THE ROLE OF SUBJECTIVE KNOWLEDGE AND PERCEIVED CONSEQUENCES IN SHAPING ATTITUDE AND INTENTION TOWARD DIGITAL PIRACY

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Digital piracy represents a significant threat, especially to music, film and software industry worldwide. In order to provide insights into consumer behavior related to digital piracy, this study aimed at developing and empirically testing the role of subjective knowledge and three types of expected consequences (i.e., perceived benefits, moral intensity, perceived risk) as antecedents of attitude toward digital piracy and intention to pirate digital content. In view of the existing literature, the purpose of this research was twofold: (a) to develop a conceptual model of consumer's attitude and intention to pirate, and (b) to empirically test the role of subjective knowledge, perceived benefits, moral intensity and perceived risk as antecedents of consumers' attitude toward pirating, as well as the role of subjective knowledge, perceived benefits, and attitude as antecedents of intention to pirate.

The hypotheses were tested by collecting data via self-administered mail survey sent to an initial sample of 10,000 adult consumers in Slovenia, yielding a usable random sample of 843 consumers. The data were analyzed using structural equation modeling. The results of the study show that moral intensity and perceived risk do not play an important role in shaping one's attitude toward piracy, while subjective knowledge and perceived benefits exhibit a statistically significant impact upon both, attitude toward digital piracy and intention to pirate. In addition, consistent with previous studies, attitude is a significant predictor of behavioral intention. Taking into consideration the specifics of the selected context, it is hoped that this study contributes to a better understanding of the demand side of digital piracy.

Keywords:
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Intention
Attitude
Subjective knowledge
Sustainability

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I. INTRODUCTION

Digital piracy is defined as infringements of copyright and related intellectual property rights in digital products (World Trade Organization, 1994). It represents a significant threat to several industries, particularly the recorded music, movie and software industries. Based on industry data for 2008, digitally pirated music, movies and software accounted for between $30 billion and $75 billion and are estimated to grow up to $240 billion in 2015 (BASCAP, 2011). To stem the rising tide of digital piracy, different preventives and deterrents have been employed, including initiatives such as BASCAP. However, efforts to attenuate digital piracy have fallen short of desired results (Goles et al., 2008).

Several authors believe that gaining fuller understanding of digital piracy behavior would be a more effective approach to curtailing this phenomenon (Al-Rafee and Cronan, 2006; Goles et al., 2008). Since the topic of digital piracy has only lately received attention in the academic literature (e.g. Aleassa et al., 2011; Coyle et al., 2009; Sinha and Mandel, 2009), our knowledge of the mechanisms and structure of the illicit market is still rather limited (Staake et al., 2009). Revealing insights into the determinants of digital piracy behavior is critical if efficacious public policy strategies are to be developed.

In order to address these gaps, this paper aims to ascertain the factors that govern a consumer's decision to pirate digital content. In doing so, we rely on the models of attitude-behavior relations, research of ethical decision making, and the Beckerian framework. Our purpose is twofold: (a) to develop a conceptual model of consumer's attitude and intention to pirate, and (b) to empirically test the role of subjective knowledge, perceived benefits, moral intensity and perceived risk as antecedents of consumers' attitude toward pirating, as well as the role of subjective knowledge, perceived benefits, and attitude as antecedents of intention to pirate. We shed light on the topic of digital piracy by employing a cross-sectional study in Slovenia. This country offers a compelling site for conducting research on digital piracy for several reasons: there is a lack of research on consumer ethical issues in transitional economies (Al-Khatib et al., 2004); the rate of piracy (especially software piracy) in Slovenia is among the highest in the European Union (e.g., Business Software Alliance, 2010); a relatively low level of copyright law enforcement shapes consumers' view of digital piracy in a unique perspective.

The paper is organized as follows. First, relevant literature with respect to digital piracy is reviewed. Next, a conceptual model of the digital piracy intention and relevant hypotheses are presented. After explaining the methodological approach, the data are analyzed and findings are presented. In the final segment of our paper, the implications as well as study limitations and venues for future research are discussed.

