CrossMark

Further Understanding Factors that Explain Freshman Business Students' Academic Integrity Intention and Behavior: Plagiarism and Sharing Homework

Timothy Paul Cronan[1] · Jeffrey K. Mullins[1] · David E. Douglas[1]

Abstract Academic integrity (AI) violations on college campuses continue to be a significant concern that draws public attention. Even though AI has been the subject of numerous studies offering explanations and recommendations, academic dishonesty persists. Consequently, this has rekindled interest in understanding AI behavior and its influencers. This paper focuses on the AI violations of plagiarism and sharing homework for freshman business students, examining the factors that influence a student's intention to plagiarize or share homework with others. Using a sample of more than 1300 freshman business students over 2 years, we modeled intent to plagiarize and intent to share homework using factors in the Theory of Planned Behavior in addition to past violation behavior and moral obligation (feelings of guilt). Based on the results of this study, attitude, perceived behavioral control, subjective norm, and in addition past behavior and moral obligation, were found to significantly influence an individual's intention to violate academic integrity (for plagiarism and sharing homework when asked not to do so), explaining 33 and 35 % of the variance in intention to commit an AI violation for sharing homework and plagiarism, respectively. These results contribute to a better understanding of individuals' motivations for plagiarizing and sharing homework, which is a necessary step toward reducing academic integrity violations.

Introduction

An academic integrity (AI) violation exists any time one gains an unfair advantage over others (examples include cheating on an exam or quiz, having an advance copy of an exam, sharing homework when not appropriate, using another's ideas and work as your own, and falsifying documents, among others). AI violations continue to be a problem on college campuses. Scandals involving students' plagiarism and other forms of academic misconduct have surfaced at many of the world's leading institutions (Cabral-Cardoso 2004; Minarcik and Bridges 2015; Taylor 2010) and more recently at the University of North Carolina (Stripling 2014). Moreover, according to RAISE Survey Assessment Data results (2015), eighty-nine (89) percent of students surveyed ($n = 5799$) think that cheating in college leads to cheating after graduation. Lawson (2004) reports that students, although generally upset with cheating, participate in cheating behavior in large proportions. Even though they understand ethical behavior in business and the need for ethical behavior, students believe that business people fail to act ethically and "may need to act unethically to advance their careers" (p.189); the practicality of an action may be more important than its ethicality. Students who admit to cheating are more likely to be tolerant of unethical workplace behavior.

✉ Timothy Paul Cronan
pcronan@walton.uark.edu

Jeffrey K. Mullins
jmullins@walton.uark.edu

David E. Douglas
ddouglas@walton.uark.edu

[1] WCOB 204, University of Arkansas, Fayetteville, AR 72701, USA

Springer

Lang ([2013](#), pp. 12–15) indicates that as many as 65 to 82 % of students have cheated. Based on a summary of surveys conducted to determine the extent of cheating, he concludes, agreeing with other researchers, that cheating rates of about 67 % are "much higher than we want them to be" (p. 15). McCabe et al. ([2012](#), pp. 35–71) present findings and summaries of major research by scholars (from 1962 to 2010) on the prevalence of cheating, types of cheating, and methods of cheating. They present a summary of students' engagement in nine types of cheating that indicates that the most prevalent type of cheating is "working on the same homework assignment with several students when the teacher does not allow it" and "getting questions or answers from someone who has already taken the same exam" (p. 58). They report that except for the aforementioned types of cheating, self-reported cheating from their 2002 to 2010 web survey is lower than previous surveys and offer several explanations for skepticism of those lower rates, among them being a student's reluctance to be completely forthright on a survey (they may not be convinced that their responses will remain confidential). Importantly, McCabe et al. ([2012](#)) indicate that the prevalence of self-reported cheating is high enough for all to be concerned. They suggest that the most important reason to care about AI may be because "college students are likely to become tomorrow's leaders in virtually all areas of society, including education, medicine, law, politics, and business" (p. 9). If they become practiced in making unethical decisions while in college, "this does not reflect well on our shared future" (p. 9).

Even with the focus of numerous studies, as well as changes in university and college codes of conduct with strict penalties for violators, academic integrity violations persist. As a consequence, faculty and administrators continue to focus on procedures and codes in an attempt to help deter violations and ultimately change the climate of academic dishonesty into one of integrity and respect for learning. Instead of relying solely on preventives (making it difficult to violate academic integrity) and deterrents (threat of consequences), having a better understanding of factors that influence a student's intention to commit violations could help transform a culture of cheating into a culture of learning. Such an understanding is important because the use of codes of conduct and technology to prevent cheating has not led to the desired levels of success based on rates presented in Lang ([2013](#)) and McCabe et al. ([2012](#)); moreover, students appear to not view AI violations as something wrong, but rather as a means to an end. In fact, many students may not understand that certain behaviors are considered AI violations (Cronan et al. [2015](#)). Misconceptions include the appropriateness of not citing material found on the internet and sharing homework

answers (and other work) with other students when instructed not to.

To better understand why AI violation behavior occurs and what influences an individual's intent to violate AI, researchers should understand the factors that affect the intention to violate AI, as well as the dishonest behavior itself. To this end, the objective of this research is to further identify and understand factors that influence an individual's intention to violate AI policies and offer a better understanding of this behavior. Specifically, this research expands on previous studies and enhances the understanding of homework sharing and plagiarism intentions for freshman students. Using samples of freshman business students, intention to plagiarize and intention to share homework are modeled using past violation behavior in high school and moral obligation (MO), in addition to factors in the prevailing Theory of Planned Behavior. Given the results, a better understanding of why individuals plagiarize and share homework is presented and can be used to help change the increasing occurrence of academic integrity violations.

Background and Related Studies

Academic Integrity—Behavior and Intentions

Related studies in academic integrity (discussed below) include assessing the extent of violations and type of violations, literature reviews, model development to help explain and predict violations, and strategies to prevent and deter cheating. Lang ([2013](#)) presents a summary of AI-related studies, with objectives to better understand cheating and to offer recommendations about what faculty might consider in developing an effective learning environment to help reduce cheating. McCabe et al. ([2012](#)) examine the importance of AI as well as the antecedents of academic dishonesty. In addition, they offer suggestions for dealing with academic dishonesty. They present several key findings–cheating habits are likely to develop in high school, more than two-thirds of college students report that they engage in academic dishonesty, cheating occurs in professional schools and graduate schools, cheating related attitudes are shifting (decreases in certain types of self-reported cheating), and that peers are powerful influencers, as is a strong ethical environment (such as that facilitated by an honor code). Kisamore et al. ([2007](#)) stress that academic misconduct is not new. They discuss cheating findings reported as early as a 1941; references to cheating dates as far back as Aristotle ([2002](#)).

It is noteworthy that not only are there wide variations in cheating rates reported, there may exist a large gap between reported cheating and actual cheating. McCabe

et al. ([2012](#)) suggest that discrepancies in the research estimates on academic dishonesty reports largely stem from differences in methods used, definitions of cheating, operationalizing of the research, and the time frame examined. They indicate that student comments suggest that they are cautious when answering survey questions and may not be completely forthright, possibly supplying false information about their cheating behavior for a variety of reasons, such as the fear of their responses being shared with the school. Moreover, social desirability bias is also a concern with academic dishonesty self-reports (p. 37). Holtgraves ([2004](#), p. 172) in his examination of social desirability and self-reports, concludes that concern for how the responses may make the respondent look tends to have them consider their answers more carefully; however, it does not always affect the response they give. He suggests that how the response makes the respondent look will have more of an effect on how long the response may take. Consequently, researchers should use prudence when using self-reported cheating, and readers should use prudence in interpreting results.

Literature reviews and meta-analyses related to AI have been conducted periodically over the past 20 years (McCabe et al. [2001](#); Molnar et al. [2008](#); Whitley [1998](#)). Research studies have proposed predictors that influence academic dishonesty behavior, cheating rates, and intentions to breach academic integrity. Table [1](#) presents a summary of findings from related studies using various independent variables/constructs, behavioral theories, and models to help explain both AI behavior and intentions. As noted in Table [1](#), several studies focus on AI behavior and the extent of cheating behavior (Aasheim et al. [2012](#); Jordan [2001](#); Harding et al. [2007](#); Mayhew et al. [2009](#); McCabe et al. [2001](#); Stone et al. [2010](#)). Many of these studies use constructs based on the Theory of Planned Behavior (TPB, to be explained in more detail in the next section) to develop models explaining behavior. Results suggest that attitude toward the cheating behavior, perceived social norms, perceived behavior controls, MO, and past cheating behavior (such as while in high school) can be used to explain academic dishonesty behavior. Consistent with TPB, intentions to behave dishonestly in an academic integrity setting explain much of the academic dishonesty behavior. Other variables found to be important include policy knowledge, personality traits (prudence), and demographics.

In addition, Table [1](#) summarizes results of studies that determine which constructs/variables explain students' intentions to behave with academic honesty or dishonesty. Beck and Ajzen ([1991](#)) indicate that intention to cheat on a test (among other dishonest actions) can be explained by TPB constructs. Simkin and McLeod ([2010](#)) indicate that 60 % of business students admit to cheating; the chance to get ahead is a motivating factor. They find that intention to cheat is significantly determined by attitude, which is determined by motivation and deterrents, and subjective norms as determined by family, friends, and professors. Harding et al. ([2007](#)) develop a model based on TPB for engineering and humanities students to better understand the decision to engage in cheating. A notable finding in this study is that 39 % of the extent of college exam cheating and 27 % of homework cheating is explained by high school cheating as well as AI-related intention for engineering and humanities students. Similarly, Mayhew et al. ([2009](#)) focus on engineering and humanities students to develop a structural equation model based on TPB to predict cheating on exams; they conclude that MO, subjective norm, and cheating in high school explain 71 % of the intention to cheat. Stone et al. ([2010](#)) also find strong support for the use of TPB constructs to predict misconduct which explain 21 % of the variance in intention to cheat. Personality dimensions of prudence and adjustment are incorporated as antecedents of the TPB constructs, presenting evidence that the TPB components mediate both prudence and adjustment for the intention to cheat. Based on the results of these studies, intention is explained in large part by TPB constructs (or Theory of Reasoned Action, a predecessor of TPB, constructs), past cheating behavior, MO, and demographics. Some studies have also included perceptions of peers, prudence, adjustment, certain moral philosophical constructs, and ethical judgement.

Other studies focus on a variety of factors that may influence AI behaviors in college students, including the use of technology, the business student context, individual and situational factors, prevention, self-efficacy (the ability to accomplish a task), knowledge of situational policy, and general deviance behaviors (Blankenship and Whitley [2000](#); Elias [2009](#); Jordan [2001](#); Kisamore et al. [2007](#); Klein et al. [2007](#); Molnar et al. [2008](#); Wilson [2008](#)). More recent studies focus on a comparison of institutions with and without honor systems (e.g., Schwartz et al. [2013](#)). Aasheim et al. ([2012](#)) present an examination of student attitudes toward AI behaviors. Their results suggest that faculty efforts to clarify expectations do result in a change in attitudes. These findings yield multiple explanatory variables that can help to understand both behavior and the intent to behave dishonestly. The current study focuses on the context of business freshmen to understand intentions toward two commonly occurring but understudied types of violations.

