Illegal, Inappropriate, and Unethical Behavior in an Information Technology Context: A Study to Explain Influences

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Abstract

A recent study by Banerjee et al. (1998) proposed and tested an information technology (IT) ethics model. They found that personal normative beliefs, organizational ethical climate, and organization-scenario were significant indicators of ethical behavioral intention. Moreover, they found that factors affecting ethical intention are situational and depend upon the ethical dilemma. Further research was suggested and recommended, among other things, replications with different samples. The present study furthers the development/validation of the IT ethical model by utilizing a large sample of students in the same organizational climate (a university).

Moreover, based on previous studies, gender is introduced to the model. The present study, as in previous studies, found that personal normative beliefs and scenario (situation) are indicators of ethical behavior intention. However, this study found that attitude toward ethical behavior, ego strength, relative preference for principled reasoning over conventional and pre-conventional reasoning, and gender are additional significant indicators of ethical behavior intention.

Keywords: Ethics, ethical behavior.

I. INTRODUCTION

The use of computers in today's business decisions has both revolutionized and benefitted businesses. Yet, misuse of computers and unethical behavior related to computer application systems has resulted in serious losses to business and society. Studies have indicated that losses as a result of computer crime have reached billions of dollars each year. While individuals may focus on privacy and security, business and IS professionals are concerned about the inappropriate, illegal, and unethical use of computers.

Several articles have focused on the area of computer ethics (Aiken 1988; Conner and Rumelt 1991; Couger 1989; Heide and Hightower 1988; Oz 1990; Paradice 1990; Saari 1987; Straub and Nance 1990; Zalud 1984). As a result, direct/preventive measures (enhanced security, prompt and fair reporting, and tougher sanctions) and indirect/deterrent measures (establishing and implementing codes of conduct for information systems (IS) professionals, identifying ethical issues in using computers, and including ethical issues in the curriculum for IS majors) have been supported (Couger 1984; Parker 1980, 1988; Straub 1986). Bommer et al. (1987) and Trevino (1986) both developed models of ethical decision making and considered specific factors as influencers to ethical decision making. However, neither of these models were tested.

Banerjee et al. (1998) recently indicated that individual and situational characteristics do influence ethical behavior intention. In their comprehensive

article, they propose a model for the ethical behavior of IS personnel (IT ethics). Their model is developed using attitude, ethical behavior, and moral development research. Using the theory of planned behavior (TPB) (Ajzen 1985, 1989, 1991) and the theory of reasoned action (TRA) (Fishbein and Ajzen 1975), Banerjee et al. (1998) developed and tested an IT ethical behavior model on information systems (IS) personnel. Their IT ethical model (Figure 1) used moral judgment, attitude toward ethical behavior, and personal normative beliefs as variables that affect an individual's intention to behave ethically/unethically. In addition, ego strength, locus of control, and organizational ethical climate were tested as moderator variables.[1] After collecting 261 observations where two of seven ethical scenarios were used in each company, Banerjee et al. (1998) tested their IT ethical model. The study's sample focused exclusively on IS personnel. Many of the variables were found not to be statistically significant. Only personal normative beliefs, organizational ethical climate, and the organization-scenario (an indicator variable controlling for the scenario and company) were found to be significant. The study reports that this could be the result of a small sample size.

Recently, Kreie and Cronan (1998) developed and tested a model to determine why a behavior (based on a hypothetical scenario) was judged as ethically acceptable or unacceptable. Their model, based on Bommer et al., used the following factors: (1) environment, (2) personal values, (3) characteristics of the individual, (4) moral obligation, (5) awareness of consequences, and (6) ethical scenario. After collecting over 300 observations from students in various computing classes, moral obligation and awareness of consequences were found to be significant indicators of whether an act (described in a scenario) was judged as acceptable or unacceptable. Moral judgment was not statistically significant in the Banerjee et al model, but it was significant in Kreie and Cronan's model.

