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An Exploratory Examination of Antecedents to Software Piracy: A Cross-Cultural Comparison

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Abstract

Software piracy continues to be a growing problem on a global scale for software developers. The purpose of this study was to conduct a cross-cultural comparison of a model predicting the intent of individuals to pirate software using two subsamples: Jordan and the US. Our results suggest that the Theory of Reasoned Action provides a strong predictive ability for our US subsample, but not for our Jordanian sample. Additionally, public self-consciousness, ideology, and religiosity varied in their ability to moderate the relationships of TRA across cultures. Overall, our results suggest culture plays an important role in affecting software piracy, and individual behavior in general.

1. Introduction

With 1.4 billion PCs installed globally, the development and sale of commercial software remains a promising industry sector with nearly $95 billion in sales in 2010 [1]. At the same time, however, software piracy remains a serious threat for firms that create and sell software. Software piracy can be defined as the illegal installation, reproduction, or distribution of commercial software. A recent study by the Business Software Alliance found that $59 billion in software was pirated in 2010 [1].

Given the magnitude of the problem, it is not surprising that the software industry has implemented a number of different strategies in an attempt mitigate software piracy (see [2] for discussion). Yet, despite these efforts, the amount of software pirated has nearly doubled from 2003 to 2010 [1]. Interestingly, the dramatic rise in software piracy can be attributed largely to emerging economies. To illustrate, it was found that 57% of software installed on PCs in the country of Jordan was pirated in 2010. At the same time, the piracy rate in the U.S. was significantly lower at 20% [1]. This raises an important question,

"what cultural differences, if any, explain the disparity in software piracy rates between the US and Jordan?"

The decision to pirate software is an individual-level concern, while culture is a macro-level construct. Our research employs a cultural psychological perspective. Thus, we argue that culture and individual personality traits are indivisible. Operating under this assumption, our research conducts analysis at the individual-level to provide insight into attributes about the culture in which an individual resides. Using the theory of reasoned action (TRA) as a foundation theory, this paper seeks to identify culturally-related factors in an individual's ethical decision-making process that lead to the intention to pirate software. Specifically, we examine the moderating effects that religiosity, ideology (idealism and relativism), and public self-consciousness have on the relationships of TRA and compare our results across US and Jordanian subsamples in an attempt to determine where the differences in the propensity to pirate software between cultures are derived. Our research model is presented in Figure 1.
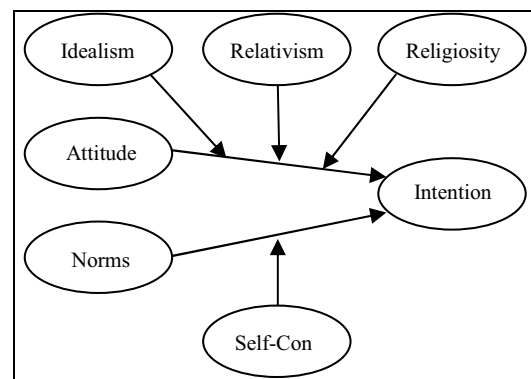

Figure 1. Research model

This study makes several contributions, both in terms of academic research and insights for practitioners. For academics in general, our study

provides an additional examination of the applicability of TRA as a predictive model for individuals from different cultures. For IS researchers in particular, this study examines a new combination of antecedents to software piracy that have not been previously tested together. For practitioners, our results compare and contrast the ethical decision-making process for individuals from different regions of the world. By identifying similarities in what motivates an individual to make an ethical decision, practitioners will be better informed about which strategies for minimizing software piracy are most efficient; that is, which anti-piracy measures will be effective regardless of an individual's cultural background.

