

## **Motivation and (Un)Ethical Behavior: Are There Gender Differences?**

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### **Abstract**

A common belief is that women and men differ in their willingness to behave in unethical or immoral ways, with women being more ethical and less likely to be political. Recent research provides some support for this assumption. The current study further investigates potential gender differences in ethical behaviors

The model of cheating behavior recently developed by Smith, Davy and Rosenberg (2009) was employed. The influence of motivation on academic performance, self-reported cheating behavior, neutralization/justification tendencies and self-reported likelihood of future cheating are examined. Four types of motivation are included: Intrinsic; External Identified Regulation; Introjected Regulation; and Amotivation. Multi-sample, latent variable structural equation modeling is used to test for gender differences among the hypothesized relations using 2088 business students from three AACSB accredited business schools.

There were no differences with regard to Intrinsic Motivation and the posited relations. Differences were found with respect to External Identified Regulation, Introjected Regulation and Amotivation. A key result is the extent to which women use Neutralization when extrinsically motivated. The paths to Neutralization from extrinsic motivation constructs are significant for women, but not for men. Men use Neutralization only to justify Prior Cheating. Women justify both Prior and Likelihood of Cheating. While direct effects show gender differences, total effects (direct plus indirect) decrease two gender differences considerably and two additional differences appear that are missed when focusing on direct effects alone. These results are discussed in detail.

### **Introduction**

There has been considerable focus in the literature regarding possible gender differences related to ethical behavior (Betz, O'Connell & Shepard, 1989; Kidwell, Stevens & Bethke, 1987; Silkula & Costa, 1994; Smith, Davy & Easterling, 2004; Stevenson & Bodkin, 1996; Vemeir & Van Kenhove, 2008). While there are differences of opinion and empirical results as to whether gender differences exist (Sikula & Costa, 1994; Vermeir & Van Kenhove, 2008), the preponderance of the evidence suggests women tend to be more ethical in their values and behaviors than do men. In the context of business, the question is how and why this difference might be important. All of the studies reporting ethical differences discuss implications within their specific contexts. Some have gone as far as to argue that the increase in the numbers of

women in business will ultimately improve the ethical norms of organizations (e.g., Stevenson & Bodkin, 1996).

The increasing number of women entering business schools and related professions has been the primary impetus for assumptions regarding enhanced ethical conduct in organizational settings. The explosive growth in business school enrollments from the 1960's through the 1980's has been in large part due to the entrance of women. By 1994 women made up half of undergraduate business students and were making up a greater proportion of MBA programs (Sikula & Costa, 1994). However, the increase in the number of women in business does not appear to have resulted in ethically enhanced corporate behavior. On the contrary, ethical conduct within organizations appears to have deteriorated over the past several years. One need only look at the business scandals at Enron, Ernst & Young, Arthur Anderson, Tyco, and a number of large financial institutions for evidence of deteriorating ethical values and conduct in Corporate America. Does this suggest women are not any more ethical than men? Not necessarily as there are other possible explanations. For example, more important than the number of women earning degrees and entering the workplace might be their ultimate influence on corporate behavior as determined by their position in their respective organizations. The glass ceiling is well documented. Women may not be having the influence they could have because they are not in positions that allow for that type of influence. Perhaps their higher ethical values serve as a limiting factor to their upward mobility with the organization. These values may indeed conflict with requisite behaviors for organizational advancement. An alternative explanation for the observed decline in ethical conduct in organizational settings is that men and women who choose similar careers will have similar ethical standards (Betz et al., 1989; Dawson, 1992).

While we cannot directly address these questions in the present study, we provide more conclusive evidence regarding differences between men and women in participating in unethical behavior (cheating). In contrast to most prior research in this field of inquiry, in this study participants focus on their own behavior rather than assess hypothetical situations. In addition, we focus on motivation, specifically the impact of four different types of motivation on academic performance, self-reported cheating behavior, likelihood to cheat in the future and justifying/neutralizing these behaviors. Moreover, this study utilizes multi-sample, latent variable structural equation modeling to test hypotheses and explore relations that have not been previously examined in the literature, thus providing a stronger test for gender differences than is typically reported. The theoretical model developed and tested by Smith, Davy and Rosenberg (2009) is the focal point for this investigation. This model is summarized and then hypotheses for gender differences are developed.

### **Smith, Davy & Rosenberg (2009) Model**

Cheating behavior has focused primarily on defining who is more likely to cheat (e.g., Barnes, 1975; Crown & Spiller, 1998; Graham, Monday, O'Brien & Stevens, 1994; Smith, Davy, Rosenberg, & Haight, 2002; Whitley, 1998). Focusing on demographics does not tell us why

some will cheat while others won't. Understanding the motivation behind unethical behaviors will go farther when developing educational programs in both universities and corporations to reduce the occurrence of unethical behaviors. Previous research has demonstrated students with a desire to be able to demonstrate knowledge or motivated by a desire to learn or engage in an activity (intrinsic motivation) and are not helped by cheating. On the other hand, students motivated to primarily obtain valued outcomes or avoid negative outcomes (extrinsic motivation) may see the potential benefit in engaging in dishonest behaviors (Baker, 2004, p. 190). In order to expand on earlier research, they use motivational constructs derived from Deci and Ryan's (2000) continuum which include:

*Intrinsic Motivation*—"the drive to pursue an activity simply for the pleasure derived from it" (Fairchild et al., 2005, 332);

*External Identified Regulation*—entails attributing personal value to a behavior while still being externally motivated (Deci & Ryan, 2000, pp. 235-236), e.g. motivated by the value of the outcome as opposed to pure interest in the activity for its own sake;

*Introjected Regulation*—behaviors are regulated somewhat internally, but are primarily externally motivated, e.g., a person will study to avoid feelings of guilt rather than address the external threat of failure;

*Amotivation*—the absence of motivation to pursue an activity due to a lack of value to the person, or that person's feeling of incompetence or inability to obtain the desired outcome (Deci & Ryan, 2000, pp 60-61).

These four motivation constructs are modeled as the independent variables in the Smith et al. (2009) theoretical model. Based on the definition of Intrinsic Motivation and previous research (e.g., Baker, 2004), we posit negative relationships between Intrinsic Motivation and the two cheating constructs, Prior Cheating (Path A) and Likelihood of Cheating (Path B). Individuals intrinsically motivated have little need to cheat. Path C, in turn, posits a positive relationship between Intrinsic Motivation and Academic Performance. The two Extrinsic Motivation constructs, External-Identified Regulation (EIR) (Paths D and E) and Integrated Regulation (IR) (Paths G and H) are posited to have positive relationships with the two cheating constructs. Individuals stronger on these types of extrinsic motivation may see advantages to cheating in order to gain the desired external rewards/outcomes. Because their focus is on external gratification rather than the pleasure of learning and desire for understanding, we predict negative relationships between these two constructs and academic performance (Paths F and I respectively).