Reasoned Action and Planned Behavior

Madden et al. ([1992](#)) review the substantial impact of the research by Ajzen and Fishbein to predict behavior. Based

Table 1 Related studies

Study	AI focus	Related findings
Jordan (2001)	AI behavior	$N = 164$
		Student cheating rates (how many times respondent cheated the previous semester) are explained by attitude, perceived social norms, mastery motivation, knowledge of the policy, and extrinsic motivation—$R^2 = 0.16$
McCabe et al. (2001)	AI behavior	Comprehensive study of a decade of research beginning in 1990. The study indicates that cheating is widespread and that some forms of cheating have dramatically increased. Research indicates that individual factors, contextual factors (such as peers' perceptions which are very influential in cheating behavior), and the institution's AI programs and policies (i.e., honor codes) have significant influence on behavior
Beck and Ajzen (1991)	AI behavior	$N = 146$
	AI intentions	Among other dishonest actions, student behavior and the intention to cheat on a test are studied in the context of theory of planned behavior (TPB constructs —attitude, subjective norm, and perceived behavioral control). Multiple regression results indicate that the TPB constructs explain the intention to cheat ($R^2 = 0.82$). The inclusion of moral obligation and past self-reported cheating behavior marginally improved the R-square (subjective norm was no longer significant). AI cheating behavior is explained by moral obligation and self-reported past behavior (not intention or perceived behavioral control) with an R-square of 0.82
Harding et al. (2007)	AI intentions	$N = 527$
	AI behavior	For engineering and humanities majors, intention to cheat (tests and homework) is significantly explained by certain demographics, past high school behavior, and a second-order factor (moral obligation, attitude, and social norms)-$R^2 = 0.58$. Cheating behavior is significantly explained by intention, certain demographics, and past behavior —$R^2 = 0.39$ and .27 for tests and homework, respectively. TPB was important in each context. High school cheating was a strong predictor of intention
Mayhew et al. (2009)	AI Behavior	$N = 527$
	AI Intentions	College cheating is significantly explained by intention and perceived behavioral control—$R^2 = 0.11$. Intention is significantly explained by moral obligation, subjective norm, and high school cheating—$R^2 = 0.71$. Attitude is not significant in the total sample model; rather it is significant in the "transition" stage of moral development
Stone et al. (2010)	AI behavior	$N = 241$
	AI intentions	Intention to cheat is significantly explained by TPB constructs (attitude, subjective norm, perceived behavioral control) and prudence (personality traits); adjustment was not significant—$R^2 = 0.21$. AI behavior is explained by TPB constructs mediated by prudence—$R^2 = 0.36$
Aasheim et al. (2012)	AI behavior	$N = 150$
	AI attitudes	Attitudes regarding unacceptable AI behaviors based on the type of assignment were examined and findings indicate that students perceive differences in behavior acceptability depending on the assignment type. Results also indicate that faculty efforts to clarify expectations are effective in changing attitudes regarding the acceptability of behaviors
Kisamore et al. (2007)	AI intentions	$N = 217$
	other	The interaction of an integrity culture on perceptions of and intentions related to academic misconduct are studied. Personality variables (prudence and adjustment) explained most of the unique variance in academic misconduct
Simkin and McLeod (2010)	AI intentions	$N = 144$
		Approximately 60 % of business students admit to cheating; 64 % of non-business students admit to cheating. Among cheaters, the desire to get ahead is the most important factor motivating the behavior; among non-cheaters, the presence of a professor or a moral anchor is most important. Intention to cheat is significantly explained by Theory of Reasoned Action constructs (attitude, as determined by motivation and deterrent items, and subjective norm, as determined by referent items for family, friends, professors)—$R^2 = 0.58$
Yoon (2011)	AI intentions	$N = 111$
		Using ethical dilemmas, AI intentions are influenced by justice, utilitarianism, and ethical judgement (Moral Philosophy constructs)-(R-Square ranged from 0.44 to 0.61). Ethical judgement is affected by justice, relativism, egoism, utilitarianism, and deontology (Moral Philosophy constructs)—(R-square ranged from 0.45 to 0.56)

Table 1 continued

Study	AI focus	Related findings
Schwartz et al. (2013)	Other	$N = 758$
		Using eight scenarios, student responses regarding perceptions of and responses to academic dishonesty from honor system and non-honor system institutions are compared. Students from the honor system institutions consider the behaviors to be more dishonest (more likely to report the incident)
Klein et al. (2007)	Other	$N = 268$
		A comparison of student attitudes and experiences (business and other professional school students) indicates that business school students cheat no more or less than others; their attitudes as to what constitutes cheating is more lax than those of the other students
Elias (2009)	Other	$N = 666$
		Students high in anti-intellectualism attitudes (value and importance of intellectual pursuits and critical thinking) and low in academic self-efficacy are least likely to perceive cheating as unethical
Blakenship et al. (2000)	Other	$N = 284$
		Survey indicates that those students who cheated on an exam scored higher on measures of unreliability and risky driving behaviors; false excuse makers scored higher on measures of substance use, risky driving, illegal behaviors, and personal unreliability
Molnar et al. (2008)	Other	$N = 708$
		Students indicate that cheating using IT is more acceptable than cheating without the use of IT; it is more acceptable for themselves to cheat using IT than for others. The opposite is the case when no IT is involved
Cabral-Cardoso (2004)	Other	In the context of an alleged case of plagiarism at a university lacking a formalized procedure for misconduct and a code of conduct, this paper discusses the processes available to raise ethical awareness and prevent academic misconduct. Examining the impact of faculty ethical standards and ethics instruction, ethics instruction can only be effective when what is taught is in line with their instructors' daily actions
Lawson (2004)	Other	Examining inconsistencies between beliefs of college students regarding their actions in college and the need for ethical behavior in a business setting, the results indicate that they believe that "business people fail to act in an ethical manner" and "need to act unethically to advance their careers" (p. 189). In effect, their concern for business ethics contrasts with their own lack of personal ethics; "students view the practicality of an action as being more important than its ethicality" (p. 189)

on the premise that intention is the best predictor of behavior (Fishbein and Ajzen 1975), the Theory of Reasoned Action (TRA) was introduced. TRA is based upon the assumption that human behavior is rational and makes use of information available to individuals, asserting that *attitudes* and *subjective norms* affect human behavior. Fishbein and Ajzen describe attitude as one's feeling of favorableness or unfavorableness for a behavior. The study of attitudes is especially compelling because attitudes can be changed through persuasion and other means. An abundance of research regarding attitude change and persuasion exists in the psychology literature (Olson and Zanna 1993). Since attitude is the most significant predictor of intention (Beck and Ajzen 1991) (which in turn, is the best predictor of the actual behavior), then behavior (in this case, academic integrity behavior) could possibly be influenced through attitude change and persuasion. Subjective norm (another construct of TRA) is defined as one's perceptions that most people important to them think they should or should not perform the behavior (Ajzen 1985). This is a social influence that could affect intention and subsequently behavior.

The Theory of Planned Behavior, an extension of TRA, was introduced by Ajzen (1985) to account for situations in which the behavior is not under the individual's control. That is, even if the individual's attitude and subjective norm were in favor of committing the behavior, the individual might not be able to perform the behavior. The model presented by Ajzen includes an additional determinant of intention, *perceived behavioral control,* which represents the person's belief of how easy or difficult it is to perform the behavior (Ajzen and Madden 1986). The TPB model suggests that intention is determined by attitude, subjective norm, and perceived behavioral control; and subsequently, intention is a determinant of actual behavior.

Moral Obligation and Past Behavior[1]

Schwartz and Tessler (1972) indicated that MO is also a strong predictor of intention. MO refers to the feeling of

---

[1] Justifications presented are similar to those presented those in Cronan and Al-Rafee (2008).

guilt or personal obligation associated with performing or not performing a behavior. MO has been used in research to predict ethical intention (Banerjee et al. 1998; Kurland 1995; Leonard and Cronan 2001; Randall and Gibson 1991). MO has also been theorized to influence intention in studies within the psychology field. Ajzen (1991) indicated that MO could possibly be added to the TPB as a separate determinant of intention. In a review of TPB research, Conner and Armitage (1998) found that MO was a significant predictor of intention in some studies. Whitley (1998) suggests that MO could influence cheating and AI violations. The case of AI violations presents a situation in which individuals who are contemplating an AI violation may experience a sense of guilt or personal obligation, which could subsequently influence intentions to violate or not violate AI. Given recent media exposure highlighting the amount and seriousness of AI violations, individuals could form intentions with moral considerations in mind. That is, MO may become more salient when individuals consciously consider AI behavioral intentions. Intention may therefore be consciously and rationally influenced by a sense of guilt or obligation, which subsequently leads to actual behaviors. Additional research is needed to determine what effect (if any) MO has on the intention to violate more common AI behaviors such as sharing homework and plagiarism.

Other studies (focusing on such behavior as coupon usage, physical activity, travel mode choices, and more recently digital piracy) have included a measurement of *past behavior* as one determinant of both the intention to perform the behavior as well as later behavior itself (Ajzen 2002b; Bagozzi et al. 1992; Bamberg et al. 2003; Cronan and Al-Rafee 2008; Hagger et al. 2002). Past behavior frequency is often suggested as having an influence on later behavior independent of intention, although some suggest this is the result of habituation phenomena. Ajzen (2002b) discusses the residual effects of past behavior on later behavior, suggesting that "the residual impact of past behavior is attenuated when measures of intention and behavior are compatible and vanishes when intentions are strong and well formed, expectations are realistic, and specific plans for intention implementation have been developed." (Ajzen 2002b, p. 107).

Conner and Armitage (1998) have theorized past behavior as a predictor of intention. Cronan and Al-Rafee (2008) studied the effect of past piracy behavior on piracy intention (including TPB factors) since past piracy behavior could influence intentions and behavior. They found that past piracy behavior has a significant impact on subsequent intention to pirate. Whitley (1998, p. 259) suggests prior cheating as one possible cause of cheating. McCabe et al. (2012) conclude based on their studies that cheating behaviors develop long before college and that cheating in

high schools is widespread. This behavior clearly begins while students are in high school; if they were successful in high school cheating, it follows that they will continue to cheat in college. Harding et al. (2007) and Mayhew et al. (2009) report that past high school cheating behavior, among other constructs, significantly explained the intent to cheat in college. Past AI violations significantly affect the intention to commit an AI violation or the behavior itself. The landscape of AI is constantly shifting (new technologies to enable, prevent, or detect cheating; new codes of conduct; new methods of educating students; etc.). Moreover, when AI violation intentions have not been well formed or no specific plans have been made (such as a spur of the moment behavior), AI violation decisions are typically made quickly or "on the spot" (Haidt 2013). In these cases, the elements of TRA and TPB with respect to behavior are in play; a conscious, rational decision is often made. Consistent with the large body of work that has established past behavior as a predictor of intention (with acknowledgement of Ajzen's position presented earlier), the role of past AI violation behavior in forming intentions to violate AI is a focus of the current study, as is MO.