II. THEORETICAL BASIS

In the existing literature on consumer behavior related to counterfeiting and piracy, one of the most prevalent theories is models of attitude-behavior relations. Among these, the Theory of Reasoned Action (TRA) (e.g., Shoham, Ruvio, and Davidow, 2008) and the Theory of Planned Behavior (TPB) (e.g., Al-Rafee and Cronan, 2006) are most commonly applied. The basic premise of these models is the interplay between attitudes, intentions and actual behavior (Bentler and Speckart, 1979). This framework, either as TRA or TPB, has been applied to counterfeiting (e.g., Shoham, Ruvio, and Davidow, 2008), as well as piracy (e.g., Goles et al. 2008).

Despite their general applicability in consumer behavior research, the models of attitude-behavior relations have certain weaknesses. For example, several studies in the counterfeiting and piracy literature found that constructs other than attitudes tend to have a stronger power in

predicting behavioral intentions (e.g. De Pelsmacker and Janssens, 2007, 364; Chang, 1998). Shaw, Grehan, Shiu, Hassan, and Thomson (2005, 186) conclude that a substantial amount of variance in buying behavior remains unexplained by traditional models based on TRA and that other relevant variables should be included. Nonetheless, one valuable characteristic of these models is their flexibility in allowing the inclusion of other theoretically relevant variables (Ajzen, 1991, 199).

An insightful starting point for identifying other potentially relevant variables of pirating digital content is the theories of ethical decision making, since piracy and counterfeiting are often considered as illegal and/or unethical practices (Simpson et al. 1994). The decision to pirate digital content presents stimuli that might evoke certain ethical dilemmas in individuals (Chiou et al., 2005, 161). With respect to combining different theoretical streams, Loe et al. (2000, 199) propose to integrate the ethical constructs suggested by ethical decision making theory with other marketing related variables. In addition, calls have been voiced for more research on moral intensity as a core ethical decision making concept (Loe et al., 2000, 200), referring to the characteristics of the issue under consideration, not an individual's or situational characteristics (Jones, 1991, 371-372).

Another promising venue for tackling the issue of unexplained variance of buying behavior is the Beckerian framework. Namely, the consumer would purchase a counterfeit product or engage in file-sharing if it yielded greater utility than the original, weighing benefits against risks (Henning-Thurau et al., 2007). The benefits encompass perceived positive consequences for the consumer; while the risks encompass negative consequences as perceived by an individual. However, as Hennig-Thurau point out (2007, 5), utility maximization is not always the primary aim of consumers. Rather, they strive to minimize their cognitive effort, and in such instances, perceived (or subjective) knowledge is of great importance in making satisfactory decisions.

Against this background, we propose a conceptual model of consumer attitude toward piracy and intention to pirate presented in Figure 1. The relationship between attitude and intention is further extended with the concepts of (1) moral intensity, (2) perceived benefits, (3) perceived risk, and (4) subjective knowledge. For the purpose of this study, moral intensity, perceived benefits and perceived risk can be regarded as perceived negative consequences arising from pirating digital content. Moral intensity is defined as the strength with which the characteristics of the act of digital piracy affect the decision process. Furthermore, perceived benefits describe the benefits of pirating digital content for the individual, while perceived risk assesses the perceived negative consequences of pirating digital content for the individual. More specifically, since the level of copyright law enforcement in Slovenia is rather low (MIRS, 2010), but having technical difficulties is more likely, we include perceived technical risk. Both moral intensity and perceived technical risk can be interpreted as costs of pirating digital content, i.e., at individual and societal levels, respectively. Subjective knowledge has been identified as the consumer's prior perception of digital piracy related information kept in the memory. Attitude toward pirating digital content is defined as an individual's predisposition toward pirating digital content, and intention to pirate refers to an individual's inclination to pirate digital content, such as music, films and software.