Finally, the impact of Amotivation on cheating behavior should be similar, if not stronger than either of the previous extrinsic motivation constructs (Deci & Ryan, 2000; Smith et al., 2009). Paths J and K posit a significant positive relationship between Amotivation and the two cheating constructs, while Path L predicts a negative relationship with Academic Performance.

Consistent with the hypotheses proposed so far and previous research (Crown & Spiller, 1998, p.689; Rakowski & Levy, 2007, p. 473), Paths M and N predict a negative relationship between Academic Performance and the two cheating constructs. Those who perform better academically have less of a need to cheat.

Prior research has shown that cheating behavior can actually be facilitated by Neutralization (Smith et al., 2002, p. 59). Neutralization “represents the rationalizations and justifications for unethical/dishonest behavior used to deflect self-disapproval from others after violating an accepted social norm” (Sykes & Matza, 1957, p. 666). This allows students to cheat without feeling inherently dishonest, eliminating, or at least reducing, guilt for the dishonest action (Norris & Swift, 1998, p. 190). It follows then that there is less reason to neutralize when there is less of a need to cheat. Thus, we posit that those who perform better academically are less likely to neutralize (Path O). Given Intrinsic Motivation is positively linked to learning, lowering the need to cheat and thus the need to rationalize, Path P posits a negative relationship between Intrinsic Motivation and Neutralization. Davy et al. (2007) reported a positive relationship between extrinsic motivation and neutralization, prompting the inclusion of Paths Q and R from EIR and IR to Neutralization respectively. Again, using Deci and Ryan’s (2000, p. 237) continuum, Amotivation is also predicted to have a positive relationship with Neutralization since amotivated people would also need to justify their negative behaviors (Path S).

As defined above, Neutralization is a means of justifying dishonest behavior. It follows then that individuals reporting prior cheating have a greater need to neutralize (Path T). Neutralization may also have a positive relationship with Likelihood of Cheating (Path U) and mediate the effect between Prior Cheating and future behavior since Neutralization can be used to rationalize future dishonest behavior. Finally, since past behavior is a good predictor of future behavior (Davis & Ludvigson, 1995, p. 120; Norris & Swift, 1998, p. 190), we predict a positive relationship between Prior Cheating and Likelihood of Cheating (Path V).

### **Gender Differences**

Because we are focusing on process as depicted in Figure 1, we explore differences in the strength of the relationships between men and women rather than differences in mean values. To date there has been very little research on possible gender differences in the influence of motivation. Much has been written documenting differences in (un)ethical proclivities between the genders (e.g., Arlow, 1991; Betz et. al., 1989; Kidwell et. al., 1987; Ruegger & King, 1992; Smith et al., 2002; Stevenson & Bodkin, 1996). These studies report women are less likely to engage in unethical or dishonest behaviors. One explanation often used to explain these differences is the diverse socialization of males and females, with men taught to emphasize competition and women taught to emphasize social relationships (Beutell & Brenner, 1986; Lever, 1978). Gilligan (1977) reported that women feel that it is important to “discern and alleviate the recognizable trouble of this world.” However, these findings and explanations do not directly address the issue of motivation. Barkoukis et al. (2008, p. 39) argues that motivation is “thought to be one of the most important aspects of human behavior...” and as such one of the

best predictors of behavior. While not wholly unrelated to socialization, we look more directly at the impact of motivation and gender differences in predicting ethical behavior.

A few studies have addressed gender based differences in motivation indirectly. Vermeir and Van Kenhove (2007) and Roxas and Stonback (2004) report men seek competitive success and are more likely to break rules in order to achieve this success. They also report women are concerned with doing tasks well and with harmonious relationships. These results suggest men are more externally motivated and women more internally motivated. These results are consistent with those of a study focusing on volunteerism (Burns, Reid, Toncar, Anderson & Wells, 2008). Women appear to be driven more by intrinsic types of motivation to volunteer than are men. Extrapolating from these findings, we posit the paths from Intrinsic Motivation to Academic Performance, Prior Cheating and Likelihood of Cheating (Paths A, B, and C) are statistically stronger for women than for men. In turn, we predict the paths from the three External Motivation constructs to Academic Performance, Prior Cheating and Likelihood of Cheating (Paths D, E, F,G, H, I, J, K and L) are statistically stronger for men than for women.

While it is often argued men are more likely to engage in unethical behavior than are women (e.g., Betz, et al., 1989) the question arises as to whether women are able to justify their unethical behavior as readily as men. Several studies suggest that if women are more ethical, they will have more difficulty reducing their perceived guilt for inappropriate behavior (Beu, Buckley & Henry, 2003; Ritter, 2006; Vermier & Van Kenhove, 2007). Women will be less able to neutralize or justify unethical behavior. We explore this further, positing the paths to Neutralization (Paths O, P, Q, R, S and T) are statistically weaker for women than for men. We expect this difference to be most pronounced for Path T, the relationship between Prior Cheating and Neutralization.

We test for these differences using multi-sample, latent variable structural equation modeling. This analysis allows for simultaneous testing of differences across two or more samples, in this case across men and women, while taking into account biasing effects of method variance and random measurement error (Williams & Hazer, 1986). These errors are not adequately accounted for in most difference tests such as ANOVA, which is the type of analysis typically used in past studies. Random measurement error and method variance can “attenuate estimates of coefficients, make the estimates zero coefficients nonzero, or yield coefficients with the wrong sign” (Williams & Hazer, 1986, p. 221). Thus, this research provides a clearer test of gender differences while focusing on the process by which each gender may participate in (un)ethical behavior.

## **Methods**

Business students from three AACSB-accredited universities, two on the East Coast and one in the Midwest, provided data for this study. Questionnaires were administered in classes by graduate assistants. Their anonymity was assured. The sample consisted of 2,088 undergraduate students comprising 1,140 women (55%) and 948 (45%) men. Eighty percent came from the East Coast universities, with the remaining twenty percent coming from the Midwest school. We

reviewed demographics across the three schools and found no differences in terms of average age, gender composition, marital status and year in school. As a result the three samples were combined.

