Global Perspectives on Accounting Education
Volume 9, 2012, 1-29

A REEVALUATION AND EXTENSION OF THE MOTIVATION AND CHEATING MODEL

Kenneth J. Smith
Franklin Perdue School of Business
Salisbury University
Salisbury, Maryland
USA

Patricia L. Derrick
Franklin P. Perdue School of Business
Salisbury University
Salisbury, Maryland
USA

Herman Manakyan
Franklin Perdue School of Business
Salisbury University
Salisbury, Maryland
USA

ABSTRACT

This study reassesses the relations between exam-related cheating behavior and its antecedents proposed in Smith et al.'s (2009) Motivation and Cheating Model. Specifically, it calculates whether the significant relations measured in the referent study among motivational factors, academic performance, prior cheating, neutralization tendencies, and likelihood of future cheating, hold with an independent undergraduate student sample. By doing so, this study directly addresses Stout and Rebele's (1996. pp. 4-5) admonition that knowledge is created by producing generalizable findings which cannot be accomplished in a single study. Subsequent analyses extend the referent model by incorporating alienation as an additional exogenous cheating antecedent. The premise for this aspect of the investigation is that both motivation and attitude, the latter represented by alienation and neutralization, may contribute toward the cheating behavior dynamic.

Using structural equation modeling procedures on data obtained from 342 finance majors at three public AACSB-accredited business schools, we conduct independent

assessments of the validity of the referent model and the extended model which incorporated alienation as an exogenous predictor of the above-referenced dependent constructs. The replication results support several of the significant relations uncovered in the referent study. The extension supports the conceptual distinctiveness of the motivation and alienation constructs, as well as the proposition that both are significant exogenous predictors of performance and cheating proclivities.

Key words: Cheating behavior, motivation, alienation, neutralization

Data availability: Those interested in utilizing subsets of the data collected for this study should contact the first author.

INTRODUCTION

Academic dishonesty on college campuses has been an ongoing issue for many years, attracting attention from faculty and administrators, as well as the media. In perhaps the largest study of its kind, involving over 80,000 students and 12,000 faculty members from 83 US and Canadian campuses, McCabe (2005) reported high levels of self-reported cheating behavior, confirming earlier studies (e.g., McCabe and Trevino, 1995a). A major concern regarding college-age cheating behavior is that unethical behaviors exhibited during college years may eventually carry over to the workplace, as recent studies have suggested (e.g., see Nonis and Swift, 2001. pp. 74-75; Granitz and Loewy, 2007. p. 293).

McCabe (2005) also found that business students cheat more often than non-business students, confirming findings by Baird (1980), McCabe and Trevino (1995b), and Rettinger and Jordan (2005). Crown and Spiller (1998. p. 690) noted that these findings are consistent with the literature on business ethics, which indicates that business students seem to be more tolerant of unethical behavior than their non-business peers. Similarly, Klein et al. (2006) found that business students have a less stringent attitude about what constitutes cheating, compared to other professional school students. Findings such as these, coupled with the potential of unethical behavior permeating from college years to the workplace, are particularly worrisome issues for accounting and finance students.

Smith et al. (2002) note that the public relies on accountants to "track their investments, complete their taxes, and generally protect them from potentially devastating financial and legal mistakes" (p. 46). Similarly, the public relies on finance professionals to exhibit complete honesty, reliability and ethical behavior, and generally to exercise fiduciary responsibility to protect clients' assets. These expectations are reflected in the ethics rules and expectations for professionals in these fields. Unfortunately, recent events (e.g., the 2008 Financial Meltdown), including the numerous highly publicized business scandals over the past decade, have shaken the public trust in both accounting and finance professionals. Given the potential disparity between the behavioral expectations of various professional organizations, apparent ethical lapses on the part of those entrusted to protect the public, and the potential relationship between past cheating and future cheating behavior, it would appear propitious to further investigate the antecedents of college

cheating behavior. The knowledge gained from such an investigation could provide insight to educators and managers who seek to lead a more ethical generation of professionals worthy of the public's trust.

PURPOSE

Student cheating research over the past four decades has focused predominately on the demographics of those who cheat and ways to mitigate various cheating behaviors. Unfortunately, studies incorporating demographic factors that might identify cheaters, such as age and gender, provide inconsistent results (e.g., see Whitley, 1998), and little can feasibly be done to mitigate behavioral tendencies based solely on demographics. To better understand student cheating proclivities and potential mitigation strategies, it is necessary to expand the search for cheating antecedents beyond the demographic characteristics of those who cheat to factors that are potentially under the influence of educators and administrators.

The purpose of this study is to replicate and test an expanded version of the Motivation and Cheating Model proposed and tested by Smith et al. (2009). The referent study examined the relations among motivational factors, academic performance, prior cheating, neutralization tendencies, and likelihood of future cheating among a sample of accounting majors from three public universities. This study will attempt to replicate their findings with a sample of undergraduate finance majors. It will then examine an expanded model that assesses the extent to which both motivation and alienation are associated with academic performance and the aforementioned cheating constructs. Specifically, this study will incorporate alienation into the referent model as a postulated exogenous predictor of performance and cheating as it (along with neutralization as discussed below) is a noted attitudinal variable with the potential to influence cheating behavior (Smith et al., 2002). The target sample of finance majors represents students who are similar to accounting majors in terms of the nature of the subject matter studied and requisite learning skills, as well as the presence of similar ethics codes for the profession.

MODEL DEVELOPMENT

This study uses the Smith et al. (2009) Motivation and Cheating Model as the referent model, allowing replication of their findings.[1] Figure 1 presents the hypothesized cheating model to be tested. Paths A though V represent a direct test of the referent model. Smith et al. (2009. pp. 173-174) discuss the theoretical and empirical foundation for each of these posited paths. It also extends the referent model to examine the independent influence of alienation on academic performance, cheating, and neutralization.[2]

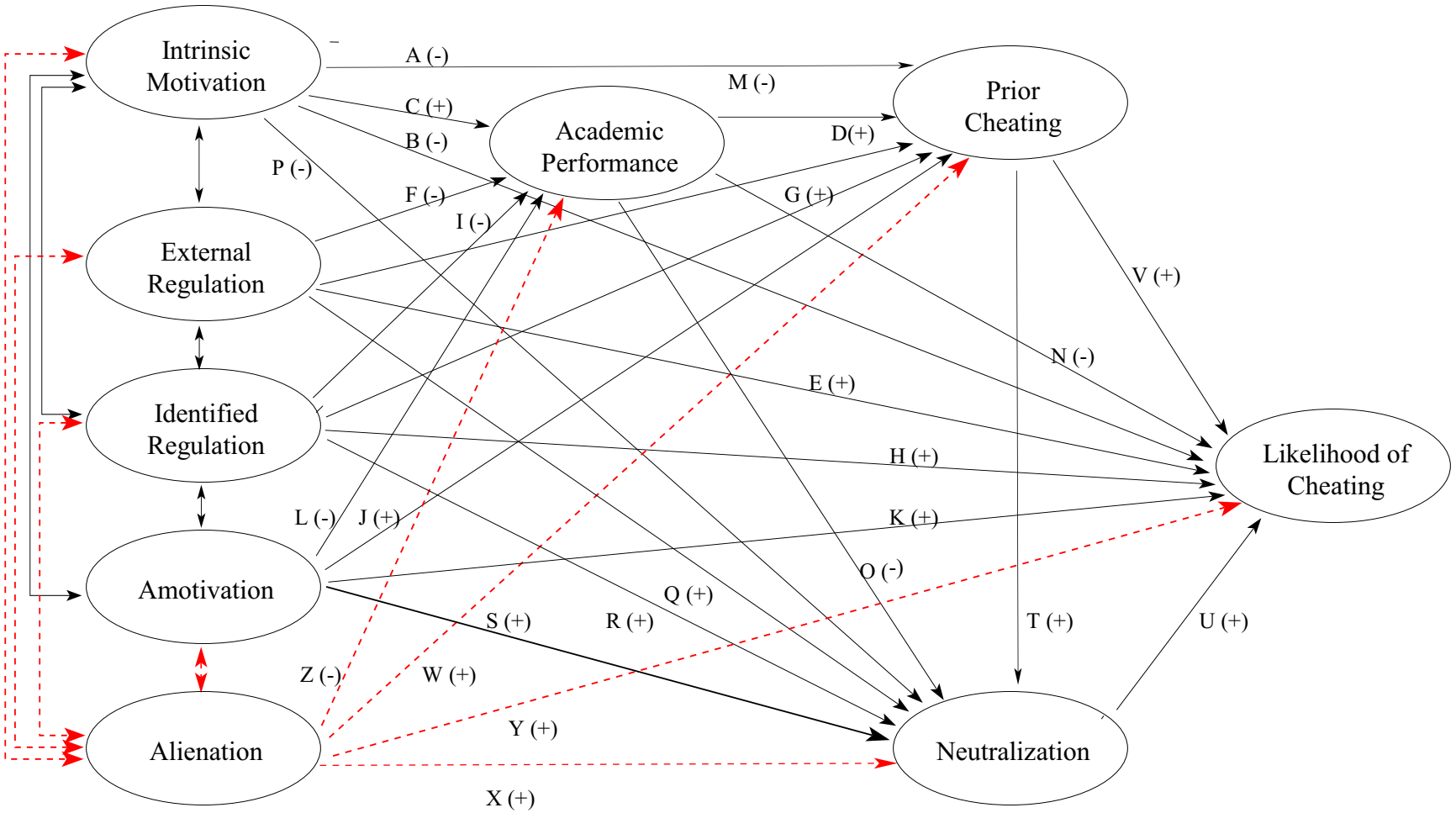
Alienation is the state of psychological estrangement from a culture, which includes feelings of social isolation, powerlessness, and the absence of norms. It is often manifested by deviant

---

[1]See Smith et al. (2009. pp. 171-172) for a complete discussion of the motivational constructs incorporated into this study.