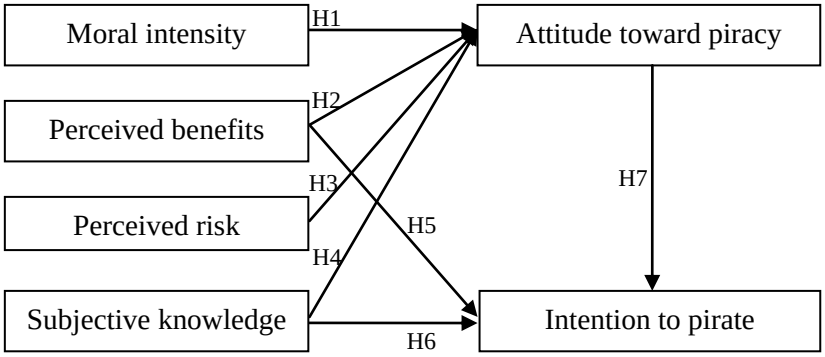

FIGURE 1. THE CONCEPTUAL FRAMEWORK

Source : Author's calculation

III. HYPOTHESES DEVELOPMENT

In line with our conceptual model, moral intensity is suggested to affect consumer's attitude. This link has been examined in various research contexts. For example, Chiou et al. (2005, 169) provided empirical evidence for the negative impact of moral intensity on attitude. Moreover, moral intensity was consistently found to significantly affect individuals' moral judgment (e.g., Tan 2002, 102). Based on similarities between moral judgment and attitude, it can be expected that these relationships hold in the case of moral intensity's impact on attitude as well (Al-Rafee and Cronan 2006, 239). Hence, we posit:

H1: Moral intensity negatively influences favorable attitude toward piracy.

Although it plays an important role in consumer decision making, the concept of perceived benefits has been rather scarcely explored in the counterfeiting and piracy context (e.g., Bian and Moutinho, 2009; Hennig-Thurau, Hennig, and Sattler, 2007). Goles et al. (2007, 491) provide empirical support for the impact of perceived usefulness on attitude, which can be paralleled to perceived benefits, both yielding positive expected outcome of a purchased product. Borrowing also from other contexts, e.g. banking (Heiko, 2010) or psychology (Darke and Chaiken, 2005), it can be hypothesized that perceived benefits increase favorable attitude.

H2: Perceived benefits positively influence favorable attitude toward piracy.

Similarly, perceived risk has also been under-researched in the counterfeiting and piracy context (e.g., Veloutsou and Bian, 2008, 4). The existing studies do not offer uniform evidence of the impact of perceived risk on attitude. Namely, Morton and Koufteros (2008) suggested perceived punishment severity and perceived punishment certainty influence attitude towards piracy, but could not confirm the stated relationships. On the other hand, D'Astous et al. (2005, 303) found a negative relationship between perceived negative consequences and consumer attitudes towards music piracy. More tailored to our context, Chiou et al. (2005, 169) found that perceived prosecution risk negatively influences the attitude toward unauthorized duplication and downloading of music. However, Liao, Lin and Liu (2010) did not confirm this relationship but found a significant relationship between psychological risk and attitudes. Based on these studies, we expect that any negative consequences, arising from pirating digital content negatively affect favorable attitude. More specifically, our hypothesis is the following:

H3: Perceived technical risk negatively influences favorable attitude toward piracy.

Another construct that has not received much attention in the digital piracy studies is subjective knowledge and its influence on attitude toward piracy. Studies that tackled this relationship focused more on the awareness of law which can be interpreted as the knowledge on restrictions and penalties and has a negative influence on favorable attitude toward piracy (Goles et al., 2008, 493; Dupin-Bryant, 2010, 19). Marcketti and Shelley (2009, 334-335) also confirmed that the more knowledge consumers have on counterfeiting and efforts to stop it the less favorable their attitudes toward counterfeit items are. Due to the specifics of the Slovene context, i.e., allegedly less important legal aspect of digital piracy, subjective knowledge in this paper pertains to an individual's perceived knowledge of where and how to share files. Namely, we hypothesize that the greater subjective knowledge consumers possess about file-sharing characteristics, the more favorble attitude they have.

H4: Subjective knowledge positively influences favorable attitude toward piracy.

