# USING THE THEORY OF PLANNED BEHAVIOR AND CHEATING JUSTIFICATIONS TO PREDICT ACADEMIC MISCONDUCT

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# USING THE THEORY OF PLANNED BEHAVIOR AND CHEATING JUSTIFICATIONS TO PREDICT ACADEMIC MISCONDUCT


## ABSTRACT

**Purpose** – Academic misconduct appears to be on the rise; some research has linked academic misconduct to unethical workplace behaviors. Unlike previous empirically-driven research, this theory-based study examines the usefulness of a modification of Ajzen's (1985) Theory of Planned Behavior to predict academic misconduct.

**Design/methodology/approach** – Two hundred seventy one students enrolled at a U.S. university were surveyed. Structural equation modeling was used to test the model.

**Findings** – The modified Theory of Planned Behavior model in which intentions and justifications both serve as antecedents to behavior fit the data well. The model accounted for 22% of the variance in intentions to cheat and 47% of the variance in self-reported cheating.

**Practical Implications** – This study extends the TPB model in the prediction of misconduct behavior. Attitudes, subjective norms, behavioral control, intentions and justifications were related to cheating behaviors. Academic misconduct may be reduced by shaping attitudes toward cheating, changing perceptions of subjective norms regarding the prevalence of cheating, and lowering students' perceptions of their control of cheating by, for example, emphasis of the consequences of getting caught. Understanding and reducing academic misconduct is important for promoting ethical behavior and values in future worker and organization leaders.

**Originality/Value:** Identification of factors that influence academic misconduct is an important aspect of professional development research given its link to workplace misconduct. To date, academic misconduct research has been primarily empirically- rather than theory-driven. The current study identifies factors that contribute to academic misconduct by extending an established theoretical model of behavior.

**Limitations**–The primary limitations of this research are the cross-sectional research design, the self-selected sample, and the single source of survey data.



**Keywords**–Academic integrity, theory of planned behavior, structural equation modeling

**Paper type** –Research paper

# USING THE THEORY OF PLANNED BEHAVIOR AND CHEATING JUSTIFICATIONS TO PREDICT ACADEMIC MISCONDUCT

There is considerable evidence that cheating, plagiarism and other forms of academic misconduct are prevalent in high schools (Josephson Institute of Ethics, 2008; Williams, 2001), colleges and universities in the U.S. (Davis *et al.*, 1992; McCabe and Trevino, 1993, 1997; Whitley, 1998), Canada (Christensen-Hughes and McCabe, 2006; Genereux and McLeod, 1995), Australia (Brimble and Stevenson-Clarke, 2005), England (Newstead *et al.*, 1996) and many other countries (Koljatic *et al.*, 2003; Magnus *et al.*, 2002). Academic misconduct appears to be related to attitudes toward unethical behaviors in the workplace. Indeed, some research suggests that people who cheat in school are more likely to engage in unethical behavior at work (Nonis and Swift, 2001; Sims, 1993; Stone *et al.*, 2009). Cheating in school is a likely precursor to engaging in unethical behaviors at work and thus, may threaten worker career success and pose risks for organizational ethical violations. Indeed, in McCall, Lombard and Morrison's (1988) study of derailed executives, two of the top 10 career derailers, betrayal of trust and being too ambitious/playing politics, are closely related to academic misconduct.

Cheating, plagiarism and similar forms of academic misconduct have been examined in many studies (see Crown and Spiller, 1998; Kisamore *et al.*, 2007; McCabe *et al.*, 1996, 1999, 2001, 2002; Smyth and Davis, 2004; Whitley, 1998). Review articles of ethical decision-making (Ford and Richardson, 1994) and college cheating (Crown and Spiller, 1998; Whitley, 1998) have also appeared. For example, in a comprehensive review of the empirical literature on academic integrity, Crown and Spiller (1998), based on Ford and Richardson's (1994) review of ethical decision making, categorized studies into those that used individual factors and those that used situational factors as predictors of academic integrity. Both reviews affirmed that research

has predominantly examined either individual factors (e.g., gender, age, grade point average, education, personality) or situational factors (e.g., honor codes, surveillance, rewards/sanctions, peer context, fraternity or sorority membership, campus housing) as predictors and lacked a coherent framework to inform academic integrity research. These reviews indicate that few studies have sought to develop a model to explain misconduct behavior.

While the majority of academic misconduct research has been empirically-driven, relying on demographic, situational and personality variables to explain violations of academic integrity, a few studies (see Beck and Ajzen, 1991; Harding *et al.*, 2007; Passow *et al.*, 2006; Stone *et al.*, 2007; Whitley, 1998) have used Ajzen's (1985, 1991) Theory of Planned Behavior (TPB) to examine academic misconduct intentions and behaviors. Theory-driven research is necessary to develop an understanding of the rationale underlying academic misconduct and to determine the most effective means for curbing such behaviors. Ajzen's (1991) Theory of Planned Behavior (TPB) shows promise in predicting and providing one possible rationale for academic misconduct (Beck and Ajzen, 1991; Harding *et al.*, 2007; Stone *et al.*, 2007; Whitley, 1998). Such work may inform research that investigates motives and factors influencing unethical workplace behaviors.

The current study has three goals: 1. to empirically investigate the fit of a modification of the TPB model which includes six rather than five components; 2. to examine the accuracy of the modified model in predicting cheating intentions and behavior among business school students and; 3. to expand the body of research regarding academic misconduct by utilizing structural equation modeling to predict academic misconduct.

## 1:THE THEORY OF PLANNED BEHAVIOR AND ACADEMIC MISCONDUCT

The TPB (Ajzen, 1985, 1991) stipulates three components predict intention to engage in a specific behavior and subsequent engagement in the behavior. The crux of the theory is that intentions to engage in a behavior precede actual engagement in the behavior. Intentions to engage in a behavior are affected by three components: (1) *attitudes toward the behavior*, i.e., beliefs about a behavior or its consequences; (2) *subjective norms*, i.e., normative expectations of other people regarding the behavior, and (3) *perceived behavioral control*, i.e., the perceived difficulty or ease of performing the behavior. Ajzen added perceived behavioral control to the Theory of Reasoned Action (Fishbein and Ajzen, 1975) to enhance prediction in situations where behavior may be constrained and/or the behavior violates norms or rules. An obvious example of this is the case of cheating, plagiarism and other academic misconduct behaviors that violate academic integrity policies.