Sophomores (n = 312), juniors (n = 682), and seniors (n = 874) comprised 15%, 33% and 42% of the sample respectively, and 123 graduate students were represented. Ages ranged from 17 to 52 with a median of 21, and 91% (n = 1,900) were unmarried.

### *Measures*

To test the theoretical model and test for gender differences, we used the same measures used by Smith et al. (2009).

*Academic Performance* was measured by students' self-reported score on: a) how they rated their overall academic performance and b) how they rated their own academic performance as compared to their peers (perceived academic performance). Both were responded to on a five-point scale ranging from 1 = very poor to 5 = very good (Nonis & Swift, 1998, pp. 192–193). While actual grade-point-average (GPA) would be a preferable measure, the need to protect student anonymity precluded collection of GPA data on the sample.

*Neutralization* was measured using Ball's (1966, pp. 22–23) scale. This scale was later used by Haines et al. (1968, p.347) and Smith et al. (2002, p. 53). 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 scale ranging from 1 = strongly disagree to 5 = strongly agree for each of the 11 items making up the scale.

*Prior Cheating* was measured using eight items from a 12-item scale adapted from Tom and Borin (1988, p. 155). These eight items were also used by Smith et al. (2002, p.54) based on their findings from exploratory factor analysis on the multidimensionality of the items making up the scale. We asked students to "Think of all the exams you have taken in college. How often have you participated in the activities during exams?" Students reported the frequency with which they engaged in each of the eight cheating behaviors on a five-point Likert scale ranging from 1 = never to 5= very often.

*Likelihood of Cheating* was evaluated using the 12 items from Tom and Borin's (1988, p. 155) scale reworded to assess future proclivities. We used all 12 items based on Smith et al.'s (2002) findings demonstrating their significance as indicators of future cheating. These items were preceded by, "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." Responses were made on a five-point Likert scale ranging from 1 = very unlikely to cheat to 5 = very likely to cheat.

Smith et al. (2002, p. 52) found that the items on this scale loaded on a single underlying factor, i.e., they were uni-dimensional. Thus, using a matched composite procedure described by Bentler and Wu (1995, pp. 201-202), we combined the items on this scale into two composite indicator variables. This is a fitting procedure for circumstances where 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, 1995, p. 201).

The Academic Motivation Scale (AMS) is a 28 item questionnaire which contains 7 subscales, each designed one of the 7 types of motivation and was designed to use with college students. Three of these subscales address Intrinsic Motivation. This study only uses one of the Intrinsic subscales, motivation to know, which is the closest to academic behavior. As a result, only 20 items were used (Smith et al., 2009). Responses were made on a Likert-type scale indicating the extent to which respondents agree that a question describes a reason they are at the university. Smith et al. (2002; 2009) report favorable psychometric properties for the above-referenced measures, prompting their adoption for the present study. Their research (2008, pp. 6-7) also supports a four factor conceptualization of academic motivation as measured on the AMS. Based on these findings, this study adopted the following measures for academic motivation:

*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. We summed the items on each subscale to create two composite indicators to allow for a better estimate of the random error associated with this construct and facilitate the subsequent latent variable tests. For each item, 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-Identified Regulation* was captured using four items from the External Regulation subscale and two items from the Identified Regulation subscale. Again, we summed the item scores for each subscale to two composite indicators to facilitate the subsequent latent variable analyses. Student response options were identical to those for the Intrinsic Motivation factor.

*Amotivation* was measured using the four items that comprise the Amotivation subscale.

*Introjected Regulation* was assessed using the two items from the Introjected Regulation subscale.

## **Procedure**

We independently tested the referent measurement model with the male and female samples prior to conducting a multi-sample analysis of the data. Byrne (1994, p. 162) recommends that a baseline model be established separately for each group prior to testing hypotheses relating to invariance between groups. We did this for each group using the 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 non-normal data issues with items on the amotivation subscale. The separate measurement model tests allowed us to determine whether the proposed theoretical relations between manifest variables and their respective latent constructs held with women and men. Then, based on the output of Wald tests applied to the full theoretical model (Bentler 1995), we dropped statistically nonsignificant parameters from each

model.<sup>1</sup> Table 1 presents the indicators of each latent variables tested along with mean scores for each predicted latent variable for each sample.

Based on the output of the single sample analyses, we incorporated the best fitting measurement models for women and men in a multi-sample analysis that specified all of the significant factor loadings and covariances among the factors in each sample as the basis for testing their invariance across samples.<sup>2</sup> Using Byrne's (1994, 163-175) specified procedure, we then conducted multi-sample analyses of the data. This procedure tested all significant factor loadings and covariance estimates simultaneously between groups. We initially constrained all paths and all significant covariance estimates to be equal between the male and female samples.<sup>3</sup> Based on LaGrange Multiplier test output, we released cross-group equality constraints until we obtained no significant improvement in fit (Bentler 1995; Byrne 1994).<sup>4</sup> Finally, we tested our reduced measurement model against two nested models; one that equated the theoretical independence of the four motivation factors and another that equated the theoretical independence of all eight factors, in order to assess the theoretical independence of the constructs under investigation.

We then conducted EQS structural modeling tests to evaluate the referent Figure 1 theoretical model. Analogous to the measurement model tests, we first independently tested the theoretical model with the male and female samples as a prelude to conducting a multi-sample analysis of the data. Then, after establishing baseline models for each group, we conducted multi-sample analyses that tested the equality of all path estimates (i.e., structural parameters) as well as factor loadings and covariance estimates (as determined by the measurement model tests) that were significant in both groups. Based on the output of LeGrange Multiplier tests applied to the full theoretical model (Bentler 1995), we dropped statistically nonsignificant cross-group equality constraints from the model. Finally, we tested an a priori sequence of nested models against the reduced theoretical model. This nested sequence of models provided direct tests of the hypotheses that the relevant motivational factors are related to academic performance and/or one or more of the key cheating outcomes (as determined by significant path coefficients measured in the reduced multi-sample structural model). The nested sequence also facilitates a direct examination of the mediating effects of prior cheating and neutralization. The

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<sup>1</sup>The Wald test is a post-hoc procedure that is not theory-driven, i.e., it capitalizes on a particular sample. Replications with additional samples are needed to assess whether the relations uncovered for a particular sample hold.

<sup>2</sup>Byrne (1994, 162) states that baseline models may not be identical across groups, e.g., the baseline model for one group may include an error covariance that might not be significant for the other groups. However, these circumstances do not negate the testing for group invariance, and *a priori* knowledge of group differences is appropriate to the conduct of ensuing multisample analyses (Byrne, Shavelson, and Muthen 1989).

