The current reference for this work is as follows:

> Paul Benjamin Lowry, Jun Zhang, and Tailai Wu (2016). "Nature or nurture? A meta-analysis of the factors that maximize the prediction of digital piracy by using social cognitive theory as a framework," Computers in Human Behavior (CHB) (accepted 10-Nov-2016).

* = corresponding author

If you have any questions, would like a copy of the final version of the article, or would like copies of other articles we've published, please contact any of us directly, as follows:

- **Prof. Paul Benjamin Lowry**
  - Email: Paul.Lowry.PhD@gmail.com
  - Website: https://sites.google.com/site/professorlowrypaulbenjamin/home
  - System to request Paul's articles: https://seanacademic.qualtrics.com/SE/?SID=SV_7WCaP0V7FA0GWWx
- **Dr. Jun Zhang**
  - Email: junzhangnju@gmail.com
- **Dr. Tailai Wu**
  - Email: lncle2012@yahoo.com

* = corresponding author

Nature or Nurture? A Meta-analysis of the Factors that Maximize the Prediction of Digital Piracy by Using Social Cognitive Theory as a Framework

ABSTRACT

Digital piracy has permeated virtually every country and costs the global economy many billions of dollars annually. Digital piracy is the unauthorized and illegal digital copying or distribution of digital goods, such as music, movies, and software. To date, researchers have used disparate theories and models to understand individuals' motivations for stealing and sharing digital content. To establish a unified understanding of digital piracy research in order to set an agenda for future studies, we conducted a meta-analysis of the literature. We analyzed 257 unique studies with a total of 126,622 participants to examine all the major constructs and covariates used in the literature. Using social cognitive theory, we were able to resolve several contradictions and trade-offs found in the digital piracy literature. Further, our meta-analytic results suggest that four key sets of factors maximize prediction: (1) *outcome expectancies* (considerations of rewards, perceived risks, and perceived sanctions), (2) *social learning* (positive and negative social influence and piracy habit), (3) *self-efficacy* and *self-regulation* (perceived behavioral control and low self-control), and (4) *moral disengagement* (morality, immorality, and neutralization). Based on our results, we describe several patterns in the literature that suggest opportunities to further synthesize the literature and expand the boundaries of digital piracy research.

KEYWORDS

Digital piracy, piracy, meta-analysis, literature review, social cognitive theory (SCT), theory building, illegal file sharing, copyright infringement, neutralization, sanctions, morality, costs, benefits, risks, social influence, perceived behavioral control (PBC), self-efficacy, moral disengagement

1. INTRODUCTION

Digital piracy is a widely used term for the act of copyright infringement of electronic goods such as software, music, books, movies, TV shows, and games. For brevity, we use the term piracy interchangeably with digital piracy, while limiting our use to the digital realm. Piracy is a form of criminal behavior that has permeated every country in the world and costs the global economy many billions of dollars annually. Approximately 99% of data transferred on peer-to-peer networks is copyrighted, 42% of the software currently in use worldwide is pirated, more than 75% of computers have at least one illegally downloaded application, 95% of music downloaded online is illegal (the rate in the United States alone is 63%), 66% of online torrents are illegal, 22% of Internet bandwidth worldwide is used for piracy, the music industry loses US$12.6 billion a year to piracy, US$59 billion in illegal software was download in 2010, and 71,060 jobs are lost in the United States each year due to piracy (Go-Gulf, 2011; RIAA, 2015). Consequently, piracy stifles business innovation, destroys jobs, and thus negatively affects media companies, software companies, and publishers. Alarmingly, 70% of Internet users find nothing wrong with piracy. Piracy research generally attempts to account for the disconnection between this attitude and the negative consequences of piracy.

This literature rarely uses experimentation, and it primarily administers cross-sectional self-reporting surveys on piracy or surveys based on hypothetical piracy vignettes. Scores of theories and hundreds of constructs have been applied to the prediction of piracy. The most commonly used theories are deterrence theory (DT), neutralization theory (NT), self-control theory, social learning theory (SLT), the theory of planned behavior (TPB), and social cognitive theory (SCT). Several morality theories have also been applied. This theoretical mishmash has created results replete with contradictory findings, emphases, and conclusions.[1] Most of these studies apply one or two theories and a handful of constructs,

[1] The following are examples of disparities in the piracy literature. Some studies show that DT-based sanctions are efficacious (e.g., Lysonski & Durvasula, 2008; Moores & Dhillon, 2000), others show the opposite (e.g., LaRose et al., 2005; Siponen et al., 2012), and still others show mixed results (e.g., Fetscherin, 2009; Gunter, 2008, 2009). Some show that morality matters (e.g., Seale, 2002; Siponen et al., 2012), whereas others do not (e.g., Chan et al., 2013; Holt & Morris, 2009). Some point to the importance of neutralization in increasing piracy (Kos Koklic et al., 2016; e.g, Siponen et al., 2012), whereas others show that it does not increase piracy (e.g., Jacobs et

and thus far, few study has attempted to unify the literature or rectify its fundamental conflicts.

The existence of so many stand-alone studies that use different theories, goals, and constructs makes it virtually impossible to reconcile the disparities in the literature through traditional review and survey methods. Until digital piracy researchers can reconcile and unify their approaches and, subsequently, their results, it will be difficult to help practitioners mitigate piracy. The conflicts and unanswered questions that haunt this literature beg for an approach that can systematically examine the conflicting results to determine the most likely predictors of piracy. Given this background, this is an ideal juncture for a meta-analysis that can identify unifying answers to advance the research and practice associated with preventing the noxious global problem of piracy, Meta-analysis is fundamentally a technique that relies on effect sizes to draw valid statistically significant conclusions across a body of related research. Its main strength, in addition to empirical rigor, is its ability to make sense of the natural variability that occurs across a body of research—often described as "contrary" or "mixed" findings—and to explain moderation effects based on quantifiable differences in each study.

Although we found that Taylor et al. (2014) have already conducted a meta-analysis on digital piracy, their work was largely preliminary, thus leaving several key opportunities we address. First, Taylor et al. (2014) built their meta-analysis study on an existing theoretical model by Higgins and Marcum (2011); however, the original focus of this conceptual model is on the mediation effects among the antecedents of digital piracy, which cannot be tested using meta-analysis. For this reason, there is not a good fit between the theoretical model of Higgins and Marcum (2011) and the meta-analysis of Taylor et al. (2014). Thus, there is a strong need to further propose an overarching theoretical framework to guide future meta-analysis on digital piracy. Second, Taylor et al. (2014) unfortunately overlooked the

al., 2012; Smallridge, 2012). The disparity of findings is not surprising given the use of many different theoretical perspectives. Some claim piracy is a planned, rational, cost-benefit act focused on outcome expectancies (e.g., Al-Rafee & Dashti, 2012; Aleassa et al., 2011; Wang & McClung, 2011), whereas others represent it as determined primarily by irrational forces such as low self-control (LSC) or low self-regulation (e.g., Burruss et al., 2013; Malin & Fowers, 2009). Some claim that negative social influence or social learning is crucial (e.g., Higgins, 2006; Higgins & Makin, 2004a), whereas others claim the opposite (e.g., Holt & Morris, 2009; Wolfe et al., 2008). Some emphasize that negative socialized habits matter (e.g., Akbulut, 2014; Cronan & Al-Rafee, 2008), whereas others argue that they do not (e.g., Phau et al., 2014; Setiawan & Tjiptono, 2013).

majority of published empirical piracy studies, and included only 42 studies in their meta-analysis. Based on our literature review, there are more than 250 empirical digital piracy studies from which effect sizes can be derived. Crucially, to be accurate meta-analysis articles must be based on a sample as close as possible to the whole population, or sample selection bias will be introduced. Third, they left uncovered several theoretical and methodological considerations that are ripe for traditional moderation analysis via meta-analysis. These include using student samples compared with non-student samples, using surveys of actual experience or scenarios for participants, differences in the kinds of goods being pirated (e.g., music, software, movies), and so on.

Recognizing the many opportunities to conduct meta-analysis on the digital piracy literature, we carefully reviewed the digital piracy literature and conducted a comprehensive meta-analysis of the predictors of piracy committed by consumers. Our review of the literature yielded 257 unique empirical studies with a total of 126,622 participants. By taking a comprehensive account of piracy's predictors, we were able to resolve several of the apparent contradictions and trade-offs in the literature. We also identified exciting opportunities for the further improvement and unification of piracy research.

The structure of the article is as follows. In Section 2, we discuss the background of digital piracy research, and provide some key findings from our literature review of 257 empirical studies on this topic. In Section 3, based on our comprehensive literature review, we propose a SCT theoretical framework of digital piracy that summarizes virtually all the relevant predictors of digital piracy in existing studies. This comprehensive model, serves as a guide for our meta-analysis, based on which we identify the relevant antecedents of digital piracy and conduct the data coding. Section 4 details the formal procedures we followed to conduct our meta-analysis, including the processes of sample selection, data coding and entry, the calculation of effect sizes in meta-analysis, and so on. The results of the data analysis are presented in Section 5. Finally, in Section 6, we discuss the implications of the key findings of the meta-analysis, as well as limitations and future research opportunities on digital piracy.

2. BACKGROUND ON DIGITAL PIRACY AND ITS THEORIES

2.1 Digital Piracy as a Form of Criminal Computer Abuse

Digital piracy occurs when a consumer intentionally uses, distributes, shares, copies, stores, or acquires copyrighted digital goods (e.g., software, music, books, movies, TV shows, and games) without the permission of the copyright holder and with the knowledge that the works are not the consumer's property (Aleassa et al., 2011; Moore & McMullan, 2004; Nandedkar & Midha, 2012). Despite near-universal international laws against these actions, piracy research suggests that most consumers do not view illegal file downloads as a crime or rationalize such criminal behavior as too minor to worry about (Go-Gulf, 2011; RIAA, 2015). In the minds of these consumers, piracy is not commensurate, morally or legally, with crimes such as petty theft and shoplifting from a retailer. Consequently, a major thrust of piracy research is to understand how the online or digital context of this criminal activity changes consumer perceptions of criminality. Thus, it is important to explain the criminal nature of piracy and to consider how piracy fits into the more general research on criminology.

Although piracy is a criminal act, not all criminal acts are committed for the same reasons or in the same circumstances. It is thus important to get inside the minds of individuals who choose to circumvent the copyrights of digital goods. First, using the taxonomy of Loch et al. (1992), we argue that piracy involves consumers who intentionally commit acts of piracy and is thus a malicious (e.g., illegal), as opposed to a non-malicious form of noncompliance (e.g., lapses in judgment or carelessness due to lack of education). In our context, it is a knowing, intentional, and ultimately malicious act, because it involves the deliberate acquisition of digital goods without payment. Moreover, piracy is distinct from crimes of passion (e.g., manslaughter), crimes involving sexual deviance and violence (e.g., rape), felonious larceny (e.g., breaking into a house and stealing diamonds), or even the shoplifting of physical goods from a retail store. Criminologists have long studied and carefully differentiated such acts and have shown that many background factors, elements of socialization, personal needs, and reactions to chance events (e.g., quarrels, getting drunk, and being challenged to a fight) can lead to the readiness and decision to commit a crime (Clarke & Cornish, 1985). For example, a typical burglar cases a

neighborhood, plans for the right opportunity, and considers costs and benefits prior to the act, whereas someone who commits manslaughter responds violently to the situation at hand without a rational thought process and based on genetic and social conditioning (Clarke & Cornish, 1985).Yet, piracy takes little to no planning, is relatively easy to commit anonymously on any computer, and involves much lower risks than traditional crimes.