A bibliography of TPB articles on Ajzen's website showing 56 theory and review papers as well as 690 empirical papers (Ajzen, 2009) reflects the extensive use of the theory. A review of the studies on Ajzen's website shows that the TPB has been used to predict many types of behavior; most commonly, researchers have used the TPB to predict behaviors related to the promotion of health and safety as well as environmental protection. A meta-analysis by Armitage and Conner (2001) of 185 independent studies published through 1997, found that the TPB accounted for 27% and 39% of the variance in behavior and intentions, respectively.

While the TPB (Ajzen, 1991) has been used to predict a wide variety of behaviors, its use has been fairly limited in the area of academic misconduct. Specifically, it has been used both in an *a priori* study of cheating, lying and shoplifting (Beck and Ajzen, 1991), an *a priori* study of cheating and plagiarism (Harding *et al.*, 2007), and two ex post facto studies of cheating and

plagiarism (Passow *et al.*, 2006; Stone *et al.*, 2007). Also, a review by Whitley (1998) used the TPB to categorize personality, demographic and situational variables as the basis for a model of academic misconduct. The most direct test of the efficacy of the TPB for predicting academic dishonesty has been Beck and Ajzen's (1991) study. This study utilized the TPB model for predicting three behaviors, shoplifting and two academic integrity violations, cheating on an exam and lying to get out of an exam or assignment in a sample of 146 psychology students.

Though moral obligation is not part of the TPB model, Beck and Ajzen (1991) included it as a predictor arguing it might add incremental validity to account for these types of behaviors. While results showed moral obligation added statistically significant explanatory power, Beck and Ajzen concluded its addition was of little practical value. Despite this, Whitley (1998), Passow *et al.* (2006) and Harding *et al.*(2007) included moral obligation in their models. Beck and Ajzen's (1991) results showed that perceived behavioral control explained the most variance in both cheating and lying. Unlike the health, safety, and conservationism-related behaviors that are positive and generally consistent with social norms, cheating and lying run counter to norms and rules and have been less well-studied using the TPB. Thus, examination of factors (e.g., perceived behavioral control) reflecting constraints on behavior may be especially important in the prediction of behaviors such as cheating.

**1A: Components of the TPB Model**

Ajzen's Theory of Planned Behavior (1985, 1991) has five components: attitude toward the behavior, subjective norms, perceived behavioral control, intentions and behavior. The theory suggests that attitudes, norms and perceived behavioral control function independently to determine intention to perform (or not perform) some behavior. Intention is the immediate antecedent to behavior. Generally, favorable attitudes and supportive group norms result in both

strong intent to perform and actual performance of a behavior, but perceived behavioral control, the perceived ease or difficulty of executing the behavior, can affect both level of intent and the intent-to-behavior relationship. For example, a student may have a favorable attitude toward cheating on exams and his/her friends may also engage in cheating, but the level of examination monitoring in a specific class may make cheating very difficult or impossible.

***1A1: Attitude toward behavior.*** According to Beck and Ajzen (1991, p. 286), attitude toward behavior refers to "the degree to which a person has a favorable or unfavorable evaluation of the behavior in question." To the extent that students condone or condemn academic misconduct, they are more or less likely to form intentions to engage in cheating or plagiarism as well as actually engage in the behavior. For example, a study of 244 college undergraduates conducted by Storch and Storch (2003) found a strong association ($r$=.50) between engagement in academic misconduct behaviors and approval of such behaviors. Whitley's (1998) review also found a large effect ($d$ = .81) for attitudes toward cheating across 16 studies, such that students who cheat have more favorable attitudes toward cheating than students who do not cheat. Stone *et al.* (2007) and Harding *et al.* (2007) found attitudes to be significant predictors of cheating. Harding *et al.* (2007) noted, as did Beck and Ajzen (1991), that perceptions of moral obligation and attitudes were highly correlated (.69 in the Harding *et al.* study).

A somewhat indirect indicator of students' attitudes towards academic misconduct is their propensity for reporting academic misconduct by others; students who report misconduct by others are presumably less likely to engage in academic misconduct themselves. Research has shown that students with favorable attitudes toward academic integrity policies are more likely to report cheating than those who regard the policies as unfair (Simon *et al.*, 2004).

***1A2: Subjective norms***. There is considerable research showing that people are influenced by the behavior of others. This influence can create a pressure to conform to the behavior of members of a group (e.g., Asch, 1951) , or may convey either what most people do in a given situation (i.e., descriptive norms) or behaviors that are associated with approval or sanctions (i.e., injunctive norms) by others (Reno *et al*., 1993). In his review of academic misconduct research, Whitley (1998) found a very strong relationship between subjective norms and cheating behavior. Specifically, his review of 16 studies that examined social norms revealed that students who perceive social norms that condone cheating cheat more than students who perceive social norms that do not condone cheating (*d*=.929).

Research by McCabe and colleagues categorized subjective norms as a contextual factor influencing students' likelihood of engaging in academic misconduct. In their study of 1750 students from nine public colleges and universities, McCabe and Trevino (1997), found that contextual factors including peer behavior (i.e., how often others cheat), peer disapproval (i.e., students' perceptions of other students' disapproval of cheating) and fraternity/sorority membership accounted for 27 percent of the variance in self-reported cheating. Additionally, the findings of McCabe *et al.* (2002) along with those of Smyth and Davis (2004) suggest that students acquire a subjective norm that cheating in college is a common behavior despite institutional policies that prohibit it. McCabe *et al.* (2002) found that students' perceptions of peers' behavior was the best predictor of academic dishonesty regardless of the presence or absence of an honor code. Also, in a recent study involving 5,331 graduate students, McCabe *et al*. (2006) found the perception that other students are cheating accounted for the most variance in cheating. Moreover, results of a survey-based study of 824 undergraduate and graduate business students conducted by Chapman *et al*. (2004) indicated that students were much more

likely to cheat if friends were involved in the cheating offense. While 75% of the respondents indicated they would cheat if a friend was involved, that figure dropped to 45% if only an acquaintance was involved.

The notion that social norms can outweigh behavioral prohibitions outlined in institutional policy as well as accepted ethical standards is further supported by work of Davis and colleagues (Davis *et al.*, 1992). Their survey of 6,000 students attending 35 different schools of varying sizes, found that even though 90 percent of students said it is wrong to cheat and that instructors should care if students cheat on an exam, 76 percent said they had cheated in high school, college or both. More recent work by Smyth and Davis (2004) found that although 92 percent of a sample of 265 two-year college students indicated that cheating is unethical, 45 percent of the sample also indicated that cheating is acceptable social behavior. Likewise, Chapman *et al*.'s (2004, p. 246) research led them to the conclusion that "Nearly 75% of all students will cheat at some point in some situation." And that "students know what cheating is and that they believe it is morally wrong. But they continue to cheat because they feel that the benefits outweigh the potential costs, and they believe cheating to be the 'norm.'"