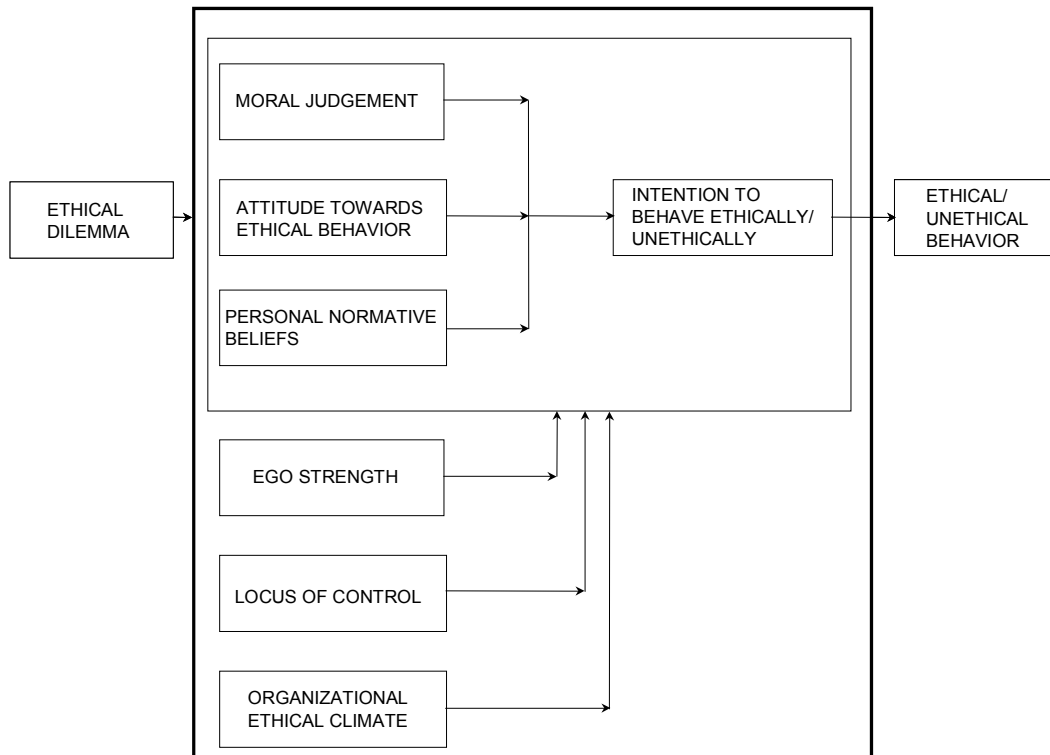[1]Variables will be explained in the following section.

**Figure 1. Ethical Behavior of Information Systems Personnel
(from Banerjee et al. 1998)**

In addition, the study by Kreie and Cronan noted different variables in models for women as compared to models for men. While Dawson (1997) found that relational issues create differences between men and women, Deshpande (1997) and Loch and Conger (1996) also found differences between men and women given the situation. Consequently, the sex of the individual may also be a significant factor that could influence the IT ethical behavior intention as studied in Banerjee et al. (1998). In a separate study, Banerjee et al. (1996) also indicated that there are differences between men and women (i.e., men behave more unethically).

The objective of this research is to further explore characteristics that could influence and explain ethical behavior with respect to IT applications. The present study further develops the IT ethical model by validating the model of Banerjee et al. (1996) using a large sample within one environment (organizational climate) that

includes both IT and non-IT future professionals. Thus, by using a larger sample of IT and non-IT future professionals, this study could further explain behavior when faced with IT-based ethical dilemmas. Moreover, the present study includes gender as a possible explanation of IT ethical behavior which should be included in the IT ethical model. Banerjee et al.'s (1998) study collected a sample of 139 responses from IS professionals, for a total of 261 observations, across six organizations. Couger et al. (1994) noted that employees differ from other fields' employees and differ among themselves based on culture. Therefore, by using a larger sample in the same organizational climate, the IT ethical model may be validated.

II. RESEARCH DESIGN

For this research, the functional representation of the present research model based on Banerjee et al.'s (1998) IT ethical model is expressed as:

$$B = f (EBI)$$

$$EBI = f (A, PNB, ES, LOC, MJ, SCEN)$$

where: **B** = **Ethical/Unethical Behavior**,

EBI = **Ethical Behavior Intention**—The intention to behave ethically/unethically is an individual's intention to perform/not perform a specific behavior (Banerjee et al. 1998). Intention captures the factors that affect an individual's behavior and is an antecedent of actual ethical/unethical behavior (Ajzen 1989),

A = **Attitude Toward Ethical Behavior**—Attitude toward ethical behavior is an individual's degree of favorable/unfavorable evaluation of the behavior in question. Fishbein and Ajzen (1975) indicate that attitude is dependent on the beliefs held and evaluated by an individual,

PNB = **Personal Normative Beliefs**—Personal normative beliefs is the individual's moral obligation to perform an act (Banerjee et

al. 1998). Ajzen and Fishbein (1969) indicate that personal normative beliefs substantially contributes to the explanation of variance in the intention to behave ethically/unethically,

ES = **Ego Strength**—Ego strength is an individual's strength of conviction. Trevino (1986) suggests the inclusion of ego strength as a moderator variable for explaining the intention to behave ethically/unethically. Therefore, ego strength is suggested to interact with other variables, moderating the relationship among situational variables and ethical/unethical behavior. Individuals with high ego are expected to follow their convictions and resist their impulses more than individuals with low ego,

LOC = **Locus of Control**—Locus of control is the degree to which an individual perceives that his/her attributes/ behavior lead to a reward or sanction as opposed to the result of outside forces (Banerjee et al. 1998). Trevino (1986) also identifies locus of control as a moderator variable for explaining the intention to behave ethically/unethically. Therefore, locus of control is suggested to interact with other variables, moderating the relationship among situational variables and ethical/unethical behavior. Individuals with an internal locus of control believe their life events are determined by their own behavior, whereas individuals with an external locus of control believe their life events are determined by forces outside of their control,

MJ = **Moral Judgement**—Moral judgement is the way an individual reasons when faced with a moral dilemma. This reasoning depends on the individual's current stage of moral development (Banerjee et al. 1998). Kohlberg (1969, 1971, 1976, 1980, 1984, 1985) identifies human development stages.