2. Hypothesis Development

Software piracy has received considerable attention in the IS literature. For instance, Moores et al. [3] developed a model to predict intentions to pirate software that integrated the Theory of Planned Behavior and constructs related to legislative measures aimed at reducing software piracy. Using data collected from business students, they tested their model and the results suggested that attitude and subjective norms were significantly related to behavior intention, while perceived behavior control did not have a significant relationship with intention. In turn, fear of legal consequences was a direct antecedent to attitude, while knowledge of software piracy was significantly related to fear of legal consequences. Gopal and Gupta [2] explored the effect that product bundling has on software pirating and firm profits. Their mathematical model suggests that when software products of similar value are bundled, given the current construction of copyright laws, the act of bundling provides a deterrent effect, which results in a reduction in the level of software piracy for both products. On the other hand, when there are differences in the value of products that are being bundled, the product of lower valuation will experience an increase in piracy rates, while the higher valued product will experience reduced piracy rates; this tradeoff results in overall higher profits for the firm. Using a sample of MBA students from Germany, Nill et al [4] tested a model designed to explain the amount of pirated software that was installed on respondents' personal computers. Their results suggested that knowledge of consequences, attitudes towards piracy, and fear of legal consequences were negatively related to the amount of pirated software the respondents possessed. At the same time, availability of software to pirate was

positively related to software pirating. Interestingly, social norms, gender, and age did not have significant relationships with the amount of pirated software the respondents had installed on their PCs.

First articulated by Ajzen and Fishbein [5], the theory of reasoned action provides an explanation of the mental processes that drive individual behavior. Specifically, behavior intention is argued to the direct cognitive antecedent to actual behavior. In turn, attitude towards the behavior and subjective norms relating to the behavior are responsible, in part, for the formulation of behavior intention. TRA has been widely used in the information systems literature to explain behaviors such as the adoption of Internet banking [6] or participation in blogging [7].

In the context of this study, we define intention as an individual's assessment of the likelihood that he/she would pirate software. Attitude is defined as an individual's belief that pirating software is either ethical or unethical. Previous research has provided evidence that a strong relationship exists between an individual's attitudes and intentions to pirate software [8, 9]. Therefore, we argue that when an individual believes pirating software is unethical their intentions to pirate software will be reduced.

Hypothesis 1: Attitude toward software piracy will be negatively related to an individuals' intention to pirate software.

In the context of this study, we define subjective norms as an individual's belief that important others think that software should or should not be pirated. Like attitudes, research has provided evidence that a significant relationship exists between subjective norms and intentions to pirate software [8, 10]. Hence, we posit that as an individual's belief that important people think he/she should not pirate software increases, that individual's intentions to pirate software will decrease.

Hypothesis 2: Subjective norms will be negatively related to an individual's intention to pirate software.

The cultural psychology perspective would suggest that a theory about psychology, such as TRA, may vary in its applicability across different cultures. This is due to the inseparable nature of culture and individual attitudes and beliefs; as cultures vary so will the general attitudes and beliefs held by the populations of those cultures. Consequently, it is not surprising that some question exists about the predictive ability of TRA for individuals from non-Western countries. It is posited that non-Western cultures tend to be less individualistic than their Western counterparts. Consequently, decisions by individuals from these cultures are more strongly related to social factors than individual attitudes [11].

Numerous studies have examined the predictive ability of behavior models such as TRA in Arabic countries and often attitude and subjective norms have been demonstrated to be effective predictors of behavior [e.g., 12, 8, 13]. Less commonly, however, have been attempts by researchers to examine specific differences in predictive models between cultures. One such study that examined the technology acceptance model's (TAM) [14] found mixed results, suggesting that TAM may not be applicable across all cultures [15]. Therefore, we predict that while attitude and subjective norms will have significant relationships with intention for individuals from both cultures in our study, these constructs will not be equivalent in their predictive ability across the US and Jordan groups.

Hypothesis 3a: The structural path between an individual's attitude toward software piracy and intention to pirate software will not be equivalent between the US and Jordan subsamples.

Hypothesis 3b: The structural path between subjective norms and an individual's intention to pirate software will not be equivalent between the US and Jordan subsamples.