2.2 Comparing the Theories Used to Predict Digital Piracy

A key goal of this study is to amalgamate the disparate results and approaches in the piracy literature to create a framework that can maximize prediction. Although studies generally agree that piracy is not a crime of passion, there is little agreement beyond that. Thus, our first task was to review and understand these theories. Appendix A Table A.1 presents an overview of all reviewed studies. Table 1 summarizes our theory-based literature review and indicates the degree to which theories used in piracy research have the potential to unify the literature. We argue that most of the theories applied in piracy research have a narrow focus that restricts prediction maximization, with one notable exception.

For example, some researchers have explained piracy from ethical or moral development perspectives. Certain approaches have leveraged the Hunt–Vitell model's deontological and teleological evaluation of individuals' ethical judgments about whether to commit piracy (Shang et al., 2008; Thong & Chee-sing, 1998). Yoon (2012) combined the Hunt–Vitell model with the TPB to explain software piracy. Similarly, others have drawn on moral development theory to argue that whether one commits piracy depends on one's stage of moral development, where those less morally developed are more prone to piracy (Chen et al., 2009; Kini et al., 2003; Yoon, 2011a). Finally, others have used moral intensity theory to consider the degree of one's moral intensity as the key predictor of piracy (Ramakrishna et al., 2001). Other studies have combined moral intensity theory and moral development theory (Kini et al., 2004; Kini et al., 2003). Other studies have used DT, a theory designed to explain criminal behavior, which argues that people engage in criminal behaviors to maximize benefits and minimize costs, with a strong focus on outcome expectancies.

DT uses the idea of sanctions—usually in the form of severity, certainty, and celerity—as rational

Table 1. Degree to Which Particular Theories Can Unify the Predictors Found in the Digital Piracy Literature

Theory used in the digital piracy literature	Accounts for rational planning and cost/benefit outcome expectancies?	Accounts for social learning and habit?	Accounts for self-efficacy/perceived behavioral control and self-regulation?	Accounts for moral beliefs and moral disengagement?	Overall quality of fit for unifying the piracy literature under one theoretical framework
Deterrence theory (DT)	Yes	No	No	Partially; can add morality	Poor fit; too narrow and easily subsumed by more general theories
Differential association theory	Yes	Yes	No	Partially; immorality	"Okay" fit, but hard to use and further improved by SLT and SCT
Equity theory	Yes	Partially	No	No	Poor fit; too narrow and easily subsumed by social learning–related theories
Hunt–Vitell model	Yes	No	No	Partially; ethical judgement	"Okay" fit, but incomplete; good external environment considerations
Moral development theory	Yes	Partially	No	Partially; ethical judgement	Good fit; very complex (stage-based) and thus difficult to test; strong moral focus
Moral intensity theory	Yes	Partially; social consensus	No	Partially; ethical judgement	Good fit; very complex (stage-based) and thus difficult to test; strong moral focus
Neutralization theory (NT)	No	No	No	Partially; moral disengagement	Poor fit; too narrow and easily subsumed by more general theories
Self-control theory	No	No	Focus on low self-control	No	Poor fit; too narrow and easily subsumed by more general theories
Social learning theory (SLT)	Yes	Yes	Yes	Yes	Good fit, but improved by SCT
Social bond theory/Social control theory	No	Focus on social bonds	No	No	Very poor fit; has never been fully used in piracy research; latest version is social control theory
Strain theory	No	No	No	No	Very poor fit; focuses on negative emotions; never fully used in piracy research
The theory of reasoned action (TRA)	Partially, not directly	Partially, through norms	No	No	Weak fit; incomplete and improved by the TPB
The theory of planned behavior(TPB)	Partially, not directly	Partially, through norms	Yes	No	"Okay" fit, but falls short with morality
Social cognitive theory (SCT)	Yes	Yes	Yes	Yes	Excellent fit; can encapsulate most of the key factors in the piracy literature

forces that thwart criminal acts. Many studies have applied DT to piracy (Higgins et al., 2005; Jeong et al., 2012). However, because of DT's narrow focus on sanctions and its consequent inability to leverage other factors, it has often been combined with other theories, including the TPB (Peace et al., 2003; Plowman & Goode, 2009) and differential association theory, which takes a social learning approach (Gunter, 2009).

Another less comprehensive approach is that of social bond theory, also known as social control theory. Social bond theory explains how positive social bonds can decrease deviant behavior. We did not find any studies that used social bond theory alone, but several have combined it with other theories, such as SLT (Hinduja & Ingram, 2009), self-control theory (Higgins et al., 2008a), and neutralization theory (Marcum et al., 2011).

Other researchers have likewise taken a narrower focus in order to predict one major phenomenon leading to piracy. Among these approaches is self-control theory, which posits that intentionally committing piracy results from a lack of self-control, which may be partially caused by the absence of strong parenting in childhood and by other social influences (Gunter et al., 2010; Higgins & Makin, 2004b; Higgins et al., 2008a). Low self-control (LSC) has often been combined with SLT (Higgins, 2006; Higgins & Makin, 2004a). Another narrow approach applies NT, a moral disengagement perspective, which posits that even though people know that piracy is inherently wrong, they use various rationalization techniques to convince themselves that it is acceptable, such as arguing that everyone does it, that it causes little real harm, that it is a victimless crime, or that they cannot afford to buy the digital goods (e.g., Kos Koklic et al., 2016; Siponen et al., 2012). Because of their narrow focus, self-control theory and NT are commonly combined with other theories, such as SCT or the TPB.

More comprehensive approaches have drawn on the theory of reasoned action (TRA) or the TPB. These approaches still embrace strong rationality with cost-benefit calculations and advanced planning but also frequently include social norms and perceived behavioral control (PBC) (Chang, 1998; Chiang & Huang, 2007; d'Astous et al., 2005; Peace et al., 2003; Wang & McClung, 2011; Yoon, 2011b). Many studies have used elements of the TPB or combined the TPB with a variety of other theories.

Other inclusive theories have emphasized more strongly that piracy is learned through negative social influences, taking into account related factors. The first key theory in this area is differential association theory, which has been partially used in a few piracy studies (Gunter, 2008, 2009). However, it has long been argued that differential association theory is difficult to operationalize, which compelled Burgess and Akers (1966) to rework the theory into the more straightforward, more easily operationalized SLT framework. SLT posits that crime is learned through differential association with others and is imitated because of positive reinforcement and other forms of justification (Burruss et al., 2013; Gunter, 2008; Hinduja & Ingram, 2009).

SCT, an offshoot of SLT designed to improve upon it, has also been used in the literature. SCT builds on the idea that criminal behavior is learned by watching others, but it adds that criminal behavior is also influenced by social and environmental factors, such as psychological outcome expectancy determinants, environmental determinants, observational learning, and self-regulation/PBC (Garbharran & Thatcher, 2011; Jacobs et al., 2012; Kuo & Hsu, 2001; Taylor, 2009). The leading candidate theory for maximizing piracy prediction, as highlighted in Table 1, is clearly SCT. We thus chose SCT as our framework for reviewing and testing the literature. Of the rationality-based theories, the TPB is arguably the strongest, because it can easily subsume DT and the TRA; however, evidence from the literature suggests that piracy is not always committed through careful, rational planning. We argue that socialization models are stronger because they incorporate rational factors such as cost-benefit analysis, as well as moral, irrational, environmental, and rationalization factors, more naturally than the TPB. Thus, although it is an imperfect predictor of piracy, SCT is the strongest candidate for a theoretical framework that can unify the constructs and subtheories in the piracy literature.[2]

[2] Aside from the major theories reviewed in this section, the technology acceptance model (TAM) has also been used, but it is a particularly poor candidate for maximizing prediction in this literature. The point of the TAM is to predict system adoption, and we argue that using it to predict the piracy/non-piracy of digital media falls outside its boundary conditions. Not surprisingly, the few studies attempting to use the TAM to predict piracy drop key constructs or include another theory in an attempt to make it work or even treat "downloading" (a behavior) as the surrogate for "system adoption" (Amiroso & Case, 2007; Blake & Kyper, 2013; Bounagui & Nel, 2009; Gartside & Heales, 2006a; Wang et al., 2013).

3. THEORY: MAPPING THE DIGITAL PIRACY LITERATURE TO SCT

To use SCT to test and unify the piracy literature, we further explain how SCT works and how it may unify the key elements in the literature that are purported to predict piracy. Originally a psychological framework, SCT was first proposed by Bandura (1986). It retains the assumptions of SLT—that people learn by watching others' behaviors and that behaviors are learned in a social context—and further takes into account the social and environmental influences on the learning process (Bandura, 1986). Like SLT, SCT emphasizes the maintenance of certain behaviors over time through both reinforcement and individual self-regulation (Bandura, 1986). SCT further emphasizes *reciprocal determinism*, which is the idea that personal factors (e.g., self-efficacy), behavioral factors (e.g., positive/negative responses to behaviors), and environmental factors (e.g., facilitating conditions) affect each other reciprocally. Behaviors and their associated consequences interact further with personal and environmental factors in the reinforcement process, in which people learn to repeat beneficial behaviors and to avoid harmful ones. SCT-related research categorizes the personal, behavioral, and environmental factors into the following five major categories, which can be translated into constructs that predict learned behavior (Bandura, 1986; Compeau et al., 1999; Glanz et al., 2008).

(1) *Outcome expectancies.* The most commonly used personal psychological determinant in SCT research is outcome expectancies, or the perceived benefits, risks, costs, and/or punishments associated with certain behaviors. These are learned over time by observing and imitating others and are heavily influenced by one's environment.

(2) *Social learning* (or modeling) is the ability and propensity to learn new behaviors by observing others. Peer association, prior experience/habit, and norms are among the variables commonly used to reflect this learning process.

(3) *Self-efficacy* (or *PBC*) and *self-regulation*. SCT posits that in addition to social learning and outcome expectancies, self-efficacy and self-regulation are crucial to properly modeling and performing a behavior. Self-efficacy, or perceived behavioral control, is one's general belief that one can effectively control and perform a given behavior or skill. Self-regulation, in contrast to the facilitating conditions and

the reinforcement process, refers to one's ability to control one's behaviors through self-control and self-monitoring. Hence, self-efficacy can be improved by self-regulation.

(4) *Moral disengagement*. SCT acknowledges the difference between knowing what the right thing to do is and doing it. That is, people may have moral competence—they know what is right and wrong—but their actions in the context of a moral conflict may be inconsistent with their moral competence. That is, people may temporarily suspend their moral judgment to gain a reward, as determined by outcome expectancies and social learning. This leads to the idea of moral disengagement, which is defined as "the mechanisms individuals activate to override the influence of their internal self-sanctions and to distance themselves from perceived reprehensible consequences of their behavior" (Garbharran & Thatcher, 2011, p. 302).

(5) *Environmental determinants*, the final category, consists of the external or physical factors that can further influence behavior. Unlike psychological determinants, which involve perceptions, this category includes facilitating conditions. Accordingly, this category comprises the factors that influence the perceptions of psychological determinants. For concision and congruity with the literature, we focus mainly on perceived factors; because direct environmental factors are rarely considered, we have little basis for a meta-analysis of this category, aside from exploratory control variables.