[2]Sykes and Matza (1957. p. 666) define neutralization as the rationalizations and justifications for unethical/dishonest behavior used to deflect self-disapproval or disapproval from others after violating an accepted social norm. According to Nonis and Swift (1998. p. 190), students neutralize to allow themselves to cheat without feeling inherently dishonest, thereby eliminating a sense of guilt for the dishonest action.

FIGURE 1
Motivation and Cheating Model To Be Tested[1,2]



[1] Replication paths (A-V) illustrated with solid black lines. Expanded theoretical model paths (W-Z) illustrated with red dashed lines.
[2] Paths with double-headed arrows represent covariances between individual latent variables.

behavior (Seeman, 1991). Whitley (1998. p. 250), summarizing prior research that examined possible cheating correlates, suggested that students who feel more alienated are more inclined to cheat. Furthermore, alienation has been found to have a significant positive relation with prior cheating and neutralization among accounting (Smith et al., 2002), finance (Smith et al., 2003), and marketing and management (Smith et al., 2004) majors (albeit in studies that did not incorporate measures of academic motivation), thus motivating Paths W and X. Finally, Whitley's (1998) above-referenced findings between alienation and cheating behavior motivate Path Y, which predicts alienation to have a positive influence on likelihood of cheating. Also, exploratory Path Z recognizes that the scope of dysfunctional behavior might include deficient academic performance.

Many of the relations depicted in Figure 1 have empirical support in prior research. However, the vast majority of prior studies have examined the relations between cheating and its antecedents using traditional techniques such as correlation or regression analyses. Indeed, this was the case with the studies cited by Whitley (1998), that related alienation to cheating. Williams and Hazer (1986) state that these models are susceptible to the biasing effects of method variance and random measurement error, which can "attenuate estimates of coefficients, make the estimate of zero coefficients nonzero, or yield coefficients of the wrong sign" (p. 221). In contrast, the current study uses latent variables with multiple indicators to examine the hypothesized relations depicted in Figure 1. The use of latent variable models with multiple indicators to examine hypothesized relationships is a strategy strongly endorsed for addressing the measurement error problems ascribed to multiple regression and traditional path-analytic techniques (Anderson and Gerbing, 1988; Bollen, 1989; Ullman and Bentler, 2003; Byrne, 2006). Latent variable structural equations analysis takes into account random error when estimating paths from latent constructs to indicator variables, as well as between the parameters of the structural model itself.

The current study, in addition to providing an independent assessment of the referent model, is unique in its inclusion of motivational dimensions along the entire Self-Determination Theory (SDT: Deci and Ryan, 2000. p. 237) continuum[3], as well as alienation, into an integrated model of cheating and its antecedents. In doing so, it provides a more comprehensive model of cheating behavior with the potential to better address self-containment issues often associated with structural models (see Limitations discussion below).

METHOD

Sample

Finance majors from three public AACSB-accredited universities, one in the midwest and two on the east coast, provided data for this study. Undergraduate student enrollment in the business schools at these institutions ranged from approximately 1,200 at the midwest university to approximately 1,600 and 2,200, respectively, at the east coast universities. Questionnaires were administered in classes during mid-semester. The instructors were not present and the students were assured of anonymity. This convenience sample generated 342 responses. Forty-two (12 percent) of

[3]The SDT continuum is anchored on the left by amotivation, followed by external regulation, then identified regulation, and is anchored on the right by intrinsic motivation. According to Ryan and Deci (2000), people vary in terms of both level and orientation of motivation, the latter of which reflects 'underlying attitudes and goals that give rise to an action - that is, it concerns the why of actions' (p. 54). For interested readers, Ryan and Deci (2000. p. 61) present a comprehensive human motivation taxonomy as envisioned by SDT.

the respondents came from the midwest university, while 300 (88 percent) were from the east coast universities. We reviewed the data for demographic differences across the three samples. Average age, gender composition, marital status, year in school, and scale scores were similar across all three school samples.

Ages ranged from 18 to 49 years with a median of 21 ($\mu = 22.87$, $\sigma = 3.73$) and 302 between the ages of 18-24. Females comprised 34 percent (n = 115) of those reporting, and 93 percent of respondents (n = 318) were unmarried. Sophomores (n = 56), juniors (n = 94), and seniors (n = 163) comprised 16 percent, 27 percent, and 48 percent of the sample, respectively.

Measures

In order to facilitate replication of the Smith et al. (2009) Motivation and Cheating Model, each of that study's measures were used in this study. Table 1 presents the items comprising each latent variable to be tested along with the mean score, standard deviation, and reliability coefficient for each predicted latent variable.

The academic motivation measures consisted of Smith et al.'s (2012) four-factor configuration of the Academic Motivation Scale (AMS) developed by Vallerand et al. (1992. p. 1013).[4,5] These measures included the following

Intrinsic Motivation was assessed using four items on the subscale from Intrinsic Motivation to Experience Stimulation, summed to one indicator, and two items on the subscale from Intrinsic Motivation to Know, summed to one indicator. As did the referent study, we summed the items on each subscale to create two composite indicators, allowing for a better estimate of the random error associated with this construct and facilitating the subsequent latent variable tests.[6] For this and the other motivational subscales, students were asked to "indicate the extent to which each response is similar to your own." They responded on a five-point Likert scale ranging from 1 = does not correspond at all to 5 = corresponds exactly.

External Regulation represented four items from the External Regulation subscale and two items from the Identified Regulation subscale.

Identified Regulation was assessed using two items from the original Introjected Regulation subscale. Smith et al. (2012. p. 7) noted that these two items appear to be more conceptually congruent with identified regulation as described in SDT (Deci and Ryan, 2000. p. 237) than with introjected regulation, given their attachment of personal value and focus on one's self.

---

[4]The original AMS consisted of 28 items that contained seven subscales. Smith et al.'s (2012) reconfigured scale, developed and tested in response to factor structure inconsistencies noted in prior research on the original 28-item AMS, is an 18-item psychometric instrument that contains four subscales designed to assess a differential state along the Deci and Ryan (2000) SDT continuum in order of increasing self-determination. Smith et al.'s (2012) factor loadings provided the basis for the item loadings in both the referent study and the current study.

[5]Smith et al. (2012) renamed two of the referent study's four motivational dimensions. Specifically, external-identified regulation is now external regulation, and introjected regulation is now identified regulation. The new titles, used in the present study, appear on the original AMS scale and more clearly reflect where each motivational dimension falls along the SDT motivational continuum than the titles used in the referent study.

[6]We performed similar item summation and composite indicator procedures for the subscales, which comprised the external regulation, neutralization, prior cheating, likelihood of cheating, and alienation scales.

TABLE 1

Latent Constructs, Scale Descriptions, Mean Scores, Standard Deviations, Reliability Coefficients[1] and Scale Items

Latent Construct (Scale Description)		Scale Items
Motivational Dimensions. Why do you go to college? 5-point Likert Scale ranging from 1 = does not correspond at all to 5 = corresponds exactly		
Intrinsic Motivation (μ=3.020, σ=0.835, α=.861)	IMTS2	For the pleasure I experience when I read interesting authors
	IMTS4	For the "high" feeling that I experience while reading about interesting subjects
	IMTS3	For the pleasure I experience when I feel completely absorbed by what certain authors have written
	IMTK2	For the pleasure I experience when I discover new things never seen before
	IMTK1	I experience pleasure and satisfaction while learning new things
	IMTS1	For the intense feelings I experience when I am communicating my own ideas to others
External Regulation (μ=4.152, σ=0.688, α=.852)	ER2	Inorder to obtain a more prestigious job later on
	ER4	In order to have a better salary later on
	IDENT2	Eventually it will enable me to enter the job market ina field that I like
	ER3	I want to have "the good life" later on
	ER1	With only a high-school degree I would not find a high-paying job later on
	IDENT3	Because this will help me make a better choice regarding my career orientation

(continued)

TABLE 1 (continued)