As previously discussed in our introduction, the rate of software piracy in Jordan is more than twice as high as the rate in the US. This is not unexpected, as studies have demonstrated that country-level socio-economic factors such as greater economic prosperity (GDP), greater political freedom, greater numbers of Internet users, and greater PC distribution within a country all negatively influence software piracy rates [16, 47]. Consequently, we anticipate that Jordanian subjects from our study will demonstrate a higher propensity to pirate software than our US subjects.

Hypothesis 4: Individuals from Jordan will have a significantly higher intention to pirate software latent variables scores than individuals from the US.

While theories such as TRA and TAM provide the benefit of strong predictive ability via parsimonious models, research has suggested they are not sufficient in explaining behaviors; extensions in the form of moderators can help to better predict individual behaviors [17, 18]. For this research, we are concerned with public self-consciousness' moderating effect on the norms-intention relationship, and religiosity and an individual's ideologies' moderating effects on the attitude-intention relationship.

The influence that others have on an individual's behavior is dependent on that individual's motivation to comply with perceived expectation. In the context of this study, public self-consciousness is defined as "the tendency to be aware of the publicly displayed aspect of the self, the self as a social object that creates impacts on other people" [19] (p. 46). As such, a publicly self-conscious compares him or herself with social norms. Consequently, while a publically self-conscious individual may have formulated idiosyncratic personal attitudes about a situation, that person may conform to norms to avoid creating dissonance among those perceived as socially important. While not receiving attention in the IS literature, public self-consciousness has been demonstrated to moderate the attitude-behavior relationship in other contexts [e.g., 20, 21]. Given this evidence, we expect that as an individual's level of public self-consciousness increases, the relationship between subjective norms and intention to pirate software will strengthen.

While not extensively examined in the IS literature, research has suggested that persons from "individualistic" cultures tend to be less concerned with public self-consciousness than "collective" cultures when looking for queues for how to behave [22]. Non-Western countries, such as Jordan, tend to have more collectivistic cultures than Western countries, such as the US. Therefore, we anticipate the impact of public self-consciousness as a moderator will be greater for Jordanians than individuals from an individualistic country such as the US.

Hypothesis 5: The moderating effect that public self-consciousness has on the subjective norms-intention relationship will be greater for the Jordan subsample than for the US subsample.

An individual's response to an ethically questionable situation can, in part, can be explained by that person's ethical ideology, or moral philosophy [23]. Thus, ideology can be viewed as a framework of right and wrong that an individual uses to make ethical decision. For the purposes of this research, we adopt a parsimonious approach to operationalizing ideology that identifies two dimensions of the construct: idealism and relativism.

Idealism is defined as the degree to which an individual believes "that desirable consequences can, with the 'right' action, always be obtained" [23] (p. 176). Idealistic individuals are concerned with the outcomes for the decisions they make and they attempt to avoid harming others.

Relativism is defined as "the extent to which the individual rejects universal moral rules" [23] (p. 175). When an individual is relativistic, the circumstances under which moral actions take place play a larger role in the judgment of those actions rather than universal principles.

The use of relativism and idealism has long been used in research attempting to understand ethical

decision-making. Studies utilizing these constructs have typically found that idealism to be positively related to ethical behavior, while relativism is negatively related to ethical decisions [24]. Correspondingly, we expect idealism to positively moderate the relationship between attitude and intention to pirate software. At the same time, we anticipate that relativism will negatively moderate the attitude-intention relationship.

Limited research has attempted to systematically determine the differences in moderating effects of ideologies across cultures. However, in a meta-analysis of research examining relativism and idealism, the US was found to be significantly less idealistic than Middle Eastern countries. At the same time, the Middle East and the US were not different in their degrees of relativism [25]. Without prior research to inform us, we believe that the magnitude of a given ideology that can be seen in a culture is indicative of its importance in decision making for the individuals within that culture. Therefore, we expect idealism to have a stronger moderating effect for the Jordanian subsample, while we do not expect there to be a difference in the moderating effect of relativism between cultures.

Hypothesis 6: The moderating effect that idealism has on the attitude-intention relationship will be greater for the Jordan subsample than for the US subsample.