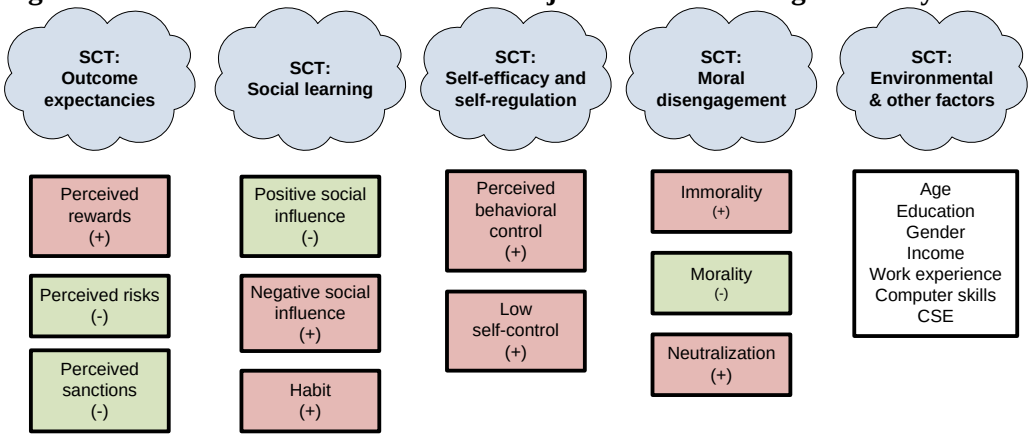
3.1 The Digital Piracy Literature's Key Constructs

Given our case for leveraging the SCT framework to unify the predictors in the piracy literature, we used it to conduct our review of the piracy literature and to explain how the underlying constructs map to SCT. By applying the five key categories of SCT to the known constructs and predictors in the piracy literature, we were able to organize them into a cohesive prediction framework that can be tested via meta-analysis. Figure 1 summarizes this prediction-oriented framework, in which we attempted to maximize the understanding of *prediction* not *explanation*.[3] Nonetheless, where appropriate, we briefly discuss the

[3] The development of theoretical models rests on a key distinction between models designed to predict and models designed to explain (Sutton, 1998). Explanatory models focus on identifying causal determinants of a phenomenon, including a focus on underlying causal mechanisms and how constructs combine to influence each other and why; these are often referred to as *causal models*. By contrast, models that focus on maximizing prediction

underlying theoretical reasons for the relationships between the predictors and piracy, as explained in the piracy literature.

Figure 1. SCT-Based Framework of the Major Predictors of Digital Piracy in the Literature



Note. CSE = computer self-efficacy; red constructs are those generally predicted to increase piracy; green constructs are those generally predicted to decrease piracy.

3.2 Outcome Expectancies: Perceived Extrinsic and Intrinsic Rewards

SCT offers strong support for the idea that perceived extrinsic and intrinsic rewards encourage piracy. This support is especially robust in a piracy context when argued from an SCT perspective, in which perceived psychological determinants are the benefits, costs, risks, and sanctions an individual considers when determining whether piracy is worth committing. *Extrinsic rewards* are the various perceived extrinsic influences, motivations, and positive outcomes that encourage one to engage in piracy. Common examples include saving money, expanding one's digital music collection, perceived utility/value, quality of digital goods, costs of software, and general net economic benefit. A number of piracy studies have shown a positive link between perceived extrinsic rewards and piracy (e.g., Djekic & Loebbecke, 2007; Setiawan & Tjiptono, 2013; Wang et al., 2009). Other studies have shown the opposite (Hennig-Thurau et al., 2007; Jacobs et al., 2012), and still others have found no statistically significant relationship or have

have the goal of finding and proposing suitable predictor variables to maximize the explained variance of a dependent construct. Importantly, in using prediction-oriented models, researchers do not need to specify causal processes other than the simple relationships between the predictors and dependent construct. Notably, in this case, researchers are "free to choose convenient predictors and weights" (p. 1,319) for such models. Even when the underlying causal mechanisms are opaque, such models are very powerful, because they help unify the key factors of prediction in the literature that can best predict future behavior (Sutton, 1998). We thus use this as the key theoretical approach to unifying the predictors in the piracy literature.

generated mixed results from multiple comparisons (Cockrill & Goode, 2012; Cox & Collins, 2014; Shanahan & Hyman, 2010; Villazon, 2004).

By contrast, *intrinsic rewards* are various perceived intrinsic influences, motivations, or positive outcomes that encourage one to engage in piracy. Common examples in the literature include curiosity, fun, thrill, enjoyment of goods, adoration of a specific artist, and desire for variety. As a whole, piracy studies exhibit a decisive tendency to consider extrinsic rewards instead of intrinsic rewards, and only a few have shown a positive link between intrinsic rewards and piracy (Bonner & O'Higgins, 2010; Sheehan et al., 2010; Suter et al., 2006; Suter et al., 2004). Others show no statistically significant results or mixed results (Chen, 2013; Kinnally et al., 2008; Thatcher & Matthews, 2012).

3.3 Outcome Expectancies: Perceived Risks and Sanctions

We also use the theoretical foundation of SCT to explain the risks and sanctions in the psychological-determinants process. In the piracy context, *perceived risk* is the degree to which individuals believe engaging in piracy is risky or fraught with uncertain negative outcomes or costs. Importantly, the sense of risk is separate from the more specific concept of sanctions or formal punishments. Related concepts from the piracy literature include personal risk, the risk of getting a computer virus, general perceived harm, potential negative social consequences, and potential financial costs. The literature related to risk is fairly sparse in comparison to the other literature, but several of the studies have shown a negative relationship between various perceived risks and piracy (Cockrill & Goode, 2012; Jeong et al., 2012; Kos Koklic et al., 2016; Liao et al., 2010; Wong et al., 1990). However, others have shown the opposite (Gerlach et al., 2009; Wolfe et al., 2008) or have shown either no significant relationships or mixed results (Al-Rafee, 2002; Mai & Niemand, 2012).

In our context, *sanctions* represent the degree to which individuals believe engaging in piracy can lead to formal or informal sanctions (or punishments). Examples from the literature include the certainty of sanctions/punishment, the severity of sanctions/punishment, the likelihood of prosecution, potential penalties, deterrence, and the chance of being caught by officials, all of which decrease piracy (Chiou et al., 2011; Higgins et al., 2005; Jeong et al., 2012; Lysonski & Durvasula, 2008; Moores & Dhillon, 2000;

Peace & Galletta, 1996). However, two studies have shown the opposite (Gartside & Heales, 2006b; LaRose et al., 2005), and several studies have found no significant links in either direction and thus could not make definitive conclusions or had mixed results in multiple piracy comparisons (Gunter, 2008; Hollinger, 1993; Mai & Niemand, 2012; Peace, 1995; Smallridge, 2012; Thatcher & Matthews, 2012).

3.4 Social Learning: Positive and Negative Social Influence

The effects of social influence can best be described with SLT (on which SCT builds), which was designed to explain how socialization influences crime (Akers et al., 1979) and later extended to explain unethical behavior. SLT starts with *differential association*, which is the extent to which individuals are exposed to deviant behavior through their associations with others. Once differential association occurs, either through the media or direct association with criminals, three social mechanisms further encourage learning about the criminal behavior: (1) *differential reinforcement*, which is the social learning process of judging the consequences of past criminal behaviors (of self or others). If such behaviors have brought extrinsic and intrinsic benefits (e.g., money, enjoyment, or social rewards) with very low risk of being caught or very few punishments, then the criminal act is likely to be positively reinforced; (2) *definitions*, which refers to the development of beliefs that are favorable toward the crime and may include attitudes and justifications; (3) *imitation*, in which one learns criminal behaviors by observing one's peers, especially peers whom one likes or admires.

The outcome(s) of the SLT process can be simplified and represented in terms of *negative social influence*, where individuals are socially persuaded to learn and embrace criminal/unethical behaviors, and *positive social influence*, where individuals are socially persuaded to reject certain criminal/unethical behaviors) (e.g,. Bandura & Bryant, 2002; Brown et al., 2005; Glomb & Liao, 2003). These ideas encapsulate not only social learning but general norms, regardless of where or how the norms are learned. That is, these social influences influence learned moral judgments about behaviors.

In a piracy context, we define negative social influence as the degree to which individuals' social influences, social environment, and derived norms encourage or support piracy. The literature has addressed negative social influence also in terms of subjective norms (negative), facilitating conditions

(negative), peer association (negative), software-pirating peers, peer deviation, differential association (negative), coercive pressure, and descriptive norms (negative). By contrast, positive social influence is the degree to which individuals' social influences, social environment, and derived norms discourage piracy. The literature has addressed this concept also in terms of subjective norms (positive), facilitating conditions (positive), social consensus, peer association (positive), social factors (positive), social persuasiveness (positive), and descriptive norms (positive).

The piracy literature frequently supports the idea that negative social influence is associated with more piracy and positive social influence is associated with less. Higgins (2006), Higgins and Makin (2004a), and Burruss et al. (2013) demonstrated an association between social learning (i.e., negative social influence) and increased piracy. Gunter's (2008) study also supported the idea that these SLT factors increase piracy. Moreover, Higgins et al. (2006) showed that differential association is a positive factor in piracy but only in low-moral-belief groups. However, a couple of studies show that negative social influence as associated with decreased piracy or positive social influence is associated with increased piracy (Forman, 2009; Holt & Kilger, 2012). Finally, several studies have found no statistically significant links in either direction and thus could not make definitive conclusions or had mixed results in multiple piracy comparisons (Becker & Clement, 2006; Higgins, 2004; Higgins et al., 2007; Higgins & Makin, 2004b; Karakaya, 2010; Kinnally et al., 2008; Lau, 2007; Mai & Niemand, 2012; Malin & Fowers, 2009; Phau & Liang, 2012; Wang & McClung, 2012).

3.5 Social Learning: Habit

Another form of observational learning discussed in the literature is past piracy experience or *piracy habit*, often based on habit theory (e.g., Verplanken, 2006; Verplanken & Aarts, 1999). The idea is that one learns from past experience and develops an experience or piracy habit because of positive reinforcement from previous piracy experiences (Yoon, 2011b). In our context, piracy habit represents the degree to which individuals have engaged in piracy on a repeated basis. In the literature, piracy habit is also referred to more loosely as negative habit, previous piracy, degree of previous piracy behavior, and habit strength. Although the piracy literature often deals with habit simplistically (e.g., the amount of

illegal downloading per month last year), the concept of habit ideally encompasses both past behavior and its psychological components.

Piracy habit was specifically proposed as an addition to SCT by LaRose and Kim (2007) and Jacobs et al. (2012), and as an addition to the TPB by Yoon (2011b). Other key studies have identified a link between piracy habit and piracy (e.g., Akbulut, 2014; Cronan & Al-Rafee, 2008). Although it is plausible that habit and piracy are linked, we observed several contrary or illogical results in the literature that require further consideration via meta-analysis, including studies that have demonstrated an association between habit or heavy past piracy and decreased future piracy (d'Astous et al., 2005; Moon et al., 2015; Phau et al., 2014; Plouffe, 2008; Setiawan & Tjiptono, 2013). Several studies could not make statistically significant conclusions about the link between habit and piracy or had mixed results with multiple related piracy comparisons (Becker & Clement, 2006; Kinnally et al., 2008; Liang & Phau, 2012; Lysonski & Durvasula, 2008; Phau & Liang, 2012; Taylor et al., 2009; Wang & McClung, 2011).

3.5 Self-efficacy and Self-regulation: Perceived Behavioral Control

PBC fits into the self-regulation component of SCT—the ability to control one's behaviors and associated outcomes. PBC is the degree to which individuals believe they can control and perform the piracy behavior effectively and control the desired outcomes. PBC should thus increase piracy. Notably, the idea of PBC was derived from Bandura's self-efficacy concept, and many theorists consider them to be synonymous (Ajzen, 1991; Bandura, 1990; Bandura & Bryant, 2002). The notion of PBC is used much more than self-efficacy in the piracy literature, but these are generally treated as synonymous. Similar examples from the literature include high personal locus of control, behavioral control, and self-efficacy to commit piracy.

Several piracy studies have shown a positive link between PBC (or self-efficacy to commit piracy) and piracy (e.g., Cronan & Al-Rafee, 2008; Gerlich et al., 2010; Kwong & Lee, 2002; Moores et al., 2009; Shemroske, 2012), but two have shown a negative link between PBC and piracy (Chan et al., 2013; Sang et al., 2014). Finally, several studies have found no statistically significant links in either direction and thus could not make definitive conclusions or had mixed results in multiple piracy

comparisons (Hu et al., 2010; Kiksen, 2012; Peace & Galletta, 1996; Van Belle et al., 2014; Wang & McClung, 2012).