According to his studies, an individual's reasoning when faced with a moral dilemma depends on his/her stage of moral development, and

SCEN = **Organizational Ethical Scenario**—Organizational ethical scenario is a control variable used to reduce the experimental error variance. Banerjee et al. (1998) suggest that a specific scenario (situation) could lead to different levels of ethical/ unethical behavior intention, meaning that situational ethics could be a factor.

To further the IT ethical model, the functional representation of the modified IT ethical model, which includes gender, is expressed as:

$$B = f (EBI)$$

$$EBI = f (A, PNB, ES, LOC, MJ, SCEN, GEN)$$

where: **GEN** = **Gender**—Gender identifies the individual as male/female. Kreie and Cronan (1998), Banerjee et al. (1996), Dawson (1997), Deshpande (1997), and Loch and Conger (1996) suggest that the individual's gender could be an indicator of ethical/unethical behavior intention, and all other variables remain as above.

Variable definitions are summarized in Appendix A. Moral judgement, attitude toward ethical behavior, and personal normative beliefs are tested as the variables that influence the intention to behave ethically/unethically. Attitude toward ethical behavior and moral judgement, not statistically significant in the Banerjee et al. (1998) model, are retained in the present research model since they are part of the theoretical, behavioral models (TRA and TPB). Personal normative beliefs was a statistically significant factor in the Banerjee et al. model.

As in previous studies, ego strength and locus of control are tested as moderator variables. Moderator variables are variables that could modify the strength and the relationship between ethical behavior intention and the other variables in the study. In order to test these, levels of each moderator variable must

be defined. Just as in the previous studies, respondents were classified as either strong ego or weak ego. Strong ego (people who resist impulses and follow their convictions) was approximately the top one-third of the scores, and weak ego (people who follow their impulses) was the bottom one-third. Also, locus of control was classified as either internal control (people who believe that events in their lives are determined by their own behavior and effort) or external control (people who believe that events in their lives are determined by fate, chance, and other forces that are beyond their control) in the same manner. Ego strength and locus of control, not statistically significant in the IT ethical model (Banerjee et al. 1998), remain in the present research model in order to further test the theoretical, IT ethical model. Gender is introduced in the present research model as a possible indicator of behavioral intention as proposed in previous studies (Banerjee et al. 1996; Dawson 1997; Deshpande 1997; Kreie and Cronan 1998). Organizational ethical climate (the ethical culture of the organization as perceived by the individual (Banerjee et al. 1998)), previously significant, becomes constant and is not included in the present research model given that there is only one organization (a university) for this sample. (Note: the Banerjee et al. study was conducted for six organizations and, therefore, could test for differences in organizational climate.)

METHOD

A questionnaire was used to measure variables previously discussed and to capture each respondent's intention to behave ethically/unethically for five computing scenarios. For consistency, five of the seven scenarios used in the Banerjee et al. (1998) study are used in the present study. Kreie and Cronan also used these same five scenarios. The present study had the respondents utilizing all five scenarios in the study. The scenarios (Banerjee et al. 1998) deal with issues such as privacy, accuracy, property, and accessibility (Mason 1986) faced by computer professionals.

As in Banerjee et al. (1998), the instrument utilized a number of previously validated instruments and measures. Appendix B contains a summary of the instruments and measures used for each variable with references, and Appendix C contains the IT ethical scenarios and items used to measure attitude, intention, and personal normative beliefs.

The variable measures are as follows:

Ethical Behavior Intention. The intention to behave ethically/unethically is measured with a single item on a seven-point semantic differential scale with highly probable/highly improbable as anchors (refer to Appendix C). This item is posed on all five scenarios. Fishbein and Ajzen (1975) indicate that semantic differential scales yield a highly reliable measure of intentions.

Attitude Toward Ethical Behavior. Attitude toward ethical behavior is measured using one item on a dichotomous scale (Ajzen 1985, 1989, 1991). Banerjee et al. (1998) used three questions on a seven-point semantic differential scale. A subsequent validation of the one question of attitude toward ethical behavior when compared to the three questions used by Banerjee et al. indicated a strong correlation. Therefore, one question was used to measure attitude toward ethical behavior (refer to Appendix C). Again, this item is questioned on all five scenarios.

Personal Normative Beliefs. Personal normative beliefs is measured with one item on a five-point semantic differential scale with no obligation/strong obligation as anchors (refer to Appendix C). This item is also requested on all five scenarios. Schwartz and Tessler (1972) indicate this measure of personal normative beliefs as a good predictor of the intention to behave ethically/unethically when using scenarios.

Ego Strength. The fourth sub-scale of Barron's ego strength scale is used to measure ego strength (Barron 1953). Eleven items on a yes/no scale are used to assess one's strong/weak ego strength.

Locus of Control. Rotter's (1966) instrument is used to measure locus of control. A total of 29 items are used to assess one's internal/external locus of control.

Moral Judgement. Rest's (1988) Defining Issues Test (DIT) is an objective measure of moral reasoning development. Three situations are presented in which a number of questions related to that situation are to be answered. Several indices reflecting moral judgement are computed with DIT: P-score, D-score, and U-score. These scores reflect the amount of reasoning individuals hold at various stages of Kohlberg's moral development theory. The P-score is an individual's stand with respect to principled morality. The D-score is an individual's rating of specific questions with regard to their importance in defining the situation in the context of a particular ethical dilemma. The U-score is the degree to which moral judgements operate in determining a decision on a particular ethical dilemma.