Hypothesis 7: The moderating effect that relativism has on the attitude-intention relationship will be equivalent between the US and Jordan subsamples.

Religiosity refers to the degree to which an individual integrates religion into his or her life. Thus, a person with a high degree of religiosity has internalized the values and morals of their religious beliefs and, consequently, uses them as a point of reference in making judgments and evaluations [26]. In the IS literature, higher degrees of religiosity have been demonstrated to be negatively related to intentions to pirate software [8]. Thus, we anticipate that as levels of religiosity increase, the attitude-intention relationship will be strengthened.

Little research has examined the cross-cultural differences that religiosity has on ethical decision-making [27]. Given that we have no evidence of the contrary, we argue that there will be no difference in the moderating effect of religiosity across cultures.

Hypothesis 8: The moderating effect that religiosity has on the attitude-intention relationship will be equivalent between the US and Jordan subsamples.

While not of theoretical interest to this study, we included age and gender as control variables, as they have been shown to be significantly related to the pirating of software [28].

3. Methodology

To test our research hypotheses, a survey methodology was used. Data was collected from sample of undergraduate business students from two large universities: one in Jordan and one in the U.S. Previous studies have found that college students are some of the most active software pirates. We therefore believe that they serve as a good proxy our targeted population, which is individuals that pirate software.

The first step in testing our hypotheses was to develop our instrument. We used an extensive literature review to identify previously validated instruments for our constructs of interest. To measure idealism and relativism, we adopted two instruments from the Ethics Position Question [23]. Each consisted of 10 items. To measure public self-consciousness we adopted a 7-item instrument developed by [29]. To measure religiosity we used an instrument developed by Evans et al. [30] and added an additional item from Rohrbaugh and Jessor [31]. This results in a total of twelve items measuring religiosity. Attitude towards software policy was measured using items from an instrument developed by Gupta et al. [32] and an additional item developed by the researchers. This results in 6 total items. Subjective norms was measured using 4 items from the literature [33, 34, 35] adapted to the context of software piracy. All items measuring our independent variables utilized a 7-point Likert scale.

To measure our dependent variable, intention to pirate software, we used scenario-based items developed by the researchers. This approach of gauging intention entails soliciting respondents' attitudes regarding a scenario in which a financially challenged "friend" asks for a pirated copy of software. A 7-point Likert scale was used to record responses to five questions in the context of this ethical dilemma. We argue that an individual's decision to pirate software is affected by contextual situations. Therefore, we used scenario-based measures, as they have been argued to a suitable method for measuring behavior intentions [36].

Prior to testing our hypotheses, an important step in our analysis was to empirically establish measurement invariance between our two samples. That is, the psychometric properties from our two cultural groups must be demonstrated to have the same structure if we are to accept the assertion that our groups have interpreted our instrument items in the same way. Failure to establish measurement

invariance suggests that we have measured different phenomena across cultural groups, making comparisons between groups using our data meaningless.

Measurement invariance was assessed using component-based confirmatory factor analysis (CFA) via SmartPLS 2.0 (M3) [37]. First, we conducted CFA analyses for each subgroup of data and retained items that had factor loadings of .5 or higher in both groups [38]. Once configural invariance was verified, we assessed metric invariance (equivalent factor loadings) and scalar invariance (equivalent intercepts) across groups (see [39]).

To test our hypotheses, components-based SEM, or partial least squares (PLS) path modeling was utilized. In particular, to assess structural differences between our culture groups, we employed the approach discussed by Chin [40]. Specifically, we estimated the path coefficients for each of our subgroups separately using SmartPLS. Then, a bootstrap resampling technique was used to calculate standard errors for the structural paths. A t-test was then used to test for significant differences between path estimates across cultural groups. We argue that PLS is the most appropriate statistical technique to utilize in our research, because the constructs in our research model have not been frequently tested together and we utilized nominal variables in our model.