These findings suggest that suspected cheating by other students and perceptions regarding frequency of cheating are the bases of norms regarding academic misconduct. Additionally, these findings suggest potential conflict between attitudes toward cheating and perceived social norms and imply that the key determinant of behavior, as found in several TPB studies, is perceived behavioral control. While most academic misconduct researchers have categorized norms and their sources as contextual variables, Stone *et al.* (2007) argued that categorizing contextual variables as the subjective norms of the TPB model is a more parsimonious and heuristically valuable approach.

***1A3: Perceived behavioral control.*** Perceived behavioral control affects both intentions and behaviors. Its addition to the TPB is to allow for prediction of behaviors not under complete volitional control. Ajzen (1991) contended that when individuals perceive constraints upon intended behaviors, perceived behavioral control could help explain discrepancies between intentions and behavior. Thus, the relative importance of attitudes, norms and perceived behavioral control will vary across situations and behaviors. When attitudes and norms are strong, perceived behavioral control may have little effect on actual behavior. When behaviors are perceived as challenging or there are barriers to performance, however, perceived behavioral control becomes a more important factor predicting behavior. Ajzen (2002) argues that perceived behavioral control is related to self-efficacy (Bandura, 1977) in that both reflect the perceived ability to perform a behavior. An unpublished meta-analysis (Cheung and Chan, 2000, as cited in Ajzen, 2002) may explain the direct and indirect (through intentions) relationship between perceived behavioral control and behavior. In their meta-analysis, Cheung and Chan (2000) found perceived self-efficacy accounted for significant portions of variance in intentions beyond attitudes and beliefs and for behaviors beyond that predicted from intentions. Controllability, on the other hand, contributed significantly to predicting behaviors but not intentions.

An example of perceived behavioral control's influence on academic misconduct is McCabe *et al.*'s (2002) finding that students' degree of certainty of being caught engaging in academic misconduct predicted extent of dishonesty independent of an institution's policies regarding misconduct. Thus, students have a greater propensity to engage in misconduct if sanctions are not imposed or are not severe enough to outweigh potential benefits of cheating

even when instructors and administrators warn students about the consequences of cheating (Bunn *et al.*, 1992; McCabe *et al.*, 2002).

Very little academic integrity research has tested the perceived behavioral control component of the TPB model. In Whitley's (1998) review, five studies demonstrated a moderate mean effect size ($d$ = .64) in the prediction of a variety of unethical behaviors. Stone *et al.*, (2007) found perceived behavioral control was a significant predictor for cheating intentions. Passow *et al.* (2006) and Harding *et al.* (2007), however, found perceived behavioral control accounted for little variance in cheating behavior. The foregoing review and synthesis of previously published research with components of the TPB model suggests that components of the TPB model will be related to academic misconduct.

***1A4: Intentions.*** In the TPB, intentions are considered to immediately precede behavior and are regarded as a central factor in the model as they capture the motivation for behavior (Ajzen, 1991; Beck and Ajzen, 1991). According to the model, the stronger a person's intention to engage in a behavior, the greater the likelihood the particular behavior will be elicited. A meta-analysis (Armitage and Conner, 2001) found the TPB, while superior at predicting self-reported behavior, accounted for 20 percent of the variance in a variety of actual behaviors. Beck and Ajzen (1991) found that intentions to engage in unethical behavior are highly correlated with actual unethical behaviors including lying, shoplifting and cheating. Reliability of intentions across six months was high with a reported correlation of .83. In the current study, intentions were measured as the extent to which participants considered cheating under different circumstances.

***1A5: Behavior.*** The purpose of the TPB model is prediction of a variety of human behaviors. In studies of academic misconduct, the behaviors of interest are actual engagement in various academic violations including cheating, plagiarism, and inappropriate collaboration.

**1B: Expanding the Theory of Planned Behavior for Academic Misconduct**

Use of the TPB model has been very limited to date and has varying degrees of success predicting academic misconduct. Beck and Ajzen's (1991) has shown the strongest results and Passow *et al.* (2006) the weakest; Harding *et al.* (2007), Stone *et al.* (2007) and Whitley's (1998) review have shown moderate success for use of the TPB. With the exception of Beck and Ajzen (1991) and Stone *et al.* (2007), other studies have included variables such as demographics and/or situational factors as predictors of academic misconduct. Although Stone *et al.* (2007) did examine personality variables as antecedents to attitudes, norms and perceived behavioral control, the effects of the antecedents were fully mediated by these TPB components.

There is considerable support (e.g., Armitage and Conner, 2001) for the ability of the TPB to predict a variety of behaviors, the focus of the TPB model, however, is *a priori.* That is, the components of the model serve to predict behavior rather than explain behavior *ex post facto*. In this study and most academic misconduct research studies, students are asked to self-report behavior they have already done. This suggests that information regarding students' abilities to provide justifications for cheating may add to the explanatory power of the TPB model.

***1B1: Academic integrity and cognitive dissonance.*** Many studies of violations of academic integrity, including TPB studies, measure attitudes and beliefs about cheating as well as perceptions of norms regarding cheating as self-reports of cheating. The findings of Davis *et al.* (1992) as well as Smyth and Davis (2004) indicated that 90% or more of students in their samples say cheating is wrong and unethical. The strong role of moral obligation in the Passow

*et al.* (2006) and Harding *et al.*, (2007) studies, suggests that most students recognize and accept that being an ethical or moral person is important. Yet, self-reported cheating rates are high. Work by Chapman *et al*. (2004), indicated that up to three-quarters of business students in their 824 subject sample had cheated already and that an even greater percent of students would consider cheating in certain circumstances. These figures coincide with work by McCabe (2005) who indicated in a summary of data collected from more than 60 schools in Canada and the U.S. that between 47% and 71% of students self-report cheating (depending on factors such major and whether the institution is public or private).