<sup>3</sup>As noted in the Results section, all estimable path coefficients were significant for each group and were thus initially constrained to be equal women and men. However, only covariances that were significant (in the preliminary single samples analyses) for women and men were constrained to be equal.

<sup>4</sup>Bentler (1995, 147) states that the LaGrange Multiplier test is available in a multi-sample analysis to test cross-group equality constraints.

simultaneous estimation of both direct and mediating effects provides a more complete understanding of the roles each construct might play.

We examined model fit for the measurement and structural modeling tests using a variety of measures as there is no one definitive index of model fit (Fogarty, et al., 2000, pp. 44 and 46). To measure overall fit, we used the  $SB\chi^2$  statistic, the  $SB\chi^2/df$  ratio, the robust normed and non-normed fit indices (NFI; NNFI), the comparative fit index (CFI), and the adjusted root mean squared error of approximation (RMSEA) for nonnormal conditions. An acceptable cutoff value for the  $SB\chi^2/df$  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 & Bonnett, 1980, p. 600). Finally, RMSEA values of .08 or less are considered acceptable (Hu & Bentler, 1999, 27).

We compared the nested structural models using the scaled difference chi-square test ( $\Delta SB\chi^2$ ; 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. A nonsignificant chi-square difference indicates the path could be dropped with no significant loss of model fit.

## Results

Preliminary single-sample measurement model tests for women and men indicated that the referent model (Smith et al. 2009) provided a good fit to the data, as all of the path coefficients from the latent constructs to their manifest indicators were significant at  $p < .01$ . Furthermore, multi-sample analysis of the full model indicated that the eight factor theoretical model provided a good fit to the data. However, the LaGrange Multiplier test indicated that six cross-group equality constraints should be dropped. Table 2 presents the goodness-of-fit summary for the reduced measurement

As table 2 indicates, the reduced model provides a good fit to the data. The NFI is above .90 and the NNFI and CFI are above .95. In addition, the RMSEA of .045 falls well within its standard of acceptance. Only the  $SB\chi^2/df$  ratio of 3.11 exceeds the upper threshold of acceptance. Releasing the noted cross-group equality constraints did not result in a loss of significant paths between manifest indicators and latent constructs nor covariances. Moreover, though not reported in Table 2, the goodness of fit indices for the reduced model provided significantly improved fit to the data in comparison to the full model where:  $\Delta SB\chi^2_{diff} = 15.54$ ;  $df = 6$ ,  $p < .05$ . Equating Intrinsic Motivation, External-Identified Regulation, Amotivation, and Introjected Regulation resulted in a much poorer fit where:  $\Delta SB\chi^2_{diff} = 1322.79$ ;  $df = 14$ ,  $p < .001$ , as did equating all eight factors where:  $\Delta SB\chi^2_{diff} = 6115.29$ ;  $df = 33$ ,  $p < .001$ , providing support for retaining these as distinct constructs.

We next separately tested the theoretical model depicted in Figure 1 for women and men. In both cases, the theoretical model provided a good fit to the data. Gender differences were addressed before simultaneously testing the theoretical model for women and men (Byrne 1994). These included setting the following paths to 0: 1) External-Identified Regulation to model and denotes each of the released constraints; 2) Introjected Regulation to Prior Cheating; 3) Amotivation to Neutralization; 4) Introjected Regulation to Neutralization; and, 5) Neutralization

to Cheating Likelihood. As the covariance between External-Identified Regulation and Amotivation was not significant for women, it too was constrained to 0. With these constraints in place, the theoretical model was tested for both groups simultaneously. This model provided good fit to the data as indicated by the fit indices, but the LaGrange Multiplier test indicated that six cross-group equality constraints should be released. Table 3 presents the goodness-of-fit summary for the reduced theoretical model and denotes each of the denoted constraints.

The fit indices for the reduced model are all in acceptable limits. The NFI is above .90 and the NNFI and CFI are above .95. In addition, the RMSEA of .045 falls well within its standard of acceptance. Again, only the  $SB\chi^2/df$  ratio of 3.07 exceeds the upper threshold of acceptance. Releasing the denoted cross-group equality constraints did not result in a loss of significant paths between manifest indicators and latent constructs nor covariances. Moreover, though not reported in Table 3, the goodness of fit indices for the reduced model provided significantly improved fit to the data in comparison to the full model where:  $\Delta SB\chi^2_{diff} = 85.03$ ;  $df = 6$ ,  $p < .001$ .

Table 4 reports the results from testing a nested sequence of models against the reduced theoretical model. First, the path from Amotivation to Prior Cheating was constrained to zero, resulting in a significant loss of fit where:  $\Delta SB\chi^2_{diff} = 8.91$ ;  $df = 1$ ,  $p < .01$ . The second model which constrained the path from Intrinsic Motivation to Cheating Likelihood to zero also resulted in a significant loss of fit where:  $\Delta SB\chi^2_{diff} = 21.69$ ;  $df = 1$ ,  $p < .001$ . Each of the successive constrained models also resulted in a significant loss of fit, thus indicating that the respective constrained paths should remain in the model.

Figure 2 shows path estimates for the accepted structural model for women and men. Intrinsic Motivation has a significant positive relation with Academic Performance ( $B = .099$ ) and significant negative relations with Prior Cheating ( $B = -.022$  for both men and women) and Neutralization ( $B_{Men} = -.081$ ;  $B_{Women} = -.295$ )<sup>5</sup>. For men only, External/Identified Regulation has a significant negative relation with Academic Performance ( $B = -.114$ ) and a significant positive relation with Prior Cheating ( $B = .036$ ). Introjected Regulation is positively related to Neutralization for women only ( $B = .208$ ). Amotivation has a significant negative relation with Academic Performance ( $B_{Men} = -.258$ ;  $B_{Women} = -.132$ ), significant positive relations with Prior Cheating ( $B = .029$  for both men and women) and Likelihood of Cheating ( $B = .139$  for both men and women), and a significant positive relation with Neutralization for women only ( $B = .106$ ). Academic Performance has a significant negative relations with Prior Cheating ( $B = -.046$  for both men and women) and Neutralization ( $B = -.134$  for both men and women). Prior Cheating has significant positive relations with Neutralization ( $B_{Men} = 3.769$ ;  $B_{Women} = 2.876$ ) and Likelihood of Cheating ( $B_{Men} = 3.189$ ;  $B_{Women} = 1.361$ ). Finally, Neutralization has a significant positive relation with Likelihood of Cheating for women only (.313). The remaining hypotheses were not supported.