Organizational Ethical Scenario. Organizational ethical scenario is a control variable and is based on the scenario being judged (refer to Appendix C). Since five scenarios are used, the range is from one to five.

Gender. Gender is measured with a single demographic item, male or female.

SAMPLE

A sample was selected from students in computing classes at a Midwestern university in the United States (one organization). There were a total of 423 survey responses for each scenario. Consequently, with each student responding to five scenarios, the overall data set had 1,995 observations, after the removal of incomplete responses. The sample was 48.2% female (51.2% male). In the sample, the average age was 21.9 years with an average GPA of 3.088. The average work experience for these students was two years with 55% having no work experience. Of the students in the sample 54.8% were juniors and seniors.

Table 1 presents summary information for ethical behavior intention by scenario. The ethical intention means ranged from 3.08 (more intent to behave unethically) for scenario three to 5.35 (more intent to behave ethically) for scenario one. Table 2 presents summary information for behavioral intention for males and females within each scenario. A review of Table 2 indicates that there is some variation in ethical intentions (given these scenarios) for men as compared to women. For example, men indicate a higher probability (57%) of using the employer's computer system on weekends to develop applications for friends than do women (42%) in scenario 3. Across all scenarios, women had a greater intent of acting ethically. This variation in ethical intentions by gender provides further support for including gender as a variable in the IT ethical model.

Table 1. Ethical Behavior Intention by Scenario[a]

Behavioral Intention	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	All Scenarios
1 (highly probable)	6.81%	21.18%	28.61%	7.18%	5.44%	13.93%
2	7.06%	16.26%	21.39%	10.00%	9.59%	12.88%
3	7.54%	9.36%	15.67%	11.54%	11.14%	11.03%
4	7.79%	10.84%	9.70%	13.33%	12.69%	10.83%
5	8.27%	10.34%	7.46%	13.08%	12.18%	10.23%
6	18.98%	14.29%	6.97%	20.77%	14.51%	15.09%
7 (highly improbable)	43.55%	17.73%	10.20%	24.10%	34.46%	26.02%
Mean	5.35	3.87	3.08	4.74	4.98	4.40
Sample Size	411	406	402	390	386	1995

[a]The means are on a scale of 1 to 7. Smaller values of behavioral intention indicate a greater intent to behave unethically, while larger values indicate a greater intent to behave ethically.

Table 2. Ethical Behavior Intention by Gender and Scenario[a]

Behavioral Intention	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1 (highly probable)	7.48%	5.18%	29.58%	11.46%	35.89%	20.94%	9.36%	4.84%	5.97%	4.89%
2	7.94%	6.22%	16.43%	16.67%	22.01%	20.94%	10.34%	9.14%	11.94%	6.52%
3	13.08%	1.55%	9.39%	9.38%	12.92%	17.80%	14.78%	7.53%	11.44%	10.87%
4	6.07%	9.84%	7.98%	14.06%	9.09%	10.47%	14.78%	11.83%	14.93%	10.33%
5	9.81%	6.22%	8.45%	12.50%	7.66%	7.33%	14.78%	11.29%	11.44%	13.04%
6	16.36%	22.28%	12.21%	16.67%	4.31%	9.95%	17.73%	24.19%	12.44%	16.85%
7 (highly improbable)	39.25%	48.70%	15.96%	19.27%	8.13%	12.57%	18.23%	31.18%	31.84%	37.50%
Mean	5.09	5.67	3.50	4.27	2.76	3.42	4.41	5.12	4.79	5.21
Sample Size	214	193	213	192	209	191	203	186	201	184

[a] The means are on a scale of 1 to 7. Smaller values of behavioral intention indicate a greater intent to behave unethically, while larger values indicate a greater intent to behave ethically.

III. RESULTS

IT ETHICAL MODEL

Using regression analysis, a model was developed to test the relative importance of each independent variable on the intention to behave ethically/ unethically. The significance level was set at 10% ($\alpha = .10$).

The full regression model (including all variables except gender) was statistically significant (p-value = .0001) and explained 58.6% of the variation of ethical behavior intention. The contribution of each independent variable indicated that *attitude toward ethical behavior* (p-value = .0001), *personal normative beliefs* (p-value = .0001), *ego strength* (p-value = .0001), *D-score* component of moral judgement (an individual's rating of specific questions with regard to their importance in defining the situation in the context of a particular ethical dilemma) (p-value = .0021), and *scenario* (p-value = .0400) were statistically significant. This suggests that the significant variables are associated with a person's intention to behave ethically/unethically. However, locus of control, P-score (a component of moral judgement which deals with an individual's stand with respect to principled morality), and U-score (a component of moral judgement which deals with the degree to which moral judgements operate in determining a decision on a particular ethical dilemma) were not found to have significant primary effects on ethical intention.

The full regression model determined which variables had a primary effect on the intention to behave ethically or unethically. According to the results of the IT ethical model, the overall strength of the relationship between the dependent variable (ethical behavior intention), and the independent variables (attitude toward ethical behavior, personal normative beliefs, and moral judgement) could be moderated by the level of locus of control and ego strength.