When students engage in behaviors that are not consistent with their beliefs and attitudes, it is very likely they will experience cognitive dissonance (Festinger, 1957). The fact that students behave in ways inconsistent with important values and beliefs raises the question, how do they justify this inconsistency? Recent advances in the theory of cognitive dissonance may offer some explanation of how students justify their cheating behavior. In his original writings, Festinger (1957) argued that the perception of inconsistent cognitions would motivate efforts to reduce dissonance; when the magnitude of dissonance becomes strong enough, people are motivated to take action to reduce dissonance. More recent formulations of the theory by Aronson (1969), however, argue that dissonance occurs when individuals behave in ways inconsistent with their self-concept. Similarly, Steele (1988) contends people have a motive to maintain a self-image of moral and adaptive adequacy and that attitude change occurs because dissonance threatens the positive self-image.

***1B2: Dissonance reduction techniques.*** According to Festinger (1957), there are three modes to remedy dissonance. The first is changing one component of the dissonance, the attitude, value or opinion or the behavior. Behavior is usually most resistant to change. The

second mode is to add cognitions consistent with the behavior. A common form of this route of this dissonance reduction is the active search for information supporting a decision or behavior. The third method of dissonance reduction is to reduce, or "trivialize" (Simon *et al.*, 1995) the importance of the elements of the dissonance. Simon *et al.* (1995) concluded from a series of four studies that trivialization is a common form of dissonance reduction. Two of their studies found that when subjects had performed behavior inconsistent with their values, making those values salient led to trivialization rather than attitude change. When students admit to cheating or plagiarizing and state their beliefs regarding cheating in a survey, for example, dissonance between the behavior and their values are made very salient to them.

Though some students may hold attitudes consistent with cheating, most students who cheat likely experience some degree of dissonance. They may, for example, believe that many other students cheat (c.f., *false consensus*), an example of Festinger's second mode of dissonance reduction. Indeed, McCabe *et al.* (2002) found the best predictor of cheating was students' perceptions that their peers cheat. More recently, research by Chapman *et al*. (2004) found support for the false consensus effect. In their study, students consistently overestimated the likelihood that other students engaged in various academic misconduct behaviors compared to the frequencies with which the students themselves engaged in those same behaviors. Chapman *et al*. found that the false consensus effect was more pronounced for high as compared to low frequency cheaters. Thus, "others do it" becomes a justification, a cognition consistent with cheating.

To the extent cheating is common, the behavior tends to be trivialized. The trivialization of cheating may be a process in which "academic dishonesty not only is learned from observing the behavior of peers, but that peers' behavior provides a kind of normative support for cheating"

(McCabe and Trevino, 1993, p. 533). Another variation of trivialization and perhaps addition of consistent cognitions may be found in justifications such as cheating to help a friend, fear of failure, peer pressure, a monetary reward or extenuating circumstances. Justifications such as helping a friend and avoiding failure may in some cases temporarily be perceived by students as more important than the value of honesty and academic integrity. In fact, Chapman *et al.*'s (2004) work with two student focus groups revealed that many students did not perceive helping or receiving help from a friend as unethical, even when the actions undertaken were recognized as being consistent with cheating.

We contend that students reporting using justifications for cheating are those students who have already cheated. Therefore, justifications will add variance to explaining cheating behavior over variance explained by cheating intentions. Justification of cheating might also play a mediating role, such that the influence of attitudes, subjective norms and behavioral control on behavior will be mediated by one's ability to justify his/her prior cheating behavior. Thus, we will also test a structural model with paths from attitudes, norms and control leading to intentions and to justification. Intention and justification will, in turn, have direct paths to cheating behaviors.

## 2. METHOD

### 2A: Sample

Based on class rosters, approximately 438 undergraduate business students in seven marketing, management, and economics classes at a large, mid-western public university in the U.S. were recruited for participation in the current study. Extra-credit points were offered as an incentive for study participation; an alternative for extra-credit was offered for students who did not want to participate in the study. Participants were assured to the confidentiality of their

responses and were given a logon code and password to complete the integrity survey online outside of class. A total of 271 participants provided usable responses yielding an effective response rate of 62%. Because the study was conducted near the end of the term some students had already earned their maximum allowed extra credit and thus would not gain credit for participation.

Twenty-three percent of participants were between the ages of 18 and 20, 52% between the ages of 21 and 23, and the rest were 24 or more years old. Forty-nine percent of the sample was male. Almost 89% of participants were full-time students. Fifty-six percent of the participants had earned 90 or more hours of college credit, 25% between 60 and 90 hours of college credit and the rest had earned less than 60 hours of college credit toward their degrees.

**2B: Measures**

Items used to measure the constructs are included in the Appendix. All items were measured on a 5-point Likert-type scale with the exception of the open-ended question regarding student resistance of cheating.

***2B1: Attitude toward misconduct.*** The attitude toward academic misconduct scale consisted of 7 items ($\alpha = .81$) that assessed participants' moral belief regarding cheating, willingness to report cheating by other students and assist others in cheating. High scores indicate an accepting attitude of academic misconduct behaviors.

***2B2: Subjective norms.*** Subjective norms were measured with 7 items ($\alpha = .85$) assessing participants' perceptions and suspicions regarding the frequency of various forms of academic misconduct. A high score indicates a belief that others cheat and academic misconduct is the norm.

***2B3: Perceived behavioral control.*** The perceived behavioral control measure consisted of 4 items (α = .80) designed to assess participants' perceptions of the ease or difficulty of successfully cheating. A high score indicates cheating successfully is perceived to be easy, in other words, there is little institutional control over cheating behaviors.

***2B4: Intention.*** Intention to engage in academic misconduct was assessed using 8 items (α = .90) that asked respondents how likely they would be to consider various types of academic integrity violations. Thus, high scores indicate intent to cheat and/or plagiarize.

***2B5: Behavior.*** Academic misconduct was measured using 10 items (α = .89) which asked respondents to indicate how often they engaged in behaviors such as cheated on a test themselves or helped others cheat, unauthorized collaboration on an assignment, plagiarism and others. These questions were identical to those used in U.S. and Canadian surveys of academic misconduct by McCabe and his co-authors (see McCabe, 2005; McCabe and Trevino, 1993, 1997). Response options ranged from "never" to "many times" thus, higher scores indicate greater levels of academic misconduct than lower scores.

***2B6: Justifications.*** Students' justifications for cheating were assessed with 10 items (α= .93). Questions asked how likely respondents were to consider cheating for reasons such as "to help a friend", "time pressure", or "peer pressure." Response options ranged from "very unlikely" to "very likely" thus, higher scores indicate students were more likely to allow various circumstances to justify their consideration of academic misconduct.