Latent Construct (Scale Description)		Scale Items
Identified Regulation (μ=3.513, σ=1.014, α=.714)	IR3	To show myself that I am an intelligent person
	IR1	To prove to myself that I am capable of completing my college degree
Amotivation (μ=1.592, σ=0.863, α=.889)	AMOT3	I can't see why I go to college and frankly, I couldn't care less
	AMOT4	I don't know; I can't understand what I am doing in school
	AMOT1	Honestly, I don't know; I really feel that I am wasting my time in school
	AMOT2	I once had good reasons for going to college; however, now I wonder whether I should continue
Academic Performance. 5-point Likert scale: 1 = very poor to 5 = very good (μ=3.548, σ=0.652, α=.816)	1.	How would you rate your overall academic performance?
	2.	How would you rate your academic performance as compared to other sutdents?
Neutralization. Please indicate the extent to which you agree that a student is justified in cheating in each of the following circumstances. 5-point Likert scale: 1 = strongly disagree to 5 = strongly agree (μ=2.076, σ=0.880, α=.956)		
N1 Difficulty	NEUT2	He is in danger of losing a scholarship due to low grades
	NEUT3	One doesnt' have time to study because he/she is working to pay for school
	NEUT1	The course material is too hard. Despite study efforts, he cannot understand material

(continued)

TABLE 1 (continued)

Latent Construct (Scale Description)		Scale Items
	NEUT5	The instructor acts like his/her course is the only one that the student is taking, and too much material is assigned
	NEUT11	The course is required for his degree, but the information seems useless. He is only interested in the grade
	NEUT4	The instructor doesn't seem to care if he learns to material
N2 Access	NEUT7	Everyone else in the room seems to be cheating.
	NEUT6	His cheating isn't hurting anyone.
	NEUT8	Nearby students make no attempt to cover their answers, and he can see their answers.
	NEUT9	The student's friend asks him to help him.her cheat and he can't say no.
	NEUT10	The instructor leaves the room to talk to someone during the test.
Prior Cheating. Think of all the exams you have taken in college. How often have you participated in each of the activities during exams? 5-point Likert scale ranging from "never" to "very often." (μ=1.321, σ=0.363, α=.777)		
PC1 Overt	CF12	Took a test for someone else
	CF10	Exchanged papers (answers) during an exam
	CF8	Gave a false reason for missing an exam
	CF9	Changed answers to an exam and submitted it for grading
PC2 Covert	CF1	Looked at another student's test during an exam
	CF2	Allowed another student to look at your paper during an exam
	CF4	Gave answers to someone during an exam
	CF3	Obtained a copy of the test prior to taking it in class

(continued)

TABLE 1 (continued)

Latent Construct (Scale Description)		Scale Items
Cheating Likelihood[2]. You are taking a course that is difficult but important and there is a possibility that you may or may not make the desired grade if you do not cheat. Please indicate how likely or unlikely you are to cheat if the professor creates the following conditions. 5-point Likert scale 1 = very unlikely to cheat to 5 = very likely to cheat (μ=1.638, σ=0.799, α=.964)		
CL1	C9	Make sure that there is an empty seat between each student
	C2	Request that students do not cheat
	C4	Assign seats to students
	C8	Walk up and down aisles during the exam
	C11	Announce that the instructor is watching for cheaters but no announce the method of detection
	C1	Announce the penalties for cheating prior to the test
CL2	C7	Distribute different forms of the same test
	C10	Constantly watch the students during the exam
	C12	Ask students to put all books and personal belongings away
	C3	Encourage students to report cheating incidents during an exam
	C6	Give all essay-type exam
	C5	Have someone other than the instructor proctor the exam

(continued)

TABLE 1 (continued)

Latent Construct (Scale Description)		Scale Items
Alienation. Please indicate your agreement with each of the statements on a 5-point Likert scale ranging from 1=strongly disagree to 5=strongly agree (μ=2.942, σ=0.512, α=.739)		
A1 Political Alienation	AL11	Most public officials are not really interested in the problems of the average person
	AL9	For the most part, the government serves the interests of a few organized groups, such as business and labor, and isn't very concerned about the needs of people like myself
	AL12	It is difficult for people like myself to have much influence on public affairs
	AL10	In spite of what others say, the lot of the average person is getting worse
A2 Social Affiliation	AL17	Our community is an easy and pleasant place in which to live (R)[3]
	AL18	We seem to live in a pretty rational and well ordered world (R)
	AL16	In this society most people can find contentment (R)
	AL3	Most people can be trusted (R)
A3 Social Alienation	AL2	Human nature is fundamentally cooperative (R)
	AL1	Beneath the polite and smiling surface of a man's nature is a bottomless pit of evil
	AL14	No one is going to care much what happens to you, when you get right down to it

[1] Chronbach's alpha reliability computed to index the internal consistency measure. Values exceeding 0.70 are considered satisfactory (Nunnally, 1978).

[2] The items on this scale loaded on a single factor. In order to facilitate the subsequent measurement model tests, the scale items were combined as shown onto two composite indicator variables using a procedure described by Bentler and Wu (2002. p. 195).

[3] Indicates that item was reverse scored.

Amotivation was measured with the four items that comprised the original Amotivation subscale.

The other measures used from the referent study are as follows:

Academic Performance was measured using each student's self-reported score on: a) how they rated their overall academic performance on a five-point scale ranging from 1 = very poor to 5 = very good; and, b) how they rated their own academic performance as compared to that of their peers (perceived academic performance) on a five-point scale ranging from 1 = very poor to 5 = very good (Nonis and Swift, 1998. pp. 192-193). Self-reported academic performance served as a surrogate measure for grade point average (GPA) since we were precluded from collecting objective GPA information in order to maintain student anonymity. *Neutralization* was measured using a scale developed by Ball (1966. pp. 22-23) and later utilized by Haines et al., (1986. p. 347). We asked students to "Please indicate the extent to which you agree that a student is justified in cheating in each of the following circumstances". Responses were made on a five-point Likert-type scale ranging from 1 = strongly disagree to 5 = strongly agree for each of the 11 items. Smith et al. (2002. pp. 53-54) found two underlying subscales, Difficulty (six items) and Access (five items), which we utilized in this study.

Prior Cheating was assessed using an eight item version of a 12-item scale adapted from Tom and Borin (1988. p. 155). We asked students to "Think of all the exams you have taken in college. How often have you participated in each of the activities during exams?" In response, students reported the frequency with which they engaged in each of the eight cheating behaviors on a five-point Likert type scale ranging from "never" to "very often". Our eight items are classified into two subscales, Overt (four items) and Covert (four items), using identical loadings as those used in the referent study.

Likelihood of Cheating was evaluated using the 12 item version of Tom and Borin's (1988. p. 155) scale reworded to assess future cheating proclivities. The preface to these items read: "You are taking a course that is difficult but important and there is a possibility that you may or may not make the desired grade if you do not cheat. Please indicate how likely or unlikely you are to cheat under the following conditions." Students responded on a five-point scale ranging from 1 = very unlikely to cheat to 5 = very likely to cheat. As the items on this scale have been found to be unidimensional (Smith 2002. p. 52), we combined the items on this scale into two composite indicator variables based on the matched composites procedure described by Bentler and Wu (2002). This procedure is appropriate when it is not expected that any of the composites would be different from one another, "and each composite should measure the same construct, or combination of constructs, as measured by a single composite of all of the original scores" (Bentler and Wu, 2002. p. 195).

Finally, to support this effort to extend the referent study, Alienation was measured using an 11 item adaptation of Ray's (1982) 20-item General Alienation Scale. Students reported their agreement with each of the statements on a 5-point Likert type scale ranging from 1 = strongly disagree to 5 = strongly agree. We utilized Smith et al.'s (2003. p. 21) three-factor conceptualization of alienation in this study.

As indicated in Table 1, the reliability coefficients ranged from .714 for identified regulation to .964 for cheating likelihood. All of the reported coefficients exceed the .700 minimum threshold suggested by Nunnally (1978) as sufficient to demonstrate the internal consistency of each measure.

Analysis

We conducted a confirmatory factor analysis on the sample data to independently assess the construct and the discriminant validity among the constructs represented by the measures. By doing so, we were able to assess whether the factors in the referent cheating study would load on the underlying theoretical constructs with our data.[7] To test the complete measurement model, we used maximum likelihood estimation procedures in EQS Version 6.1 (Bentler, 2006. p. 65) with Satorra and Bentler's (2001) scaling corrections, which allowed us to calculate the Satorra-Bentler chi-square value ($SB\chi^2$). We selected the Satorra-Bentler rescaled estimate because of the extremely high kurtosis (47) for one of the prior cheating indicators as well as the high Mardia's normalized multivariate kurtosis (39) indicating that the data were not normally distributed. Bentler and Wu (2002. p. 250) note that the Satorra-Bentler scaled χ^2 "is the most widely studied and generally accepted best alternative test statistic for model evaluation under nonnormality."