AI Violation Intention: An Extended TPB Model with Moral Obligation and Past Behavior Development of Hypotheses

The identification of factors that influence AI violations could be of significant benefit to all educational institutions and ultimately businesses, leading to studies focused on the development of models to explain and possibly reduce cheating behavior. The present study focuses on freshman business students in order to further identify and understand factors that influence a student's intention to commit an AI violation. The specific focus is to better understand homework sharing and plagiarism for freshman business students. Studies by Dubinsky and Loken (1989) and Randall and Gibson (1991) indicate that the TPB has been used to identify and explain different kinds of behavior, including cheating behavior. To identify factors that influence AI violations, a review of behavioral research was undertaken. Based on the previous discussion of factors influencing intention, a model to explain AI violation intention is developed. The following section includes a discussion of those factors hypothesized to influence the intention to commit an AI violation, which are summarized in Table 2.

Intention—Intention to behave ethically/unethically is an individual's intention to perform or not perform a specific behavior (in this case, to commit an academic integrity violation). This study measures behavioral intention rather than actual behavior, which is consistent with most behavioral research. One's intention is thought to

Table 2 Hypotheses

Hypothesis	Variable	Description
1	Attitude (ATT)	Higher attitude (more favorable to cheat: cheating is acceptable) will correspond with a higher/stronger intention to violate academic integrity
2	Subjective norm (SN)	Greater subjective norm to not cheat (others feel cheating is wrong) will correspond with a lower/weaker intention to violate academic integrity
3	Perceived behavioral control (PBC)	Greater perceived behavioral control (more so able to cheat) will correspond with a higher/stronger intention to violate academic integrity
4	Moral obligation (MO)	Higher moral obligation (greater sense of guilt) will correspond with a lower/weaker intention to violate academic integrity
5	Past AI behavior (PB)	Higher incidence of past AI violations (successfully cheated in the past) will correspond with a higher/stronger intention to violate academic integrity

capture the motivational factors that affect behavior. Ajzen (1985) found intention to be a very accurate variable when it came to the prediction of behavior.

Attitude—One of the major components of the TPB is attitude, typically observed as the strongest predictor of intention. Attitude has long been acknowledged as the most important construct in social psychology (Allport 1935), a position supported by an overwhelming amount of research published in this area (Ajzen 2002a; Olson and Zanna 1993; Petty et al. 1997). Most behavioral research suggests that attitude is one of the most significant factors influencing behavioral intention. Attitude consists of both beliefs about a behavior's consequences as well as an evaluation of those consequences. If a student holds the belief that cheating is not wrong, or that the consequences are not severe, it is more likely that intention to cheat will be higher. Conversely, if a student holds the belief that cheating is wrong, or that the consequences are severe, it is more likely that intention to cheat will be lower. A review by Trafimow (1996) found that attitude was the strongest predictor of intention in twenty-nine (29) out of thirty (30) studies. It is therefore expected that attitude will be a key determinant of intention to violate AI.

H1 Individuals with more favorable attitudes toward AI violations (cheating is acceptable) will exhibit higher intentions to commit AI violations.

Subjective Norm—Subjective norm refers to an individual's perception of social pressure to perform or not perform the behavior, and is defined as a person's perception that most people who are important to him/her think he/she should or should not perform the behavior (Ajzen 1991). There is substantial evidence to suggest that subjective norm also influences intention (Chang 1998; Shepherd and O'Keefe 1984; Shimp and Kavas 1984; Vallerand et al. 1992). Students are under competing pressures to behave in certain ways. Depending on one's

peer group, peers may encourage cheating behavior as a means to take shortcuts or get ahead, or peers may discourage cheating behavior as an unacceptable social norm. This influence may either be implicit through observed behavior, or explicit through direct discussion of related topics. Similarly, depending on one's upbringing, parents or other influential caregivers may express opinions or exhibit behaviors that discourage cheating, or that are less critical of such behaviors. In either case, students are likely to be influenced by the opinions and behaviors of their peers and/or their parents. The higher the evaluation of subjective norm (significant others have an unfavorable opinion toward the cheating behavior), the lower the intention to violate AI (H2). Therefore, subjective norms have also been theorized to influence intention as follows.

H2 Individuals with higher subjective norms toward not cheating will exhibit lower intentions to commit AI violations.

Perceived Behavioral Control—Perceived Behavioral Control (PBC) is the perceived ease or difficulty in performing the behavior (Ajzen 1991). PBC is usually considered to be composed of difficulty and control factors (Ajzen 2002a). Essentially, PBC addresses the issue of not being able to perform the behavior even if the individual's attitude and subjective norm are in favor of performing the behavior (violating AI in this case). Low levels of PBC may reflect strong preventive measures in place to combat AI violations, such as plagiarism detection software, diligent monitoring, and randomized questions. High levels of PBC may reflect weaker preventive measures and/or artifacts of a "culture" of cheating, such as lax monitoring, test and paper banks, and access to instructor resources. Thus, if an individual perceives a higher degree of control in an AI situation, he or she will be more likely to commit a violation. In effect, PBC will influence intention based on the ease or difficulty of committing an AI violation (H3).

H3 Individuals with greater PBC will exhibit higher intentions to commit AI violations.

Moral Obligation—MO refers to the feeling of guilt or personal obligation to perform or not to perform a behavior. MO reflects the values of the society and/or subgroups with which an individual identifies. Professional codes of conduct, honor codes, and one's overall perception of societal expectations (as shaped by media, faith, law, and other factors) will provide an ethical backdrop against which certain behaviors may induce feelings of pride or guilt. Ajzen (1991) indicated that MO could be added to the TPB as a separate determinant of intention. Schwartz and Tessler (1972) also indicated that MO would be a good predictor of ethical/unethical intention, and MO has been used in the literature to predict ethical intention (Banerjee et al. 1998; Cronan and Al-Rafee 2008; Kurland 1995; Leonard and Cronan 2001; Randall and Gibson 1991). In a review of TPB research, Conner and Armitage (1998) found that MO was a significant predictor of intention in a number of studies. Thus, the greater the individual perceives an anticipated sense of guilt (in this case, is this the right thing to do?) or the lower the perceived obligation to perform the behavior, the less likely the intention to commit AI violations (H4).

H4 Individuals with higher levels of MO will exhibit lower intentions to commit AI violations.

Past AI Behavior—Past AI Behavior (PB) is defined as the frequency of occurrence of AI violations in the past (during high school in the present context of university freshmen). If an individual has successfully cheated in the past, he or she will be more capable of adequately planning and will possess a more realistic understanding of what behaviors may lead to successful cheating. Given that prior research has shown past behavior frequency influences intentions and later behavior (Conner and Armitage 1998; Cronan and Al-Rafee 2008;

Whitley 1998), past AI violation behavior frequency (in this case while in high school) could influence the intention to commit an AI violation. Past behavior or its frequency has been suggested to influence later behavior independent of intentions; it has also been suggested to attenuate intentions (Hagger et al. 2002). It should be noted that some have attributed this to a habit effect. For example (Ajzen 2002b), p. 120 suggests that from a theoretical perspective, "past behavior frequency adds little to our understanding of a behavior's determinants." Further, he suggests "the limits of reasoned action are not the habituation of behavior but other factors such as in accurate or unrealistic behavioral, normative, and control beliefs; weak or unstable attitudes and intentions; and inadequate planning required for successful implementation of an intended behavior" (Ajzen 2002b, p. 120). In agreement with research studies that found past behavior to be influencers (in contrast to Ajzen's perspective), it is hypothesized that if an individual has committed AI violations in the past, they may be more likely to have these intentions again (H5).

H5 Individuals with higher incidences of past AI violation behavior will exhibit higher intentions to commit AI violations.
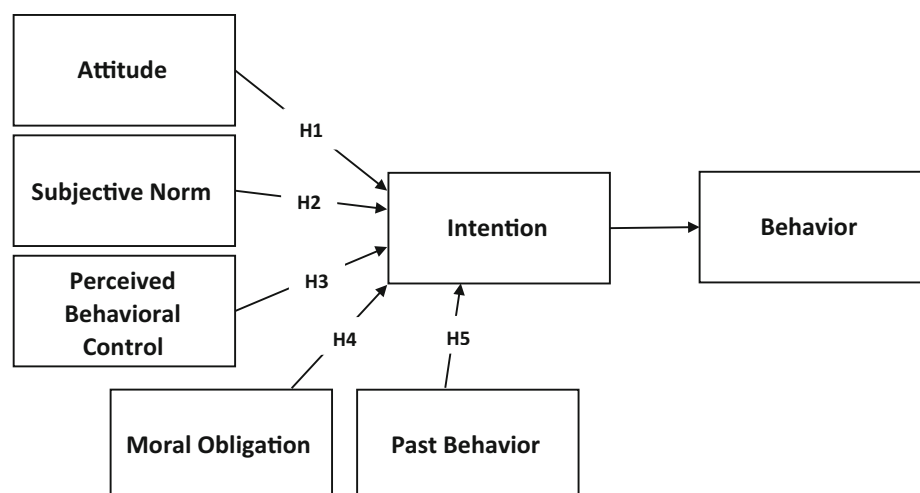
Proposed Model

Using TPB as a foundation and extending it to include MO and past behavior, the following model (Fig. 1) is proposed:

$$\text{AI Violation Behavior} = f\left(\text{Intention to Violate AI}\right) \tag{1}$$

$$\text{Intention to Violate AI} = f\left(\text{Attitude, Subjective Norm, Perceived Behavioral Control, Moral Obligation, Past AI Behavior}\right) \tag{2}$$

Fig. 1 Extended TPB AI homework and plagiarism violation intention model

Methodology

To test the proposed model, a quantitative approach involving survey-based data collection and regression-based analyses was used. Online survey data were collected and analyzed from a total of 1353 freshman business students over two consecutive years at a large Midwestern University. Where possible, survey measures used in the study were adapted from previously validated instruments. Additional details regarding the measurement, sample, and analytical method used are provided in subsequent sections.

Instrument Measures

Intention is measured, as suggested by Madden et al. (1992), using three items, with each item scored on a seven-point Likert scale. Example items include 'I intend to cheat on a homework assignment in the near future' (definitely/definitely not) and 'I will try to copy from other sources and not appropriately cite these sources in a paper assignment in the near future' (definitely/definitely not). For all instrument measure items in the survey, the instrument measures both 1) cheating on homework assignments and 2) copying from other sources and not appropriately citing sources. See Appendix 1 for the instrument used in this study.