***2B7: Resistance of cheating.*** An open-ended question asked students to describe a situation in which they resisted cheating. Responses were coded according to two issues: reason students cited for resisting cheating and whether the potential cheating situation represented panic, opportunistic, or planned cheating. Reasons for not cheating were categorized as:

integrity/personal ethics, educational development, fear of punishment, lack of trust in information source, no need to cheat, no resistance of cheating and unspecified reason/inadequate response.

**2C: Coding Procedures**

Four raters were used to categorize qualitative responses including two of the authors and two graduate assistants. Each rater was provided with a sheet defining the rating categories for the two sorting schemes. Initially, raters coded responses independently. When all ratings were received, preliminary percent agreement was computed. Raters then discussed common concerns and issues in rating responses. Once all questions were resolved, raters again individually coded responses and the revised percent agreement for the two sets of ratings were computed. After the second round of coding was completed, one of the raters classified each respondent's answer on the two qualitative coding schemes using modal ratings.

Agreement among the four raters for the reason for resisting cheating was very high, even initially and in spite of the relatively large number of rating categories. Ratings for the type of cheating situation were lower on both rating occasions. This is due to general ambiguity in responses regarding whether the motivation for cheating was primarily out of panic or perceived opportunity. See Table 1 for percent agreement indices.

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Insert Table 1 about here

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**3. RESULTS**

**3A: Quantitative Analysis**

***3A1: Confirmatory Factor Analysis (CFA).*** A survey was used to measure the attitudes, subjective norms, behavioral control, intentions, justification and cheating behaviors. Anderson and Gerbing (1988) recommend specifying and testing the measurement model prior to

introducing the structural model. To examine the factor structure, a CFA was conducted using LISREL 8.5 (Joreskog and Sorbom, 1993). Sample covariances served as input for all LISREL estimates. The maximum likelihood approach was used as it is regarded as the most appropriate approach for theory testing and development (Anderson and Gerbing, 1988; Joreskog and Wold, 1982).

As recommended by Hu and Bentler (1999), root mean square error of approximation (RMSEA), comparative fit index (CFI) and standardized root mean square residual (SRMR) were used to evaluate model fit. Factor structures of 3 different models were compared. The first was a one-factor model (Model 1) comprised of all the items used to measure the six constructs. This model did not fit the data [$\chi^2$(945, N = 241) = 6173.45, RMSEA = .15, RMSEA 90% confidence interval (.15, .16), CFI = .74, and SRMR = .11]. The second model was a three-factor model (Model 2) with all the items used to measure attitudes, norms, and behavioral control as one factor, items used to measure intentions and justification as a second factor, and items used to measure cheating behaviors as the third factor. Fit statistics indicated poor fit for this model [$\chi^2$(934, N = 241) = 3551.72, RMSEA = .11, RMSEA 90% confidence interval (.10, .11), CFI = .91, SRMR = .10]. The third (Model 3) was the hypothesized model in which items used to measure each of the six constructs were specified to load on their respective constructs. The hypothesized model was supported; fit statistics indicated acceptable fit for the model [$\chi^2$(929, N = 241) = 2633.61, RMSEA = .087, RMSEA 90% confidence interval (.08, .09), CFI = .93, and SRMR = .09].

Evidence of convergent validity is ascertained by examining if individual indicators load significantly on hypothesized dimensions (Anderson and Gerbing, 1988, p. 416). The paths from

the latent constructs to individual indicators were all statistically significant ($p < .05$) and completely standardized factor loadings ranged in values from .30 to .99 (see Appendix A).

The chi-square difference test and the confidence interval test were used to ascertain evidence of discriminant validity (Anderson and Gerbing, 1988). Results of the chi-square difference test between Model 1 and the hypothesized model (calculated chi-square difference of 3539.84 is greater than critical value of 19.68 for 11 degrees of freedom), between Model 2 and the hypothesized model (calculated chi-square difference of 918.11 is greater than the critical value of 11.07 for 5 degrees of freedom), indicated retaining the hypothesized measurement model. The 90% confidence interval of the RMSEA values of Model 1 (.15, .16) or Model 2 (.10, .11) did not overlap with that of the hypothesized model (.08, .09). A model with more factors is considered to be significantly better than a model with fewer factors if the confidence interval of RMSEA value of the two models do not overlap. Results of chi-square tests and the non-overlapping confidence interval tests (Anderson and Gerbing, 1988) provide evidence of discriminant validity. Means, standard deviations, and correlations between latent constructs from the PHI matrix are reported in Table 2.

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Insert Table 2 about here

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***3A2: Structural model.*** According to Beck and Ajzen (1991), attitudes, norms and behavioral control influence intentions and intentions in turn lead to behavior. We asserted that justification might also play a mediating role, such that the influence of attitudes, subjective norms and behavioral control on behavior will be mediated by justification. Thus, our structural model had paths from attitudes, norms and control leading to intentions and to justification. These two variables, in turn, had direct paths to cheating behaviors. This full mediation structural

model had the same indicator structure as the measurement model and was fit to the data (see Figure 1).

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Insert Figure 1 about here

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The structural model provided an acceptable fit to the data, $\chi^2$ (934, N = 241) = 2712.40, RMSEA = .089, RMSEA 90% confidence interval (.085, .093), CFI = .93, and SRMR = .13). Attitudes (β = .23, $p$< .01), subjective norms (β = .16, $p$< .05), and perceptions of behavioral control (β = .25, $p$< .01) were significantly related to intentions, and collectively explained 23% of the variance in intentions. Attitudes (β = .25, $p$< .01), subjective norms (β = .28, $p$< .05), and perceptions of behavioral control (β = .15, $p$< .01) were significantly related to justification, and collectively explained 28% of the variance in intentions. Intentions (β = .36, $p$< .01) and justification (β = .36, $p$< .01) were significantly related to cheating behavior and together explained 33% of the variance in cheating behavior.

A second model (Figure 2) was tested that also included direct paths from attitudes, subjective norms and behavioral control to cheating behavior. This partial mediation model also fit the data, $\chi^2$ (931, N = 241) = 2666.91, RMSEA = .088, RMSEA 90% confidence interval (.084, .092), CFI = .93, and SRMR = .12). The chi-square difference test was conducted between the full mediation and the partial mediation model. The obtained chi-square difference of 23 for 6 degrees of freedom was greater than the critical chi-square value of 12.59 indicating that the more restrictive full mediation model should be rejected and the partial mediation model retained.