We next conducted latent variable structural equation (LVSE) modeling tests. The first set of analyses tested and evaluated Paths A-V in Figure 1 as a direct replication of the referent model. The subsequent analyses tested and evaluated the extended theoretical model illustrated in Figure 1. In each set of analyses, we dropped statistically non-significant parameters based on the output of Wald tests (Bentler and Wu, 2002) applied to each model.[8] To measure overall fit, we used the $SB\chi2$ statistic, the $SB\chi2/df$ ratio, the robust normed and nonnormed fit indices (NFI and NNFI), the robust comparative fit index (CFI), the average off-diagonal squared residual (AOSR), and the adjusted root mean squared error of approximation (RMSEA) for nonnormal conditions. An acceptable cutoff value for the $SB\chi2/df$ ratio is 3.00, according to Grouzet et al. (2006. p. 82). NFI, NNFI, and CFI values of at least .90 are considered indicative of good model fit (Bentler and Bonnett, 1980. p. 600). Finally, AOSR and RMSEA values of .05 and .08 or less, respectively, are considered acceptable (Hu and Bentler, 1999. p. 27). We examined model fit using a variety of measures, as there is no one definitive index of model fit (Fogarty et al., 2000. pp. 44, 46).

Our final analyses consisted of tests of an a priori sequence of nested models against the trimmed theoretical model. This nested sequence of models provided direct tests of the hypotheses that the relevant motivational factors and alienation are related to academic performance and/or one or more of the key cheating outcomes, as determined by significant path coefficients measured in the trimmed structural model. We compared the nested structural models using the scaled difference chi-square test ($\Delta SB\chi2$; Satorra and Bentler, 2001. p. 511). A significant chi-square difference value indicates a significant loss of fit by constraining a path to zero, indicating that the path should be retained in the model (James et al., 1982). A nonsignificant chi-square difference indicates the path could be dropped with no significant loss of model fit.

---

[7]The confirmatory factor analysis also included the three-indicator alienation factor so as to assess its construct and discriminant validity vis-à-vis the other constructs.

[8]The Wald test is a post-hoc procedure that capitalizes on particular sample data; i.e., it is not theory-driven. To determine whether the relations uncovered in a particular study hold, replications such as this effort with another sample is needed.

RESULTS

Measurement Model Tests

Table 2 reports the results from the measurement model tests. As indicated in Panel A, all of the path coefficients from latent constructs to their manifest indicators were significant at $p < .01$. The goodness-of-fit summary presented in Panel B indicates that the model provides a good fit to the data. The robust NFI is above .90 and the NNFI and CFI are above .95. While the AOSR value of .058 exceeds the prescribed .05 maximum level, the RMSEA of .042 with its tight 95% confidence interval (.033-.051) falls within its standard for acceptance. The SB$\chi 2/df$ ratio of 1.61 is also below the upper threshold of acceptance. The nested measurement model comparison reported in Panel C supports the construct distinctiveness of the four motivation factors and alienation. As indicated, the model which constrained these constructs to load on one underlying factor demonstrated a significant loss of fit in comparison to the trimmed theoretical model ($\Delta SB\chi 2_{diff} = 590.15$; $df = 7$, $p < .001$).

TABLE 2

Results of Measurement Model Tests

Panel A: Parameter Estimates, Standardized Measurement Model Coefficients for the Construct Indicators

Latent Constructs and Indicators	Parameter Estimates	Standardized Coefficient	Robust t-value[1,2]
Intrinsic Motivation			
Intrinsic Motivation to Experience Stimulation	1.000	.883	-
Intrinsic Motivation to Know	.717	.671	7.924
External Regulation			
External Regulation$_1$	1.000	.792	-
External Regulation$_2$	1.130	.798	12.248
Identified Regulation			
Identified Regulation$_1$	1.000	.676	-
Identified Regulation$_2$	1.149	.822	11.069
Amotivation			
Amotivation$_1$	1.000	.776	-
Amotivation$_2$	1.036	.756	8.861
Amotivation$_3$	1.084	.849	11.308
Amotivation$_4$	1.124	.866	10.172

(continued)

TABLE 2 (continued)

Performance			
Academic Performance	1.000	.690	-
Perceived Academic Performance	1.544	.971	4.186
Neutralization			
Difficulty	1.000	.909	-
Access	.931	.939	20.683
Prior Cheating			
Overt	1.000	.502	-
Covert	3.229	.789	5.078
Cheating Likelihood			
CI_1	1.000	.996	-
CI_2	.926	.960	27.009
Alienation			
Political Alienation	1.000	.576	-
Social Affiliation	.483	.299	3.337
Social Alienation	1.555	.772	3.999

Panel B: Goodness-of-Fit Summary[3,4]

	Satorra-Bentler (S-B) Scaled Results	**Standard for Acceptance**
Statistical Tests		
Chi-Square	281	NA
Df	174	NA
p-value	0.00	>.05
Chi-Square/df	1.61	<3.0
Fit Indices		
NFI	.904	>.900
NNFI	.952	>.900
CFI	.961	>.900
Residual Analysis		
AOSR	.058	<.05
RMSEA	.042	<.10
(95% Confidence Level)	(.033 - .051)	NA

(continued)

TABLE 2 (continued)

Panel C: Nested Measurement Model Comparison

Model		S-B Sealed χ^2	df	χ^2/df	$\chi^2/_{diff}$ [5]
1.	Measurement Model	281.13	174	1.616	
2.	Motivation constructs and Alienation constrained to load on one underlying factor	1006.79	179	5.625	590.15*

Notes: 1) Each of the reported t-values is significant at p<.01; 2) Structural equation modeling procedures require that one measure of each construct be fixed to 1.0 to establish the scale of the latent construct; 3) The measurement model reflects the release of 21 factor covariances as determined by examination of the multivariate Wald test output from the test of the full model. By dropping these covariances, the degrees of freedom increased from 153 for the full model to 174 for the trimmed model. The Wald test is a post-hoc procedure that capitalizes on a particular sample, i.e., it is not theory-driven. Replication with another sample is needed to determine whether the relations reported herein hold; 4) NFI = Normed Fit Index. Higher values indicate better fit; NNFI = Non-Normed Fit Index. Higher values indicate better fit; CFI = Comparative Fit Index. Higher values indicate better fit; AOSR = Average Off-Diagonal Squared Residual. Lower values indicate better fit; RMR = Root Mean Square Residual. Lower values indicate better fit; RMSEA = Root Mean Squared Error of App. Lower values indicate better fit; 5) The χ^2/*diff* statistic between successive models reported in this column were calculated manually using a procedure developed by Satorra and Bentler (2001. p. 511), the formula for which is:

$$\Delta\chi^2_{SB} = \frac{\Delta\chi^2}{c_d}$$

Where:

$\Delta\chi^2 = \chi^2_1 - \chi^2_2$

χ^2_1 is chi-square for model 1

χ^2_2 is chi-square for model 2

model 1 is nested within model 2

$c_d = \frac{df_1 c_1 - df_2 - c_2}{df_1 - df_2}$

df_1 is the degree of freedom for model 1

df_2 is the degree of freedom for model 2

$c_1 = \frac{\chi^2_1}{\chi^2_{SB1}}$ χ^2_{SB1} ; is the Satorra-Bentler χ^2 for model 1

$c_2 = \frac{\chi^2_2}{\chi^2_{SB2}}$ χ^2_{SB2} ; is the Satorra-Bentler χ^2 for model 2

*p≤.001

Replication of the Smith et al. (2009) Model

Table 3 provides goodness-of-fit statistics for the test of the Smith et al. (2009) model. All of the fit indices reported in Panel A exceed the minimum threshold of .90. In addition, all of the residual analysis indicators are within their respective standards for acceptance.

Panel B presents a comparison of the path coefficients between the replication and the original models. Results for 17 of the 22 hypothesized paths are consistent with respect to significance across the two models. Specifically, this study replicates seven of the referent study's significant paths and 10 of its non-significant paths. Among this study's significant paths, identified regulation has a significant positive, not negative as hypothesized in Figure 1, relation with academic performance (.133). Amotivation has a significant negative influence on academic performance (-

.248), and a significant positive influence on prior cheating (.245) and cheating likelihood (.138). Academic performance has a significant negative influence on neutralization (-.105), and prior cheating has a significant positive influence on neutralization (.717) and likelihood of cheating (.433). Finally, neutralization has a significant positive influence on cheating likelihood (.210). The remaining hypotheses were not supported. Figure 2 illustrates the significant paths for the trimmed Motivation and Cheating Model replication.

Extended Model Tests

Table 4 provides goodness-of-fit statistics for the tests of the extended theoretical model and the sequence of nested structural models. The fit indices reported in Panel A indicate a good model fit as their values are each above the minimum threshold of .900. In addition, the AOSR value of .042 and the RMSEA of .039 fall within their respective standards for acceptance. At this point, based on the Wald test results, nonsignificant paths were dropped from the theoretical model. No significant loss of fit occurred. The theoretical model explained additional variance for academic performance, prior cheating, and neutralization vis-à-vis the replication of the Smith et al. (2009) model.