The presence of a moderator variable was determined by testing the equality of regression models (using Chow's test) across the various levels of the moderator variable. A statistically significant test indicates that the form and the strength of the

relationship between ethical behavior intention and the independent variables is modified by the levels of the moderator variable.

Locus of control did not appear to be a moderating variable. The external and internal locus of control reduced regression models were statistically significant (p-value = .0001, .0001) and explained 62% and 56% of the variation in ethical behavior intention, respectively. In the external locus of control model, attitude toward ethical behavior (p-value = .0001), personal normative beliefs (p-value = .0001), and scenario (p-value = .0016) were significant. In the internal locus of control model, attitude toward ethical behavior (p-value = .0001), personal normative beliefs (p-value = .0001), and D-score (p-value = .0038) were significant. Testing locus of control for equality of the regression models (Chow test) did not show statistical significance (p-value > .25). Therefore, locus of control does not moderate attitude toward ethical behavior, personal normative beliefs, and moral judgement in determining whether a person intends to behave ethically or unethically. Table 3 summarizes the locus of control moderator statistics for the present study.

Ego strength did appear to be a moderating variable. The reduced regression models for strong and weak ego strength were statistically significant (p-value = .0001, .0001) and explained 56% and 55% of the variation in ethical behavior intention, respectively. In the strong ego strength model, attitude toward ethical behavior (p-value = .0001), personal normative beliefs (p-value = .0001), and scenario (p-value = .0785) were significant. In the weak ego strength model, attitude toward ethical behavior (p-value = .0001), personal normative beliefs (p-value = .0001), and P-score (p-value = .0178) were significant. Testing ego strength for equality of the regression models (Chow test) did show statistical significance (p-value < .01). Therefore, ego strength is an important moderator in determining whether a person intends to behave ethically or unethically. The ego strength moderator statistics for the present study are summarized in Table 4.

Table 3. Ethical Behavior Model: Locus of Control Moderator

Variable	df	F Value	Pr > F	R^2
External Locus of Control (n = 607)	6	163.29	.0001*	.62
Attitude Toward Ethical Behavior	1	294.84	.0001*	
Personal Normative Beliefs	1	125.29	.0001*	
P-Score	1	0.28	.5958	
D-Score	1	0.20	.6545	
U-Score	1	0.11	.7414	
Scenario	1	10.07	.0016*	
Internal Locus of Control (n = 749)	6	154.49	.0001*	.56
Attitude Toward Ethical Behavior	1	293.01	.0001*	
Personal Normative Beliefs	1	101.87	.0001*	
P-Score	1	1.52	.2178	
D-Score	1	8.43	.0038*	
U-Score	1	1.89	.1692	
Scenario	1	0.55	.4596	
Combined Locus of Control (n = 1,351)	6	313.35	.0001*	.58
Attitude Toward Ethical Behavior	1	569.86	.0001*	
Personal Normative Beliefs	1	235.13	.0001*	
P-Score	1	0.99	.3204	
D-Score	1	4.13	.0423*	
U-Score	1	1.20	.2744	
Scenario	1	7.09	.0078*	

*Statistically significant (α = .10)
Moderating F-statistic: F = 3.079; df = 2, 1342; p-value > .25.

Table 4. Ethical Behavior Model: Ego Strength Moderator

Variable	df	F Value	Pr > F	R²
Strong Ego (n = 594)	6	124.32	.0001*	.56
Attitude Toward Ethical Behavior	1	243.24	.0001*	
Personal Normative Beliefs	1	106.66	.0001*	
P-Score	1	2.69	.1018	
D-Score	1	0.67	.4138	
U-Score	1	0.00	.9959	
Scenario	1	3.11	.0785*	
Weak Ego (n = 533)	6	107.24	.0001*	.55
Attitude Toward Ethical Behavior	1	245.44	.0001*	
Personal Normative Beliefs	1	69.83	.0001*	
P-Score	1	5.65	.0178*	
D-Score	1	1.34	.2483	
U-Score	1	0.27	.6061	
Scenario	1	0.44	.5097	
Combined Ego (n = 1127)	6	246.81	.0001*	.57
Attitude Toward Ethical Behavior	1	488.60	.0001*	
Personal Normative Beliefs	1	196.24	.0001*	
P-Score	1	1.24	.2654	
D-Score	1	4.67	.0309*	
U-Score	1	0.06	.8133	
Scenario	1	2.93	.0870*	

*Statistically significant (α = .10)
Moderating F-statistic: F = 7.349; df = 7, 1113; p-value < .01*.