3.6 Self-efficacy and Self-regulation: Low Self-control

LSC fits nicely under the SCT framework's concept of self-regulation. LSC is more or less the opposite of self-regulation in that it leads to a lack of self-regulation. Those with LSC tend to exhibit six characteristics that foster their engagement in risky, unethical, or criminal behaviors (Gottfredson & Hirschi, 1990). These individuals (1) are impulsive, (2) prefer simple tasks, (3) seek risks, (4) favor physical rather than mental activities, (5) are self-centered, and (6) have volatile tempers. Ironically, even though LSC is different from PBC, LSC also increases piracy, but for different reasons. piracy is generally easy to commit, takes little planning, and can occur as a result of only a few keystrokes; thus, it can appeal to individuals who lack control or self-regulation, especially when they are impulsive, risk seeking, and self-centered. Importantly, in contrast to the way it applies other constructs, the piracy literature generally applies the idea of LSC using established psychological measures of LSC that are not specific to piracy. Hence, our definition of LSC is the degree to which individuals have little ability to control their general behaviors.

Several piracy studies have shown a positive link between LSC and piracy (e.g., Burruss et al., 2013; Higgins, 2004; Higgins et al., 2012; Malin & Fowers, 2009; Morris & Higgins, 2009). The literature has addressed the concept of LSC also in terms of risk-taking propensity, deficient self-regulation, and low personal control. Despite the empirical evidence of a link between LSC and piracy, two studies have shown that LSC or deficient self-regulation is linked to decreased piracy (Goles et al., 2008; LaRose & Kim, 2007). Finally, several studies have found no statistically significant links in either direction and thus could not make definitive conclusions or had mixed results in multiple piracy comparisons (Higgins, 2006; Higgins, 2007; Hohn et al., 2006; Yang et al., 2014).

3.7 Moral Disengagement: Immorality versus Morality

SCT acknowledges the distinction between moral competence (knowing what is right and wrong) and moral performance (what one actually does in the context of a moral conflict, which may be inconsistent

with one's moral competence). This leads to the idea of *moral disengagement*, which is essentially the idea of suspending or ignoring one's moral judgment to do something one knows is contrary to that judgment. We found that the piracy literature nicely follows these ideas by using surrogates of moral competence referred to as *morality* (and *immorality* for moral incompetence). The idea of moral disengagement is reflected in the concept of neutralization, which we address in the next section.

We are concerned only with individuals' moral position regarding piracy, regardless of how they derive their moral position. This is the appropriate approach for a predictive model, because the underlying causal mechanisms of morality are superfluous for an objective to maximize the known predictors of piracy. Notably, ethics is a subset of morality in that it focuses on the rational assessment of morality. Morality can include rational (e.g., ethical) and irrational (e.g., religious) assessments (e.g., Kini et al., 2004; Seale, 2002; Shang et al., 2008; Siponen et al., 2012; Wagner & Sanders, 2001; Yoon, 2011a). We thus define morality as the degree to which individuals believe piracy is wrong, unethical, or immoral, regardless of their reasons for such beliefs. In the piracy literature, these beliefs have been addressed also in terms of moral judgment, Kantianism, utilitarianism, moral obligation, moral intensity, idealism, ethical concerns, ethics, altruism, deontological judgment, anticipated guilt, religious intensity, and shame about piracy. By contrast, immorality is the degree to which people believe it is acceptable, ethical, or morally correct to commit piracy. The piracy literature has referred to these beliefs also as relativism, egoism, unethical beliefs, Machiavellianism, lack of shame about piracy, and negative moral norms.

Moreover, several piracy studies have supported the idea that those with more moral (i.e., ethical) intentions are less likely to commit piracy than those who are less moral (or unethical) (e.g., Kini et al., 2004; Seale, 2002; Shang et al., 2008; Siponen et al., 2012; Wagner & Sanders, 2001; Yoon, 2011a). However, two studies have shown the opposite (Aleassa et al., 2011; Chan et al., 2013; Kiksen, 2012), and several studies have found no statistical significance in either direction and thus could not make conclusions or had mixed results (Chaudhry et al., 2011; Chen, 2013; Dionísio et al., 2013; Jung, 2009; Leonard & Cronan, 2001; Rawlinson & Lupton, 2007; Shoham et al., 2008).

3.8 Moral Disengagement: Neutralization

Again, we assert that neutralization is an ideal surrogate for the idea of moral disengagement. Neutralization, which fundamentally derives from NT, has been extensively applied to piracy. In piracy, neutralization involves various rationalizations, or justifications, for committing piracy and thus for why it is acceptable for one to disengage from or underestimate potential moral violations, social costs, or other negative consequences of committing piracy. Examples from the literature include users' claims that most people engage in it, claims that they cannot afford the product, denial of responsibility, condemning the condemners, and denial of injury/harm/immorality.

Many piracy studies have shown a positive link between neutralization and increased piracy (e.g, Higgins et al., 2008b; Kos Koklic et al., 2016; Morris & Higgins, 2010; Siponen et al., 2012; Vida et al., 2012; Yu, 2012). However, some studies have shown that neutralization techniques are associated with decreased piracy (Ingram & Hinduja, 2008; Smallridge, 2012; Suter et al., 2006), and several studies have shown either no statistically significant results or mixed results across multiple comparisons or forms of neutralization (Marcum et al., 2011; Rawlinson & Lupton, 2007; Wong et al., 1990).

3.9 Environmental and other factors

In addition to these constructs, we considered the major control variables used in the piracy literature as further surrogates for environmental conditions that may influence piracy, including age, education, gender, income level, work experience, computer skills, and computer self-efficacy. We categorized them as environmental and other factors in the SCT framework of digital piracy.

Appendix B Table B.1 summarizes all the major constructs used in the piracy literature to predict piracy and maps them to SCT.

4. META-ANALYSIS METHODOLOGY

4.1 Why Meta-analysis?

To explain disparities and issues in a given body of literature, researchers generally choose between

narrative reviews,[4] descriptive reviews,[5] vote counting,[6] and meta-analysis. Although the first three are frequently used in behavioral research and can provide heuristic value, they have been shown to lead to invalid and misleading conclusions when interpreting underlying statistics. By contrast, meta-analysis is the leading analytic approach for addressing these deficiencies (Aguinis et al., 2012; Borenstein et al., 2011; Hedges & Olkin, 2014; Hunter & Schmidt, 2004; Rosenthal, 1991; Rosenthal & Rubin, 1982) and has accordingly been used to great effect in behavioral research.

As noted, meta-analysis has the ability to focus on effect sizes has made it the methodology of choice in social and medical sciences for drawing conclusions across multiple studies. This is because behavioral and medical studies (or basic comparisons through surveys) often show strong effects but are statistically insignificant simply because of sample size or methodological choices. Thus, the erroneous labeling of one or two studies with strong effects but insignificant results as having mixed or contrary findings, when in fact the effects are strong, can mislead an entire body of research. In other words, meta-analysis can be used to combine effects across related studies to show the true effects and significance of those studies. This approach has turned contrary or mixed findings into dramatic breakthroughs and insights not possible in one-off studies. Thus, meta-analysis is ideally suited for dealing with the multiple theories and constructs in the piracy literature and for addressing the apparently mixed results, many of which are likely artifacts of design choices.

Juxtaposed with the strengths of meta-analysis are its challenges. First, it is considerably more

---

[4] *Narrative reviews* "present verbal descriptions of past studies focusing on theories and frameworks, elementary factors and their roles (predictor, moderator, or mediator), and/or research outcomes (e.g., supported versus unsupported) regarding a hypothesized relationship" (King & Jun, 2005, p. 667).

[5] *Descriptive reviews* "introduce some quantification, often a frequency analysis of a body of research. The purpose is to find out to what extent the existing literature supports a particular proposition or reveals an interpretable pattern. . . . A frequency analysis (including its derivatives of trend analysis and cluster analysis) treats an individual study as one data record and identifies distinct patterns among the papers surveyed. In doing so, a descriptive review may claim its findings to represent the fact or state of a research domain" (King & Jun, 2005, p. 667).

[6] *Vote counting* "is commonly used for drawing qualitative inferences about a focal relationship (e.g., a correlation is significantly different from 0 or not) by combining individual research outcomes. . . . It uses the outcomes of tests of hypothesis reported in individual studies, such as probabilities, *p*-levels, or results falling into three categories: significantly positive effect, significantly negative effect, and non-significant effect. Repeated results in the same direction across multiple studies, even when some are non-significant, may be more powerful evidence than a single significant result" (King & Jun, 2005, p. 667).

resource intensive and difficult to perform than other review techniques or one-off studies. Second, it is fraught with limitations that require great care and methodological rigor not required in other techniques. To address these limitations, we carefully document the details of our approach, as follows.

4.2 Meta-analytic Calculations

We chose the Hedges and Olkin (1985; 2014) approach to meta-analysis, which is one of three most accepted approaches.[7] Upon completion of data entry and coding, all data from Orion Shoulders™ were exported to Comprehensive Meta-Analysis (CMA)™ version 3.20 for the meta-analysis procedures; CMA is the preferred tool of the leading meta-analysis organization, Cochrane. Our source manuscripts reported source data in a wide variety of formats, from odds ratios, risk ratios, pairs of means and standard deviations, correlations, *t*-statistics, ANOVAs, and Fisher's z to *p*-values. Beta coefficients were not used.[8] We entered all data into CMA, which converted all of these statistics into standardized correlations for consistent presentation, because correlations are very well understood by the behavioral research community. All tests were conducted with Fisher's z-statistic and then converted back to correlations for presentation and interpretation. For cases in which a given study had more than one comparison, we used the standard CMA option to use the average comparisons rather than treating them as independent (which would have inflated type-II error rates).

4.3 Sample Selection of Relevant Studies to Address the "File-drawer" Problem

Our sample of piracy papers included any studies, published or unpublished, that appeared through the first quarter of 2015, regardless of discipline or publication outlet. The oldest article was published in

[7] Meta-analysis in behavioral research is generally conducted in one of three different ways, as originally proposed by Hunter and Schmidt (1990); Hunter and Schmidt (2004), Hedges and Olkin (1985); Hedges and Olkin (2014), and Rosenthal and Rubin (1982). Because the options are similar, the selection of an approach has traditionally been considered largely a matter of personal taste. We chose the Hedges–Olkin approach because a recent seminal article on meta-analysis indicated that this approach is among the two most conservative (Aguinis et al., 2012), is the approach preferred by the leading meta-analysis organization, Cochrane, and is the approach best supported by our software and training. Nonetheless, similar results should be expected from the other two approaches.

[8] Following a common practice in the literature (Borenstein et al., 2011; Peterson & Brown, 2005), we did not consider beta coefficients from regression or SEM to be appropriate sources of meta-analysis statistics. The key reasons for this is that beta coefficients partially reflect all the IVs in the model and thus do not reflect the crucial aspect of an "effect-size metric [that] reflects a simple bivariate or zero-order relationships between two variables" (Peterson & Brown, 2005, p. 175).

1990 (Wong et al., 1990). The "file-drawer" problem, which can undermine meta-analysis, refers to excluding studies that are "hidden" in researchers' file drawers, thus excluding key studies, or letting personal bias influence the selection of studies (Borenstein et al., 2011; Rosenthal, 1979). This problem results partially from the bias of certain journals toward studies that support hypotheses rather than those that reject them (causing source bias); thus, it is necessary for a meta-analysis to include a wide range of published and unpublished works (Borenstein et al., 2011; Rosenthal, 1979). To decrease source bias, maximize the number of relevant studies included, and increase statistical significance, rigorous and exhaustive searches must be conducted (Sharma & Yetton, 2011; Wu & Lederer, 2009). Such searches must include all relevant publication sources, including journal articles, book chapters, conference and workshop proceedings, working papers, and dissertations (Borenstein et al., 2011; Wu & Lederer, 2009; Wu & Lu, 2013). Accordingly, we followed a multistage, rigorous selection process, as follows.