TABLE 3

Results of Replication Tests

Panel A: Goodness-of-Fit Summary for Replication of Smith et al. (2009) Hypothesized Model

Statistical Tests	**Result**	**Standard for Acceptance**
Chi-Square	210	NA
Df	122	NA
p-value	.00	>.05
Chi-Square/df	1.72	<3.0
Fit Indices		
NFI	.923	>.900
NNFI	.957	>.900
CFI	.966	>.900
Residual Analysis		
AOSR	.030	<.05
RMSEA	.046	<.10
(95% Confidence Level)	(.035 - .056)	NA
Explained Variance of Dependent Variable		
R^2 for Performance	.079	
R^2 for Prior Cheating	.060	
R^2 for Neutralization	.534	
R^2 for Cheating Likelihood	.423	

(continued)

TABLE 3 (continued)

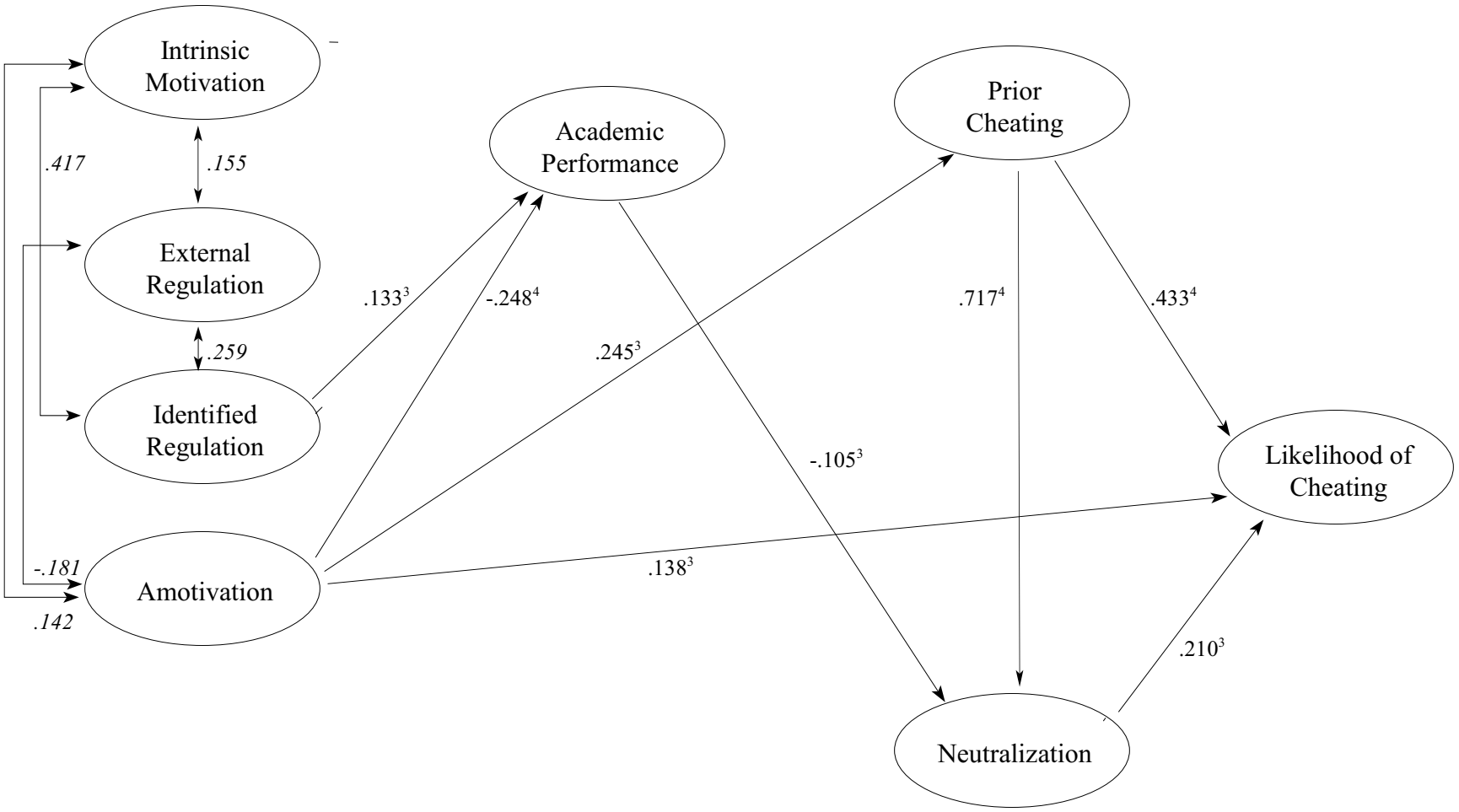
Panel B: Estimated Path Coefficients for the Replication Versus Smith et al. (2009) Model

Hypothesized Relationship			Replication		Smith et al. (2009)	
Independent Variable	**Dependent Variable**	**Predicted Sign**	**Standardized Coefficient**	**t-value**	**Standardized Coefficient**	**t-value**
Intrinsic Motivation	Academic Performance	+	NS	NS	.217**	3.849
External Regulation	Academic Performance	-	NS	NS	-.165**	-2.664
Amotivation	Academic Performance	-	-.248**	-3.531	-.274**	-5.189
Identified Regulation	Academic Performance	-	.133*	2.048	NS	NS
Intrinsic Motivation	Prior Cheating	-	NS	NS	NS	NS
External Regulation	Prior Cheating	+	NS	NS	.122*	2.619
Amotivation	Prior Cheating	+	.245*	2.159	.327**	3.495
Identified Regulation	Prior Cheating	+	NS	NS	NS	NS
Academic Performance	Prior Cheating	-	NS	NS	NS	NS
Intrinsic Motivation	Neutralization	-	NS	NS	NS	NS
External Regulation	Neutralization	+	NS	NS	NS	NS
Amotivation	Neutralization	+	NS	NS	.095*	2.107
Identified Regulation	Neutralization	+	NS	NS	NS	NS
Academic Performance	Neutralization	-	-.105*	-2.093	-.076*	-2.098
Prior Cheating	Neutralization	+	.717**	4.368	.632**	6.193
Intrinsic Motivation	Cheating Likelihood	-	NS	NS	NS	NS
External Regulation	Cheating Likelihood	+	NS	NS	NS	NS
Amotivation	Cheating Likelihood	+	.138*	2.075	.144**	2.897
Identified Regulation	Cheating Likelihood	+	NS	NS	NS	NS
Academic Performance	Cheating Likelihood	-	NS	NS	NS	NS
Prior Cheating	Cheating Likelihood	+	.433**	2.983	.390**	4.411
Neutralization	Cheating Likelihood	+	.210*	2.000	.269**	3.707

*<.05; **<.01

NS = non-significant parameter

FIGURE 2
Motivation and Cheating Model Replication: Standardized Path Coefficients[1]



[1] Italicized values represent statistically significant (p<.05) covariances between independent (i.e., exogenous) factors.
[2] Path statistically significant at p<.10
[3] Path statistically significant at p<.05
[4] Path statistically significant at p<.01

TABLE 4

Results of Theoretical Model Tests

Panel A: Goodness-of-Fit Summary

Statistical Tests	**Satorra-Bentler Scaled Results**	**Standard for Acceptance**
Chi-Square	266	NA
Df	174	NA
p-value	.00	>.05
Chi-Square/df	1.53	<3.0
Fit Indices		
NFI	.909	>.900
NNFI	.959	>.900
CFI	.966	>.900
Residual Analysis		
AOSR	.042	<.05
RMSEA	.039	<.10
(95% Confidence Level)	(.029-.048)	NA
Explained Variance of Dependent Variables		
R^2 for Performance	.080	
R^2 for Prior Cheating	.102	
R^2 for Neutralization	.562	
R^2 for Cheating Likelihood	.422	

Panel B: Nested Model Comparisons

Model	**ML χ^2**	**S-B Scaled χ^2**	**df**	**χ^2/diff[2]**
Trimmed Theoretical Model[1]	304.94	265.56	174	NA
Path from Amotivation to Prior Cheating constrained to zero	318.07	274.10	175	4.04*
Path from Amotivation to Cheating Likelihood constrained to zero	309.29	269.46	175	4.19*
Path from Identified Regulation to Performance constrained to zero	312.72	271.35	175	4.21*

(continued)

TABLE 4 (continued)

Model	ML χ^2	S-B Scaled χ^2	df	χ^2/diff[2]
Path from Alienation to Prior Cheating constrained to zero	311.97	271.00	175	4.33*
Path from Alienation to Neutralization constrained to zero	312.60	272.99	175	13.79***
Path from Amotivation to Performance constrained to zero	321.67	280.37	175	17.76***

[1]The final theoretical model reflects the release of 22 non-significant parameter estimates as determined by examination of the multivariate Wald test output from the test of the full model. The full model test specified covariances among all of the independent factors as depicted in Figure 1.