Table 5 compares the results of the present study to the Banerjee et al. (1998) study for the full regression model (with seven independent variables), as well as the reduced regression models (with five independent variables) for strong and weak ego strength and external and internal locus of control. The Banerjee et al. (1998) study found personal normative beliefs, organization-scenario, and organization ethical climate to be significant indicators of behavioral intention in the full regression model, while the present study found attitude toward ethical behavior, personal normative beliefs, ego strength, relative preference for principled reasoning over conventional and preconventional reasoning (i.e., D-score compo-

nent of moral judgement), and scenario to be significant. In the reduced regression models, differences also exist between the two studies. For the ego strength moderator, Banerjee et al. (1998) indicated no difference was found between strong ego and weak ego, while in the present study a difference was found between strong ego and weak ego. Moreover, in their study, strong ego identified only personal normative beliefs and organization-scenario to be significant indicators of behavioral intention, whereas the present study found attitude toward ethical behavior, personal normative beliefs, and scenario to be significant. Weak ego for Banerjee et al. (1998) indicated organization-scenario to be significant; the present study indicated attitude toward ethical behavior, personal normative beliefs, and P-score to be significant.

Neither study found a difference between external locus and internal locus for the locus of control moderator, but differences were found in the significant variables for the two studies. Banerjee et al. (1998), for external locus, found organization-scenario, D-score, and U-score to be significant indicators of behavioral intention, whereas the present study found attitude toward ethical behavior, personal normative beliefs, and scenario to be significant. Internal locus for Banerjee et al. (1998) identified P-score and organization-scenario as being significant; the present study identified attitude toward ethical behavior, personal normative beliefs, and D-score as being significant.

The results of the present study indicate impressive improvements in the R-squared of all the regression models as compared to previous studies. The full regression model in the present study has an R-square of .586 compared to .406 in the Banerjee et al. (1998) study. Moreover, the explananatory power of all reduced models in the present study has improved. This suggests that the variables in the regression models of the present study explain more of the total variation in ethical behavior intention than previous models. Stated differently, ethical behavior intention can be explained by a variety of factors. These findings should be of interest to management.

Table 5. Comparison of Statistical Results

Analysis	Banerjee et al. (1998) Study		Present Study	
	Significant Variables, $\alpha = .10$	R^2	Significant Variables, $\alpha = .10$	R^2
Full Regression Model (seven independent variables)	— Personal Normative Beliefs — — Organization-Scenario Organization Ethical Climate	.406	Attitude Toward Ethical Behavior Personal Normative Beliefs Ego Strength D-score Scenario —	.586
Reduced Regression Model—Moderator Variable (five independent variables)				
Ego Strength >**Strong Ego**	*No Difference (Strong/Weak)* — Personal Normative Beliefs Organization-Scenario	.514	*Difference (Strong/Weak)* Attitude Toward Ethical Behavior Personal Normative Beliefs Scenario	.56
>**Weak Ego**	— — — Organization-Scenario	.428	Attitude Toward Ethical Behavior Personal Normative Beliefs P-score —	.55
Locus of Control >**External Locus of Control**	*No Difference* *(External/Internal)* — — Organization-Scenario D-score U-score	.434	*No Difference* *(External/Internal)* Attitude Toward Ethical Behavior Personal Normative Beliefs Scenario — —	.62
>**Internal Locus of Control**	— — — P-score Organization-Scenario	.504	Attitude Toward Ethical Behavior Personal Normative Beliefs D-score — —	.56

However, the findings of this study are not consistent with previous studies. While Banerjee et al. (1998) indicates statistical significance for personal normative beliefs only, this study indicates statistical significance for most variables in the IT ethical model and further indicates that ego strength is a moderator variable. This may have resulted from the increased sample size of the present study, as well as the constant organizational climate of the sample. Banerjee et al. (1998) sampled IS professionals from a number of organizations. Since the present research study's sample is students from one organization, not as many varying organizational influences may be apparent.

MODIFIED IT ETHICAL MODEL

Using regression analysis, the modified IT ethical model with behavioral intention as the dependent variable was also analyzed to determine the effect of the independent variables, by adding gender as an independent variable. Again a 10% significance level (α = .10) was used. Table 2 presented summary statistics for ethical behavior intention by gender. Women had a greater intention to behave ethically than men in this study.

The modified IT ethical model using gender was statistically significant (p-value = .0001) and explained 58.9% of the variation of ethical behavior intention. The contribution of each independent variable showed that *attitude toward ethical behavior* (p-value = .0001), *personal normative beliefs* (p-value = .0001), *ego strength* (p-value = .0001), *gender* (p-value = .0003), relative preference for principled reasoning over conventional and preconventional reasoning (i.e., *D-score* component of moral judgement) (p-value = .0051), and *scenario* (p-value = .0404) were statistically significant. This suggests that these significant variables are associated with a person's intention to behave ethically/unethically, while locus of control and P-score and U-score (components of moral judgement) are not considered to have significant primary effects.

IV. DISCUSSION AND CONCLUSIONS

The results of the present study further validate the IT ethical model. The findings indicate that the significant characteristics that explain the intention to behave ethically/unethically are attitude toward ethical behavior, personal normative beliefs, ego strength, scenario, gender, and relative preference for principled reasoning over conventional and pre-conventional reasoning (i.e., D-score component of moral judgement). These results indicate that the intention to behave ethically/unethically can be explained by one's attitude toward the ethical behavior (acceptable or unacceptable), by one's moral obligation toward performing an act (i.e., personal normative beliefs), by an individual's strength of conviction (i.e., ego strength), the importance of questions in defining the situation (i.e., D-score), the gender of the individual, and the scenario itself. Further, ego strength is a moderating variable in the present research study. Therefore, there are significant differences between the strong ego strength IT ethical model and the weak ego strength IT ethical model. The intention to behave ethically/unethically is indirectly influenced by the ego strength level of the individual, which indicates that the levels of ego strength do modify ethical behavior intention.