Attitude is assessed with four items relating to the overall favorableness/unfavorableness of the behavior. As suggested by Fishbein and Ajzen (1975), subjects are asked to respond to a question regarding the individual's attitude toward the behavior. Subjects are presented with a statement such as, 'Overall, my attitude toward (cheating on homework assignments or copying from other sources and not appropriately citing them) is:,' and semantic differential items are used to answer the question and assess attitude. Semantic differential items that have been used previously include good/bad, favorable/unfavorable, pleasant/unpleasant, harmful/beneficial, useful/useless, positive/negative, pro/anti, harmful/beneficial, nice/awful, and wise/foolish (Bodur and Brinberg 2000; Chang 1998; Flannery and May 2000; Madden et al. 1992; Trafimow 1996). In this study, attitude is measured using four items (good/bad, harmful/beneficial, foolish/wise, and favorable/unfavorable) and scored on a seven-point scale.

Subjective norms have been assessed by asking subjects whether "significant others" approve or disapprove the behavior in question. Questions include 'Most people who are important to me think that I should NOT cheat on homework assignments' and 'When considering copying from other sources and NOT appropriately citing sources in paper assignments, I wish to do what people who are important to me want me to do.' These questions are answered using a seven-point Likert scale (strongly agree/strongly disagree) (Ajzen 1991). In total, 3 items assessing subjective norms are used in this study for both homework and plagiarism.

Perceived Behavioral Control is a measure of how easy or difficult it is for subjects to perform the behavior in question, as originally conceptualized by Ajzen (1985). Ajzen (2002a) recommends the use of both self-efficacy measures (whether individuals believe that they have the skills and abilities to perform the behavior) and control measures (whether individuals believe they have control over performing the behavior). Measures used in this study (using five items) are based on previous research regarding PBC that captures both self-efficacy and control dimensions. Self-efficacy is measured on a seven-point Likert scale; an example would be 'For me to cheat on a homework assignment, would be' (very easy/very difficult). An example of how control is measured, also on a seven-point Likert scale, is 'If I wanted to, I could easily copy from other sources and not appropriately cite them in a paper assignment' (strongly agree/strongly disagree).

Moral obligation is measured using three items, with each item scored on a seven-point Likert scale ranging from strongly agree to strongly disagree. Statements such as 'I would not feel guilty if I copy from other sources and not appropriately cite these sources in paper assignments' and 'cheating on homework assignments goes against my principles' are used (Beck and Ajzen 1991).

Past (academic integrity) is the degree of past occurrences of AI violations, mostly during high school in this case. If the respondent has indicated that they have violated AI previously, they are asked about the degree of occurrences. The following statement is used to assess past cheating on homework (sharing), 'How much have you cheated (or shared inappropriately) on homework assignments in the past 2 years?' The possible response is a seven-point Likert scale ranging from 'a lot' to 'very little.' The respondents were also asked about the frequency of cheating (from 'never' to 'every time' on a five-point Likert scale). Two items assessing past behavior are used in this study for both homework and plagiarism.

Table 3 provides a summary description of the constructs (including construct items) used in this study. A copy of the instrument with items is available in Appendix 1.

Table 3 Measures used in the study

Factor	Description
Intention (INT) (Madden et al. 1992)	3 items for cheating on homework assignment and 3 items for plagiarism *Definitely (1) to Definitely Not (7)**
	I intend to cheat on a homework assignment in the near future (I intend to copy from other sources and not appropriately cite these sources in a paper assignment in the near future)
	I will try to cheat on homework in the near future (I will try to copy from other sources and not appropriately cite these sources in a paper assignment in the near future)
	I will make an effort to cheat on a homework assignment in the near future (I will make an effort to copy from other sources and not appropriately cite these sources in a paper assignment in the near future)
Attitude (ATT) (Bodur and Bringberg 2000; Chang 1998; Flannery and May 2000; Madden et al. 1992; Trafimow 1996)	4 items for homework assignment and 4 items for plagiarism
	Overall, my attitude toward cheating on homework assignments is (that is, I view cheating on homework assignments as) (Overall, my attitude toward copying from other sources and not appropriately citing them in a paper assignment is (that is, I view copying sources without citations on paper assignments as))
	Favorable (1) to Unfavorable (7)*
	Harmful (1) to Beneficial (7)
	Foolish (1) to Wise (7)
	Good (1) to Bad (7)*
Subjective norm (SN) (Ajzen 1991)	3 items for homework assignment and 3 items for plagiarism
	Most people who are important to me think I should NOT cheat on homework assignments (Most people who are important to me think I should NOT copy from other sources without appropriately citing the sources in paper assignments) *(1—Strongly Agree to 7—Strongly Disagree)**
	When considering cheating homework assignments, I want to do what people who are important to me want me to do (When considering copying from other sources and not appropriately citing sources in paper assignments, I wish to do what people who are important to me want me to do) *(1-Strongly Agree to 7-Strongly Disagree)**
	If I cheat on homework assignments, then most people who are important to me would (If I copy from other sources and not appropriately cite these sources in a paper assignment, then most people who are important to me would *(1—Not Care to 7—Disapprove)**
Perceived behavioral control (PBC) (Ajzen 2002a)	5 items for homework assignment and 5 items for plagiarism-3 representing self-efficacy, 1 representing resources, 1 representing control
	If I wanted to, I could easily cheat on homework assignments (If I wanted to, I could easily copy from other sources and not appropriately cite sources in paper assignments) *(1—Strongly Agree to 7—Strongly Disagree)**
	I believe that I have the ability to cheat on homework assignments (I believe that I have the ability to copy from other sources and not appropriately cite sources in paper assignments) *(1—Strongly Agree to 7—Strongly Disagree)**
	I have the resources necessary to cheat on homework assignments (I have the resources necessary to copy from other sources and not appropriately cite sources in paper assignments) *(1—Strongly Agree to 7—Strongly Disagree)**
	I have opportunities to cheat on homework assignments if I wanted (I have opportunities to copy from other sources and not appropriately cite sources in paper assignments if I wanted) *(1—Strongly Agree to 7—Strongly Disagree)**
	For me to cheat on a homework assignment would be (For me to copy from other sources and not appropriately cite these sources in a paper assignment would be) *(1—Very Easy to 7—Very Difficult)**

Table 3 continued

Factor	Description
Moral obligation (MO) (Beck and Ajzen 1991)	3 items for homework assignment and 3 items for plagiarism *1—Strongly Agree* to *7—Strongly Disagree*
	I would NOT feel guilty if I cheated on homework assignments (I would NOT feel guilty if I copy from other sources and not appropriately cite these sources in paper assignments)
	Cheating on homework assignments goes against my principles (Copying from other sources and not appropriately citing sources in paper assignments goes against my principles)*
	It would be morally wrong to cheat on homework assignments (It would be morally wrong to copy from other sources and not appropriately cite in paper assignments)*
Past AI Behavior (PB)	2 items for homework assignment and 2 items for plagiarism
	How much have you cheated (or shared inappropriately) on homework assignments in the past few years? (How much have you copied from other sources and not appropriately cited these sources in a paper assignment in the past few years?) *1—A Lot* to *7—Very Little**
	In the past two years, how frequently did you cheat (inappropriately share) on homework assignments? (In the past two years, how frequently did you copy from other sources and not appropriately cite these sources in a paper assignment?) *1—Never* to *5—Every Time*

* Items reverse coded for analysis

Sample

The sample for this study consists of students enrolled in a business college at a large Midwestern university. Students are the target population, since the focus is AI in a university or college setting. The instrument was administered to a common freshman business class taken during a student's first semester on campus as a voluntary assignment. This introductory business class is required of all incoming freshman students who have declared business as a major. To help ensure the accuracy of the responses, an online survey was used and students were informed that the names of those who completed the survey would not be shared with the instructor nor would any individual survey responses. Further, to help answer the question of response accuracy and increase the response rate, upon completion of this voluntary survey, the student was given a for-credit academic integrity assignment, which did not require completion of the online survey. The instrument was administered to one-thousand nine-hundred eighty-eight (1988) students during the fall semester over two consecutive years (recent)–Year 1 and Year 2. While one-thousand four-hundred fifteen (1415) surveys were collected, one-thousand three-hundred fifty-three (1353) surveys were used in the analyses. Partially completed surveys were omitted; surveys that had an inconsistent case of "column-checking" of scales with reverse items or questionnaires that had one or more constructs left unanswered were also omitted. The response rate was 68 %. A review of the sample indicates that 57.9 % were male students and 42.1 % were female students.

As discussed previously, prudence is advised since self-reported intentions are used. Not only could a gap exist between self-reported cheating and actual cheating, a fear that student responses may be shared with the school or a social desirability bias could exist. Table 4 presents sample means and standard deviations for the variables used in both plagiarism and shared homework contexts. Past behavior self-reports are consistent with rates reported in prior studies (McCabe et al. 2012). For comparisons, Table 4 also presents sample summary statistics for those students who indicated that they had committed a past violation in high school or did not commit a past violation in high school–a yes/no response to 'I have cheated (or shared homework inappropriately) on homework assignment…' and 'I have copied from sources without appropriate cites….' Seventeen percent (17 %) of the students reported that they cheated in the past for plagiarism and fifty-three percent (53 %) cheated in the past by sharing homework. Because of the frequency of reported past plagiarism (17 %) and fairly high frequency of shared homework (53 %), the self-reported responses are likely to have minimal social desirability bias. The means and standard deviations of the individual variables vary

Table 4 Sample characteristics

	Total sample		Past violation		No past violation	
	N = 1353		N = 702 (52.5 %)		N = 636 (47.5 %)	
	X	S.D	X	S.D	X	S.D
Share homework						
Intention	1.68	1.11	1.83	1.13	1.51	1.06
Attitude	2.31	1.34	2.80	1.32	1.75	1.10
Moral obligation	5.48	1.24	5.32	1.24	5.68	1.21
Perceived behavioral control	4.10	1.59	4.58	1.44	3.57	1.59
Subjective norm	5.63	1.29	5.63	1.19	5.69	1.40
Past behavior	2.04	1.01	2.50	0.84	1.49	0.82
	Total sample		Past violation		No past violation	
	N = 1353		N = 230 (17.1 %)		N = 1109 (82.9 %)	
	X	S.D	X	S.D	X	S.D
Plagiarism						
Intention	1.54	0.99	1.81	1.03	1.48	0.96
Attitude	1.70	1.11	2.30	1.25	1.56	1.02
Moral obligation	5.53	1.22	5.18	1.23	5.62	1.20
Perceived behavioral control	4.03	1.64	4.63	1.46	3.89	1.66
Subjective norm	5.51	1.34	5.24	1.40	5.58	1.32
Past behavior	1.52	0.83	2.34	0.97	1.36	0.72

dependent on past behavior reported when compared to the total sample. It is noteworthy that those who indicate that they have cheated in the past have a higher intention to cheat in college (both plagiarism and shared homework) as compared to those who reported no history of cheating.