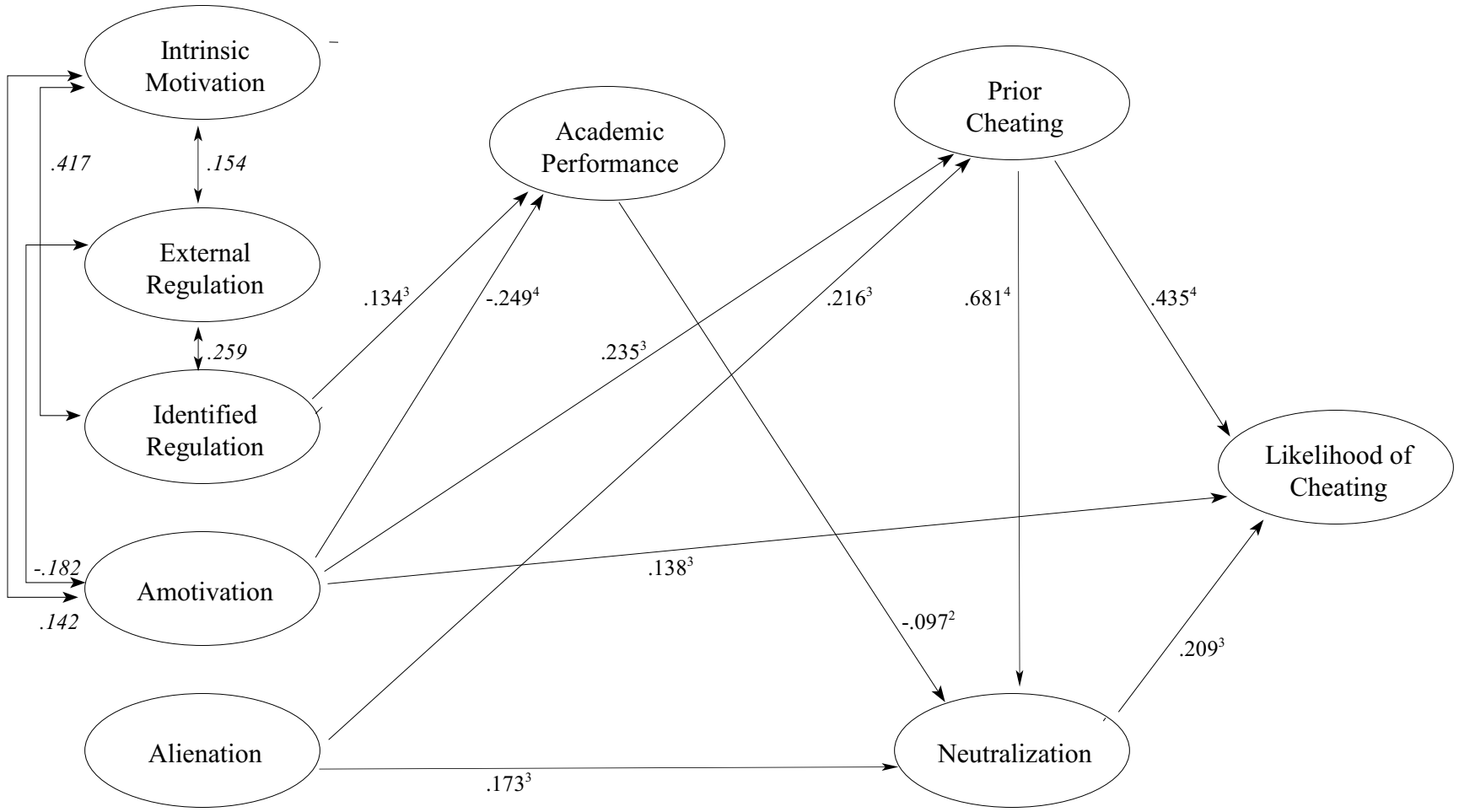
[2] The χ^2/diff statistics reported in this column were calculated manually using a procedure developed by Santorra and Bentler (2001. p. 511).

*p<.05; ***p<.001

Panel B presents the results from testing the a priori sequence of nested models against the trimmed theoretical model. The model which constrained the path from amotivation to prior cheating to 0 demonstrated a significant loss of fit in comparison to the reduced theoretical model ($\Delta SB\chi 2_{diff}$ = 4.04; df = 1, $p < .05$), indicating that this path should remain in the model. The next model constrained the path from amotivation to cheating likelihood to 0. The χ^2_{diff} test again indicates a significant loss of fit ($\Delta SB\chi 2_{diff}$ = 4.19; df = 1, $p < .05$). From the perspective of the proposed extension of the Motivation and Cheating model, the $\Delta SB\chi^2$ difference tests for models which constrained the paths from alienation to prior cheating and from alienation to neutralization to 0 each demonstrated a significant loss of fit in comparison to the trimmed theoretical model, thus providing evidence that these paths should remain in the model. As is also apparent, the $\Delta SB\chi^2$ difference tests for the models that constrained the paths from both identified regulation and amotivation to academic performance to 0 should also remain in the model.

Figure 3 illustrates the significant path estimates for the final structural model. Standardized coefficients indicate that again, contrary to prediction in the referent study (Smith et al., 2009. p. 173), identified regulation has a significant positive influence on academic performance (.134). Amotivation has a significant negative influence on academic performance (-.249), and a significant positive influence on prior cheating (.235) and cheating likelihood (.138). Alienation has a significant positive influence on prior cheating (.216) and neutralization (.173). Academic performance has a significant negative influence on neutralization (-.097), and prior cheating has a significant positive influence on neutralization (.681) and likelihood of cheating (.435). Finally,

FIGURE 3
Extended Cheating Model Standardized Path Coefficients[1]



[1] Italicized values represent statistically significant ($p<.05$) covariances between independent (i.e., exogenous) factors.
[2] Path statistically significant at $p<.10$
[3] Path statistically significant at $p<.05$
[4] Path statistically significant at $p<.01$

neutralization has a significant positive influence on cheating likelihood (.209). The remaining hypotheses were not supported.

DISCUSSION

Replication

The findings of this replication are highly supportive of those reported by Smith et al. (2009. pp. 182-183). In fact, seven of the eight significant paths illustrated in Figure 2 were also significant in the referent study. Only five of the 22 hypothesized paths are not consistent with respect to significance across the two studies. The paths from intrinsic motivation (+) and external regulation (-) to academic performance, external regulation (+) to prior cheating, and amotivation (+) to neutralization, were significant in the referent study but not significant in the replication. Contrarily, the path from identified regulation to academic performance (+) was significant in the replication (and extension as noted below) but not in the referent study.

In partial explanation of the discrepant findings noted above, Cokley (2000) found with respect to the original 28-item AMS, that the intrinsic motivation subscales had higher positive correlations with the items on the original introjected regulation subscale than they did with those on the original identified regulation subscale. This prompted him to suggest "that introjected regulation may be more indicative of self-determined behavior than has previously been believed" (2000. p. 560). Cokley's finding, coupled with the large positive covariance (.417) between intrinsic motivation and identified regulation (again comprised of two original AMS introjected regulation subscale items) in this study, suggests that the items associated with the latter subscale may indeed represent more self-determined behavior than suggested by Deci and Ryan's (1985) self-determination theory. Moreover, the two items on the identified regulation subscale read, "Why do you go to college?": 1) to show myself that I am an intelligent person; and, 2) to prove to myself that I am capable of completing a college degree. Intuitively, there would appear to be a positive relation between these two performance capability items and reported academic performance.

The large covariance with identified regulation may also explain why intrinsic motivation failed to demonstrate any of the posited relations. Even with this large covariance, both of these constructs have been shown to be distinct through exploratory and confirmatory factor analysis reported by Smith et al. (2009), and the confirmatory factor analysis in this study. Given the size of the covariance between these two constructs, identified regulation may have negated the effects of intrinsic motivation. That is, the explanatory power of the latter may have been subsumed by the former. This same argument may explain the failure of external regulation to demonstrate any of the posited relations; i.e., the large covariance (.259) with identified regulation may also explain why the former failed to demonstrate any of the posited relations.

Amotivation also had the posited relations with academic performance, prior cheating and likelihood of cheating. Furthermore, while amotivation did not have a direct influence on neutralization, it did have an indirect positive influence of .202 through its relations with academic performance (-.248 x -.105) and prior cheating (.245 x .717). Fairchild et al. (2005. p. 339) report a positive correlation between amotivation and motivation to avoid failure, and argue that amotivated people are more likely to avoid achievement situations. Smith et al. (2009) posit that when amotivated individuals find themselves thrust into achievement situations such as college classes, they may choose to cheat as a means to avoid failure. They also cite the Fairchild et al. (2005. p. 339)

finding of a positive correlation between amotivation and work avoidance, the latter defined as the desire to do as little as possible in an achievement situation (Brophy, 1983. p. 211), as another motive for these individuals to cheat. This study's findings support those propositions.

As predicted from prior research, prior cheating was also positively related to neutralization, further supporting the notion that the more one engages in questionable behavior, the greater the need to rationalize to justify that behavior. In turn, higher levels of neutralization enhanced the prospect of future cheating. Also as predicted, those with a history of cheating are likely to cheat again in the future.