The target population for our meta-analysis consisted of all empirical behavioral studies involving the prediction of piracy attitudes, intentions, or behaviors. Digital piracy includes behaviors such as softlifting, software piracy, illegal digital downloading of music or movies, and illegal file sharing. To find these publications, we first carefully trained five Ph.D. students to perform an exhaustive search on 25 piracy-related keywords against the full abstracts of the articles (each student was assigned 10 unique keywords to ensure exhaustive, overlapping efforts;) across multiple research resources. For the detailed keywords and resources used in paper searching, please refer to Table A.4 and Table A.5 in Appendix A.

All search terms were performed systematically for each category of resource until a given student could find no more unique papers. All newly found papers were shared in a common Google Drive™ repository. Each student then continued to the next category of resource and repeated the process until all searching was exhausted. Once the search space was exhausted, the students checked the bibliographies of the retrieved articles to find any relevant articles that were missed. Authors who had published piracy and behavioral security research were also contacted to see if they had any research in process or newly accepted papers they wanted to include in our study. This search process yielded a total of 658 articles that were fully downloaded and further considered for inclusion in our meta-analysis.

Teams of at least two researchers read and further filtered the articles to remove non-empirical studies (e.g., qualitative research, national-level studies, commentaries, review articles, and theory articles), after which 340 empirical piracy articles remained to be processed. We selected a study for inclusion in the meta-analysis if it met the following criteria: (1) predicted and scientifically measured the individual DV of piracy attitudes, piracy intentions, or actual piracy, and (2) provided statistics (e.g., correlations, *t*-statistics, odds ratios with standard errors, means and standard deviations, *p*-values, z-scores) from which effect sizes could be computed.

Of these considered articles, 107 empirical piracy articles were eliminated for the following reasons: 44 had poor data quality or the wrong kind of data (e.g., descriptive data); 36 had either IVs, DVs, or both that were beyond the scope of our study (e.g., national-level data); 10 did not have the necessary statistics and the authors would not or could not provide them upon request; 10 used the same dataset of articles published later (i.e., duplicate, non-independent data); four were dissertations on embargo; two used non-validated instruments that lacked reliability; and one was in another language and could not be effectively translated.

Summarizing these steps, Appendix A Table A.1 documents the studies included in our meta-analysis; Table A.2 documents the empirical piracy studies that were excluded from our study and why; and Table A.3 documents the empirical studies that we used only partially because the authors refused or could not provide all the required information about their study's relationships. Our preferred format was either correlations or pairs of means and standard deviations, because this allowed full effect-size information to be calculated. Some studies offered only *p*-values, which provide less-than-ideal effect-size information.

4.4 Article Data Entry and Coding

To carefully organize and code all the articles, we used Orion Shoulders™, a collaborative, online meta-analysis tool that is especially useful for supporting the workflow and task management of large meta-analysis projects. We used this tool to help manage the data entry and coding of articles and to manage the multiple rounds of checking the data entry and coding. The coding of the articles involved assigning

articles to moderator categories that could be used later to illuminate our findings. This coding was conducted by three people and continued until 100% interrater agreement was reached, which was required because all of our moderators were categorical variables as opposed to ratings-based scales. Moderators were later used for subgroup analysis to further explain some of the disparities and opportunities in the piracy literature.

4.5 Not Comparing Apples and Oranges

A common criticism of meta-analysis "is that it may compare 'apples and oranges,' aggregating results derived from studies with incommensurable research goals, measures, and procedures" (He & King, 2008, p. 310). We dealt with this problem first by including only studies whose purpose was to predict piracy. We also followed other studies in dealing with results that are generalizable within a broad domain (He & King, 2008; Sharma & Yetton, 2007); consequently, we were not concerned about particulars such as the number of measurement items used for a given measure and treated all such measures equally, as suggested by leading guides to meta-analysis (Aguinis et al., 2012; Borenstein et al., 2011; Card, 2011). To further mitigate the possibility of comparing apples and oranges, we followed King and Jun (2005, pp. author-year) in coding our constructs to avoid "the problem of attempting aggregation of too diverse a sampling of studies" (p. 672). What this means is that we looked at the actual measurement items and construct definitions to determine a construct's name, rather than blindly relying on an article's choice of terms.[9] Multiple raters conducted this mapping until 100% agreement was reached. Details of these construct mappings are shown in Appendix Table A.1.

4.6 Checking Study Independence

Meta-analysis works on the assumption that each reported study is independent (Borenstein et al., 2011; Hunter & Schmidt, 2004); thus, we carefully checked and controlled for this assumption. We eliminated earlier versions of studies based on the same dataset (e.g., a dissertation version of a published article or

[9] For example, "threat vulnerability," "threat likelihood," and "threat probability" were all treated as the same; various types of immoral or unethical attitudes were categorized as "immorality"; or various forms of negative social influence were categorized as "negative social influence."

cases in which an author has published different articles with the same dataset). Moreover, independent datasets within a publication or a study with two versions of the same or related dependent variable (DV) were treated as separate studies (Hunter & Schmidt, 2004; Wu & Lu, 2013). Thus, if a study considered intentions to pirate music, actual music piracy, intentions to softlift, and actual piracy, these four target DVs would result in four subsets of data or "studies" that were valid for meta-analysis, which allowed us to assess the difference between attitudes, intentions, and behaviors, a practice similar to that of Wu and Lu (2013).

Also following standard practice (Hunter & Schmidt, 2004; Wu & Lu, 2013), if a given dataset had multiple versions of the same independent variables (IVs) or DVs, these were integrated as one construct.[10] We did this also for constructs that were conceptually similar, such as multiple versions of neutralization in one study or multiple kinds of negative behavioral intentions. Such constructs could otherwise be double-counted, artificially inflating their meta-analysis results.

5. RESULTS OF META-ANALYSIS

5.1 Meta-analysis Sampling Statistics

We examined a total of 222 articles/theses/book chapters (see Appendix A). Our study's scope compares very favorably to the only other digital piracy meta-analysis published to date, which included only 42 articles (Taylor et al., 2014). The manuscripts in our study represented a total of 257 unique studies (several papers had more than one dataset), 333 uniquely predicted piracy outcomes (piracy attitudes, intentions, or behaviors), 1,667 unique comparisons providing effect-size data with a total of 126,622 participants (N). The distribution of studies was as follows: 117 Thomson Reuters impact-factor™ rated (a.k.a., ISI-rated[11]) journal articles, 57 non-ISI-rated journal articles, 30 conference papers or book

[10] The Hedges–Olkin (2014) approach to meta-analysis, which we used, departs from the Hunter and Schmidt (2004) approach on this point. The Hunter and Schmidt approach adjusts effect-size calculations based on the reliability of the underlying measures, and thus integrating measures requires a composite calculation of reliabilities. The Hedges–Olkin approach does not adjust effect sizes based on measure reliability and thus uses averages to combine like constructs. Recent leading research on how to conduct meta-analysis indicates that adjusting for measure reliability makes no material difference in results (Aguinis et al., 2012); hence, the approaches would lead to similar conclusions.

[11] These are traditionally referred to as the Institution for Scientific Information (ISI) rankings, which were acquired by Thomson Reuters.

chapters, and 18 dissertations/theses.

5.2 Assumptions about Heterogeneity/Fixed versus Random Effects

We used the nomenclature and statistics from the Hedges–Olkin approach to describe our results. Namely, following Borenstein et al. (2011), we explain the key statistics of our meta-analysis as follows: N is the aggregate sample size across all included studies; r is the aggregate, standardized effect-size statistic weighted across the included studies; k is the number of studies selected for the tested comparison. Generally, if $k < 10$, the results are less reliable because statistical power depends not only on N but on k (such results might be correct but need to be treated with more caution) (Borenstein et al., 2011; Hedges & Olkin, 2014). Q reflects the distance of each study from the mean effect (weighted, squared, and summed over all studies). Q is always computed using fixed effect weights but also applies to random effect analysis. If all studies actually had the same true effect size, the expected value of Q would be less than or equal to the df (Q). If $Q > df(Q)$, then there is evidence of variance in true effects. I^2 is the proportion of the observed variance that reflects differences in true effects rather than sampling error. I^2 is expected to be 0 if the variance in true effects is 0. Following Borenstein et al. (2011), before conducting the meta-analysis, we assumed heterogeneity in our model and thus used random effects models in the analysis as a more conservative approach than assuming fixed effects.[12]

5.3 Determining Whether Publication Bias Exists

Our first analysis tested for publication bias. Despite our exhaustive efforts to deal with the file-drawer problem, we could not assume that publication bias did not exist in our data. In fact, publication bias is common in behavioral meta-analytic studies (Aguinis et al., 2012; Borenstein et al., 2011). We thus tested for publication bias following the approaches of He and King (2008) and Sharma and Yetton (2007). We did so first by categorizing our publications into three types: (1) studies published in ISI-rated journals,

[12] Borenstein et al. (2011) explained that the decision to use fixed effects models instead of random effects models should not be made ex post facto based on Q-values (contrary to common practice) but on the basis of the kinds of studies involved and their underlying variability. Given that piracy research is behavioral and highly variable (unlike medical trials, for example, which are replicated under highly controlled conditions), we discerned no reason to believe fixed effects models are appropriate. This decision was later validated by the calculated Q-values, which further indicated high heterogeneity.

(2) studies published in non-ISI-rated journals, and (3) studies published in conferences, books, and dissertations/theses. All effect sizes were at the lower end of the small-to-medium range, and no statistically significant differences among them were found at Q = 2.558 (df = 2), $p = 0.278$. See Table 2 for details. Our analysis of effect sizes demonstrated a lack of publication bias in the piracy literature.

Table 2. Publication Bias in the Digital Piracy Literature

			Effect size and 95% CI			Heterogeneity and tau^2			
Publication source	**# of studies**	**N**	**Point estimate**	**Lower limit**	**Upper limit**	**Q-value**	**df (Q)**	**I^2**	**Tau^2**
Conference, book, thesis	126	56,195	.120	.045	.195	7495.9	125	98.3	.126
Journal, ISI	393	338,544	.141	.098	.183	61380.8	392	99.4	.146
Journal, non-ISI	169	96,506	.073	.007	.138	40843.3	168	99.6	.384
Total within						109719.9	684		
Total between						103.6	2		
Overall	688	491,245	.114	.063	.164				

Note. All effect sizes are in the lower end of the small-to-medium range. No statistically significant differences among them were found at Q = 2.558 (df = 2), $p = 0.345$.

5.4 Overall Meta-Analysis Results

After extensive preparation and pretesting, we performed a meta-analysis on the key constructs of piracy that were mapped to our SCT-based framework in Figure 1 (see Table 3). Figure 2 depicts all the significant control variables and theoretical predictors.

5.5 Moderator Analysis

Next, we conducted a series of exploratory moderator analyses. We started with high-level moderation tests that explored the literature in terms of the following: DV type (attitudes, scenarios, intentions, and behaviors), piracy type (software or other media [music, movies, games]), respondent type (student or nonstudent [consumer or professional]), the number of piracy-behavior studies (one or multiple), type of sanction used (general or specific [severity and certainty]), and type of neutralization used (general or specific). See Table 4. We further explored these moderators using the key SCT theoretical factors in our framework (Figure 1). This revealed several additional interesting patterns (see Appendix C Table C.1 for DV type, C.2 for piracy media, C.3 for respondent types, and C.4 for number of behaviors,). We could not perform this detailed analysis for types of sanctions and neutralization, however, because there were not enough studies to break them down.