Measurement Model

Analyses of the measurement models and structural models were conducted using Partial Least Squares (PLS) structural equation modeling (Lohmöller 1989). PLS was selected as the method of analysis for three reasons. First, PLS is robust to underlying distributional assumptions (Cassel et al. 1999; Chin 1998b; Hair et al. 2012). This is relevant to the present study, given the nature of the dependent variable of interest. Self-reported intention to commit violations of academic integrity, as might be expected, is skewed, with a mean of 1.5 and 1.7 for plagiarism and homework, respectively, on a 7-point scale. Second, PLS is considered an effective method for testing newly developed theories (Chin 1998b), which aligns with the objectives of this study to extend TPB to include new constructs for MO and past cheating behavior. Third, PLS is designed to maximize predictive accuracy of the model (Chin 1998b). The ability to more accurately predict intention to commit acts of academic dishonesty offers strong practical motivation for selecting this method.

In the analysis of the measurement model, convergent and discriminant validity of constructs were assessed using common tests based on correlation and factor analyses; *SmartPLS 3.0* (Ringle et al. 2005) was used. Separate analyses were conducted for factors relating to AI homework and plagiarism violations. Composite reliability scores in PLS all exceeded 0.85, well above the threshold of 0.7 suggested by Werts et al. (1974). Additionally, Cronbach's Alpha was measured for all constructs with values exceeding 0.7, a generally accepted threshold to establish scale reliability (Nunnally 1978). The average variance extracted (AVE) values all exceeded 0.65, above the threshold of 0.5 suggested by Fornell and Larcker (1981), suggesting adequate convergent validity. To assess discriminant validity, a Fornell–Larcker measure was used (Chin 1998a; Fornell and Larcker 1981), comparing the square-root of the AVE for a construct to the correlation coefficients between constructs. In all cases, the square-root of the AVE (listed along the diagonals in Table 7) was greater than all other correlations, suggesting adequate discriminant validity. As an additional test of discriminant validity, cross-loadings were evaluated for all constructs, with all items loading on the expected constructs at 0.6 or higher and all cross-loadings at least two orders of magnitude below those of the primary factor items (Gefen and Straub 2005). Tables 5 and 6 present the factor loadings and Table 7 summarizes the factor, reliability, convergent,

Table 5 Factor loadings—sharing homework

Constructs & items	1	2	3	4	5	6
Attitude						
Attitude 1	**0.895**	0.463	−0.414	0.315	0.597	−0.229
Attitude 2	**0.890**	0.423	−0.426	0.296	0.555	−0.242
Attitude 3	**0.917**	0.455	−0.445	0.278	0.579	−0.277
Attitude 4	**0.918**	0.477	−0.441	0.298	0.551	−0.226
Intention						
Intention 1	0.528	**0.958**	−0.431	0.292	0.466	−0.291
Intention 2	0.472	**0.962**	−0.403	0.252	0.416	−0.271
Intention 3	0.438	**0.950**	−0.397	0.231	0.398	−0.294
Moral obligation						
MO 1	−0.454	−0.418	**0.797**	−0.366	−0.361	0.372
MO 2	−0.368	−0.316	**0.870**	−0.133	−0.284	0.566
MO 3	−0.362	−0.330	**0.859**	−0.106	−0.264	0.586
Perceived behavioral control						
PBC 1	0.299	0.227	−0.222	**0.902**	0.306	−0.015
PBC 2	0.307	0.249	−0.269	**0.894**	0.309	−0.015
PBC 3	0.281	0.241	−0.232	**0.924**	0.324	0.003
PBC 4	0.271	0.242	−0.196	**0.914**	0.319	0.025
PBC 5	0.309	0.257	−0.233	**0.850**	0.354	−0.043
Past AI behavior						
Past 1	0.603	0.433	-0.343	0.365	**0.920**	−0.113
Past 2	0.534	0.373	-0.321	0.282	**0.889**	−0.156
Subjective norm						
Subj norm 1	−0.244	−0.293	0.547	−0.020	−0.121	**0.925**
Subj norm 2	−0.115	−0.106	0.318	0.124	−0.026	**0.626**
Subj norm 3	−0.273	−0.288	0.568	−0.064	−0.175	**0.926**

Bolded items indicate item loadings for intended constructs

and discriminant validity analyses results for the appropriate components.

Analysis and Results

Partial Least Squares (PLS) analysis was used to evaluate the both the measurement and structural (or path) models. The structural model was assessed using a bootstrap resampling procedure in *SmartPLS 3.0* to estimate coefficients and standard errors using 500 iterations. The PLS results for the proposed models (using combined data from Years 1 & 2) for Homework and Plagiarism are presented in Figs. 2, 3, respectively. The numbers on each relationship (line) correspond to the standardized regression coefficients. The p value for each coefficient is represented using * for the $p < .05$ level of significance and ** for the $p < .01$ level of significance.

The following section details the results of individual hypotheses. *Attitude* is hypothesized to influence the intention to violate AI. As expected, for both types of behaviors and across both years of data, attitude is a

significant predictor of intention. There is a positive and significant relationship between attitude and intention, supporting H1. We conclude that subjects with higher (more favorable) attitude toward AI violation behaviors tend to have higher intentions to violate AI.

Subjective norm is also hypothesized to affect the intention to violate AI. Examining the results of the analysis, while subjective norm is a significant predictor of sharing homework intention, it is not significant predictor of plagiarism intention. In both cases, there is a negative (expected) relationship between subjective norm and intention (not significant in the case of plagiarism). While H2 is supported for homework sharing violation, H2 is not supported for plagiarism. We cannot conclude that subjects' intentions regarding AI plagiarism violations are affected by the approval of significant others. However, the approval of significant others appears to affect AI homework sharing violations.

Perceived behavioral control is hypothesized to positively affect the intention to commit AI violations. Examining the results of the analyses, PBC is a significant predictor of intention. As expected, there is a positive and

Table 6 Factor loadings—plagiarism/copying

Constructs & items	1	2	3	4	5	6
Attitude
Attitude 1	**0.911**	0.478	−0.394	0.152	0.568	−0.289
Attitude 2	**0.911**	0.429	−0.404	0.155	0.536	−0.283
Attitude 3	**0.924**	0.503	−0.413	0.138	0.549	−0.319
Attitude 4	**0.926**	0.475	−0.395	0.172	0.524	−0.288
Intention
Intention 1	0.490	**0.936**	−0.379	0.154	0.472	−0.257
Intention 2	0.484	**0.949**	−0.407	0.127	0.471	−0.273
Intention 3	0.474	**0.928**	−0.376	0.122	0.444	−0.259
Moral obligation
MO 1	−0.399	−0.392	**0.756**	−0.232	−0.355	0.341
MO 2	−0.325	−0.285	**0.864**	−0.008	−0.297	0.662
MO 3	−0.337	−0.312	**0.855**	0.003	−0.315	0.635
Perceived behavioral control
PBC 1	0.142	0.118	−0.068	**0.892**	0.118	0.108
PBC 2	0.155	0.145	−0.140	**0.909**	0.153	0.066
PBC 3	0.141	0.107	−0.075	**0.924**	0.126	0.133
PBC 4	0.118	0.101	−0.065	**0.916**	0.111	0.147
PBC 5	0.174	0.152	−0.129	**0.821**	0.178	0.027
Past AI behavior
Past 1	0.544	0.485	−0.374	0.180	**0.913**	−0.205
Past 2	0.502	0.377	−0.325	0.091	**0.852**	−0.246
Subjective norm
Subj norm 1	−0.293	−0.277	0.615	0.099	−0.251	**0.930**
Subj norm 2	−0.160	−0.133	0.329	0.178	−0.114	**0.683**
Subj norm 3	−0.331	−0.278	0.631	0.043	−0.243	**0.934**

Bolded items indicate item loadings for intended constructs

Table 7 Reliability and discriminant validity

Variable	Composite Reliability	Cronbach's Alpha	AVE	ATT	INT	MO	PBC	PB	SN
Homework
ATT	0.948	0.926	0.819	0.905					
INT	0.970	0.954	0.916	0.503	0.957				
MO	0.880	0.799	0.711	−0.477	−0.430	0.843			
PBC	0.954	0.939	0.805	0.328	0.272	−0.257	0.897		
PB	0.900	0.779	0.818	0.631	0.448	−0.368	0.360	0.905	
SN	0.873	0.795	0.702	−0.269	−0.298	0.592	−0.019	−0.147	0.838
Plagiarism
ATT	0.955	0.938	0.843	0.918					
INT	0.956	0.931	0.879	0.515	0.938				
MO	0.866	0.770	0.683	−0.437	−0.414	0.827			
PBC	0.952	0.937	0.798	0.168	0.144	−0.113	0.883		
PB	0.877	0.723	0.780	0.593	0.494	−0.389	0.159	0.883	
SN	0.891	0.826	0.735	−0.322	−0.280	0.644	0.100	−0.252	0.857

ATT attitude, *INT* intention, *SN* subjective norm, *PBC* perceived behavioral control, *MO* moral obligation, *PB* past AI violation behavior

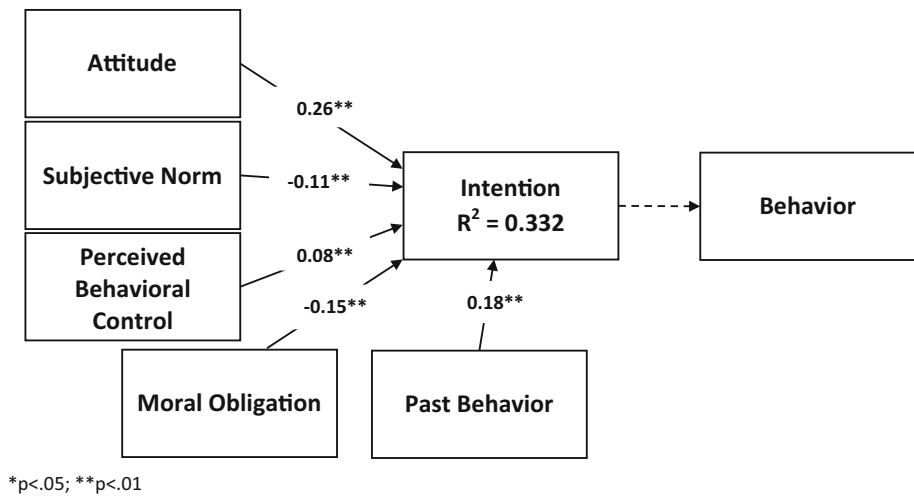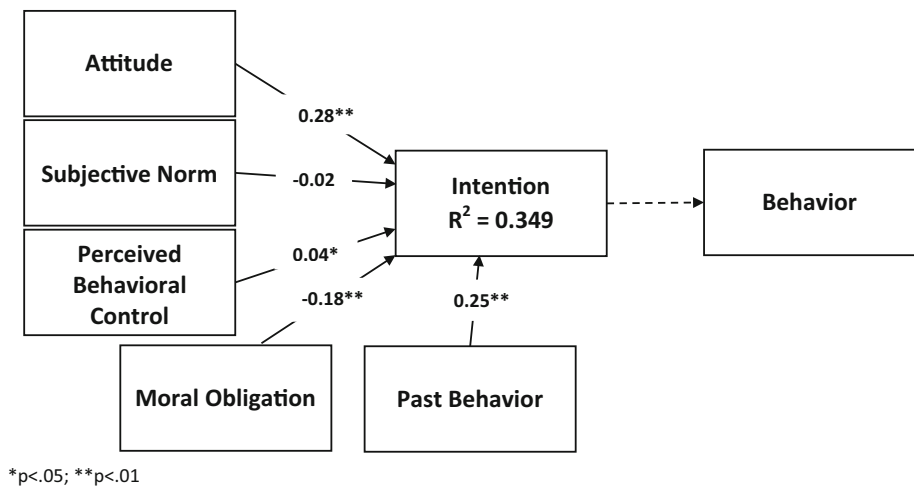**Fig. 2** Extended TPB AI homework violation intention model results

*p<.05; **p<.01

Fig. 3 Extended TPB AI plagiarism violation intention model results

*p<.05; **p<.01

significant relationship between PBC and intention in both analyses. H3 is supported, and we conclude that subjects who have the ability and resources to commit an AI violation will tend to have a higher intention toward committing a violation.