Corresponding to our second hypothesis, we also emphasize the importance of perceived benefits with respect to consumer intentions to pirate copyrighted materials. Several authors suggested that perceived benefits positively influence the intentions to pirate, as well as managed to provide empirical evidence of the stated relationship, e.g. Hennig-Thurau, Hennig, and Sattler (2007, 13-14), Lysonski and Durvasula (2008, 173-174), Kwong et al., 2003, 230-231). Along these lines, we also hypothesize:

H5: Perceived benefits positively influence intention to pirate.

The sixth hypothesis focuses on the relationship between subjective knowledge and intention to pirate. Consumers have to know what to do before they take action. Phau and Ng (2010, 33) suggested computer proficiency of a consumer may be a crucial factor when forming intentions. What is even more important in the digital piracy context is subjective knowledge on file-sharing. The positive influence of consumer's perceived knowledge on behavior has been confirmed by Hennig-Thurau, Hennig and Sattler (2007, 13-14). Based on their findings, we hypothesize:

H6: Subjective knowledge positively influences intention to pirate.

The relationship between attitudes and intentions, as the core concepts of the models of attitude-behavior relations, has been a focus of numerous consumer piracy studies, where a strong causal link has been reported (e.g. Aleassa, Pearson and McClurg, 2011, 671; Chen, Pan and Pan, 2009, 367-369; Cronan and Al-Rafee, 2008, 536; Liao, Lin and Liu, 2010, 243; Shoham, Ruvio and Davidow, 2008, 203-204; Phau and Ng, 2010, 32). Following these findings, we propose that:

H7: Favorable attitude toward piracy positively influences intention to pirate.

IV. METHODOLOGY

The hypotheses were tested on a final sample of 843 consumers in Slovenia. A self-administered survey was utilized as a data collection methodology. The instrument was administered to an initial sample of 10.000 consumers, representative of the population in the country based on gender, age, type of settlement and region. The total number of the returned questionnaires was 1523, yielding a 15.2 % response rate. Some questionnaires were eliminated due to missing data and 55.4% (943) were included in the present study on piracy. The prerequisite for the inclusion in this study was an individual's computer usage, i.e., only respondents actually using a computer were asked to respond to our questions related to digital piracy.

Construct measures were based on the existing literature, but carefully adapted to the cultural context with additional testing of reliability in this study. In the process of developing the survey instrument and modifying the scale items for a cross-cultural adaptation, the guidelines for conducting international consumer research were closely followed (Craig and Douglas, 2000; Douglas and Nijssen, 2003). This process included elimination of items with limited conceptual equivalence, ensuring the translation is decentered from the literal language translation, and a careful pretesting of the questionnaire on a convenience sample of relevant individuals, and subsequent modification of individual items.

The moral intensity construct was measured on a 5-point semantic differential scale, while the rest of the constructs, identified in the conceptual model (perceived benefits, perceived technical risk, subjective knowledge, favorable attitude toward piracy and intention to pirate) were measured on 5-point Likert type scales ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

The moral intensity scale measured the magnitude of consequences, the probability of effect and the temporal immediacy for the situation of pirating digital content. Individual items were previously applied in studies by Singhapakdi et al. (1996, 254) and McMahon and Harvey (2006, 384). When developing the perceived benefits scale we relied on items applied by Hennig-Thurau et al. (2007, 17) and Goles et al. (2008, 496). Items for perceived technical risk were partly adapted from the scale of technical costs of the copy by Hennig-Thurau et al. (2007, 17). The measure of subjective knowledge was based on the consumer file-sharing knowledge scale used by Hennig-Thurau et al. (2007, 17). To capture the attitude toward pirating digital content, items relating to overall favorableness of the digital piracy were used, relying on scales previously applied by Al-Rafee and Cronan (2006, 251) and de Matos et al. (2007, 40). The piracy intention measure relied on a three-item scale designed by Taylor and Todd (1995) which has been applied in the recent study on softlifting (Goles et al., 2008, 496).

Our sample consisted of 843 individuals, with 54.8 % of females and average age of 37.5 years (SD of 14.8). The largest category was represented by respondents between 18 and 25 years (26.9%), and the smallest age category comprised individuals above 61 years (7.4 %). The majority of the sample (61.5 %) attained college education, and just over half of the sample (56.7 %) was employed, either on a part-time or full-time basis. With respect to income, about one third (32.2 %) of the respondents' households received net monthly income of €1001 and €2000, closely followed by the €501 and €1000 income category (27.9 % respondents' households).