<sup>5</sup> Separately reported path estimates for men and women indicate a statistically significant difference in the strength of the path estimate for each group determined by the Lagrange Multiplier test which indicated that the cross-group equality constraint for the respective path estimate should be released.

## Discussion

Overall, the resulting model from this study is quite similar to that developed by Smith and his colleagues (2009). There are three additional significant paths in this study not reported in the previous work. These are between Intrinsic Motivation and Prior Cheating, Academic Performance and Prior Cheating, and Introjected Regulation and Neutralization. In all cases, these paths are in the posited directions. The effect of Introjected Regulation is significant only for women. No paths were lost between the two studies, providing strong support for the Smith, et al., (2009) model.

The addition of three significant paths is best explained by the multi-sample analysis. The previous study assumed no differences between men and women, equating covariances across the variables between genders. It also didn't take into account possible differences in error variances across the samples. The multi-sample analysis tests for these differences. The greater number of degrees of freedom can allow significant paths to be demonstrated that otherwise would have been deemed non-significant (Bentler, 1995).

The relations between Intrinsic Motivation and Academic Performance indicate no inter-gender differences. Intrinsic Motivation has a direct positive relation with Academic Performance. Whether male or female, those who are more intrinsically motivated appear to have higher levels of academic performance. This is consistent with the definition of Intrinsic Motivation that states these individuals pursue activities based on their desire to learn and demonstrate their knowledge. Gender differences do appear when we examine the three remaining types of motivation.

External Identified Regulation (EIR) was posited to have a negative relation with Academic Performance and to be stronger for men. These hypotheses are supported. Interestingly, EIR did not enter the model for women. One possible explanation for this finding is that women may have difficulty distinguishing between Intrinsic Motivation and EIR. EIR is defined as "attributing personal value to a behavior while still being externally motivated" (Deci & Ryan, 2000, pp. 236-236). For women, that value is more likely to be internalized. Roxas and Stoneback (2004) argue women are concerned about doing tasks well and developing harmonious relationships while men focus on competitive success. It may be more difficult to focus on doing a task well and/or maintaining harmonious relationships from an extrinsic perspective. Competitive success may be more easily valued personally while the outcome of that success is extrinsically motivated.

In turn, Introjected Regulation (IR) is not related to Academic Performance for men or women. These results are similar to those reported by Smith et al. (2009). This may be accounted for by the size of the covariances between IR and Intrinsic Motivation (.377) and EIR (.227). Even with these somewhat large covariances, all three of the constructs have been shown to be distinct through exploratory and confirmatory factor analysis reported by Smith et al. (2008; 2009) and the confirmatory factor (measurement model) analysis in this study. Both Intrinsic Motivation and EIR had the posited relations with Academic Performance and Prior Cheating and indirect relations with Likelihood of Cheating. Given the size of the covariances between

these two constructs and IR, the explanatory power of IR may have been negated or subsumed by them. For example, IR behaviors are regulated somewhat internally, but motivated by some external outcome (e.g., earning an A in the course) (Deci & Ryan, 2000). Intrinsic Motivation behaviors are also internally regulated, but driven by the desire to know or do something for its own sake. Smith and his colleagues (2009) argue that the activities undertaken to obtain a valued outcome may have similarities to those undertaken due to a desire for knowledge. Both sets of activities would be consistent with better academic performance. The thing that keeps these two constructs distinct is the means to the outcome. IR motivated individuals may take short cuts (cheat) to get that A if they feel it is necessary. These short cuts will not help the intrinsic motivated achieve their goal.

As hypothesized, Intrinsic Motivation is negatively related to Prior Cheating for both women and men, but there is no significant inter-gender difference in the strength of this relationship. Thus the internal drive to learn equally impacts Prior Cheating behavior for both genders, reducing the need to cheat. In turn, Intrinsic Motivation is negatively related to Neutralization, as posited. Those who are intrinsically motivated have less need to engage in neutralizing behaviors. This is consistent with the lower levels of Prior Cheating. Also as posited, this relation is stronger for women (more negative) than for men. This supports the argument that women have less of a need to neutralize or justify their behavior. EIR is positively related to Prior Cheating, but again only for men. The direction of the relation is consistent with the hypothesis that individuals externally motivated are more likely to engage in unethical behaviors. As with Academic Performance, this form of motivation does not appear to impact the behavior of women. IR is not related to Prior Cheating for men or women. This is somewhat surprising. Based on Deci and Ryan's (2000) definition, this is a more extreme form of external motivation and, as such, should be a stronger indicator of unethical types of behavior. We find the opposite for IR as it relates to Neutralization. Women higher on IR engage in Neutralization. This path is not significant for men, suggesting women have a greater need to justify themselves when demonstrating this type of motivation. Even though it doesn't appear to be a driver of behavior (as measured here), IR motivated women seem to need to engage in neutralizing behaviors.

As hypothesized, Amotivation has a direct negative relation with Academic Performance and positive relations with Prior Cheating, Likelihood of Cheating and Neutralization. Gender differences occur for the paths between Amotivation and Academic Performance and Neutralization. Also as hypothesized, the path from Amotivation to Academic Performance is significantly more negative for men than for women. Amotivated men demonstrate lower Academic Performance than do women. This is not the case when we examine the paths from Amotivation to Prior Cheating and Likelihood of Cheating. In these cases the linkages to unethical behaviors are equal for Amotivated men and women. Finally, we find a significant path from Amotivation to Neutralization, but only for women. Again, as with IR, women who are Amotivated appear to have a need to engage in neutralizing behavior while men don't.

As hypothesized, Prior Cheating has strong positive relations with both Neutralization

and Likelihood of Cheating. Those who have engaged previously in cheating behavior are more likely to try and justify the behavior. Also consistent with prior research, prior unethical behavior is a good predictor of future unethical behavior (Nonis & Swift, 1998, p. 109). There are significant gender differences for the two paths. In both cases the path coefficients for women are statistically smaller. Women appear to be less likely to engage in neutralizing behavior to justify past unethical behavior. In turn, Prior Cheating Behavior is a much weaker indicator of future cheating behavior for women. Finally, Neutralization had a positive relation with Likelihood of Cheating, but only for women. They appear to use neutralizing behaviors to justify future cheating proclivities while men do not.