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Insert Figure 2 about here

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In the partial mediation model, attitudes (β = .23, $p < .01$), subjective norms (β = .14, $p < .05$), and perceptions of behavioral control (β = .25, $p < .01$) were significantly related to intentions, and collectively explained 22% of the variance in intentions. Attitudes (β = .25, $p < .01$), subjective norms (β = .27, $p < .05$), and perceptions of behavioral control (β = .14, $p < .01$) were significantly related to justification, and collectively explained 25% of the variance in justifications. Intentions (β = .27, $p < .01$) and justification (β = .21, $p < .01$) were significantly related to cheating behavior. Attitudes (β = .18, $p < .01$), norms (β = .40, $p < .01$), and control (β = .10, $p < .01$) also had direct effects on cheating behavior. The inclusion of direct effects increased the variance explained in cheating behavior from 33% to 47%.

**3B: Qualitative Analysis**

We analyzed responses from students who cited specific reasons for not cheating. A number of respondents indicated they did not want to answer the question at all or provided vague answers that did not adequately address their reason for not cheating ($N$=176). Of the 90 respondents who provided a specific reason for not cheating, 42.2% referred to external reasons such as fear of punishment (23.3%), lack of opportunity (7.8%), or lack of trust in the source of the information (11.1%). On the other hand, 50% cited internal factors such as integrity (26.7%), concerns about educational development (15.6%), and no need to cheat due to adequate preparation (7.8%) as reasons for not cheating. The remaining 7.8% of students indicated that they did not resist cheating, one going so far as to state,

> *I can't recall a time that I passed up the opportunity to cheat. Not for any other reason than I am lazy and do not like to do work. I try to put forth the least amount of effort possible.*

We also coded the qualitative responses to determine circumstances that lead students to consider cheating, specifically whether students planned to cheat, considered cheating out of a sense of panic, or cheated merely because the opportunity to cheat was readily available (e.g., another student had test answers prior to the test and gave them to the respondent, a friend's answers were readily visible during the test). Of the 167 student responses that provided specific information regarding circumstances relevant to their consideration of cheating, 64.7% of students mentioned having readily available, often presented, opportunities to cheat while 16.2% indicated considering cheating out of panic, typically for lack of adequate preparation or forgetting about an assignment. Only 19.2% of the 167 valid responses cited a situation involving planned cheating. Students commonly described situations in which the instructor left the room during an exam or exercised little vigilance or did not use many deterrence mechanisms (e.g., lack of proctors, use of same test forms), especially in crowded classrooms.

## 4: DISCUSSION

### 4A: Theoretical Implications

The prevalence of academic misconduct has been widely documented. Most prior research seeking to explain academic misconduct, however, has focused on situational or individual difference factors, or a combination of both and has rarely been guided by an established theoretical framework. In contrast, this study used the Theory of Planned Behavior (Ajzen, 1985, 1991), a well-established social psychological theory to guide the research. Results of our study provide additional support for use of the TPB (Ajzen, 1985, 1991) attitudinal model as a basis for predicting academic dishonesty.

This study is the first to examine the efficacy of the TPB model to predict both cheating intentions and behavior using structural equation modeling. Harding *et al.* (2007) note in their

limitations that use of structural equation modeling to assess the goodness of fit with the TPB model would be "a fruitful venue for future research and provide more evidence of the validity of the theory of planned behavior in mapping students' ethical decision-making processes" (p. 273).

Unlike previous research, this study parsimoniously extended the TPB in the prediction of misconduct intentions and behavior with the addition of a component we have labeled "justifications." Justifications, unlike demographic and situational variables, are a cognitive, perceptual phenomenon closely related to attitudes, norms and perceived behavioral control. Justifications, however, may be related to locus of control in that the more students can blame cheating behavior on external circumstances or pressures rather than personal volition, the more likely they are to attribute a wide-range of behaviors to external rather than internal sources. Additionally, the current study extends research by Bunn *et al.* (1992) who only compared the prevalence of planned and panic cheating relative to each other. The current study includes consideration of opportunistic cheating situations. Also, the current study differs from work by Bunn and colleagues in that Bunn *et al*. measured perceptions of others' behavior while data for the current study assessed students' own motivations regarding cheating and not cheating.

Work by Trevino and others (Gephart *et al.*, 2007) indicate that intentions and behavior do not correlate perfectly, not only as a function of external preventative mechanisms, but also because behavior is often spontaneous. Indeed, our open-ended data suggest that incidents of cheating may be more spontaneous than planned. Thus, the formation of intentions is restricted given the reactionary nature of the behavior. This assertion is consistent with the partially mediated model we tested in that attitudes, social norms, and perceptions of behavioral control acted not only on behavior through intentions, but also on behavior directly, which may account for more spontaneous actions.

**4B: Implications for Practice**

Cheating in school is related to cheating at work (e.g., Nonis & Swift, 2001; Sims, 1993). Previous research has found personality to be predictive of cheating at school (e.g., Stone *et al.*, 2008) and engaging in counterproductive work behaviors (e.g., Dalal, 2005). As one student said, "If you will cheat at school, you will cheat at anything." Counterproductive work behaviors can take the form of verbal assaults, sabotage, bullying, lying, stealing, and physical assaults (e.g., Gallagher *et al.*, 2008). These results have implications for the criteria used to select employees. Results indicate that not only attitudes but also subjective (descriptive) norms, that is, perceptions of the extent to which others are cheating, and behavioral control influence one's cheating behavior. From an organizational standpoint, it is important to communicate disapproval of and the negative consequences of misconduct to employees. Research by Reno *et al*. (1993) suggests use of injunctive norms in which desirable behavior, such as acting ethically, is demonstrated even in the midst of overwhelming evidence that undesirable behavior is the norm can reduce the incidence of the undesirable behavior. Of course, managers must act ethically and serve as role models to their employees. Making expectations clear, setting high standards, demonstrating ethical behaviors, rewarding employees' ethical behavior and punishing employees' unethical behavior may be necessary to change attitudes, subjective norms and behavioral control. As Hoyk and Hersey (2008) explain in *The Ethical Executive*:

> When we were children, most of our moral decisions were made based on our desire to avoid punishment and to gain rewards. As adults, we're more apt to base our moral decisions on other factors. But after we've committed a transgression, our early conditioning is an undercurrent that influences our perception. When the chance of being

> punished is low, the sting of unethical behavior seems less serious and we tend to minimize the importance of the transgression. (p. 72)

While ethical behavior is important in employees, it is even more critical for leaders to have good values and ethics. Robert Hogan (2007) argues that an important but often ignored cause of managerial failure is "bad values- specifically greed and selfishness". The integrity of a leader is particularly critical for transformational leadership since the leader influences others by persuading them to set aside selfish goals and work toward group and organizational objectives (Bass, 1985). Transformational leaders influence others by modeling commitment and self-sacrifice to higher-level goals (van Knippenberg *et al*., 2004). Therefore, the effectiveness of transformational leadership depends upon followers trusting their leader (Podsakoff *et al*., 1990). It follows that unethical behaviors among managers and leaders will have a negative effect on the positive career growth and development of subordinates.