Given that the present study's sample consists entirely of students from one organization and that the present study's sample is students, age and experience can account for differences in significant variables. Also the present study used the same five scenarios for all respondents, whereas Banerjee et al. (1998) used two of seven chosen scenarios for each individual company. Therefore, given the increased number of observations and the constant climate (a university), some variables appear to make a difference.

Moreover, the present study has attempted to eliminate some of the weaknesses of the previous studies. First, Banerjee et al. (1998) had a relatively small sample, whereas the present study has 423 subjects for five scenarios (1,995 usable observations). Banerjee et al. (1998) also focused exclusively on IS personnel. The present study allows for a more diverse population to determine

whether the ethical behavior intention model explains behavioral intention for a sample of university students. Finally, the present study includes gender as a possible influence on ethical behavior intention. Gender was found to be a significant indicator of one's intention to behave ethically/unethically.

The understanding of the ethical behavior of employees and the specific characteristics that affect ethical behavior is necessary in order to provide management with guidelines for preventing ethical problems. This study has identified those factors that affect ethical behavior intention. In this study, the individual's degree of favorable evaluation of the behavior, their moral judgment and individual reasoning, the obligation to do something about the act, the individual's strength of conviction, their gender, and the situation (scenario) are factors that explain the intention to behave ethically/unethically. In general, these are consistent with Kohlberg's (1969, 1971, 1976, 1980, 1984, 1985) theory and Fishbein and Ajzen's (1975) theory.

Training programs, such as seminars on IT ethical issues, could be used to influence an individual's moral development—the goal being the reduction in computer misuse. Management can also formulate, implement, and enforce codes of conduct related to how individuals are expected to behave in the organizational setting given different situations. For example, past ethical situations can be used to provide direction for both new and current employees. Unfortunately, most people learn by example; therefore, it takes an ethical dilemma to reinforce the company's policies. Codes of ethics, followed by ethics training, are the most common approaches for implementing ethics initiatives (Banerjee et al. 1998), which could influence a person's actions when faced with ethical dilemmas.

Preventive and deterrent measures, such as suspension without pay, may need to be established for weak ego individuals. Somewhat similar to the Banerjee et al. (1998) study, different aspects of moral judgement influenced the intention for internal versus external control. Again, codes of ethics and company policy could be helpful in influencing behavior. With differences between male and female

ethical intentions, programs could be focused on gender differences when implementing ethical programs. For example, if men or women have been found to behave more unethically in a given situation, the organization should focus on making that gender more aware of the consequences of such actions. Also, given that the scenario (situation) is important, specific policies must be established to handle each individual IT ethical situation.

In future studies, an attempt to understand the influences on ethical behavior can use these findings to further modify and develop the model. This study validates and extends (by gender) the IT ethical model and, therefore, allows for the development and testing of a more complete and accurate model of the intention to behave ethically/unethically, such as age and experience (Dawson 1997; Deshpande 1997; Raghunathan and Saftner 1995). Since well-founded theories (Kohlberg and Rest) indicate that life experiences (as opposed to age alone) influence ethical behavior, more research is needed using experience as a factor. Moreover, are specific codes of ethics and preventive measures directed at subpopulations needed? Which ones are more effective for specific subpopulations? Additionally, a subsequent research study could include the perceived importance of the ethical issue (Robin et al. 1996). The perceived importance of the ethical issue could be used to determine the behavioral intention indicators by scenario (situational ethics). There is much work yet to be accomplished which could help explain and minimize unethical behavior.

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Appendix A. Definitions of Variables Used in the Model

Variable	Definition
Ethical Behavior Intention	The intention to behave ethically/unethically (to perform/not perform the behavior)
Attitude Toward Ethical Behavior	An individual's degree of favorable/unfavorable evaluation of the behavior in question
Personal Normative Beliefs	The moral obligation to perform an act
Ego Strength	An individual's strength of conviction
Locus of Control	The degree to which an individual perceives that his/her attributes/behavior lead to a reward as opposed as the result of outside forces
Moral Judgement	An individual's reasoning when faced with an ethical dilemma
P-score	An individual's stand with respect to principled morality
D-score	An individual's rating of specific questions with regard to their importance in defining the situation in the context of a particular ethical dilemma
U-score	The degree to which moral judgements operate in determining a decision on a particular ethical dilemma
Scenario	A control variable used to reduce the experimental error variance
Gender	An individual's gender

Appendix B. Instruments and Measures for the Variables

Variable	Test
Intention to Behave Ethically/Unethically	One item on a seven-point scale (Fishbein and Ajzen 1975)
Attitude Toward Ethical Behavior	One item[a] (Ajzen 1985, 1989, 1991)
Personal Normative Beliefs	One item on a five-point scale (Schwartz and Tessler 1972)
Ego Strength	Fourth Sub-Scale of Barron's Ego Strength Scale (Barron 1953)
Locus of Control	Rotter's Instrument (Rotter 1966)
Moral Judgement	Rest's Defining Issues Test (DIT) (Rest 1988)
Gender	One demographic item

[a] Banerjee et al. (1998) utilized three questions on a seven point scale where this study utilized only one question on a dichotomous scale for efficiency. A subsequent validation of the one question of attitude toward ethical behavior when compared to the three question measure indicated a strong correlation, hence one question was used to measure attitude toward ethical behavior.