Extended Model

We added alienation to the hypothesized cheating model to comprehensively examine its influence and that of motivational dimensions along the entire SDT continuum, on performance and cheating proclivities via LVSE modeling procedures. Consistent with the hypothesized model, alienation had the posited relations with prior cheating (+) and neutralization (+). Moreover, while alienation did not have a direct influence on cheating likelihood, it did have an indirect positive influence of .141through its relations with prior cheating (.216 x .435) and neutralization (.173 x .209) individually, and both prior cheating and neutralization (.216 x .681 x .209) together. That is, the more alienated an individual, the more likely that this person has cheated in the past and rationalizes cheating behavior, both of which in turn enhance the likelihood of future cheating. Furthermore, these relations appear to be independent of motivational influences given that there are no significant relations between alienation and any of the motivational constructs. Finally, the inclusion of alienation in the model also enhanced the explained variance of prior cheating and neutralization, though not for academic performance.

One might argue that the alienation and amotivation findings are not surprising as both connote some form of estrangement, disengagement, and/or powerlessness, and thus perhaps are really measuring the same underlying theoretical construct. However, this is not the case. The measurement model test results clearly establish the construct distinctiveness of these two factors. Further, as noted above and illustrated by the Figure 3 covariances, alienation, unlike amotivation, has no significant relation with any of the other exogeneous predictors. This provides a compelling argument for the unique contribution of alienation to the hypothesized cheating model.

LIMITATIONS

Self-reported survey data provide the input for this study, introducing the possibility of common methods bias, i.e., one in which a majority of the variance in the data can be explained by a single factor. However, testing of the measurement model addressed this issue. The confirmatory factor analyses did not indicate an issue with common methods bias.[9]

The role of negative affectivity when reporting a factor like alienation, and the possibility of underreporting cheating behavior and neutralization were also of concern. Yet procedures were also put in place to mitigate these issues. The surveys were completed without the faculty member present. The proctors explained that students' responses were completely anonymous. They also

[9]See Meade et al. (2007) for a detailed discussion of the use of confirmatory factor analysis to assess common methods bias.

explained the nature of the process of data analysis and that only aggregate results would be reported. To guarantee anonymity, we also had to rely on self-reported performance and GPA data. However, in that this study focuses on the interrelationships among the proposed constructs within the hypothesized model rather than mean values, these limitations should be of minimal concern (Smith et al., 2002). There is no reason to suspect differential underreporting of these attitudes and behaviors by any specific subpopulation of this student sample.

There is also the issue of self-containment of the model's explicit structural equations (see Kemery et al., 1985. p. 373). A structural model is self-contained when all relevant dependent variable determinants are measured (James et al., 1982). Practical constraints precluded this study, as well as those that preceded it, from including all known and suspected determinants of the constructs examined herein. To the extent that unexplained variance in the model is due to correlated omitted variables (i.e., non-random influences), the consequence of these omissions is a biased estimate of the structural parameters relating the cheating antecedents and each of the dependent variables under investigation. For example, the observed effects of alienation and amotivation may depend on common (heretofore unexamined) antecedent variables. This study does not include possible antecedents of these constructs. Identification and measurement of additional influences on these personality variables and the denoted cheating constructs, and their potential consequences (e.g., workplace dishonesty) may add to the refinement of the present model and warrant investigation.

A final concern relates to the causal paths implied in the final structural models presented in Figures 2 and 3. The cross-sectional nature of the data precludes us from making strong causal inferences.

IMPLICATIONS AND CONCLUSIONS

The above limitations notwithstanding, the relationships depicted in Figure 2 and Figure 3 have noteworthy implications for future research and educators seeking to mitigate cheating behavior.

Replication

With the exceptions noted above, this study's replication effort corroborated the referent study's findings. In doing so, it enhanced the reliability of those relationships uncovered in the referent study. Specifically, this study uncovered the same relations among amotivation, academic performance, prior cheating, neutralization, and likelihood of cheating as did Smith et al. (2009. p. 183), with the exception of this study's failure to measure a significant direct relation between amotivation and neutralization.

On the other hand, the inter-study differences with respect to the influence of intrinsic motivation, extrinsic regulation, and identified regulation warrant further investigation. Whereas the former two constructs were significant cheating antecedents in Smith et al. (2009. p. 183), they were not in this study. Conversely, while identified regulation was a significant cheating antecedent in this study, it was not in the referent study. The explanations proffered above for these discrepant findings do not put this issue to rest.

The failure of both the intrinsic and extrinsic motivation measures utilized in this study to directly influence cheating behavior may also reflect issues with the theoretical foundation of the

AMS. Measured correlations between specific intrinsic and extrinsic motivation subscales on the original seven factor configuration of the AMS prompted Cokley (2000) to suggest "that the differences between intrinsic and extrinsic motivation as measured by the Academic Motivation Scales are not as distinct and well-defined as theory suggests" (p. 563). Similar findings by Fairchild et al. (2005) prompted the authors to conjecture that "intrinsic and extrinsic motivation do not fall along a continuum" (p. 353) and that they may be two independent orientations rather than mutually exclusive constructs (p. 354). Indeed, this study's measured factor covariances and structural relations show positive associations between these two motivational orientations. Future research might consider adapting other motivational scales to educational settings in an effort to further clarify the distinction (or lack thereof) between intrinsic and extrinsic motivation, as well as to identify the role that these factors play in the cheating dynamic postulated in this study.

Extended Model

The influence on cheating behavior by alienation and amotivation versus that of intrinsic and extrinsic motivation is particularly enlightening. Clearly, negative affectivity is inherent in both the alienation and amotivation constructs, which in turn have direct positive associations with cheating behavior. On the other hand, as indicated in Table 1, the items loading on the intrinsic motivation, external regulation, and identified regulation scale indicators are worded in a positive context. Only the negatively connoted constructs have a direct influence on cheating behavior, a finding at variance with the prior research cited herein. This discrepancy may be accounted for by the fact that the previously cited studies only included a single negatively connoted cheating antecedent whereas this study includes both alienation and amotivation. It may well be that negative affectivity is a more powerful predictor of cheating than is positive motivational orientation, intrinsic or extrinsic. Follow-up investigations that further examine this phenomenon are strongly encouraged.

Studies on motivation provide insights into classroom strategies to motivate students, hence encouraging the decision to remain honest, and thereby reduce cheating. Self-determination theory suggests an innate human need for competence, autonomy, and relatedness; when these needs are not met, motivation suffers (Deci and Ryan, 1985; Ryan and Deci, 2000). Pintrich (2003. p. 672) suggest that educators engage students by designing assignments that, while challenging, also: 1) offer students the opportunity to succeed; 2) provide clear feedback; and, 3) focus on development of competence (by assigning tasks that are stimulating interesting, and meaningful), expertise, and skill. Students who feel self-confident are less likely to resort to cheating (Elias, 2009).

Educators can also draw upon the indirect link in Figure 3 between alienation and the propensity to cheat. Students who feel alienated are not only more likely to have cheated in the past, they also resort to justifications and rationalizations which, in turn, pave the way for future cheating. Ashworth and Bannister (1997) find that large classes, group work, and limited contact with professors tend to alienate students, and that these students feel cheating is excusable. These researchers also suggest that assignments that do not engage the students, or assignments that do not promote original thought, further marginalize students. Hutton (2006. p. 175) suggests that educators employ a participative leadership style rather than a more authoritarian one, as a participative style encourages horizontal connections with students, enhancing communication. Students are less likely to justify cheating when they feel their instructor knows and cares about them (Anderman and Midgley, 2004; Murdock et al., 2001; Murdock and Anderman, 2006). Educators can enhance

connections to their students by serving as advisors to student organizations, keeping office hours, and offering academic and career advice. Alienation can also be combated by encouraging students to participate in student organizations like the Financial Management Association and Beta Alpha Psi, to tutor other students, or participate in other activities that engage students and provide a connection to their institution, their fellow students, and ultimately, their profession. Each of these efforts, alone or in combination, have the benefit of both enhancing the educational experience for students and potentially attenuating their need or desire to cheat due to feelings of isolation.

REFERENCES

Anderman, E. M., and C. Midgley. 2004. Changes in Self-Reported Academic Cheating Across the Transition from Middle School to High School. *Contemporary Educational Psychology* (Vol. 29) 499-517.

Anderson, J., and D. Gerbing. 1988. Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychological Bulletin* (Vol. 103) 411-423.

Ashworth, P., and P. Bannister. 1997. Guilty in Whose Eyes? University Students' Perceptions of Cheating and Plagiarism in Academic Work and Assessment. *Studies in Higher Education* (Vol. 22) 187-203.

Baird, J. S. 1980. Current Trends in College Cheating. *Psychology in the School*, (Vol. 17) 512-522.

Ball, R. 1966. An Empirical Exploration of Neutralization. *Criminologica* (Vol. 4) 22-23.