The current study, together with research that links academic and workplace misconduct suggests that society should not wait until individuals act unethically in organizations to deter, detect, and punish unethical behavior. Students must learn about the consequences of unethical acts in the formative years of their professional development when consequences to the individual actor are significant but consequences to others are low. In other words, we should not wait until the downfall of an individual due to unethical behavior is likely to take a tremendous toll on the lives of countless others (e.g., Enron), but instead deter, detect and punish the behavior while the ability to remediate such behavior is high and the cost to do so is relatively low (as compared to incarceration). It is also important to deter cheating in order to prevent an escalating spiral of misconduct. As discussed, misconduct becomes more likely when

others are seen engaging in such behaviors, then individuals who engage in such behaviors estimate others are even more likely to engage in misconduct.

**4C: Study Limitations and Directions for Future Research**

There are a few potential limitations of this study including a sample limited to one school, use of self-report measures, and the specific operationalization of TPB constructs. Several of the large sample integrity studies collected data from many schools, but analysis of differences has been limited to consideration of school type (i.e., private versus public) and existence of an honor code (traditional, modified, or no honor code) (McCabe, 2005; McCabe and Trevino, 1993; McCabe *et al.*, 2002). Though researchers examining academic integrity have not come to agreement on measurement of academic integrity, this study used McCabe's established measures. The TPB measures used in this study are faithful to Ajzen's (1985, 1991) model and Beck and Ajzen's (1991) study examining cheating and lying.

Another potential limitation of the current study is the measurement of justifications. While the model indicates students' justifications precede academic misconduct, the cross-sectional nature of the study leaves unsettled whether justification of cheating precedes actual cheating or whether it occurs only after one has already engaged in the behavior. Further exploration of the extent to which academic misconduct is planned, opportunistic or panic-based will facilitate understanding of the role of both justifications and intentions. Longitudinal research may facilitate exploration of how justifications help some students maintain their beliefs in honesty and integrity while engaging in misconduct. Future research should use a longitudinal design to examine the extent to which cheating in school is related to cheating in the workplace and to other counterproductive work behaviors. Investigating whether cheating in school is

associated with objective and subjective measures of career success is likely to be a fruitful area for future research.

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**TABLE 1**

**Percent Agreement for Categorization of Qualitative Responses**

| | Preliminary Ratings | | Revised Ratings | |
|---|---|---|---|---|
| | 3 raters agreed | 4 raters agreed | 3 raters agreed | 4 raters agreed |
| Reason for resisting cheating | 22.2% | 65.0% | 8.6% | 91.4% |
| | N=49 | N=143 | N=19 | N=201 |
| Type of cheating situation | 35.0% | 45.45% | 26.4% | 73.6% |
| | N=77 | N=100 | N=58 | N=162 |

**TABLE 2**

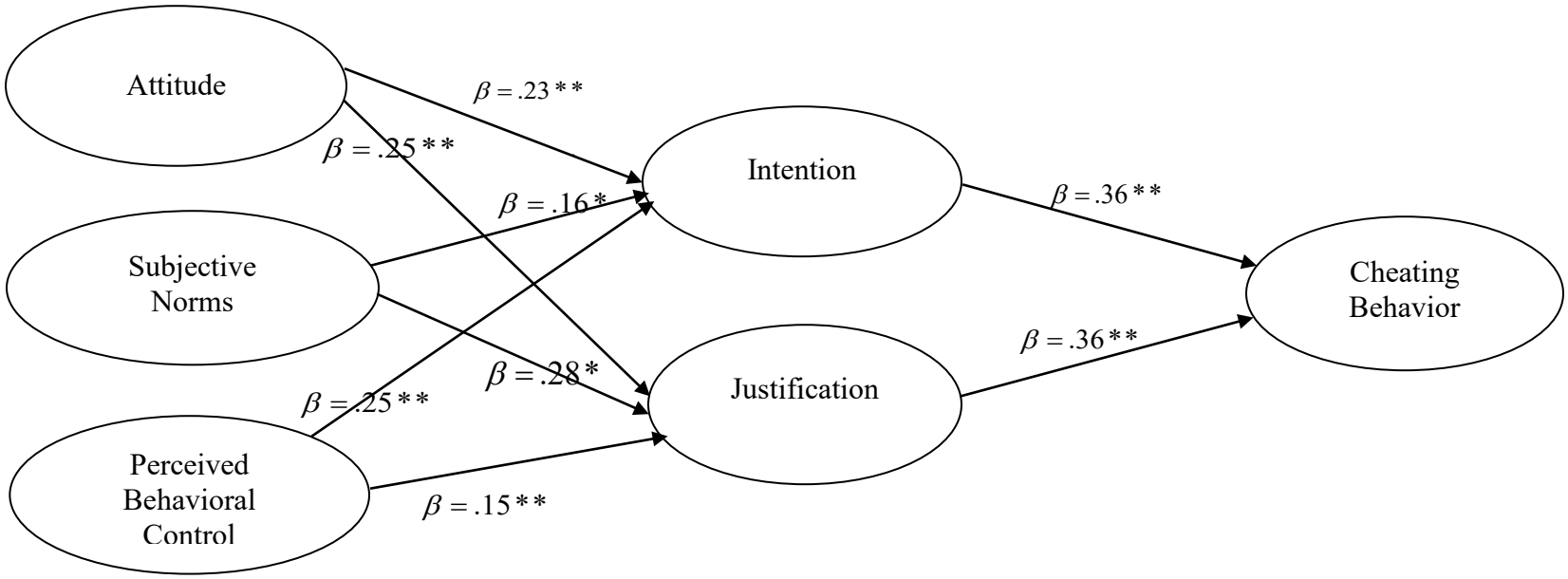
**Means, Standard Deviations, and Correlation between Latent variables**

| | M | SD | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|
| Attitudes | 2.66 | .65 | (.81) | | | | | |
| Norms | 2.95 | .79 | .18 | (.85) | | | | |
| Control | 2.86 | .85 | .20 | .71 | (.80) | | | |
| Intention | 2.33 | .94 | .29 | .34 | .39 | (.90) | | |
| Justification | 2.60 | 1.02 | .31 | .40 | .36 | .60 | (.93) | |
| Behavior | 1.75 | .68 | .36 | .53 | .40 | .54 | .54 | (.89) |

Note: All correlations between latent variables significant at .05 level. Cronbach's coefficient alpha reliability values are noted on the diagonal.