V. DATA ANALYSIS

The data analysis consisted of two steps. First, a Confirmatory Factor Analysis with LISREL was used to check the validity and reliability of the measurement items. Then, full-information structural equation modeling was employed to examine the structural relationships in the model. The final measurement model was modified by taking the theoretical limitations, modification diagnostics, and validity of indicators into account. Consequently, statistically insignificant items and items measuring more than one construct were excluded.

The chi-square test and fit indices indicated that the measurement model had a good fit (χ^2=461.25, d.f.=155; GFI=0.95; NFI=0.95; CFI=0.96; RMSEA=0.05). All the factor loadings and error variances were statistically significant (at $p < 0.05$), which confirms the convergent validity of the selected indicators. The construct reliability was measured by composite reliability (CR) and average variance extracted (AVE), as suggested in the measurement literature (e.g. Fornell and Larcker, 1981). As seen in Table 1, the six constructs display adequate average variance extracted and construct reliability (CR > 0.7; AVE > 0.5). Discriminant validity was checked by constraining

the covariance in any set of two constructs (Anderson and Gerbing, 1988) and then performing a chi-square difference test on the values obtained for the constrained and unconstrained models. Since the unconstrained models had significantly lower chi-square values, it can be concluded that the measures exhibit acceptable discriminant validity.

TABLE 1. MEASUREMENT SCALE PROPERTIES

Construct	No. of items	Mean	AVE	CR
Subjective Knowledge	5	3.06	0.575	0.871
Perceived Benefits	3	3.07	0.529	0.765
Moral Intensity	3	2.86	0.682	0.861
Perceived Technical Risk	3	4.03	0.522	0.765
Attitude	3	2.33	0.574	0.798
Intention	3	2.89	0.694	0.869

Source: Research results

Once the convergent validity, construct reliability, and discriminant validity were established, the structural model was evaluated in order to test the hypothesized relationships. The model fit measures show that the data conform well to the model (χ^2=464.61, d.f.=157; GFI=0.95; NFI=0.95; CFI=0.96; RMSEA=0.05). The t-statistics from the structural model were used to examine the relationships among constructs. As indicated in Table 2, support was found for five of seven proposed relationships. The effect of moral intensity on favorable attitude toward piracy was not statistically significant. Therefore, H1 was not supported. Similarly, the hypothesized negative impact of perceived technical risk on attitude was not statistically significant, resulting in rejection of H3. On the other hand, perceived benefits and subjective knowledge were found to influence favorable attitude, lending support to hypotheses H2 and H4. Further, perceived benefits, subjective knowledge and favorable attitude had a significant positive effect on intention to pirate, providing support to H5, H6 and H7, respectively.

TABLE 2. HYPOTHESIS TESTING AND RESULTS

Hypothesis	Causal Path	Expected sign	Path Coefficients (*t*-Value*)	Result
H1	Intensity → Attitude	-	-0.07 (-1.77)	Not supported
H2	Benefits → Attitude	+	0.51* (9.04)	Supported
H3	Risk→ Attitude	-	-0.03 (-1.04)	Not supported
H4	Knowledge → Attitude	+	0.31* (7.49)	Supported
H5	Benefits →Intention	+	0.21* (4.25)	Supported
H6	Knowledge →Intention	+	0.20* (5.36)	Supported
H7	Attitude → Intention	+	0.48* (8.49)	Supported

Source: Research results

* Significant at $p \leq 0.05$ if $|t| \geq 1.96$.

VI. DISCUSSIONS AND IMPLICATIONS

In our model we have combined the models of attitude-behavior relations with variables drawn from ethical decision making theory (moral intensity) as well as variables related to consumer knowledge and perceived personal consequences of piracy. When tested on a sample of Slovenian consumers five of the seven hypothesized relationships were supported.