Table 3. Overall Results of the Major Predictors of Digital Piracy

	Characteristics			Estimated effect size and 95% CI			Heterogeneity and tau^2			
Predictor of piracy	**k**	**N**	**Effect?**	**r**	**Lower limit**	**Upper limit**	**Q-value**	**df (Q)**	**I^2**	**T^2**
Atheoretical control variables most commonly used in piracy studies										
Age	96	81,647	Small-to-medium	.149	.014	.280	64805.7	95	99.9	.464
Computer skills	58	68,415	None (n/s)	.015	-.137	.166	22787.7	57	99.8	.351
Education	37	29,280	None (n/s)	-.010	-.194	.173	11830.9	36	99.7	.328
Gender (female)	147	152,556	Small-to-medium	-.137	-.228	-.043	56132.4	146	99.7	.341
Income	42	25,380	None (n/s)	.141	-.039	.312	12744.5	41	99.7	.353
Work experience	9*	6,083	None (n/s)	.065	-.179	.302	769.7	8	98.9	.140
CSE	17	12,539	Small	.096	.051	.140	93.8	16	82.9	.007
Key factors from the literature that support cost-benefit outcome expectancies										
Reward	101	86,841	Small-to-medium	.265	.161	.364	30272.8	100	99.7	.314
Risks	64	61,667	Small-to-medium	-.150	-.195	-.105	1889.8	63	96.7	.032
Sanctions	107	86,121	Small-to-medium	-.175	-.246	-.102	13179.1	106	99.2	.152
Key factors from the literature that support social learning										
SI (negative)	202	146,718	Small-to-medium	.225	.162	.286	34263.8	201	99.4	.223
SI (positive)	67	35,942	Small-to-medium	-.249	-.325	-.170	4244.0	66	98.5	.116
Piracy habit	80	37,713	Small-to-medium	.217	.100	.329	11864.5	79	99.3	.300
Key factors from the literature that support self-efficacy and self-regulation										
PBC	73	32,700	Medium	.309	.223	.391	5535.4	72	98.7	.160
LSC	56	49,612	Medium-to-large	.477	.292	.627	37519.6	55	99.9	.690
Key factors from the literature that support morality and moral disengagement										
Immorality	77	39,023	Small-to-medium	.163	.066	.257	8568.1	76	99.1	.190
Morality	189	135,716	Small-to-medium	-.127	-.197	-.055	35481.0	188	99.5	.251
Neutralization	59	33,462	Small-to-medium	.241	.184	.297	6184.9	58	99.1	.053

Note. n/s = not significant, r = correlation point estimation of overall effects, k = the number of studies, N = sample size, n/s = not significant. All point estimations of r assume and use the random effects model. Effect-size key: large ≥ .50; medium-to-large > .30 < .50; medium = .30; small-to-medium ≥ .10 < .30; small < .10.

Figure 2. Summary of Significant Results Combining all Predictors of Overall Digital Piracy

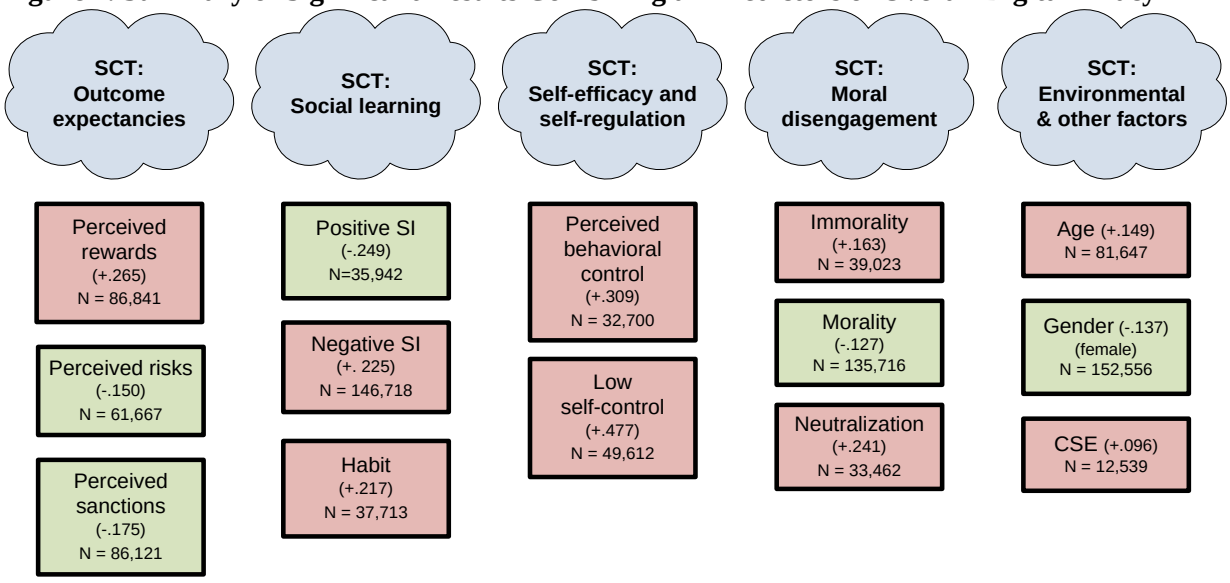


Table 4. Summary of the Moderators of Digital Piracy

	Characteristics			Estimated effect size and 95%CI		
Moderator	**k**	**N**	**Effect?**	**r**	**Lower limit**	**Upper limit**
DV type (attitudes, scenarios, intentions, or behaviors)						
DV type: attitudes	125	59,532	None (n/s)	-.047	-.122	.029
DV type: scenarios	48	41,074	Small-to-medium	.194	.074	.308
DV type: intentions	212	100,905	Small-to-medium	.137	.079	.199
DV type: behaviors	270	276,375	Small-to-medium	.175	.125	.225
Piracy media type (software or other media [movies, music, games])						
Piracy media: software	247	136,762	Small-to-medium	.142	.088	.194
Piracy media: other media	439	353,276	Small-to-medium	.109	.068	.149
Respondent type (students or nonstudents [consumers or professionals])						
Respondent type: nonstudent	142	127,229	Small-to-medium	.173	.102	.242
Respondent type: student	515	349,791	Small-to-medium	.103	.065	.140
Number of piracy behaviors (one or multiple)						
Number: one	483	335,120	Small-to-medium	.142	.104	.180
Number: multiple	205	156,800	Small	.068	.009	.127
Type of sanctions used (general or specific [severity and certainty])						
Sanctions: general	28	14,622	None (n/s)	-.076	-.288	.144
Sanctions: specific	79	71,499	Small-to-medium	-.209	-.276	-.140
Type of neutralization measures (general or specific)						
Neutralization: general	139	100,346	Small	-.063	-.122	-.003
Neutralization: specific	129	102,756	Small-to-medium	-.107	-.178	-.035

Note. * = k is lower than the optional 10-study threshold; r = correlation point estimation of overall effects; k = the number of studies, N = sample size, n/s = not significant. All point estimations of r use the random effects model. Effect-size key: large ≥ .50; medium-to-large > .30 < .50; medium = .30; small-to-medium ≥ .10 < .30; small < .10.

6. DISCUSSION

Piracy is a pervasive global problem that causes great economic damage. Accordingly, a large body of literature has investigated the predictors of piracy. Unfortunately, because it uses many different theories and constructs, this literature is fraught with many contradictory results. To unify current knowledge, we conducted the first comprehensive meta-analysis of the predictors of piracy. This section summarizes and interprets the results, along with our unique contributions and opportunities for future research.

6.1 Summary of the Results

First, we present overall results for the SCT-related components for the entire body of literature (see Table 3 and Figure 2), which showed that all social learning factors had similar magnitudes of effect: negative social influence (r = .225), positive social influence (r = -.249), and habit (r = .217). In terms of self-efficacy and self-regulation, both PBC (r = .309) and LSC (r = .477) had very strong effects, with LSC having the strongest of all factors in the framework. Notably, virtually all the significant effects were

in the small-to-medium range, which the exception of both of the self-efficacy and self-regulation effects, which were in the medium-to-large range. Finally, in terms of morality and moral disengagement, the magnitudes of effect were as follows: immorality (r = .163), morality (r = -.127), and neutralization (r = .241). Notably, neutralization had stronger effects than morality/immorality. Finally, our results showed that three covariates significantly influence piracy: age (r = .149); gender (r = -.137), meaning females are less likely to pirate; and CSE (r = .096). Four covariates had no statistically significant effects: computer skills, education, income, and work experience. In terms of outcome expectancies, rewards (r = .265) had a higher magnitude of effect than risks (r = -.150) and sanctions (r = -.175).

6.2 Interpretation and Contributions of the Results

From these results, we concluded that our SCT-based framework is an excellent guide for unifying the piracy literature, because all major factors mapped to SCT were significant, with the smallest effect sizes in the small-to-medium range. Hence, a comprehensive predictive account of piracy must, at a minimum, include the SCT-related factors we proposed in the literature review: (1) *outcome expectancies* (dealing with rewards, perceived risks, and perceived sanctions), (2) *social learning* (positive and negative social influence, and piracy habit), (3) *self-efficacy* and *self-regulation* (PBC and LSC), and (4) *moral disengagement* (morality, immorality, and neutralization). This does not mean that researchers must always account for these factors—they should do so only if they are building models to enhance prediction. Models oriented toward explanation can effectively focus on particular factors and place heavier emphasis on causality and causal mechanisms. Nonetheless, researchers need to carefully explain the addition or exclusion of factors, which this framework allows them to do.

6.2.1 Outcome Expectancies and piracy

Our meta-analysis of the magnitude of the SCT factors involved in piracy can guide further research. First, in terms of outcome expectancies, the overall effect size of rewards is an order of magnitude higher than that of risks and sanctions. Hence, we concluded that expectancy supports piracy. Consequently, approaches that focus on sanctions or risks will be misguided if they do not also consider the stronger influence of rewards—in other words, efforts to fight piracy should consider ways to decrease rewards

perception (an approach rarely taken) in addition to identifying more effective ways to enhance risks or sanctions (the usual approach). However, rewards are much more complicated in reality than could be modelled in this meta-analysis. First, there is a key difference between extrinsic and intrinsic motivations that we could not account for because of the lack of data. Notably, intrinsic rewards and motivation have many forms and variations (e.g., fun, thrill of piracy, enjoyment of the music, revenge against big music labels) and can often be more powerful than extrinsic motivations (e.g., Lowry et al., 2015; Lowry et al., 2013). Therefore, future research needs to more carefully consider these differences and any related environmental drivers.

Moreover, we found that studies that conceptualized and measured specific sanctions (e.g., certain and severity) resulted in much stronger effect sizes than those that referred to general sanctions, which is congruent with long-standing DT research. We also noted that the piracy literature has virtually ignored the key sanctions construct of celerity, which refers to how quickly people believe they will be sanctioned, because researchers have assumed that it is only peripherally applicable. Thus, future piracy research needs to consider celerity for nomological completeness of the sanctions construct.

6.2.2 Social learning and piracy

In terms of social learning approaches, researchers and practitioners need to consider not only negative social influence but also consider the effects of positive social influence. Moreover, habituation is a strong negative factor that requires further research. We suspect that its influence may be underrepresented in our analysis because some of the approaches to measuring habit may have conflated heavy use with habit.

6.2.3 Self-efficacy, self-regulation, and piracy

Our study showed that PBC (representing self-efficacy to commit piracy) and LSC (representing low self-regulation) are the strongest predictors of piracy. This finding is particularly troubling because these factors are deeply imbedded over years of social learning, thus further supporting SCT's status as an ideal framework and explaining why most other theoretical approaches are not a good fit. We thus argue that whether researchers intend to maximize explanation or maximize prediction, these factors should be

included.