**FIGURE 1**

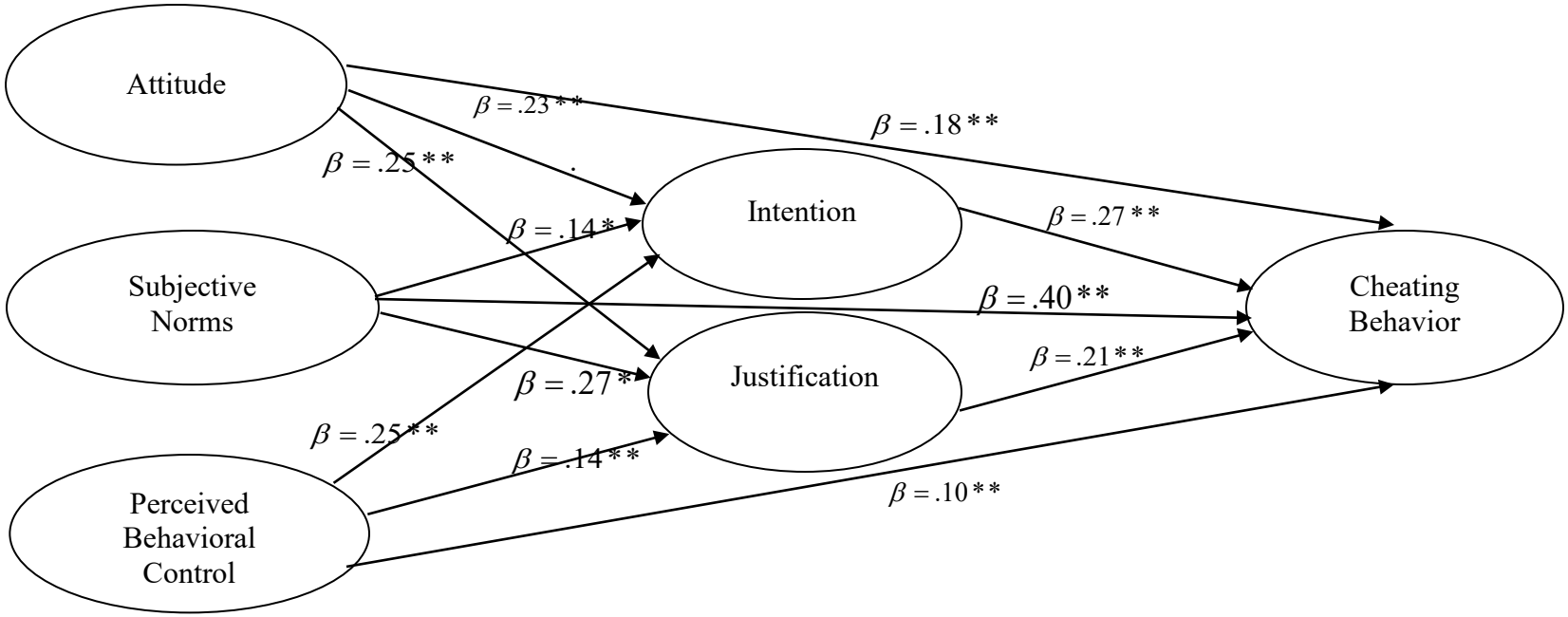
**Results of Structural Equation Model – Full Mediation Model**




Note: * p<.05, ** p<.01. Completely standardized factor loadings of indicators on latent variables are reported in Appendix A and are not shown here.

**FIGURE 2**

**Results of Structural Equation Model – Partial Mediation Model**




Note: * p<.05, ** p<.01. Completely standardized factor loadings of indicators on latent variables are reported in Appendix1 and are not shown here.

## APPENDIX

Scale Content and Completely Standardized Factor Loadings

**Attitude toward Cheating (R = reverse scored)**

| | |
|---|---|
| R Important to report cheating by other students | .37 |
| R Always wrong to cheat | .91 |
| R Report cheating by a student whom I do not know | .80 |
| R Report cheating by a friend | .74 |
| R Report cheating necessary for fairness to honest students | .69 |
| Students should cheat if they can get away with it | .31 |
| Allow another student to cheat from my exam | .37 |

**Subjective Norm**

| | |
|---|---|
| Estimated percent students who cheat | .73 |
| Suspected another student of cheating on exam in past year | .76 |
| Suspected another student of plagiarizing in past year | .73 |
| Friends cheat and have not been caught | .66 |
| Perceived frequency of plagiarism | .65 |
| Perceived frequency of inappropriate collaboration on assignments | .59 |
| Perceived frequency of cheating during tests and examinations | .71 |

| | |
|---|---|
| **Perceived Behavioral Control** | |
| Easy to cheat on assignments | .80 |
| Easy to cheat on exams | .82 |
| Friends cheat and have not been caught | .48 |
| Students who cheat are often not caught | .93 |
| **Intention** (Consider Cheating) | |
| Turning in another's work done as one's own | .88 |
| Unapproved collaboration on an assignment | .81 |
| Writing a paper for another student | .85 |
| Getting test information from a student who has taken it | .51 |
| Copying from someone on a test | .89 |
| Using unapproved materials on an assignment | .75 |
| Using unapproved materials on a test | .84 |
| Plagiarizing a paper using the Internet | .79 |

**Behavior**

| | |
|---|---|
| Copied a few sentences from a source but not give credit | .58 |
| Copied from another student and turned in an own | .64 |
| Helped someone cheat on a test | .71 |
| Collaborated on assignment that was supposed to be individual work | .68 |
| Turned in work done by others | .52 |
| Copied from another student on test | .77 |
| Used notes on test without instructor permission | .72 |
| Received substantial help on assignment without permission | .57 |
| Cheated on test in any way | .81 |
| Used unfair methods to learn about a test | .68 |

**Justification**

| | |
|---|---|
| To help a friend | .74 |
| Time pressure | .88 |
| Extenuating circumstances | .79 |
| Peer pressure | .62 |
| To increase my grade | .87 |
| Other students do it | .69 |
| Monetary reward | .82 |
| Instructor does not prevent | .64 |
| Fear of failure | .70 |
| Laziness | .77 |