Subjective knowledge of where and how to download pirated files and the perceived benefits of piracy proved to be significant determinants of consumer attitudes and intentions (H2, H4, H5, H6). More subjective knowledge and perceptions of positive benefits lead to more positive attitude toward piracy and higher intentions to pirate. In addition to extending theory these findings hold several managerial and public policy implications. As the information and communication technology and infrastructure advance, the accessibility and ease of using downloading applications are likely to improve. What is more, these advancements also make it easier for average consumers to acquire and share the necessary knowledge (Poster 2006). As a result, the overall level of consumer knowledge is likely to increase. In absence of significant market changes (e.g., improved access to and affordability of content), increased consumer competence to download and upload pirated files, together with increased accessibility and ease of using downloading services are also likely to improve consumer perceptions of benefits of piracy. This suggests that the content industry and policy makers will find it more difficult to rely on consumers' lack of knowledge as a deterrent to piracy and could well be faced with more positive consumer perceptions of benefits of piracy. Aiming to reduce the perceived benefits of piracy will prove difficult in absence of substantial increase in advantages of using authorized content. This further stresses the need to provide incentives for consuming authorized content rather than merely relying on deterrents to piracy.

In accord with previous studies (Chiou et al., 2005; Sinha and Mandel, 2008), we have also tested the role of risk perceptions in forming attitudes toward piracy (H3). Due to the specificity of the context (Slovenia), we have forgone the traditional focus on prosecution risk, exploring instead the role of perceived technical risk. Surprisingly, the relationship could not be supported, which invites several considerations. While the results do invite us to speculate that the role of risk perceptions might not be as significant as previously thought, concluding that technical risk does

not play a role in piracy behavior would be premature. When perceived benefits and subjective knowledge variables are removed from our model, the negative relationship between perceived risk and attitudes does become significant. This would suggest that the effect of technical risks on consumer attitudes might be overridden by the impact of perception of benefits and subjective knowledge. Further exploration is needed to comprehensively test these speculations.

We also failed to confirm a positive relationship between moral intensity and attitudes toward piracy (H1). In our study the construct of moral intensity involves consumer perceptions of the magnitude of consequences caused by piracy, consumer perceptions of the likelihood of this impact being felt by others and the temporal nature of these consequences (i.e., long vs. short-term). Whereas past research (Tan 2002; Chiou et al. 2005) confirmed the role of various moral intensity components (primarily 'magnitude') as a significant predictor of attitudes, we were unable to do so. Since in the context we have studied, negative perceptions of societal consequences of piracy did not directly lead to more negative attitudes toward piracy, policy makers should reexamine their preference for using (stand alone) moral appeals in anti-piracy campaigns. As suggested above the overall moral intensity score of our sample is rather low. Combined with the confirmed high impact of perceived benefits on attitudes and intensions, this would suggest that our respondents primarily construe piracy in terms of personal consequences as opposed to moral concerns.

Several limitations of our study also need to be acknowledged. Although a thorough and systematic examination of the literature and careful adaptation to the chosen setting have been made, the range of constructs explored in our study has been subject to various constraints. Our intention was not to test all possible antecedents to piracy attitudes and intensions, but rather to focus those judged most relevant to addressing the pertinent gaps in the literature. From the methodological point of view, the cross-sectional design of this study provides some limitations as compared to the longitudinal design, which enables a more dynamic insight into the mechanisms of piracy behavior. In addition, future research would also benefit from taking into account the differences in attitude and intention formation across culture.

In sum, our contributions carry important theoretical and public policy implication. First, they highlight the fruitfulness of introducing ethical decision-making theory and utility maximization theory into models of attitude-behavior relations in the context of digital piracy behavior. Second, they confirm the vital role that subjective knowledge of how and where to download and consumer perceptions of benefits play in determining consumers' overall attitudes toward piracy and intentions to pirate. Third, they raise doubts regarding the effectiveness of invoking moral appeals and technical risks in anti-piracy advertising. Although there is no reason to dismiss these two antecedents, their influence does seem to be overridden by the impact of subjective knowledge and perception of benefits. Further research is needed to test the intricate relationships between these variables and explore the ways in which they might change through time and differ across culture.

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