6.2.4 Moral disengagement and piracy

SCT accounts not only for moral calculations but also for how people can suspend these calculations. Our analysis showed that potential pirates tend to have slightly stronger immoral views (i.e., piracy is acceptable) than moral views (i.e., piracy is not acceptable). But more importantly, we witnessed much more moral disengagement (through neutralization) than moral calculation. Hence, it is not enough to focus on the morality of piracy, and more efforts need to be made to understand and reduce moral disengagement. Here, if researchers focus on a moral perspective, whether for explanation or prediction, they should account for neutralization.

Along these lines, we found that studies that measured general moral disengagement had much lower effect sizes than studies that measured multiple moral disengagement behaviors. This is congruent with NT and the related literature that uses neutralization. Neutralization is a formative construct in that people may prefer particular justifications (e.g., "my piracy harms no one" or "this is a good way to get at big-time music publishers") over others (e.g., "everyone does it" or "I can't afford the software"). Thus, trying to capture these particulars as a general construct (e.g., "I rationalize my piracy use") can obscure to respondents the actual form of neutralization they may be using. Furthermore, although several studies measured multiple different kinds of neutralization, they often wrongly treated their measurements as reflective by averaging the responses. Such reflective measurement misrepresents the actual form of neutralization that is being used, and it results in other measurement issues, as explained by formative measurement methodologists (e.g., Cenfetelli & Bassellier, 2009). Such measures need to be treated as formative, as in other literature using neutralization (e.g., Siponen & Vance, 2010).

6.2.5 Covariates and environmental factors of piracy

Finally, we concluded that only three commonly used covariates can consistently be used to predict piracy results: age, gender, and CSE. The remaining covariates—computer skills, education, income, and work experience—are inconsistent and thus questionable in terms of their contribution to the literature. First, the result suggests that age has a small-to-medium positive influence on digital piracy. This finding could

probably help to explain why the majority of studies on digital piracy adopt student samples in methodology design, aside from sampling convenience: the phenomenon of digital piracy is more severe and pervasive among students and in campus. This finding also motivated us to further explore the moderation effect of respondent types (student vs. non-student), as shown in section 6.3.4, to further identify the different antecedents of pirates in their different ages. There are two explanations for age that require further research: One is that age is an indicator of maturity and positive social learning, and thus that digital piracy is something that people grow out of as they mature. The other is that there is a big shift toward accepting piracy that has started with the millennial generation, and that as they age, this problem will continue.

Second, an interesting finding is that CSE has a small but significant impact on digital piracy, but computer skill does not. Although CSE and computer skills are related (and computer skills might even support CSE), they are conceptually distinct. Efficacy is a self-assessment of confidence and control, and we showed that efficacy perceptions are more important than actual skills. Notably, CSE taps into the confidence that potential pirates have in using their computers, whereas the strongest efficacy component in the literature is PBC, which taps into the confidence that potential pirates have in committing piracy itself. Thus, the key constructs that piracy researchers should focus on are PBC first and CSE second. Skill is essentially irrelevant.

Finally, another key finding is that females are much less likely to commit piracy than males. This aligns with a large body of sociology and criminology research that shows simply that men are more likely to commit a wide range of crimes than are women. The key longstanding issue here is whether this is an issue of nature versus nature. Thus, gender-based piracy studies with gender-specific prevention efforts and manipulations are needed to understand this further. Likewise, piracy studies tend to lack a consideration of environmental factors that might influence piracy, such as structural educational differences between men and women. These need more consideration going forward.

6.3 Interpreting Moderation Results to Inform Theory, Practice, and Methodology

6.3.1 DV type and piracy

One of the key theoretical and methodological issues in the literature is that some studies use piracy attitudes, others use intentions or behaviors, and still others use intentions based on hypothetical scenarios. Some studies even use attitudes, intentions, and behaviors in an attempt to replicate elements of the TRA or TPB. We further explored these issues using moderation analysis. Our first concern is that studies that used attitudes appeared to have dramatically lower effect sizes (see Table 4). We thus examined these different DV types using the major factors of SCT, as summarized in Appendix C Table C.1 and depicted in Figure C.1. Overall, the effect sizes for attitudes were less consistent than the effect sizes for intentions and behaviors. The key issue is whether it is useful to examine attitudes or intentions, because the relationships between attitudes, intentions, and behaviors have already been established (e.g., Sutton, 1998). Moreover, attitudes are more abstract, and thus more difficult to collect, than self-reported behaviors, which can typically be studied effectively (unlike highly criminal behaviors that are more subject to social desirability bias). We thus concluded that if presented with a choice between collecting attitudes, intentions, or behaviors, researchers should opt for the latter, which is especially pertinent when dealing with self-efficacy, self-regulation, and moral disengagement, because actual decisions and behaviors are likely to depart from hypothetical or intended ones.

6.3.2 The use of scenarios and piracy

We also discovered potential problems in using hypothetical scenarios. Studies using scenarios tended to either have unusually high effect sizes or no statistically significant effects. As Appendix C Figure C.1 suggests, scenario results stand out as the most inconsistent and extreme. It was particularly odd that scenarios created the following effect sizes, which were much higher than those generated by studies using attitudes, intentions, or behaviors: perceived risks (r = .379), sanctions (r = -.365), negative social influence (r = .502), positive social influence (r = -.566), and LSC (r = .948). The latter three were so high that they more likely indicate high levels of common-methods bias (CMB), multicollinearity, or other methodological issues. Given the ease of collecting self-reported anonymous piracy data and its

relatively low negative social desirability, we see little evidence for the efficacy of scenario-based studies in piracy research.

6.3.3 Piracy media type

Appendix C Table C.2 and Figure C.2 summarize our detailed moderation analysis by piracy media type. We concluded that these outcomes are different enough to indicate that software piracy is not fully generalizable to other forms of piracy. Interestingly, however, when it came to outcome expectancies, there were virtually no differences between software piracy and the piracy of other media. This was also true for every social learning construct, with the interesting exception of habit, where an effect was seen for other forms of media piracy but not software piracy. It could be that software piracy represents a one-time or less frequent potential behavior, whereas the piracy of other forms of media is more prone to habituation. We saw the most unusual differences with self-efficacy and self-regulation. PBC was much higher for other media and lower for software piracy; moreover, LSC was much higher for software piracy and lower for other media. Finally, software piracy was associated with higher levels of immorality, and moral calculations were excluded from other forms of media piracy. Much higher levels of neutralization were associated with software piracy than with piracy of other forms of media. These results could indicate that software piracy is more difficult (and thus requires more efficacy) and is considered more criminal (and thus requires more self-control and causes more moral disengagement). This would also partially explain why habituation is different with software piracy. These possibilities should be considered in future studies, especially those that focus on casual explanation.

6.3.4 Respondent type and piracy

Our analysis of respondent type (see Appendix C Table C.3 and Figure C.3) showed that studies involving students had different outcomes than those involving nonstudents; thus, students cannot be used as surrogates for nonstudents. There were especially stark differences when considering rewards, PBC, LSC, and immorality. However, this does not indicate that students are inferior subjects for piracy research, unless the context is workplace software piracy. On the contrary, students are readily aware of and involved in all forms of piracy and thus make excellent piracy research subjects. In fact, they may be

ideal piracy subjects, because our analysis showed more consistent results with students than with nonstudents and a better fit with SCT, likely because students are a more homogenous population than nonstudents (e.g., nonstudent studies had much wider fluctuations in their confidence intervals).

However, in view of the results of our covariate analysis, we cannot infer that the key difference between students and nonstudents has to do with age, income, or work experience. Their differences may be rooted in students being so-called digital natives. For example, one possibility is that professionals will show more social desirability effects than students. Thus, piracy studies should carefully avoid mixing students and nonstudents or should focus on explaining these differences.

6.3.5 The number of behaviors studied and piracy

Appendix C Table C.5 and Figure C.5 summarize the moderation tests on the number of piracy behaviors. There was an interesting split in the literature: some studies examined one particular case of piracy (e.g., "do you pirate online music?"), whereas others examined a number of piracy behaviors (e.g., music, movies, games, software, or multiple types of each). Virtually none of the studies that looked at multiple piracy behaviors or scenarios treated these as repeated measures or had within-subject designs, and thus, the repeated questioning about piracy could have biased the results. Indeed, we saw effect-size differences between these approaches but no clear pattern—sometimes they were higher, sometimes they were lower. Nonetheless, we concluded that these different approaches yielded unnecessary variation, especially because the studies looking at multiple behaviors and outcomes generally did not use best-practice methodologies for multiple comparison. For improved direct comparability and stronger controls, it would be better for researchers to study one piracy behavior in one period of time; otherwise, they should use repeated measures or within-subject designs.

6.4 Study Limitations and Future Research Opportunities for Digital Piracy

Meta-analysis is fraught with many limitations, which we extensively addressed in the methodology section. Aside from these, the biggest limitation is that our analysis was based on a snapshot of the overall state of piracy literature, which prevented us from drawing conclusions about factors that were not comprehensively studied. We were likewise limited by the methodological and measurement choices in

the literature itself. Hence, our results should be seen as a snapshot of the current literature that can resolve only some of its issues. After performing moderation analyses, we have some further recommendations for methodological and theoretical improvements in the literature.

First, piracy researchers need to better follow best methodological practices so that their research can be more easily interpreted, challenged, and replicated. Researchers should consistently check and report on the following, as is standard in any line of behavioral research: pilot testing; taking a priori steps to prevent CMB; using marker variables to check for CMB; testing and correcting for multicollinearity; providing full correlation tables of all constructs and covariates; and establishing convergent and divergent validity, reliability statistics, average variance extracted, full measurement items (and where they were derived from and how), and all the means and standard deviations of all constructs. We were particularly troubled that several studies did not report standard correlation tables, averages, and standard deviations of their measures. Worse, when approached for these statistics, several researchers refused to provide it or said it was no longer available. Such practices are unacceptable in any scientific community. Researchers have an ethical obligation to publish these basic statistics or to make them readily available to other researchers; otherwise, scientific progress is impaired or even misled.

Second, when dealing with DVs, we recommend more care and consistency. Piracy studies should move away from collecting attitudes, intentions, and using scenarios and focus instead on self-reported and observed behaviors. Students and nonstudents should not be mixed, and unless within-subject designs are used, studies should focus on only one piracy behavior. Software piracy and other forms of media piracy should also be treated separately. Likewise, researchers should consider that new forms of piracy may have unique environmental factors that have not been explored, such as piracy factors related to streaming services.

Third, there is a general bias in the current literature toward examining piracy behaviors and people who engage in piracy. What is generally missing is a consideration of users who do not engage in piracy and the factors of such nonengagement. It may be a false supposition that non-piracy is the opposite of piracy. For example, simply based on moral engagement, we would expect that those who

choose not to pirate would have a stronger moral calculus and not resort to moral disengagement. Because these are different processes that likely have different antecedents, further models and studies are needed to understand non-piracy.

Fourth, perhaps the biggest opportunity in the literature is to provide further explanations and causal evidence. The majority of studies are correlational and involve cross-sectional surveys and are thus effective only for prediction. Furthermore, the use of scenarios appears to be highly misleading. We thus suggest a need for longitudinal self-report studies from which to deduce causality from reliable data.

REFERENCES

Aguinis, H., Dalton, D. R., Bosco, F. A., Pierce, C. A., and Dalton, C. M. (2012). Meta-analytic choices and judgment calls: Implications for theory building and testing, obtained effect sizes, and scholarly impact. *Journal of Management, 37*(1), 5-38.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211.

Akbulut, Y. (2014). Exploration of the antecedents of digital piracy through a structural equation model. *Computers & Education, 78*(1), 294-305.