Past AI violation behavior is also hypothesized to positively affect the intention to commit an AI violation. Examining the results of the analysis, past high school behavior is another significant predictor of intention. As expected, there is a strong positive and significant relationship between past behavior and intention. H4 is supported, and we conclude that more occurrences and experiences of past cheating behavior in high school tend to increase the intention to commit AI violations.

Finally, *MO* is hypothesized to negatively affect the intention to violate AI. Examining the results of both analyses, MO is a significant predictor of intention. As expected, there is a negative and significant relationship

between MO and intention, supporting H5, and we conclude that students with higher MO will tend to have lower intentions toward violating AI. Given the results of analyses discussed above, the extended TPB AI violation intention model includes subjective norm for AI homework sharing violations in addition to the other hypothesized constructs. The extended AI homework sharing model has the following significant variables:

Intention to Violate AI = f

(Attitude, Perceived Behavioral Control,

Past AI Behavior, Moral Obligation, Subjective Norm)

(3)

The results for plagiarism violations indicate that subjective norm is not a significant predictor of intention. The extended AI plagiarism violation model has the following significant variables:

Table 8 Extended TPB AI violation intention model results (years 1 & 2 combined)

	Homework ($n = 1353$)		Plagiarism ($n = 1353$)	
	Standardized coefficients	Significance	Standardized coefficients	Significance
R^2	0.332	–	0.349	–
Attitude	0.259	<.01	0.278	<.01
Subjective norm	−0.109	<.01	−0.018	ns
Perceived behavior control	0.079	<.01	0.040	<.05
Moral obligation	−0.154	<.01	−0.177	<.01
Past behavior	0.183	<.01	0.247	<.01

Table 9 Extended TPB AI violation intention model comparisons

Model	Homework		Plagiarism	
	TPB	Extended TPB	TPB	Extended TPB
Attitude	0.409**	0.259**	0.445**	0.278**
Subjective norm	−0.186**	−0.109**	−0.142**	−0.018
Perceived behavior control	0.134**	0.079**	0.082**	0.040**
Moral obligation		−0.154**		−0.177**
Past behavior		0.183**		−0.247**
N	1353	1353	1353	1353
R^2	0.298	0.332	0.286	0.349
Change in R^2		0.034		0.063
F-statistic—change in R^2		34.33**		65.27**

* $p < .05$; ** $p < .01$

$$\text{Intention to Violate AI} = f$$
$$\text{(Attitude, Perceived Behavioral Control,} \quad (4)$$
$$\text{Past AI Behavior, Moral Obligation)}$$

The results for the extended TPB AI violation intention model are summarized in Table 8 for AI homework sharing violations and plagiarism violations, respectively. The models explain between 33 % (homework sharing) and 35 % (plagiarism) of the variance in intention, which compares favorably with other studies in Table 1.

Table 9 presents model results comparing the TPB models (using only TPB constructs) to the extended TPB models. The shared homework TPB model (attitude, perceived behavioral control, and subjective norm) explains 30 % of the variation in the intention to share homework. When MO and past behavior are included in the AI shared homework model, the explanatory power (R-square) increased from 30 to 33 % (a 10 % improvement) with past behavior second only to attitude in explaining the intention to share homework. The F-test reveals a significant difference between the TPB and extended TPB models. The TPB model for plagiarism explains 29 % of the variation in

the intention to plagiarize; yet, with the addition of MO and past behavior, R-square increases by 6 to 35 % (a 22 % improvement in explanatory power) and again with past behavior as a relatively important variable in the model. Using the F-test, a significant difference exists between the TPB and extended TPB models for plagiarism. Subjective norm becomes non-significant when MO and past behavior are included, indicating that the intention to plagiarize is not affected by what influential others may think, but by an internal sense of MO.

To assess any self-report gaps or social desirability bias, subgroup analyses were performed. Shared homework and plagiarism extended TPB models were developed for students who have some degree possibility that cheating behavior could occur (that is, those students who did not mark a "definitely not" for all three intention items). Extended TPB models for students who have some degree of possibility of cheating ($n = 414$ for sharing homework and $n = 340$ for plagiarism) are similar to the extended TPB models for all students (see Appendix 2 for details). For students in this subsample, the intention to share homework is influenced by past behavior, perceived

behavioral control, subjective norm, and attitude to some degree. In this subsample, students' intention to plagiarize is influenced by past behavior, perceived behavioral control, MO and, attitude to some degree. That is, if there is a possibility of cheating, the variables that influence the decision (sharing homework or plagiarism) are similar to those for the full models.

Also included in Appendix 2 for comparative purposes are subgroup analyses for those students who indicated that they had committed a past violation in high school for both shared homework and plagiarism ("yes" response to the 'I have cheated in the past…' question, as previously discussed). Past violation occurrences clearly influence the models. For those students who had shared homework in high school, it appears that the prevailing attitudes are 'if my peers are sharing, then I will too' and 'if I think it is ok, I'll share homework; if I do not feel it's ok, I'll not share.' Moreover, 'if I did not share homework in high school, it does not matter what others do or what significant others think, I'll not cheat.' Similarly, for those who plagiarized in the past, the attitudes may be 'I was able to do it then and got away with it; it does not matter what others do.'

Discussion, Limitations, and Conclusion

Antecedents to academic integrity intention were investigated in this study using an extended TPB component model. The study categorizes and identifies factors that could influence the intention to violate academic integrity (specifically business freshmen for the behaviors of sharing homework and plagiarism). Using established research from the psychology and information systems fields, key constructs were hypothesized to influence an individual's intention to commit an AI violation. Given these research studies, a questionnaire was developed and administered to a student sample of business freshmen over a 2 year period. The significant components of this model are attitude, perceived behavioral control, MO, and past violation behavior. Subjective norm also significantly affects AI intention to share homework.

The findings of this study are consistent with those of Beck and Ajzen (1991), Harding et al. (2007), Mayhew et al. (2009), and Stone et al. (2007), who found support for the TPB model to predict AI violation intentions. The extended TPB model, used in the present study, which includes TPB components in addition to past AI violation behavior and MO, explains 33 and 35 % of the variance in AI intentions for sharing homework and plagiarism, respectively. These results compare favorably to previous findings. This study makes a contribution to AI research in that the context of this study extends and validates prior research by focusing on business freshmen, and the acts of

plagiarism and sharing homework when asked not to share. These students, the business leaders of the next generation, are at an influential stage in their lives, and these behaviors represent common "grey areas" around understanding and severity of AI violations. Findings confirm that MO and past behavior are important influencers of intention to commit both types of AI violations studied.

It would seem natural for a researcher to translate the results of this study into common-sense recommendations for practice: reach out to parents to influence subjective norms, continue to improve detection mechanisms and deterrents in order to influence perceived behavioral control, establish an honor code to improve students' MO, enhance education about AI to improve attitudes, and intervene much earlier to reduce past behavior. These have been in the crosshairs of teachers and administrators for some time, and another call to action (or reminders) on these issues is warranted.

Importantly, the general implications of each factor should be considered, and additional focus placed on those that are more influential and malleable. Of the factors considered in the present model, the strongest predictors of intention to plagiarize and share homework are attitude, past behavior, and MO. The moderately strong influence of subjective norm is important in understanding the formation of attitudes toward homework violations, but it is practically implausible to change the beliefs of others who are important to college students. Parent outreach programs can be effective to the degree that parents hold acceptable norms and exhibit strong influence on their teenagers. The moderate influence of PBC reflects an ongoing struggle between preventive and deterrent measures on the part of universities and faculty, and individual choices and institutionalized cheating (e.g., test banks and paper writing services) on the part of students. This struggle will likely continue for the foreseeable future, and the results of this study support the continued efforts on the part of universities to prevent and detect extant and evolving AI violation behaviors. To offer meaningful practical guidance in light of these results, it is important to more closely consider factors that are both influential and malleable, and to offer suggestions that may benefit readers in multiple roles– policy makers, administrators, and teachers.

Past behavior cannot be changed. However, it is important for policy makers to understand that prior unethical behaviors are strong predictors of future unethical behaviors, from high school to college and from college to the workforce. It is imperative that AI education and prevention receive greater attention in the earlier stages of students' development, possibly as early as elementary school. The implementation of AI education and awareness programs at an earlier stage can influence all of the factors found to be significant in the present study, and ultimately

reduce AI violation behaviors so that the influence of past behavior on college AI violations is less consequential. Administrators and teachers at the college level, though they cannot change past behavior, can position the college experience to incoming freshmen as a *tabula rasa*, a blank slate, that allows each student to redefine who he or she is.

Attitude and MO are the two factors which are both influential and malleable to some degree. Attitudes can be changed through effective intervention campaigns based on exemplars of public opinion change initiatives. The "Don't Mess with Texas" (DMWT, http://www.dontmesswith texas.org) anti-littering campaign has been extremely influential since the 1980s in reducing roadside littering by instilling a sense of shared identity and pride to residents of the state through the use of local sports stars and celebrities in advertising. Taking a different approach, the more recent campaign by thetruth.com (TRUTH, http://www.thetruth. com) has mobilized youth against smoking by positioning "big tobacco" as a malevolent entity that spreads lies and disease in the name of corporate greed, and encourages youth to rebel against this entity by exposing the truth about the tobacco industry. TRUTH appeals to a youthful propensity to rebel against perceived authority, while DMWT appeals to shared identity and pride in group membership. These are powerful anchors on which to pivot existing attitudes and anchor new ones. At a public policy level, perhaps a bolder campaign could capitalize on the rebellious nature of teenagers by positioning academic integrity in the context of the "corporate machine," doing whatever is needed to get ahead in business, in life, and in school, exposing the truth behind major corporate and college scandals, and ultimately leaving the audience to decide what "getting ahead" should mean to them. At a university level, campaigns might take an approach more akin to DMWT by incorporating well-known graduates of the school such as professional athletes, executives, and celebrities into marketing messages that create a shared sense of identity and pride in the integrity of a degree from that particular school. If successful, these programs would need to be maintained and re-enforced as attitudes toward cheating may revert otherwise. Arlow and Ulrich (1985) found that attitudes toward cheating changed after an ethics course, but over time returned to their original states. DMWT has been quite effective in maintaining the original message over time, suggesting that such programs are sustainable.