4. Results

A total of 338 and 323 completed surveys were collected from US and Jordan respondents, respectively. Examination of the respondents' names revealed no duplications. We next screened our data for multivariate outliers using the Mahalanobis distance measure; 14 cases from the US sample and 5 cases from the Jordan samples were identified as potential outliers and removed. A total sample of 324 responses from the US sample and 318 responses from the Jordan sample were retained for use during hypothesis testing

Prior to testing our hypotheses relating to our foundation theory, TRA, we statistically validated our instrument. After removing items that did not load significantly across both cultural samples, three items were retained to measure the constructs of attitude, social norms, and piracy intention, respectively. The average variance extracted (AVE) statistics exceeded .50 for each construct, while all AVE values were greater than the squared correlations between constructs [41]. Further, items did not have substantial cross-loadings when compared to the loadings of items on their respective latent variable [42], while all composite reliabilities exceeded .70 [43]. T-tests indicated no significant differences in item weights or loadings across cultures for retained items.

First, we calculated models including only control variables relating to intention. For our US group, 8.2% of the variance was explained with both age (β = -.215, t-statistic = 3.541) and gender (β = -.214, t-statistic = 3.939) significantly relating to intention. For our Jordan sample, 1.7% of variance was explained by our control variables with age being significantly related to intention (β = -.132, t-statistic = 2.344). Interestingly, gender's relationship was insignificant (β = .005, t-statistic = 0.082) while also having a significantly different path coefficient than the US sample (t = -2.651).

Next, we added the attitude and social norms constructs to our model. The significance of our control variables did not change across groups. 42.8% of the variance was explained by the TRA model for our US group, which was significant improvement over the control variable model (F = 58.165, p < .001). Both attitude (β = -.087, t-statistic = 4.084) and social norms (β = -.390, t-statistic = 9.796) had significant relationships with intention for the US group. For the Jordan group, only 3.5% of the variance was explained by the TRA model, which was not a significant improvement over the control variable model (F = 2.359, p = .053). Further, neither attitude (β = -.009, t = 0.101) nor social norms (β = -.131, t = 1.800) were significantly related to intention. Thus, Hypotheses 1 and 2 were only partially supported; the predictive ability of TRA does not appear to hold across the cultures in our study. Despite the lack of significance for the attitude-intention relationship for the Jordan subsample, the path coefficient for attitude was not significantly different for the two subgroups (t = -1.903), therefore hypothesis 3a was not supported. Conversely, the path coefficients for social norms were significantly different (t = -3.845) across groups, supporting hypothesis 3b.

To test whether the value for a construct of interest varied between groups, we exported the unstandardized latent variable scores to SPSS 18.0 and conducted a regression analysis using latent variable scores as the dependent variables and a dummy code indicating whether a given case was from the US or Jordan sample as the independent variable. We found that the US and Jordan groups did not significantly vary in their score for social norms. However, the US had significantly higher scores for attitude (t = 12.474) than the Jordan group, while at the same time having a significantly lower score for

piracy intention (t = 4.547). Thus, hypothesis 4 was supported.

Prior to testing for two-way interaction effects, we examined a model that included lower–order terms to be used as moderators (public self-consciousness, religiosity, idealism, and relativism). We conducted CFA using PLS for all constructs included in our model. After removing items that did not load significantly across both cultural samples, 6 items we retained for self-consciousness, 8 items were retained for religiosity, and 3 items were retained for idealism and relativism, respectively. All AVE statistics exceeded .50 for each construct, while all AVE values were greater than the squared correlations between constructs. No items had substantial cross-loadings, while all composite reliabilities exceeded .70. T-tests indicated no significant differences in item weights. One item for intention demonstrated a significantly different factor loading across groups (t = 3.552). Given that 28 of 29 loadings and all weights were equivalent, we argue that we have achieved an acceptable level of measurement invariance to continue with our analysis.