So far we have only looked at direct effects. It is also important to look at total effects which include both direct and indirect effects. For example, when calculating the total effects of Amotivation on Prior Cheating through Academic Performance we find a difference between men and women that is not present when looking only at the direct effects:

$$w = (-.132 \times -.046) + .029 = .035 \quad m = (-.258 \times -.046) + .029 = .041$$

These results are consistent with the hypothesis suggesting amotivated men have higher proclivities to report prior cheating but it occurs only when academic performance is also considered. Amotivated men with lower Academic Performance report higher levels of Prior Cheating. The total effects for Amotivation on Neutralization through Prior Cheating indicates a decrease in gender differences:

$$w = (.029 \times 2.876) + .106 = .189 \quad m = (.029 \times 3.769) + 0 = .109$$

While the relation between Amotivation and Prior Cheating is equal between women and men, and the path from Prior Cheating to Neutralization is much stronger for men, when considered together with the direct path from Amotivation to Neutralization, the differences are reduced considerably. The path from Amotivation to Likelihood of Cheating indicates no gender differences. But when the indirect effect of Amotivation through Neutralization is considered, a gender difference appears:

$$w = (.106 \times .313) + .139 = .172 \quad m = (0 \times 0) + .139 = .139$$

This suggests Amotivated women, with the help of Neutralization, are somewhat more likely to indicate a Likelihood of Cheating. Finally, while the gender difference is quite large for the path from Prior Cheating to Likelihood of Cheating, this difference is reduced when considering the indirect effect of Prior Cheating through Neutralization:

$$w = 2.876 \times .313 + 1.361 = 2.261 \quad m = (3.769 \times 0) + 3.189 = 3.189$$

Based on all of the above results, Neutralization appears to play a major role for women. Previous research suggests women are less able to neutralize or justify unethical behavior (Beau et al. 2003; Ritter, 2006; Vermier & Van Kenhove, 2007). This led us to hypothesize that women are less likely to use neutralizing behaviors. This study suggests the opposite. It may be because

women have more difficulty justifying unethical behavior they work harder at it, thus using more neutralizing behaviors. Interestingly, with the exception of a significant but relatively small path from Intrinsic Motivation to Neutralization, motivation does not appear to influence men in using neutralizing behaviors. There is a strong relationship for men between Prior Cheating and Neutralization, suggesting a need to justify past unethical behavior. But they do not seem to need to justify the possibility of future unethical behavior. It hasn't happened yet, therefore there is little need to rationalize it. This is not the case for IR and amotivated women.

### *Limitations*

All of the data were self-reported, introducing the possibility of response bias and under reporting of cheating behavior and neutralization. The issue of response bias is addressed when testing the measurement model (test of the theoretical independence by equating the eight constructs). The results did not indicate a significant response bias. Care was also taken to minimize additional concerns regarding self-reporting. Surveys were administered without the faculty member present and no form of identifying information was requested. The proctors explained that students' responses were completely anonymous and that only aggregate results would be reported. With regard to academic performance data, we had to rely on self-report rather than objective data (GPA) in order to protect anonymity. Given that this study did not focus on mean values, but rather on the inter-relationships among the constructs in the proposed model, these limitations are of minimal concern (Smith et al., 2002, p. 62).

The Wald test used to drop non-significant parameters from the theoretical model is a post-hoc test that capitalizes on the particular data set. It is not theory driven. As a result, to determine if the relations reported in this study hold replication with another sample is needed.

An additional limitation relates to the source of the data. Business students served as the subjects. Studies need to be conducted to determine whether these findings generalize to a broader population. A final limitation of the study is the cross-sectional nature of the data. While causal paths are implied in the structural model, strong causal statements cannot be made.

### **Conclusions**

In spite of the above limitations, the findings from this study warrant further attention. The results suggest there are differences between men and women but they lie primarily in the interaction between neutralization behaviors and specific motivational constructs. While the direct relations among the constructs suggest several gender differences, when total effects are considered some of the differences were attenuated while two differences were uncovered that were not found by only focusing on direct effects. Less sophisticated analyses would likely have missed the latter findings and over-estimated the differences from the direct effects analyses.

Previous research has not addressed differences between men and women on motivation or neutralization. In addition, reports of gender differences on ethical behavior have been inconsistent. As a result, there is little direct research to draw from to explain these findings. The communication literature tells us men are less likely than women to admit faults (Dainton &

Zelley, 2005). This may explain differences in the reliance on neutralization between men and women. One must admit there is a problem before attempting to fix it. Women who are extrinsically motivated use neutralization, regardless of whether the motivation is connected to behavior. This suggests women motivated by external outcomes may see this, by itself, a fault that needs to be, in some way, justified. The gender socialization literature provides some insight here. Through early socialization experiences women learned to value interpersonal relationships and care for others (Lever, 1977). Gilligan (1977) argued that women have an “injunction” to care for others. This is not the case for men. This socialized need to care for others may be in conflict with extrinsic motivation in which the focus is on gaining some external outcome of personal value. The means by which one does that may involve behaviors that could hurt others. Women seem to need to justify this external focus in which the concerns of others take a back seat, even if they aren’t engaged in more self-serving behaviors.

This internal conflict may limit women’s abilities to engage in political behaviors necessary to achieve advancement within organizations. While organizational politics exist and are often necessary and positive in terms of moving an organization forward, engaging in them is generally viewed as negative (Marshak, 2006, p. 146). Politics tend to be viewed as using power to advance one’s own interests (Marshak, 2006, p.146). The internal conflict between the socialized need to care for others and possibly (being seen as) using others to advance their own interests may inhibit women from engaging in politics. They may expend too much time and energy justifying the behavior even if the behavior could benefit the group or organization.

Further research is needed to replicate and understand the full meaning of the findings from this research. Clearly the relationship between gender and ethical behavior is far more complex than what has been addressed by previous research.

