result depicts that respondents were relatively high and positive in their disposition towards academic dishonesty. This calls for urgent action on the part of stake holders in higher education, by fashioning out effective methods that inculcate right-type positive values and virtues in students. The methods that would make them (students) develop zero tolerance for academic misconducts.

One practical way towards this objective is by formulating formidable/enduring educational policies. That is, policies that emphasize a simultaneous transmission of knowledge and worthwhile values in learners. This requires harmonization of body of knowledge and moral values in the curriculum of higher education. Put differently, frantic effort is required to institutionalize a value-based educational system. The present practices in many higher institutions where departments designed for value-inclined courses/subjects such as religious studies, philosophy, history, ethics, literature, etcetera are made to close down prematurely are regrettable. Positive values and attitudes that promote good conducts cannot develop in vacuum; they need to be learnt as part of educational experiences. Thus, educational policy makers are called upon to assist the situation by designing core courses on ethics for all students, irrespective of fields of specializations. It is note-worthy that some Malaysian universities are already treading this path. However, this needs to be extended to institutions all over the country.

Another important psychological factor shaping rate of engagement in academic dishonesty is the perceived prevailing norms of the college environment. This study found perception of supportive environment for dishonest conducts, in terms of the positive attitudes of people whose opinions are held strongly by students (e.g., peers, friends, colleagues, teachers, etc.), as one of the determinants of intention towards academic dishonesty. This finding is not surprising. McCabe and Trevino (1997) reported a similar outcome in their study. According to these scholars, majority of their respondents felt that because their peers cheat and escaped easily, cheating was done to level the playing field. Specifically, McCabe and Trevino (1993) stated regarding peer influence as follows: "academic dishonesty not only is learned from observing the behavior of peers, but that peers' behavior provides a kind of normative support for cheating" (p. 533). Hence, all necessary measures should be consolidated to ensure that college environment detests dishonest practices and promotes ethical conducts.

Moreover, perceived behavioral control also proved a powerful determinant of intention towards academic dishonesty. This study found that the more a difficulty is felt or perceived by student in succeeding with dishonest conducts, the lesser is the likelihood of forming intention towards academic dishonesty. The previous studies (McCabe 1993, 2005; McCabe et al. 1999; McCabe and Trevino 1993, 1997; Nuss 1984) have reported that faculty attitudes and state of implementing academic honesty policies on campus are issues of concern in students' perceptions of ease or difficulty of engaging in academic dishonesty. In this case, faculty, educators and university administrators are urged to aid the growth of quality scholarship by exhibiting a zero tolerance attitude for academic dishonesty. This effort should not be limited to a mere rhetoric of warning students against academic dishonesty during a class test or exam, strong punitive measures should always be instituted against culprits of these conducts.

Last but not the least, this study found ethical belief as having a strong influence on academic dishonesty. This result depicts the importance of moral capability as a determinant of how much academic dishonesty students would perpetrate. As stated earlier, students who are high in sense of ethical belief are less likely to indulge in acts of academic dishonesty unlike their counterparts who have lower sense of ethical belief. Thus, to tackle academic dishonesty, one of the important contributions of this study is its formulation of a means to strengthen students' ethical belief system.[1] This could be achieved by making curriculums of higher education sensitive to inculcation of moral values and ethics in all its disciplines and for all levels of students.

[1] As rightly pointed out in the Kibler, NUSS, Paterson, and Pavela's (1988) study (cited in Whitley and Keith-Spiegel 2002), moral and ethical development of students is a vital mission crucial to the existence of higher education.

Conclusion

The major contribution of the present study lies not only in using a strong theoretical framework to examine psychological mechanisms underlining students' academic dishonesty, but the amount of variance accounted by the constructs which is far greater than those recorded in the previous studies. The previous studies had reported 27 % and 39 % variances in behavior and intention respectively (Armitage and Conner 2001; Whitley 1998); 15 % in intention to cheat (Stone et al. 2007); and 58 % and 66.2 % in cheating behavior and intention to cheat respectively (Harding et al. 2007). The present study however found 69 % and 75 % variances for intention and academic dishonesty respectively, thereby lending a strong credence to the efficacy of modified TPB model in understanding the rationales behind students' academic misconduct.

This study also enjoyed a singular honor of investigating the impact of ethical belief in the prediction of intention towards academic dishonesty. The fact that this component exerted a statistically significant effect shows that the predictive utility of TPB model could further enhance by factoring ethical/moral issue into consideration. In other words, this investigation strengthens and supports our earlier belief that modification is required for TPB model to enhance its usefulness and effectiveness in the prediction of students' academic conducts and other related matters.