Appendix C. Scenarios and Survey Instrument

SCENARIO 1

A programmer at a bank realized that he had accidentally overdrawn his checking account. He made a small adjustment in the bank's accounting system so that his account would not have an additional service charge assessed. As soon as he made a deposit that made his balance positive again, he corrected the bank's accounting system.

Attitude Toward Ethical Behavior:
   a) The **programmer**'s modification of the accounting system was:
   ____ *acceptable* ____ *unacceptable*

Intention to Behave Ethically/Unethically:
   b) If **you** were the programmer, what is the probability that you would have modified the accounting system?
   highly probable ___|___|___|___|___|___|___ *highly improbable*

Personal Normative Beliefs:
   c) How <u>morally obligated</u> would you feel to take corrective action in this case?
   no obligation |____|____|____|____|____| *strong obligation*

SCENARIO 2

With approval from his boss, a person ordered an accounting program from a mail-order software company. When the employee received his order, he found that the store had accidentally sent him a very expensive word processing program as well as the accounting package that he had ordered. He looked at the invoice, and it indicated only that the accounting package had been sent. The employee decided to keep the word processing package.

   a) The **employee**'s decision to keep the word processing package was:
   ____ *acceptable* ____ *unacceptable*

   b) If **you** received the word processing package without ordering it, what is the probability that you would have kept it?
   highly probable ___|___|___|___|___|___|___ *highly improbable*

   c) How <u>morally obligated</u> would you feel to take corrective action in this case?
   no obligation |____|____|____|____|____| *strong obligation*

SCENARIO 3

A computer programmer enjoyed building small computer applications to give his friends. He would frequently go to his office on Saturday when no one was working and use his employer's computer to develop computer applications. He did not hide the fact that he was going into the building; he had to sign a register at a security desk each time he entered.

   a) The **programmer**'s use of the company's computer was:
   ____ *acceptable* ____ *unacceptable*

b) If **you** were the programmer, what is the probability you would have used the company's computer on your own time to develop programs for your friends?

highly probable ___|___|___|___|___|___|___ *highly improbable*

c) How <u>morally obligated</u> would you feel to take corrective action in this case?

no obligation |____|____|____|____|____| *strong obligation*

SCENARIO 4

A computing service provider offered the use of a program at a premium charge to subscribing businesses. The program was to be used only through the service company's computer. An employee at one of the subscribing businesses obtained a copy of the program accidentally, when the service company inadvertently revealed it to him in discussions through the system (terminal to terminal) concerning a possible program bug. All copies of the program outside of the computer system were marked as trade secret, proprietary to the service, but the copy the customer obtained from the computer was not. The employee used the copy of the program after he obtained it, without paying the usage fee to the service.

a) The **employee**'s use of the proprietary program was:

____ *acceptable* ____ *unacceptable*

b) If **you** were the employee, what is the probability you would have used the proprietary program and not paid the service fee?

highly probable ___|___|___|___|___|___|___ *highly improbable*

c) How <u>morally obligated</u> would you feel to take corrective action in this case?

no obligation |____|____|____|____|____| *strong obligation*

SCENARIO 5

A marketing company's employee was doing piece work production data runs on company computers after hours under contract for a state government. Her moonlighting activity was performed with the knowledge and approval of her manager. The data were questionnaire answers of 14,000 public school children. The questionnaire contained highly specific questions on domestic life of the children and their parents. The government's purpose was to develop statistics for behavioral profiles, for use in public assistance programs. The data included the respondents' names, addresses, and so forth. The employee's contract contained no divulgement restrictions, except a provision that statistical compilations and analyzes were the property of the government. The manager discovered the exact nature of the information in the tapes and its value in business services his company supplied. He requested that the data be copied for subsequent use in the business. The employee decided the request did not violate the terms of the contract, and she complied.

a) The **employee**'s copying of the data was:

____ *acceptable* ____ *unacceptable*

b) If **you** were the employee, what is the probability you would have copied the data?

highly probable ___|___|___|___|___|___|___ *highly improbable*

c) How <u>morally obligated</u> would you feel to take corrective action in this case?

no obligation |____|____|____|____|____| *strong obligation*

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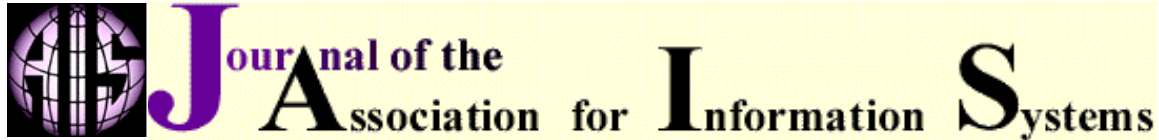
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