It may also be possible to influence MO by tapping into students' identities and group memberships. Various campus and student organizations are generally associated with providing moral guidance to members, including student religious groups, Greek life organizations, and cultural groups. Even groups that are not typically associated with moral guidance may offer effective opportunities for outreach, such as professional organizations with established codes of conduct (e.g., American Marketing Association, Association of Information Technology Professionals, and International Federation of Accountants). Administrators can work with these groups to help send a consistent and shared message about academic integrity, and what it means to each group specifically. Teachers can be involved with these groups as well, acting as advisors and counselors, effecting change through service leadership. Teachers are also in the best position to have a more intimate conversation with students about discovering and shaping their identities as individuals, deciding for themselves what will be important in school and in life, and prioritizing integrity. While teachers are unlikely to be able to connect with all of their students in this way, these are the experiences that can stick with students for the rest of their lives.

Results from this study should be used after considering the potential for self-reporting and social desirability biases, as well as limitations inherent in studying a sample of business freshmen. Given the low observed mean values for intention to commit AI violations, particularly when compared to prior findings of cheating at rates around 65 %, it is possible that a combination of self-reporting fears, social desirability bias, and a "starting off right" attitude in freshmen all contributed to a restriction of the range in reported intentions. Because past reported cheating was consistent with levels reported in other recent studies, self-reporting and social desirability concerns are reduced. Additionally, given that range restriction is more likely to suppress significant effects, the results of the proposed model can be interpreted with some additional confidence. Future research could consider measures and adjustments for potential social desirability bias (see Hancock and Flowers 2001, Ray 1984). Moreover, actual AI violation behavior was not measured in this study. Continued research in this area is needed, especially since it is noted that self-reported violation occurrences have not decreased and student attitudes regarding these violations have not changed (it appears to be 'okay' to cheat). A culture of academic dishonesty may persist; it is apparent that one can rationalize any action/means in order to achieve the end result (a higher grade, and ultimately a degree). A particularly understudied and compelling area for further research is the design and identification of programs and interventions that reduce AI violation behavior, change attitudes toward an atmosphere of honesty, and, in effect, change the climate to one of academic honesty.

Other ideas for continued study include extending the research to high school students and focusing on the transition to the university environment, as well as on freshman development programs. Other questions that remain

unanswered and warrant study include identification of the determinants or antecedents of attitude (at both the university and high school levels), what interventions may be effective, what best explains intention and behavior for other university majors (are they the same as business students?), and the inclusion of additional relatively unstudied constructs such as culture and perceptions of equity. A greater understanding of these issues, as well as the will and determination of faculty, administrators, and policy makers, can foster the development a new environment: a culture of academic honesty and integrity. It is our responsibility.

Appendix 1—Survey Items Used[2]

The following set of questions are general and relate to cheating on Homework and plagiarism in Papers (your overall attitude and intentions, as well as your ability to do these).

Overall, my attitude towards cheating on homework assignments is (that is, I view cheating on homework assignments as):

Favorable						Unfavorable
○	○	○	○	○	○	○

Harmful						Beneficial
○	○	○	○	○	○	○

Foolish						Wise
○	○	○	○	○	○	○

Good						Bad
○	○	○	○	○	○	○

Overall, my attitude towards copying from other sources and not appropriately citing them in a paper assignment is (that is, I view copying sources without citations on paper assignments as):

Favorable						Unfavorable
○	○	○	○	○	○	○

Harmful						Beneficial
○	○	○	○	○	○	○

Foolish						Wise
○	○	○	○	○	○	○

Good						Bad
○	○	○	○	○	○	○

---

[2] Some survey items are based on research by Donald McCabe studies (McCabe et al. 2012) and Trevor Harding studies (Harding et al. 2007).

Regarding Homework Assignments (cheating or inappropriately sharing homework) -

	Strongly Agree	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree	Strongly Disagree
If I wanted to, I could easily cheat on homework assignments:	○	○	○	○	○	○	○
I believe that I have the ability to cheat on homework assignments:	○	○	○	○	○	○	○
I have the resources necessary to cheat on homework assignments:	○	○	○	○	○	○	○
I have opportunities to cheat on homework assignments if I wanted:	○	○	○	○	○	○	○
Most people who are important to me think I should NOT cheat on homework assignments:	○	○	○	○	○	○	○
When considering cheating homework assignments, I want to do what people who are important to me want me to do:	○	○	○	○	○	○	○
If I cheat on homework assignments, then most people who are important to me would NOT approve:	○	○	○	○	○	○	○
I would NOT feel guilty if I cheated on homework assignments:	○	○	○	○	○	○	○
Cheating homework assignments goes against my principles:	○	○	○	○	○	○	○
It would be morally wrong to cheat on homework assignments:	○	○	○	○	○	○	○
	Strongly Agree	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree	Strongly Disagree

Regarding copying from other sources and not appropriately citing sources (Plagiarism) in Papers -

	Strongly Agree	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree	Strongly Disagree
If I wanted to, I could easily copy from other sources and not appropriately cite sources in paper assignments:	○	○	○	○	○	○	○
I believe that I have the ability to copy from other sources and not appropriately cite sources in paper assignments:	○	○	○	○	○	○	○
I have the resources necessary to copy from other sources and not appropriately cite sources in paper assignments:	○	○	○	○	○	○	○
I have opportunities to copy from other sources and not appropriately cite sources in paper assignments if I wanted:	○	○	○	○	○	○	○
Most people who are important to me think I should NOT copy from other sources without appropriately citing the sources in paper assignments:	○	○	○	○	○	○	○
When considering copying from other sources and not appropriately citing sources in paper assignments, I wish to do what people who are important to me want me to do:	○	○	○	○	○	○	○
If I copy from other source and not appropriately cite the sources in a paper, then most people who are important to me would NOT approve:	○	○	○	○	○	○	○
I would NOT feel guilty if I copy from other sources and not appropriately cite these sources in paper assignments:	○	○	○	○	○	○	○
Copying from other sources and not appropriately citing sources in paper assignments goes against my principles:	○	○	○	○	○	○	○
It would be morally wrong to copy from other sources and not appropriately cite in paper assignments:	○	○	○	○	○	○	○
	Strongly Agree	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree	Strongly Disagree

	Very Easy	Easy	Somewhat Easy	Neutral	Somewhat Difficult	Difficult	Very Difficult
For me to cheat on a homework assignment would be	○	○	○	○	○	○	○
For me to copy from other sources and not appropriately cite these sources in a paper assignment would be	○	○	○	○	○	○	○

	Definitely	2	3	4	5	6	Definitely NOT
I intend to cheat on a homework assignment in the near future	○	○	○	○	○	○	○
I intend to copy from other sources and not appropriately cite these sources in a paper assignment in the near future	○	○	○	○	○	○	○
I will try to cheat on homework in the near future	○	○	○	○	○	○	○
I will try to copy from other sources and not appropriately cite these sources in a paper assignment in the near future	○	○	○	○	○	○	○
I will make an effort to cheat on a homework assignment in the near future	○	○	○	○	○	○	○
I will make an effort to copy from other sources and not appropriately cite these sources in a paper assignment in the near future	○	○	○	○	○	○	○

	Not Care 1	2	3	4	5	6	Disapprove 7
If I cheat on a homework assignment, then most people who are important to me would	○	○	○	○	○	○	○
If I copy from other sources and not appropriately cite these sources in a paper assignment, then most people who are important to me would	○	○	○	○	○	○	○

	A Lot 1	2	3	4	5	6	Very Little 7
How much have you cheated (or shared inappropriately) on homework assignments in the past few years?	○	○	○	○	○	○	○
In the past few years, how much have you copied from other sources and not appropriately cited these sources in a paper assignment?	○	○	○	○	○	○	○

	Never	A few of the times	About half the times	Almost every time	Every time
In the past two years, how frequently did you cheat (inappropriately share) on homework assignments ?	○	○	○	○	○
In the past two years, how frequently did you copy from other sources and not appropriately cite these sources in a paper assignment?	○	○	○	○	○

Appendix 2

See Tables 10, 11, 12, 13.

Table 10 Extended TPB AI violation intention model results (years 1 & 2 combined)

	Homework ($n = 1353$)		Plagiarism ($n = 1353$)	
	Standardized coefficients	Significance	Standardized coefficients	Significance
R^2	0.332	–	0.349	–
Attitude	0.259	<.01	0.278	<.01
Subjective norm	−0.109	<.01	−0.018	ns
Perceived behavior control	0.079	<.01	0.040	<.05
Moral obligation	−0.154	<.01	−0.177	<.01
Past behavior	0.183	<.01	0.247	<.01

Table 11 Possibility of AI violation-extended TPB AI violation intention model results (years 1 & 2 combined)

	Homework ($n = 414$)		Plagiarism ($n = 340$)	
	Standardized coefficients	Significance	Standardized coefficients	Significance
R^2	0.207	–	0.285	–
Attitude	0.119	<.06	0.113	<.06
Subjective norm	−0.160	<.01	−0.098	ns
Perceived behavior control	0.134	<.01	0.126	<.01
Moral obligation	−0.111	ns	−0.227	<.01
Past behavior	0.173	<.01	0.214	<.01

Table 12 Extended TPB AI violation intention model results (homework)

	Homework ($n = 702$)		Plagiarism ($n = 636$)	
	Standardized coefficients	Significance	Standardized coefficients	Significance
R^2	0.362	–	0.330	–
Attitude	0.240	<.01	0.191	<.01
Subjective norm	−0.165	<.01	−0.035	ns
Perceived behavior control	0.107	<.01	0.065	<.04
Moral obligation	−0.164	<.01	−0.120	<.07
Past behavior	0.183	<.01	0.341	<.01

Table 13 Extended TPB AI violation intention model results (plagiarism)

	Homework (n = 230)		Plagiarism (n = 1109)	
	Standardized coefficients	Significance	Standardized coefficients	Significance
R^2	0.313	–	0.360	–
Attitude	0.300	<.01	0.251	<.01
Subjective norm	−0.006	ns	−0.024	ns
Perceived behavior control	0.078	ns	0.050	<.01
Moral obligation	−0.265	<.01	−0.152	<.01
Past behavior	0.119	<.01	0.308	<.01

References

Aasheim, C. L., Rutner, P. S., et al. (2012). Plagiarism and programming: A survey of student attitudes. *Journal of Information Systems Education, 23*(3), 297–310.

Ajzen, I. (1985). From intentions to behavior: A theory of planned behavior. In J. Kuhl & J. Beckman (Eds.), *Action-Control: From cognition to behavior* (pp. 11–39). Heidelberg: Spinger.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(1), 179–211.

Ajzen, I. (2002a). Perceived behavioral control, self efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology, 32*(4), 665–683.