Bentler, P. M. 2006. *EQS 6 Structural Equations Program Manual.* (Encino, CA: Multivariate Software, Inc.).

_____, and D. G. Bonnett. 1980. Significance Tests and Goodness of Fit in the Analysis of Covariance Structures. *Psychological Bulletin* (Vol. 88, No. 3) 588-606.

_____, and J. C. Wu. 2002. *EQS 6 for Windows User's Guide* (Encino, CA: Multivariate Software, Inc.).

Bollen, K. A. 1989. *Structural Equations with Latent Variables*. (New York, Wiley).

Brophy, J. E. 1983. Conceptualizing Student Motivation. *Educational Psychology* (Vol. 18) 200-215.

Byrne, B. M. 2006. *Structural Equation Modeling with EQS: Basic Concepts, Applications, and programming*, 2nd ed. (Florence, KY: Routledge Academic).

Cokley, K. O. 2000. Examining the Validity of the Academic Motivation Scale by Comparing Scale Construction to Self-Determination Theory. *Psychological Reports* (Vol. 86) 560–564.

Crown, D. F., and M.S. Spiller. 1998. Learning from the Literature on College Cheating: A Review of Empirical Research. *Journal of Business Ethics* (Vol. 17) 683-700.

Deci, E. L., and R. M. Ryan. 1985. *Intrinsic Motivation and Self-Determination in Human Behavior.* (New York, Plenum).

_____, and _____. 2000. The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior. *Psychological Inquiry* (Vol. 11) 227-268.

Elias, R. Z. 2009. The Impact of Anti-Intellectualism Attitudes and Academic Self-Efficacy on Business Students' Perceptions of Cheating. *Journal of Business Ethics* (Vol. 86) 199-209.

Fairchild, A. J., S. J. Horst, S. Finney, and K. E. Barron. 2005. Evaluating Existing and New Validity Evidence for the Academic Motivation Scale. *Contemporary Educational Psychology* (Vol. 30) 331-358.

Fogarty, T. J., J. Singh, G. K. Rhoads, and R. K. Moore. 2000. Antecedents and Consequences of Burnout in Accounting: Beyond the Role Stress Model. *Behavioral Research In Accounting* (Vol. 12) 31-67.

Granitz, N., and D. Loewy. 2007. Applying Ethical Theories: Interpreting and Responding to Student Plagiarism. *Journal of Business Ethics* (Vol. 72) 293-306.

Grouzet, F. M., N. Otis, and L. Pelletier. 2006. Longitudinal Cross-Gender Factorial Invariance of the Academic Motivation Scale. *Structural Equations Modeling* (Vol. 13, No. 1) 73-98.

Haines, V. J., G. M. Diekhoff, E. E. LaBeff, and R. E. Clark. 1986. College Cheating: Immaturity, Lack of Commitment, and the Neutralizing Attitude. *Research in Higher Education* (Vol. 25) 257-266.

Hu, L., and P. M. Bentler. 1999. Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives. *Structural Equation Modeling* (Vol. 6) 1-55.

Hutton, P. A. 2006. Understanding Student Cheating and What Educators Can Do About It. *College Teaching* (Vol. 54, No. 1) 171-176.

James, L., S. Mulaik, and J. Brett. 1982. *Causal Analysis* (Beverly Hills, Sage Publications, Inc.).

Kemery, E., A. Bedeian, K. Mossholder, and J. Touliatos. 1985. Outcomes of Role Stress: A Multisample Constructive Replication. *Academy of Management Journal* (Vol. 28, No. 2) 363-375.

Klein, H., N. Levenburg, M. McKendall, and W. Mothersell. 2006. Cheating During the College Years: How Do Business School Students Compare? *Journal of Business Ethics* (Vol. 72) 197-206.

McCabe, D. L. 2005. *The Center for Academic Integrity* (Duke University: Kenan Institute for Ethics).

_____, and L. K. Trevino. 1995a. Cheating Among Business Students: A Challenge for Business Leaders and Educators. *The Journal of Management Education* (Vol. 19, No. 2) 205-218.

_____, and _____. 1995b. Academic Dishonesty: Honor Codes and Other Contextual Influences. *Journal of Higher Education* (Vol. 64, No. 5) 522-538.

Meade, A. W., A. M. Watson, and C. M. Kroustalis. 2007. Assessing Common Methods Bias in Organizational Research. Paper presented at the *22nd Annual Meeting of the Society for Industrial and Organizational Psychology*. New York.

Murdock, T. B., and E. M. Anderman. 2006. Motivational Perspectives on Student Cheating: Toward an Integrated Model of Academic Dishonest. *Educational Psychologist* (Vol.41, No. 3) 129-145.

_____, N. M. Hale, and M. J. Weber. 2001. Predictors of Cheating among Early Adolescents: Academic and Social Interaction. *Contemporary Educational Psychology* (Vol. 26) 96-115.

Nonis, S. A., and C. O. Swift. 1998. Deterring Cheating Behavior in the Marketing Classroom: An Analysis of the Effects of Demographics, Attitudes, and In-Class Deterrent Strategies. *Journal of Marketing Education* (Vol. 20, No. 3) 188-199.

_____, and _____. 2001. An Examination of the Relationship Between Academic Dishonesty and Workplace Dishonesty: A Multicampus Investigation. *Journal of Education for Business* (Vol. 77, No. 2) 69-76.

Nunnally, J. 1978. *Psychometric Theory* 2nd Edition (New York: McGraw-Hill).

Pintrich, P. R. 2003. A Motivational Science Perspective on the Role of Student Motivation in Learning and Teaching Contexts. *Journal of Educational Psychology* (Vol. 95, No. 4) 667-686.

Ray, J. J. 1982. Toward a Definitive Alienation Scale. *Journal of Psychology* (Vol. 112) 67-70.

Rettinger, D. A., and A. E. Jordan. 2005. The Relations among Religion, Motivation, and College Cheating: A Natural Experiment. *Ethics & Behavior* (Vol. 15, No. 2) 107-129.

Ryan, R. M., and E. L. Deci. 2000. Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology* (Vol. 25) 54-67.

Satorra, A., and P. M. Bentler. 2001. A Scaled Difference Chi-Square Test Statistic for Moment Structure Analysis. *Psychometrika* (Vol. 66, No.4) 507-514.

Seeman, M. 1991. Alienation and Anomie. In J. P. Robinson, P. R. Shaver, and L. S. Wrightsman (eds.). *Measures of Personality and Social Psychological Attitudes* (San Diego: Academic Press) 291-372.

Smith, K. J., J. A. Davy, and D. S. Easterling. 2004. An Examination Cheating and its Antecedents among Marketing and Management Majors. *Journal of Business Ethics* (Vol. 50, No. 1) 63-80.

_____, _____, D. L. Rosenberg, and G. T. Haight. 2002. A Structural Modeling Investigation of the Influence of Demographic and Attitudinal Factors and In-Class Deterrents on Cheating Behaviors among Accounting Majors. *Journal of Accounting Education* (Vol. 20) 45-65.

_____, _____, and _____. 2009. The Influence of Motivation on Cheating Behavior among Accounting Majors. *Advances in Accounting Education* (Vol. 10) 169-188.

_____, _____, and _____. 2012. An Empirical Analysis of an Alternative Configuration of the Academic Motivation Scale. *Assessment in Education: Principles, Policy & Practice* (Vol. 19, No. 2) 231-250.

_____, D. M. Ervin, and J. A. Davy. 2003. An Examination of the Antecedents of Cheating Among Finance Students. *Journal of Financial Education* (Vol. 29) 13-33.

Stout, D. E., and J. E. Rebele. 1996. Establishing a Research Agenda for Accounting Education. *Accounting Education* (Vol. 1, No.1) 1-18.

Sykes, G., and D. Matza. 1957. Techniques of Neutralization: A Theory of Delinquency. *American Sociological Review* (Vol. 22) 664-670.

Tom, G., and G. Borin. 1988. Cheating in Academe. *Journal of Education for Business* (January) 153-157.

Ullman, J. B., and P. M. Bentler. 2003. Structural Equation Modeling. In J. A. Schinka, W. F. Velicer, and I. B. Weiner (Eds.) *Handbook of psychology: Volume 2 Research Methods in Psychology* (Somerset, NJ: Wiley) 607-634.

Vallerand, R. J., L. G. Pelletier, M. R. Blais, N. M. Brière, C. B. Senécal, and É. F. Vallières. 1992. The Academic Motivation Scale: A Measure of Intrinsic, Extrinsic, and Amotivation in Education. *Educational and Psychological Measurement* (Vol. 52) 1003–1017.

Whitley, B. E. 1998. Factors Associated with Cheating among College Students: A Review. *Research in Higher Education* (Vol. 39, No. 3) 235-274.

Williams, L., and J. Hazer, J. 1986. Antecedents and Consequences of Satisfaction and Commitment in Turnover Models: A Reanalysis Using Latent Variable Structural Equation Methods. *Journal of Applied Psychology* (Vol. 71, No. 2) 219-231.