We estimated the lower-order terms model and found that 47.4% of the variance for the US group was explained, which was a significant improvement over the TRA model (F = 34.313, p < .001). Age, attitude, and social norms remained significant in their influence of intention, while gender became insignificant (t = 1.897). Idealism and public self-consciousness did not have significant relationships with intention. However, religiosity (β = -.081, t = 1.960) and relativism (β = .172, t-statistic = 3.948) had significant relationships. With regard to the Jordan group, the addition of the lower-order terms resulted in 12.6% of the variance being explained, which was a significant improvement over the TRA model (F = 5.251, p < .001). Age remained a significant predictor of piracy intention, while attitude, social norms, and gender remained insignificant. While Relativism, idealism, and religiosity were not significant predictors of intention, public self-consciousness had a significant relationship (β = .263, t-statistic = 4.879).

At this point, we imported our unstandardized latent variables scores into SPSS to determine if there were significant differences in the moderator variables between groups. Our results suggest that the US sample had significantly higher scores for public self-consciousness (t = 3.406) and idealism (t = 3.472), while the Jordan sample had significantly higher scores for religiosity (t = 4.632). Groups did not have dissimilar scores for relativism.

Next, we included our interaction terms into our model to determine if significant interaction effects were present. For the US group, 47.6% of the variance was explained by the full interaction model. While this was a significant improvement in the model (F = 22.782, p < .001), none of the interaction terms had significant relationships with piracy intention. For the Jordan group, 36.9% of the variance is explained by the interaction model, which was a significant improvement over the lower-term model (F = 17.735). While three of our interaction effects were insignificant for the Jordan group, idealism was found to be a significant moderator of attitude (β = -1.104, t = 2.557).

The last step in our analysis was to examine whether the moderating effects in our research were equivalent across groups. Our results suggest that idealism's moderating effect for the Jordan group was significantly stronger than for the US group (t = 2.059). Thus, the results of our study support hypothesis 5. All other moderators were not significantly different in their effects across groups. We therefore conclude that hypotheses 6 and 7 were not supported by our study. While the moderating effect of religiosity did not differ between cultures in our study (non-significant t-stats), the effects were not significant. Therefore, it could be argued that hypothesis 8 was supported, though these results are trivial.

5. Discussion and Conclusions

The results of our study suggest there are dramatic differences between individuals from the US and Jordan in terms of which antecedents can effectively predict software piracy. With respect to our control variable model, age behaved similarly across both cultural groups as a predictor of intention to pirate software: older individuals were less likely to pirate software. This is not surprising, as age has been shown to be negatively correlated to an individual's propensity to make unethical decisions [44, 47]. This result has clear ramifications for practitioners, as it suggests strategies for reducing software piracy should target younger individuals when applicable (i.e., awareness campaigns). For gender, females in the US subsample were less likely to pirate software than their male counterparts. This gender-intention relationship was not observed in the Jordan subsample. While research examining software piracy typically has found that males have a higher propensity to pirate software [e.g., 45, 46], some studies using respondents from outside of the U.S. have failed to find these gender differences [4,

47]. We interpret this to mean that there are important gender differences between the cultures examined in our study. For practitioners, this suggests that targeting males with strategies for reducing software piracy may be effective within the U.S. and other Western cultures. However, such an approach may not be effective outside of the U.S, particularly in non-Western cultures.

With respect to our foundation theory, TRA, we hypothesized its predictive performance would be statistically dissimilar across cultural groups. After controlling for age and gender, attitude and subjective norms were both significantly related in the anticipated direction with intentions to pirate software for the US sample. At the same time, the Jordan sample did not demonstrate significant relationships for the same model. Furthermore, there was a remarkable disparity between the amount of variance explained by attitude and subjective norms for the US group (ΔR^2=.188) and Jordanian group (ΔR^2=.018). This is important to researchers, as we interpret these findings to mean that culture has a significant impact on the applicability of theoretical models such as TRA, and would suggest caution must be used when comparing the results of studies from countries with significantly different cultures. Furthermore, our results provide support for the theory underpinning the cultural psychological perspective; that is, theories of psychology will, at times, vary across cultures.