Ajzen, I. (2002b). Residual effects of past on later behavior: Habituation and reasoned action perspectives. *Personality and Social Psychology Review, 6*(2), 107–122.

Ajzen, I., & Madden, T. (1986). Perceived goal-directed behavior: Attitudes, dimensions, and perceived behavioral control. *Journal of Experimental Social Psychology, 22*, 453–474.

Allport, G. (1935). Attitudes. In C. Murchison (Ed.), *Handbook of social psychology* (pp. 798–844). Worcester, MA: Clark University Press.

Aristotle. (2002). *Nicomachean ethics* (J. Sachs, Trans.). Newburyport, MA: Focus Philosophical Library, Pullins Press.

Arlow, P., & Ulrich, T. A. (1985). Business ethics and business school graduates: A longitudinal study. *Akron Business and Economic Review, 16*(1), 13–17.

Bagozzi, R., Baumgartner, H., & Yi, L. (1992). State versus action orientation and the theory of reasoned action: An application to coupon usage. *Journal of Consumer Research, 18*(4), 505–517.

Bamberg, S., Ajzen, I., & Schmidt, P. (2003). Choice of travel mode in the theory of planned behavior: The roles of past behavior, habit, and reasoned action. *Basic and Applied Social Psychology, 25*(3), 175–187.

Banerjee, D., Cronan, T. P., & Jones, T. W. (1998). Modeling IT ethics: A study in situational ethics. *MIS Quarterly, 22*(1), 31–60.

Beck, L., & Ajzen, I. (1991). Predicting dishonest actions using the theory of planned behavior. *Journal of Research in Personality, 25*(3), 285–301.

Blankenship, K. L., & Whitley, B. E. (2000). Relation of general deviance to academic dishonesty. *Ethics and Behavior, 10*(1), 1–12.

Bodur, H., & Brinberg, D. (2000). Belief, affect, and attitude: Alternative models of the determinants of attitude. *Journal of Consumer Psychology, 9*(1), 17–28.

Cabral-Cardoso, C. (2004). Ethical misconduct in the business school: A case of plagiarism that turned bitter. *Journal of Business Ethics, 49*(1), 75–89.

Cassel, C., Hackl, P., & Westlund, A. H. (1999). Robustness of partial least-squares methods for estimating latent variable quality structures. *Journal of Applied Statistics, 26*(4), 435–446.

Chang, M. (1998). Predicting unethical behavior: A comparison of the theory of reasoned action and the theory of planned behavior. *Journal of Business Ethics, 17*(16), 1825–1834.

Chin, W. W. (1998a). Issues and opinions on structural equation modeling. *MIS Quarterly, 22*(1), vii–xvi.

Chin, W. W. (1998b). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 1295–1336). Mahwah, NJ: Lawrence Erlbaum Associates.

Conner, M., & Armitage, C. (1998). Extending the theory of planned behavior: A review and avenues for further research. *Journal of Applied Social Psychology, 28*(15), 1429–1464.

Cronan, T., & Al-Rafee, S. (2008). Factors that influence the intention to pirate software and media. *Journal of Business Ethics, 78*(4), 527–545.

Cronan, T. P., Douglas, D. E., et al. (2015). Influencing academic integrity awareness and attitudes: A study of freshmen and international students. In Paper presented at the international conference on Academic Integrity, Vancouver, CA.

Dubinsky, A., & Loken, B. (1989). Analyzing ethical decision making in marketing. *Journal of Business Research, 19*(2), 83–107.

Elias, R. Z. (2009). The impact of anti-intellectualism attitudes and academic self-efficacy on business students' perceptions of cheating. *Journal of Business Ethics, 86*(2), 199–209.

Fishbein, M., & Ajzen, I. (1975). *Attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Flannery, B., & May, D. (2000). Environmental ethical decision making in the U.S. metal-finishing industry. *Academy of Management Journal, 43*(4), 642–662.

Fornell, C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50.

Gefen, D., & Straub, D. (2005). A practical guide to factorial validity using PLS-Graph: Tutorial and annotated example. *Communications of the Association for Information Systems, 16*(1), 91–109.

Hagger, M., Chatzisarantis, N., & Biddle, S. (2002). A meta-analytic review of the theories of reasoned action and planned behavior in physical activity: Predictive validity and the contribution of additional variables. *Journal of Sport & Exercise Psychology, 24*, 3–32.

Haidt, J. (2013). *The righteous man; Why good people are divided by politics and religion*. New York: Pantheon Books.

Hair, J. F., Sarstedt, M., et al. (2012). An assessment of the use of partial least squares structural equation modeling in marketing

research. *Journal of the Academy of Marketing Science, 40*(3), 414–433.

Hancock, D. R., & Flowers, C. P. (2001). Comparing social desirability responding on world-wide web and paper-administered surveys. *Educational Technology Research & Developments, 49*, 5–13.

Harding, T. S., Mayhew, M. J., et al. (2007). The theory of planned behavior as a model of academic dishonesty in engineering and humanities undergraduates. *Ethics and Behavior, 17*(3), 255–279.

Holtgraves, T. (2004). Social desirability and self-reports: Testing models of socially desirable responding. *Personality and Social Psychology Bulletin, 30*(2), 161–172.

Jordan, A. E. (2001). College student cheating: The role of motivation, perceived norms, attitudes, and knowledge of institutional policy. *Ethics and Behavior, 11*(3), 233–247.

Kisamore, J. L., Stone, T. H., & Jawahar, I. M. (2007). Academic integrity: The relationship between individual and situational factors on misconduct contemplation. *Journal of Business Ethics, 75*(3), 381–394.

Klein, H. A., Levenburg, N. M., et al. (2007). Cheating during the college years: How do business school students compare? *Journal of Business Ethics, 72*(2), 197–206.

Kurland, N. (1995). Ethical intentions and the theories of reasoned action and planned behavior. *Journal of Applied Social Psychology, 25*(4), 297–313.

Lang, J. M. (2013). *Cheating lessons: Learning from academic dishonesty*. Cambridge, Massachusetts: Harvard University Press.

Lawson, R. A. (2004). Is classroom cheating related to business students' propensity to cheat in the real world? *Journal of Business Ethics, 49*(2), 189–199.

Leonard, L., & Cronan, T. P. (2001). Illegal, inappropriate, and unethical behavior in an information technology context: A study to explain influence. *Journal of the Association for Information Systems, 1*(12), 1–31.

Lohmöller, J. B. (1989). *Latent variable modelling with partial least squares*. Heidelberg: PhysicaVerlag.

Madden, T., Ellen, P., et al. (1992). A comparison of the theory of planned behavior and the theory of reasoned action. *Personality and Social Psychology Bulletin, 18*(1), 3–9.

Mayhew, M. J., Hubbard, S. M., et al. (2009). Using structural equation modeling to validate the theory of planned behavior as a model for predicting student cheating. *The Review of Higher Education, 32*(4), 441–468.

McCabe, D. L., Butterfield, K. D., & Treviño, L. K. (2012). *Cheating in college: Why students do it and what educators can do about it*. Baltimore, MD: Johns Hopkins University Press.

McCabe, D. L., Treviño, L. K., & Butterfield, K. D. (2001). Cheating in academic institutions: A decade of research. *Ethics and Behavior, 11*(3), 219–232.

Minarcik, J., & Bridges, A. J. (2015). Psychology graduate students weigh in: Qualitative analysis of academic dishonesty and suggestion prevention strategies. *Journal of Academic Ethics, 13*(2), 197–216.

Molnar, K. K., Kletke, M. G., & Chongwatpol, J. (2008). Ethics vs. IT ethics: Do undergraduate students perceive a difference? *Journal of Business Ethics, 83*(4), 657–671.

Nunnally, J. C. (1978). *Psychometric Theory*. New York: McGraw-Hill.

Olson, J., & Zanna, M. (1993). Attitudes and attitude change. *Annual Review of Psychology, 44*, 117–154.

Petty, R., & Wegener, D. (1997). Attitudes and attitude change. *Annual Review of Psychology, 48*, 609–647.

Present Author(s)—a citation to a conference Proceedings with pre-T/F scores from the study.

RAISE Survey Assessment Data. (2015). Raising academic standards in education (RAISE), TLS Online Solutions.

Randall, D., & Gibson, A. (1991). Ethical decision making in the medical profession: An application of the theory of planned behavior. *Journal of Business Ethics, 10*(2), 111–122.

Ray, J. J. (1984). The reliability of short social desirability scales. *The Journal of Social Psychology, 123*, 133–134.

Ringle, C. M., Wende, S., & Will, A. (2005). *SmartPLS 3.0.* Hamburg: SmartPLS.

Schwartz, B. M., Tatum, H. E., & Hageman, M. C. (2013). College students' responses to cheating at traditional, modified, and non-honor system institutions. *Ethics and Behavior, 23*(6), 463–476.

Schwartz, S., & Tessler, R. (1972). A test of a model for reducing measured attitude-behavior discrepancies. *Journal of Personality and Social Psychology, 42*(2), 225–236.

Shepherd, G., & O'Keefe, D. (1984). Separability of attitudinal and normative influences on behavioral intentions in the Fishbein-Ajzen model. *The Journal of Social Psychology, 122*, 287–288.

Shimp, T. A., & Kavas, A. (1984). The theory of reasoned action applied to coupon usage. *Journal of Consumer Research, 11*(3), 795–809.

Simkin, M. G., & McLeod, A. (2010). Why do college students cheat? *Journal of Business Ethics, 94*(3), 441–453.

Stone, T. H., Jawahar, I. M., & Kisamore, J. L. (2010). Predicting academic misconduct intentions and behavior using the theory of planned behavior and personality. *Basic and Applied Social Psychology, 32*(1), 35–45.

Stripling, J. (2014). Widespread nature of Chapel Hill's academic fraud is laid bare. *Chronicle of Higher Education, 61*(2), A26–A27.

Taylor, M. C. (2010). *Crisis on campus: A bold plan for reforming our colleges and universities*. New York: Alfred A. Knopf.

Trafimow, D. (1996). The importance of attitudes in the prediction of college students' intention to drink. *Journal of Applied Social Psychology, 26*(24), 2167–2188.

Vallerand, R. J., & Pelletier, L. G. (1992). Ajzen and Fishbein's theory of reasoned action as applied to moral behavior: A confirmatory analysis. *Journal of Personality and Social Psychology, 62*(1), 98–108.

Werts, C. E., Linn, R. L., & Jöreskog, K. G. (1974). Intraclass reliability estimates: Testing structural assumptions. *Educational and Psychological Measurement, 34*(1), 25–33.

Whitley, B. E. (1998). Factors associated with cheating among college students: A review. *Research in Higher Education, 39*(3), 235–274.

Wilson, B. A. (2008). Predicting intended unethical behavior of business students. *Journal of Education for Business, 83*(4), 187–195.

Yoon, C. (2011). Ethical decision-making in the internet context: Development and test of an initial model based on moral philosophy. *Computers in Human Behavior, 27*, 2401–2409.