**TPB AND MES: A COMPARISON OF BEHAVIORAL INTENTION FINDINGS REGARDING IT IN AN ACADEMIC SETTING**

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**ABSTRACT**

Information technology is a profound part of every student’s life. However, students are not always aware of the ethical ramifications of their use or misuse of information technology. This study examines two theories – Theory of Planned Behavior and Multidimensional Ethics Scale – as to influences on a student’s behavioral intention in an academic setting in order to determine which theory more accurately predicts behavioral intention. The results indicate that MES provides more explanatory power in two scenarios, but TPB has more significant influences on behavioral intention in three of the scenarios. A discussion of the findings and implications is given.

**Keywords:** behavioral intention, IT ethics, MES, TPB

**INTRODUCTION**

The use of information technology (IT) is profound. Not only do businesses use it for every aspect, children in elementary school are studying IT as part of their curriculum. With this early exposure to IT comes a desensitizing to the ramifications of its use. College faculty are learning that a student gives very little thought regarding how he/she uses IT. There has been an influx of misuse as a result, not only in a student’s personal life but in academia as well. In order for faculty to promote ethical use of IT, they must have an understanding of what influences a student’s intention to behave ethically or unethically and this understanding should begin at the academic level.

Many studies have examined the behavioral intention of business professionals, students, and segments of the general population. Those studies primarily examined one theory as to influences on behavioral intention. This study seeks to examine two theories – the Theory of Planned Behavior (TPB) and the Multidimensional Ethics Scale (MES). These two theories have been used extensively in the information system and ethics literature. However, after extensive literature search, no prior research was found that compared the two. Therefore, this study seeks to examine each theory as to influences on a student’s behavioral intention in order to determine which theory more accurately predicts intention to behave ethically. In order to achieve this, academic situations will be examined in a scenario-based survey.
BACKGROUND

Theory of Planned Behavior

The Theory of Planned Behavior (TPB) is an extension of the Theory of Reasoned Action (TRA) [10], which indicates that an individual’s attitude toward an act and an individual’s subjective norm can be used to explain behavioral intentions. The TRA was extended to the TPB by adding a construct, perceived behavioral control [1] [2] [3]. Therefore, the TPB uses attitude, subjective norm, and perceived behavioral control to explain behavioral intention. Since the TPB alone does not cover all dimensions of ethical behavior, two additional items are considered – moral judgment and perceived importance. Both have been shown to be significant factors when assessing ethical behavior [5] [9]. Since these factors have been found significant since the TPB’s initial development, they have been added to the TPB in this study in order to depict a more accurate ethical behavior model. Therefore, we propose that a student’s ethical behavioral intention when using IT (according to the TPB) is influenced by attitude, subjective norm, perceived behavioral control, moral judgment, and perceived importance.

Attitude is the extent to which one favorably/unfavorably evaluates a behavior [10] and is indicated as a predictor of behavioral intention in both the TRA and TPB. Attitude has been found to influence behavioral intention in many studies [6] [13] [15]. Subjective norm (SN), or personal normative beliefs (PNB), is a moral obligation to perform an act [4] [24]. SN/PNB has been found to influence behavioral intention in many studies [5] [13] [14] [15]. Perceived behavioral control (PBC) is the perceived ease/difficulty of achieving the behavior in question [3]. PBC has been found to influence behavioral intention in many studies [6] [13] [16]. Moral judgment (MJ) is the way one reasons when faced with an ethical decision [5]. This reasoning depends on one’s stage of moral development. Moral judgment has been found to be an influence on one’s behavioral intention [26]. Perceived importance (PI) is an individual’s beliefs, values, and perceptions regarding a particular situation [22] [23]. Perceived importance has been found to be an influence on one’s behavioral intention [9], with a greater perceived importance indicating a greater intent to behave ethically and vice versa.

Multidimensional Ethics Scale

The multidimensional ethics scale (MES) is used as a predictor of ethical judgment [20] and assumes that more than one justification is used when making an ethical judgment by an individual [8]. The MES considers the work of five ethical philosophies – Justice Theory, Relativism, Deontology, Teleology-Egoism, and Teleology-Utilitarianism – and uses those five philosophies in the scale development. Starting with a 33-item instrument across the five philosophies, the MES was originally reduced to 14 items [19] and then to eight items [20]. However, Shawver and Sennetti [25] developed a 12-item scale that considers egoism and utilitarianism, which are not included in the eight-item scale. The eight-item scale has been found to be valid and reliable [17]; however, the lack of egoism and utilitarianism has been noted and Loo [17] suggested that the short eight-item instrument be used when administration time is limited. Therefore, we chose to utilize the 12-item scale which is comprised of all five ethical dimensions – moral equity, relativism, egoism, utilitarianism, and contractualism.
Moral equity can be thought of as part of Justice Theory and deals with fairness, justice and goodness, as well as family acceptance [20]. Moral equity has been found to be related to ethical behavioral intention in certain situations [18]. Relativism is concerned with the social system’s guidelines and requirements [20], suggesting that society and culture are important in determining one’s ethical beliefs and that no universal ethical rules exist that govern everyone [21]. Egoism is concerned with an individual’s self promotion and personal satisfaction [18]. Utilitarianism is concerned with the greatest good for the greatest number of people through a cost/benefit assessment [18]. It also implies that individuals should behave as to create the best possible good to evil in society [21]. Contractualism deals with the concept of a social contract that could exist between business and society [20] and is part of Deontology theory.