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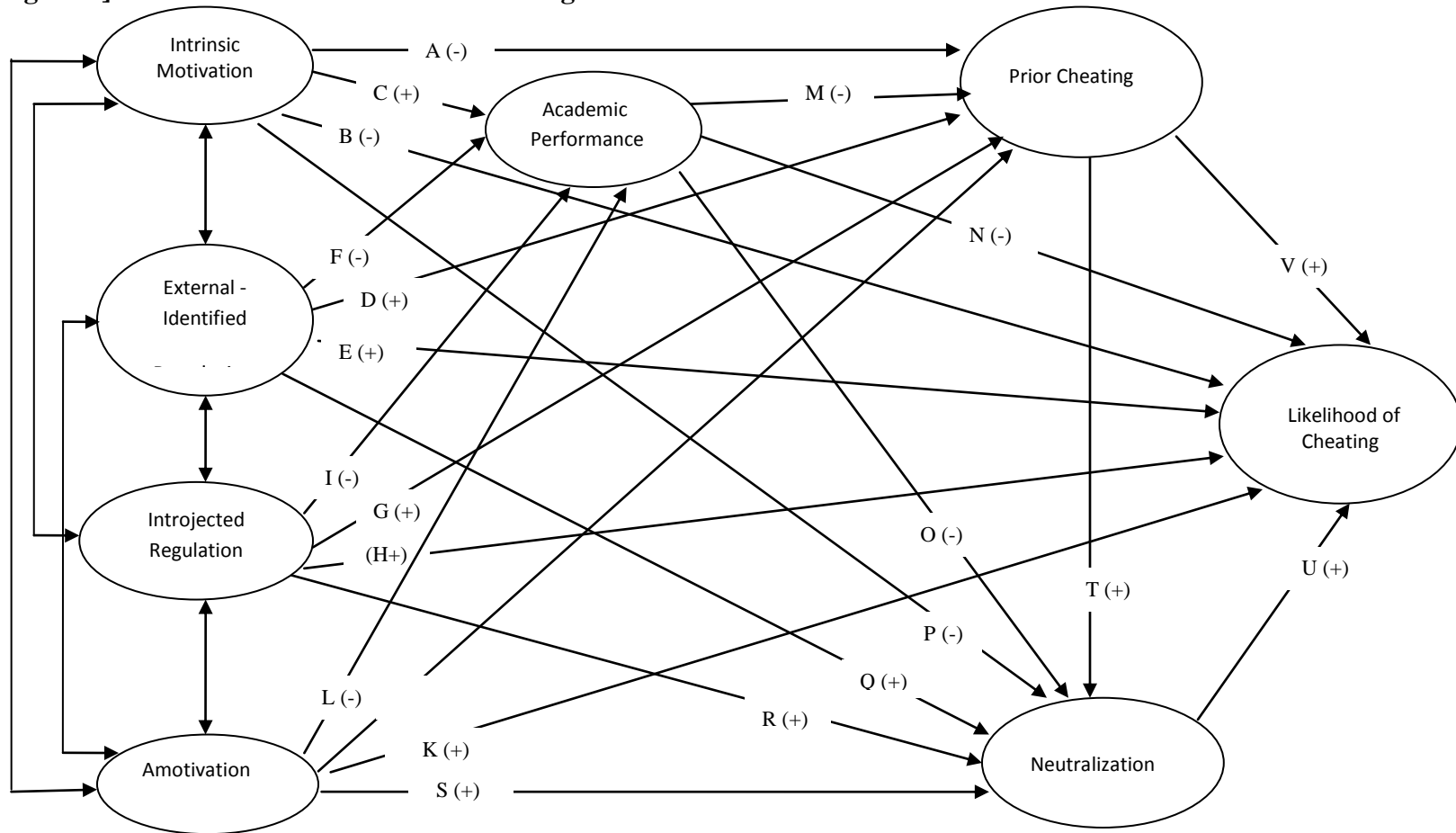
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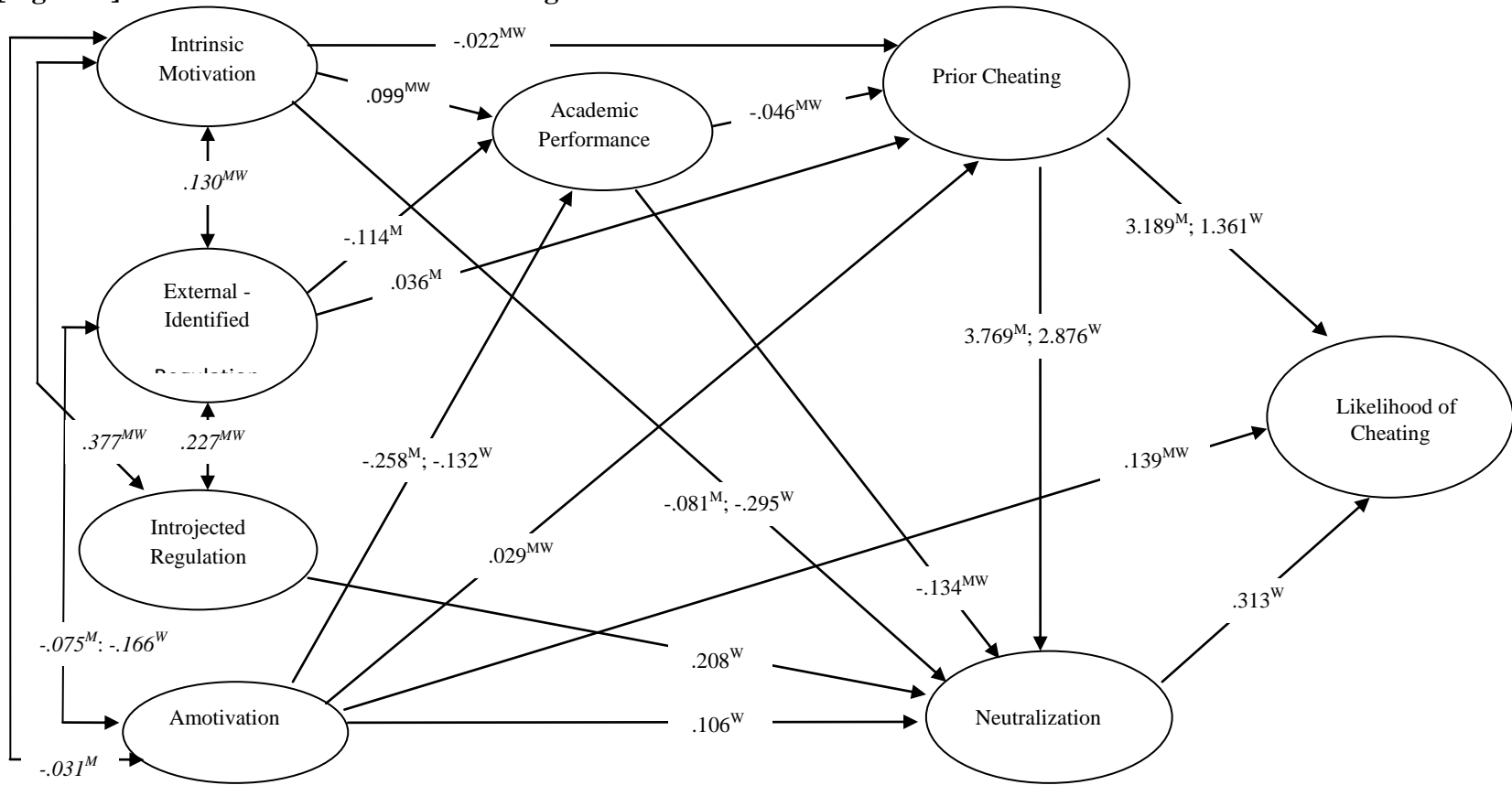
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[Figure 1] Theoretical Motivation and Cheating Model



Note: Paths with double-headed arrows represent covariances between independent latent variables.