Limitation

The present study is not without some limitations. The sample size is relatively small compared to previous studies where a larger sample size is selected from multi-institutional settings. Besides, the sampling technique approach utilized also raises concern about generalizability of the study's outcome. As noted earlier, although convenience sampling method affords researcher opportunity to choose more willing respondents from the population, it does not guarantee that the participants are true representatives of the population. Therefore, the extent that the findings might be generalized is curtailed. Consequently, future studies should consider a bigger sample size using a probabilistic sampling principle. Besides, the impacts of additional variables such as moral reasoning, personality components and even cultural factors are considerable for examination alongside the original components of the TPB model. This would help to generate additional supports for the efficacy of the model and enhance its generalizable impact.

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APPENDIX

COMPLETE ITEMS OF THE MODIFIED INSTRUMENT

a. **PACES-2** (The Perceptions and Attitudes toward Cheating among Engineering Students Survey, version 2, adapted from Harding et al. 2007)

Instruction: Please indicate your level of agreement or disagreement with the items listed below. Use the keys: 1 = Strongly Disagree; 2 = Disagree; 3 = Less Disagree; 4 =

Undecided; 5 = Less Agree; 6 = Agree; 7 = Strongly Agree

Intention (INT)

1. I will cheat on an in-class test or exam during the current academic term.
2. I intend to cheat on an in-class test or exam during the academic term.
3. If I had the opportunity, I would cheat on an in-class test or exam during the current academic term.
4. I will allow my friends to copy my academic works before submitting to the professor.
5. I will turn in a paper purchased online for professor's assignment during the current academic term.
6. I intend to collaborate with friends to solve some of my take-home assignments.
7. I intend to engage expert to write some of my academic works during the current academic term.

Perceived Behavioral Control (PBC)

1. I believe I would have a great deal of control over whether I get caught attempting to cheat on a class test/exam.
2. I believe that I have the skills required to cheat successfully during a class test or exam in all circumstances.
3. It is mostly up to me whether or not I cheat successfully during a class test or exam.
4. I will try to cheat if my friends cheat and escaped easily.
5. I will NOT engage in cheating even if all other students are doing it.

Subjective Norms (S/Ns)

1. If I cheated on a class test/exam, most people who are important to me (e.g., parent, siblings, friends, peers, teachers, etc.) would approve of my behavior.
2. The people in my life whose opinions I value (e.g., parent, siblings, friends, peers, teachers, etc.) would be willing to cheat on a class test/exam if they were in my situation.
3. The people in my life whose opinions I value (e.g., parent, siblings, friends, peers, teachers, etc.) would NOT approve of my conduct if I cheated on a class test/exam.
4. Most people who are important to me (e.g., parent, siblings, friends, peers, teachers, etc.) think I should NOT cheat on a class test/exam.
5. People whose opinions I value (e.g., parent, siblings, friends, peers, teachers, etc.) expect me to cheat on a class test/exam.
6. Most people who are important to me (e.g., parent, siblings, friends, peers, teachers, etc.) will look down on me if I cheat on a class test/exam.
7. None of the people who are important to me (e.g., parent, siblings, friends, peers, teachers, etc.) thinks it is OK to cheat on a class test/exam.

b. **Measure of Attitude Towards Behavior** (adapted from Stone et al. 2007)

Instruction: Please indicate your level of agreement or disagreement with the items listed below. Use the keys: 1 = Strongly Agree; 2 = Disagree; 3 = Less Disagree; 4 = Undecided; 5 = Less Agree; 6 = Agree; 7 = Strongly Agree

1. It is necessary to report cheating by other students.
2. It is always wrong to cheat.
3. Students who cheat in college are likely to cheat on the future job.

4. Cheating is necessary to level the playing field.
5. It is good to report a friend caught cheating.

c. **Measure of Academic Dishonesty** (using Harding et al.'s 2007 approach)

Instruction: During the previous academic term in university, how frequently did you engage in the following conducts using the following scales, 1 = Never; 2 = Once or twice; 3 = Few times; 4 = Many times; 5 = Most of the times; 6 = Almost every time; and 7 = Every time:

1. Cheating on a class test/exam
2. Cheating on home assignments
3. Unapproved collaboration on an assignment
4. Writing a paper for another student
5. Plagiarizing a paper using the internet

d. **Measure of Ethical Belief** (adapted from Kirkland 2009)

Instruction: What do you think or believe about the following statements? Use the keys: 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree and 5 = No Opinion:

1. It is important for me to be a person with good character
2. Most adults in my life consistently set a good example of ethics and character
3. My parents/guardians always want me to do the ethically right thing, no matter the cost
4. Being a person with good character is more important than being rich
5. When it comes to doing what is right, I am better than most people I know
6. In personal relationships, trust and honesty are essential
7. I am satisfied with my own ethics and character
8. In business and the workplace, trust and honesty are essential
9. It's important to me that people trust me
10. People should play by the rules even if it means they lose
11. It's not cheating if everyone is doing it.

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