**METHOD**

In order to develop the instrument for the study, existing literature was examined for available scales and appropriate scenarios were developed. Researchers who had published articles relating to IT and ethics and business professionals who had provided consulting and training in ethics reviewed a draft and a revision of the scenarios and instrument. Eight experts provided comments which were incorporated into the instrument and scenarios. Then, the instrument and scenarios were pilot-tested on nine graduate student subjects who were enrolled in a graduate business ethics class. Further refinements were made to the scenarios and instrument based on the pilot study feedback.

In order to compare the two theories, undergraduate students from two southwestern universities in the United States were asked to complete one of the two instruments (either TPB or MES) which assessed their general perceptions about a series of scenarios presenting IT ethical situations in academic settings. The same scenarios were assessed for each instrument. The two instruments were randomly dispersed to the student subjects. A total of 90 responses were collected for the TPB survey, and 86 responses for the MES survey. For the TPB survey group, 95% of respondents were between the ages of 18 and 24, 89% were classified as sophomores and juniors, and 71% were male. For the MES survey group, 93% of the respondents were between the ages of 18 and 24, 91% were classified as sophomores and juniors, and 55% were male. The specific measurement items for the TPB and the MES and the scenarios utilized are available upon request.

SmartPLS Version 2.0 was used to analyze the data for each of the theories, following guidelines outlined by Chin [7]. Construct validity is assessed by using nomological, convergent, and discriminant validity. Nomological validity was assessed by using previously validated scales for all of the constructs; convergent validity was assessed using factor loadings, composite reliability (CR), the average variance extracted (AVE), and Cronbach’s alpha. The factor loadings and cross loadings were analyzed for each of the four scenarios and all loadings were greater than .70 as recommended by Hair et al. [12], indicating appropriate convergence of the item to their factors. Each construct had a Cronbach’s alpha and composite reliability greater than .7 [11], as well as an average variance extracted greater than .5 as recommended by Chin [7]. Discriminant validity can be assessed by comparing the square root of the AVE to the correlations. Since the
square root of the AVE is larger for each construct than any of the corresponding factor correlations, discriminant validity of the constructs is shown.

RESULTS

In order to test the structural models for TPB and MES, the standard bootstrap resampling procedure in SmartPLS was used, with each construct being analyzed as a reflective construct. In PLS, $R^2$ is a measure of the prediction quality of the structural model and gives an indication of the percentage of explained variance of that latent construct as driven by the indicator constructs. Table 1 provides a comparison summary of the findings for both models, including significant constructs and $R^2$ values. For the Improper Internet Citations scenario, moral judgment is found to be an influence on behavioral intention in the TPB model ($R^2=.22$), and contractualism and egoism are found to be influences on behavioral intention in the MES model ($R^2=.64$). For the Chat Room Project scenario, attitude, subjective norm and moral judgment are influences in the TPB model ($R^2=.46$), and no significant influences are found in the MES model. For the Collaborative Programming scenario, attitude, subjective norm, and perceived importance are influences in the TPB model ($R^2=.65$), and moral equity is an influence in the MES model ($R^2=.26$). Finally, for the Internet Plagiarism scenario, attitude, subjective norm, and moral judgment are influences in the TPB model ($R^2=.56$), and moral equity is an influence in the MES model ($R^2=.62$).

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Theory</th>
<th>Significant Variables</th>
<th>$R^2$</th>
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<tr>
<td>Improper Internet Citations</td>
<td>TPB</td>
<td>Moral Judgment</td>
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<tr>
<td></td>
<td>MES</td>
<td>Contractualism, Egoism</td>
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<td>TPB</td>
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<td>TPB</td>
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<td>TPB</td>
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</tbody>
</table>

DISCUSSION AND CONCLUSION

It has the potential to influence the ethical decision making of college students. This study examines two models that can be used to explain those influences – TPB and MES. Through an
assessment of both models, the findings indicate each model has its strengths and weaknesses. The TPB model can be used to explain a portion of behavioral intention for all four scenarios examined, where as the MES model can be used to explain behavioral intention in only three of the scenarios. However, MES has a greater explanatory power than TPB in two of those three scenarios. For the TPB model, attitude, subjective norm and moral judgment were each significant in three of the four scenarios. Furthermore, for the scenarios Chat Room Project, Collaborative Programming, and Internet Plagiarism, three antecedents (though not the same three) of the five antecedents were significant in the TPB model. Additionally, for the Improper Internet Citations scenario, moral judgment is a significant predictor of behavioral intention. For MES, moral equity is a significant predictor of behavioral intention for the Collaborative Programming and Internet Plagiarism scenarios. Additionally, contractualism and egoism are significant predictors in the Improper Internet Citations scenario. Therefore, more constructs are found to predict behavioral intention in the TPB model versus the MES model. The findings indicate that one theory alone is not enough to predict a student’s behavioral intention regarding IT. Both the TPB and MES provide some explanatory power and variables of influence depending on the scenario in question. Therefore, a new model incorporating both theories will add value to the current stream of research regarding said theories.

REFERENCES