Prior to testing for moderators, we entered all lower order terms (public self-consciousness, religiosity, idealism, and relativism) into our model. While we made no hypotheses about the direct effect of these constructs on intention, we still found several interesting results. For the US group, the addition of these lower-terms significantly increased the explanatory power of our model (ΔR^2=.046). Specifically, relativism had a significant positive relationship with intention, while religiosity had a significant negative relationship; both of these results are congruent with previous literature examining these constructs' relationships with ethical decisions [27, 48]. The increase in variance for the Jordanian group was also significant, and remarkably greater in magnitude than the US group (ΔR^2=.091). In contrast to the US subsample, public self-consciousness was the only lower-order to significantly relate (positively) to intention, suggesting higher levels of public self-consciousness are associated with higher levels of intention to pirate software. This result is contrary to what theory would lead us to expect. One possible explanation for this result is that software piracy does not have a strong negative stigma associated with it in the Jordanian culture, while

being perceived as helpful to friends is viewed as socially important. Given this scenario, individuals that are highly self-aware of their public image could be expected to have higher intentions to pirate software if that action was perceived as beneficial to others. This explanation seems plausible given the collective nature of non-Western cultures such as Jordan.

Worth noting are the significant differences in scores between our two subgroups for our culturally-related constructs. Not surprisingly, individuals from Jordan demonstrated a higher level of religiosity than their U.S. counterparts. Again, the non-individualist nature of non-Western cultures explains this result. On the other hand, individuals from the U.S. reported higher levels of idealism and public self-consciousness, which is contrary to what prior research [22, 25] and theory would suggest. A review of related literature did not provide an explanation for these results. We believe further investigation is warranted.

While we expected cultural differences in the effects of our moderating variables, we did not anticipate as stark of results across groups. For the US group, none of the interaction terms were significant. Additionally while the inclusion of the interaction terms provided a significant improvement in the overall model, the increase in the amount of variance explained was trivial (ΔR^2=.003); On the other hand, the explanatory power for the Jordanian subsample essentially tripled (ΔR^2=.243). The only instance where significant moderating effects were found was with the Jordanian group, where the attitude-idealism interaction term was negative related to intention. This result was expected, as we anticipated idealism to have a larger effect on individuals from Jordan than from the US. For researchers, these results demonstrate that predicting individuals' intentions to pirate software and, more generally, make ethical decisions can be effectively predicted in non-Western countries like Jordan. While the inclusion of culturally related constructs, such as ideology, may not be necessary in Western cultures to predict ethical decisions, it would appear they are needed in non-individualist cultures

Several limitations exist for this study. First, the use of college students could limit the generalizability of our results. While we believe our sample adequately represents the population of interest (individuals that pirate software), additional research is needed to determine if this assumption holds true. Further, our study examines only two countries/cultures and within the one context of software piracy. It is possible that research examining different ethical decisions might produce different

results, even using the same sample groups. Another potential limitation is the methods utilized to collect the data for this study. A paper-based approach was utilized to collect the Jordanian data while a web-based approach was used to collect data from respondents in the U.S. This could raise questions about selection and participation biases that could possibly influence the type of respondent that participated within each group.

Based on our results, several avenues for future research could be pursued. First, much work has been conducted in Western cultures (i.e., the U.S.) to develop models for predicting individual behavior, such as TRA, TPB, and TAM. These theories provide parsimonious explanations of the mental processes that precede the development of intention, and have been found to be robust in their applicability across many contexts. To our knowledge, such a model has not been developed for Arabic countries, or non-Western countries in general, and we believe research in this area would potentially represent a significant contribution to IS research. Second, while one of the goals of this research was to identify similar factors that motivate individual to make ethical decisions across the cultural groups used in our study, our results suggested that the mental processes for our two subsamples were dramatically different and that there were no substantial similarities. Future research that successfully identifies factors that affect an individual's decision to or to not pirate software across all cultures would potentially be very beneficial to practitioners grappling with mitigating software piracy occurring in the various countries around the world.

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