[Figure 2] Reduced Motivation and Cheating Model Path Coefficients



Note: Path coefficients for the paths between External-Identified Regulation to Academic Performance and Intrinsic Motivation to Neutralization for men to Neutralization are statistically significant at  $p < .05$ , whereas all other path coefficients are significant at  $p < .01$ .

Italicized numeric values represent statistically significant at  $p < .05$  covariances between independent factors. *M* = Men; *W* = Women

**[Table 1] Factors for Measurement Model Tests**

<b>Latent Construct</b>	<b>Number of Observed Indicators</b>	<b><u>Model Test Results</u></b>	
		<b>Women (n = 1,140)</b>	<b>Men (n = 948)</b>
<i>Intrinsic Motivation</i>	2	$\mu = 2.860, \sigma = 0.821, \alpha = .752$	$\mu = 2.941, \sigma = 0.867, \alpha = .820$
<i>External-Identified Regulation</i>	2	$\mu = 3.974, \sigma = 0.758, \alpha = .802$	$\mu = 4.206, \sigma = 0.615, \alpha = .715$
<i>Amotivation</i>	4	$\mu = 1.669, \sigma = 0.869, \alpha = .883$	$\mu = 1.393, \sigma = 0.658, \alpha = .842$
<i>Introjected Regulation</i>	2	$\mu = 3.314, \sigma = 1.046, \alpha = .725$	$\mu = 3.588, \sigma = 0.979, \alpha = .725$
<i>Academic Performance</i>	2	$\mu = 3.441, \sigma = 0.667, \alpha = .843$	$\mu = 3.522, \sigma = 0.631, \alpha = .802$
<i>Prior cheating</i>	2	$\mu = 1.391, \sigma = 0.422, \alpha = .614$	$\mu = 1.304, \sigma = 0.344, \alpha = .500$
<i>Neutralization</i>	2	$\mu = 2.224, \sigma = 0.904, \alpha = .910$	$\mu = 1.964, \sigma = 0.798, \alpha = .900$
<i>Cheating Likelihood</i>	2	$\mu = 1.765, \sigma = 0.816, \alpha = .971$	$\mu = 1.488, \sigma = 0.677, \alpha = .944$

*Source:* Cronbach's alpha reliability computed to index the internal consistency of the measure. Values exceeding 0.70 are considered satisfactory (Nunnally, 1978).

**[Table 2] Measurement Model Goodness of Fit Summary**

	<b>Satorra-Bentler Scaled Results</b>	<b>Standard for Acceptance</b>
<i>Statistical Tests</i>		
Chi-Square	791	-
Df	254	-
p-value	.00	>.05
Chi-Square/df	3.11	<3.0
<i>Fit Indices</i>		
NFI	.945	>.90
NNFI	.954	>.90
CFI	.962	>.90
<i>Residual Analysis</i>		
RMSEA	.045	<.08
90% Confidence Interval of RMSEA	(.041 - .049)	

Note: The trimmed measurement model reflects the release of six cross group equality constraints between women and men. The dropped constraints were: 1) Amotivation3 – Amotivation; 2) Amotivation - External/Identified Regulation; 3) Neutralization –Prior Cheating; 4) Cheating Likelihood - External/Identified Regulation; 5) Cheating Likelihood – Prior Cheating; and, 6) Cheating Likelihood – Neutralization. By dropping these constraints, the degrees of freedom decreased from 260 to 254.

**[Table 3] Theoretical Model Goodness of Fit Test Results**

	<b>Satorra-Bentler Scaled Results</b>	<b>Standard for Acceptance</b>
<i>Statistical Tests</i>		
Chi-Square	779	-
Df	254	-
p-value	.00	>.05
Chi-Square/df	3.07	<3.0
<i>Fit Indices</i>		
NFI	.946	>.90
NNFI	.955	>.90
CFI	.963	>.90
<i>Residual Analysis</i>		
RMSEA	.045	<.08
90% Confidence Interval of RMSEA	(.041 - .048)	

Note: The trimmed theoretical model reflects the release of six cross group equality constraints between women and men. The dropped constraints were: 1) Amotivation 3 – Amotivation; 2) Amotivation - External/Identified Regulation; 3) Academic Performance – Amotivation; 4) Neutralization – Intrinsic Motivation; 5) Neutralization – Prior Cheating; and, 6) Cheating Likelihood – Prior Cheating. By dropping these constraints, the degrees of freedom decreased from 260 to 254.

[Table 4] Nested Model Comparison Test Results

Model	Regular $\chi^2$	S-B scaled $\chi^2$	df	$\chi^2/df^a$
Trimmed Theoretical Model	941.48	779.86	254	NA
Path from Amotivation to Prior Cheating constrained to zero	967.48	796.97	255	8.91*
Path from Intrinsic Motivation to Cheating Likelihood Constrained to zero	984.39	813.37	255	21.69**
Path from Intrinsic Motivation to Prior Cheating Constrained to zero	952.98	791.17	255	22.48**
Path from Intrinsic Motivation to Neutralization constrained to zero	970.87	805.45	256	30.39**
Path from Intrinsic Motivation to Performance constrained to zero	962.92	798.95	255	30.86**
Path from Amotivation to Academic Performance constrained to zero	1029.78	853.07	256	78.84**

<sup>a</sup>The  $\chi^2/df$  statistics reported in this column were calculated manually using the Satorra-Bentler Scaled  $\chi^2$  difference test (Satorra and Bentler, 2001, p. 511), the formula for which is,

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

Where:

$$\Delta\chi^2 = \chi_1^2 - \chi_2^2$$

-  $\chi_1^2$  is the chi-square for model 1

-  $\chi_2^2$  is the 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

-  $c_1 = \frac{\chi_1^2}{\chi_{SB1}^2}$ ;  $\chi_{SB1}^2$  is the Satorra-Bentler  $\chi^2$  for model 1

-  $c_2 = \frac{\chi_2^2}{\chi_{SB2}^2}$ ;  $\chi_{SB2}^2$  is the Satorra-Bentler  $\chi^2$  for model 2

\*p< .01 \*\*p< .001