Akers, R. L., Krohn, M. D., Lanza-Kaduce, L., and Radosevich, M. (1979). Social learning and deviant behavior: A specific test of a general theory. *American Sociological Review, 44*(4), 636-655.

Al-Rafee, S. and Dashti, A. E. (2012). A cross cultural comparison of the extended TPB: The case of digital piracy. *Journal of Global Information Technology Management, 15*(1), 5-24.

Al-Rafee, S. A. (2002). *Digital piracy: Ethical decision-making.* Unpublished Ph.D., University of Arkansas, Ann Arbor.

Aleassa, H., Pearson, J. M., and McClurg, S. (2011). Investigating software piracy in Jordan: An extension of the theory of reasoned action. *Journal of Business Ethics, 98*(4), 663-676.

Amiroso, D. and Case, T. (2007, August 9-12). *Music sharing in Russia: Understanding behavioral intention and use of music downloading.* Paper presented at the 13th Americas Conference on Information Systems, Keystone, Colorado, USA.

Bandura, A. (1986). *Social Foundations of Thought and Action*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1990). Perceived self-efficacy in the exercise of control over AIDS infection. *Evaluation and Program Planning, 13*(1), 9-17.

Bandura, A. and Bryant, J. (2002). Social cognitive theory of mass communication. *Media Effects: Advances in Theory and Research, 2*, 121-153.

Becker, J. U. and Clement, M. (2006). Dynamics of illegal participation in peer-to-peer networks—Why do people illegally share media files? *Journal of Media Economics, 19*(1), 7-32.

Blake, R. H. and Kyper, E. S. (2013). An investigation of the intention to share media files over peer-to-peer networks. *Behaviour & Information Technology, 32*(4), 410-422.

Bonner, S. and O'Higgins, E. (2010). Music piracy: ethical perspectives. *Management Decision, 48*(9), 1341-1354.

Borenstein, M., Hedges, L. V., Higgins, J. P., and Rothstein, H. R. (2011). *Introduction to Meta-Analysis*. West Sussex, UK: John Wiley & Sons.

Bounagui, M. and Nel, J. (2009). Towards understanding intention to purchase online music downloads. *Management Dynamics, 18*(1), 15-26.

Brown, M. E., Treviño, L. K., and Harrison, D. A. (2005). Ethical leadership: A social learning perspective for construct development and testing. *Organizational Behavior and Human Decision*

Processes, 97(2), 117-134.
Burgess, R. L. and Akers, R. L. (1966). A differential association-reinforcement theory of criminal behavior. *Social Problems, 14*(1), 128-147.
Burruss, G. W., Bossler, A., and Holt, T. J. (2013). Assessing the mediation of a Fuller social learning model on low self-control's influence on software piracy. *Crime & Delinquency, 59*(8), 1157-1184.
Card, N. A. (2011). *Applied Meta-Analysis for Social Science Research*. New York, NY: Guilford Press.
Cenfetelli, R. T. and Bassellier, G. (2009). Interpretation of formative measurement in information systems research. *MIS Quarterly, 33*(4), 689-707.
Chan, R. Y. K., Ma, K. H. Y., and Wong, Y. H. (2013). The software piracy decision-making process of Chinese computer users. *Information Society, 29*(4), 203-218.
Chang, M. K. (1998). Predicting unethical behavior: a comparison of the theory of reasoned action and the theory of planned behavior. *Journal of Business Ethics, 17*(16), 1825-1834.
Chaudhry, P. E., Chaudhry, S. S., Stumpf, S. A., and Sudler, H. (2011). Piracy in cyber space: Consumer complicity, pirates and enterprise enforcement. *Enterprise Information Systems, 5*(2), 255-271.
Chen, C.-C. (2013). Music piracy behaviors of university students in view of consumption value. *African Journal of Business Management, 7*(39), 4059.
Chen, M.-F., Pan, C.-T., and Pan, M.-C. (2009). The joint moderating impact of moral intensity and moral judgment on consumer's use intention of pirated software. *Journal of Business Ethics, 90*(3), 361-373.
Chiang, L. C. and Huang, C. Y. (2007). Use of pirated compact discs on four college campuses: A perspective from Theory of Planned Behavior. *Psychological Reports, 101*(2), 361-364.
Chiou, J.-S., Cheng, H.-I., and Huang, C.-Y. (2011). The effects of artist adoration and perceived risk of getting caught on attitude and intention to pirate music in the United States and Taiwan. *Ethics & Behavior, 21*(3), 182.
Clarke, R. and Cornish, D. (1985). Modelling offender's decisions: A framework for policy and research. In M. Tonry & N. Morris (Eds.), *Crime and Justice: An Annual Review of Research (Vol. 6)* (pp. 147-185). Chicago, IL: University of Chicago Press.
Cockrill, A. and Goode, M. M. (2012). DVD pirating intentions: Angels, devils, chancers and receivers. *Journal of Consumer Behaviour, 11*(1), 1-10.
Compeau, D., Higgins, C. A., and Huff, S. (1999). Social cognitive theory and individual reactions to computing technology: A longitudinal study. *MIS quarterly, 23*(2), 145-158.
Cox, J. and Collins, A. (2014). Sailing in the same ship? Differences in factors motivating piracy of music and movie content. *Journal of Behavioral and Experimental Economics, 50*, 70-76.
Cronan, T. P. and Al-Rafee, S. (2008). Factors that influence the intention to pirate software and media. *Journal of Business Ethics, 78*(4), 527-545.
d'Astous, A., Colbert, F., and Montpetit, D. (2005). Music piracy on the Web–How effective are anti-piracy arguments? Evidence from the theory of planned behaviour. *Journal of Consumer Policy, 28*(3), 289-310.
Dionísio, P., Leal, C., Pereira, H., and Salgueiro, M. F. (2013). Piracy among undergraduate and graduate students: Influences on unauthorized book copies. *Journal of Marketing Education, 35*(2), 191–200.
Djekic, P. and Loebbecke, C. (2007). Preventing application software piracy: An empirical investigation of technical copy protections. *Journal of Strategic Information Systems, 16*(2), 173-186.
Fetscherin, M. (2009). Importance of cultural and risk aspects in music piracy: a cross-national comparison among university students. *Journal of Electronic Commerce Research, 10*(1), 42-55.
Forman, A. E. (2009). *An exploratory study on the factors associated with ethical intention of digital piracy.* Unpublished Ph.D., Nova Southeastern University, Ann Arbor.
Garbharran, A. and Thatcher, A. (2011). Modelling social cognitive theory to explain software piracy intention. In M. Smith & G. Salvendy (Eds.), *Human Interface and the Management of Information. Interacting with Information* (Vol. 6771, pp. 301-310). Berlin, Germany: Springer

Berlin Heidelberg.
Gartside, J. and Heales, J. (2006a, Dec 10-13). *Is music piracy normal? Behavioral effects of social and technological barriers.* Paper presented at the International Conference on Information Systems 2006, Milwaukee, WI.
Gartside, J. and Heales, J. (2006b, August 4-6). *A model of music piracy.* Paper presented at the 12th Americas Conference on Information Systems, Acapulco, México.
Gerlach, J. H., Kuo, F.-Y. B., and Lin, C. S. (2009). Self sanction and regulative sanction against copyright infringement: A comparison between U.S. and China college students. *Journal of the American Society for Information Science and Technology, 60*(8), 1687-1701.
Gerlich, R. N., Lewer, J. J., and Lucas, D. (2010). Illegal media file sharing: The impact of cultural and demographic factors. *Journal of Internet Commerce, 9*(2), 104-126.
Glanz, K., Rimer, B. K., and Viswanath, K. (2008). *Health behavior and health education: theory, research, and practice*. Hoboken, NJ: John Wiley & Sons.
Glomb, T. M. and Liao, H. (2003). Interpersonal aggression in work groups: Social influence, reciprocal, and individual effects. *Academy of Management Journal, 46*(4), 486-496.
Go-Gulf (2011). Online piracy in numbers--Facts and statistics. Retrieved from http://www.go-gulf.com/blog/online-piracy/
Goles, T., Jayatilaka, B., George, B., Parsons, L., Chambers, V., Taylor, D. et al. (2008). Softlifting: Exploring determinants of attitude. *Journal of Business Ethics, 77*(4), 481-499.
Gottfredson, M. R. and Hirschi, T. (1990). *A General Theory of Crime*. Stanford, CA: Stanford University Press.
Gunter, W. D. (2008). Piracy on the high speeds: A test of social learning theory on digital piracy among college students. *International Journal of Criminal Justice Sciences, 3*(1), 54-68.
Gunter, W. D. (2009). Internet scallywags: A comparative analysis of multiple forms and measurements of digital piracy. *Western Criminology Review, 10*(`), 15-28.
Gunter, W. D., Higgins, G. E., and Gealt, R. E. (2010). Pirating youth: Examining the correlates of digital music piracy among adolescents. *International Journal of Cyber Criminology, 4*(1&2), 657-671.
He, J. and King, W. R. (2008). The role of user participation in information systems development: Implications from a meta-analysis. *Journal of Management Information Systems, 25*(1), 301-331.
Hedges, L. V. and Olkin, I. (1985). *Statistical Methods for Meta-Analysis*. New York, NY: Academic.
Hedges, L. V. and Olkin, I. (2014). *Statistical Methods for Meta-Analysis*. New York: Academic Press.
Hennig-Thurau, T., Henning, V., and Sattler, H. (2007). Consumer file Sharing of motion pictures. *Journal of Marketing, 71*(4), 1-18.
Higgins, G., Wilson, A., and Fell, B. (2005). An application of deterrence theory to software piracy. *Journal of Criminal Justice and Popular Culture, 12*(3), 166-184.
Higgins, G. E. (2004). Can low self-control help with the understanding of the software piracy problem? *Deviant Behavior, 26*(1), 1-24.
Higgins, G. E. (2006). Gender differences in software piracy: The mediating roles of self-control theory and social learning theory. *Journal of Economic Crime Management, 4*(1), 1-30.
Higgins, G. E. (2007). Digital piracy: An examination of low self-control and motivation using short-term longitudinal data. *CyberPsychology & Behavior, 10*(4), 523-529.
Higgins, G. E., Fell, B. D., and Wilson, A. L. (2006). Digital piracy: Assessing the contributions of an integrated self-control theory and social learning theory using structural equation modeling. *Criminal Justice Studies, 19*(1), 3-22.
Higgins, G. E., Fell, B. D., and Wilson, A. L. (2007). Low self-control and social learning in understanding students' intentions to pirate movies in the United States. *Social Science Computer Review, 25*(3), 339-357.
Higgins, G. E. and Makin, D. A. (2004a). Does social learning theory condition the effects of low self-control on college students' software piracy? *Journal of Economic Crime Management, 2*(2), 1-22.
Higgins, G. E. and Makin, D. A. (2004b). Self-control, deviant peers, and software piracy. *Psychological*

Reports, 95(3), 921-931.
Higgins, G. E. and Marcum, C. D. (2011). *Digital Piracy: An Integrated Theoretical Approach*. Durham, NC: Carolina Academic Press.
Higgins, G. E., Marcum, C. D., Freiburger, T. L., and Ricketts, M. L. (2012). Examining the role of peer influence and self-control on downloading behavior. *Deviant Behavior, 33*(5), 412-423.
Higgins, G. E., Wolfe, S. E., and Marcum, C. D. (2008a). Digital piracy: An examination of three measurements of self-control. *Deviant Behavior, 29*(5), 440-460.
Higgins, G. E., Wolfe, S. E., and Marcum, C. D. (2008b). Music piracy and neutralization: A preliminary trajectory analysis from short-term longitudinal data. *International Journal of Cyber Criminology, 2*(2), 324-336.
Hinduja, S. and Ingram, J. R. (2009). Social learning theory and music piracy: The differential role of online and offline peer influences. *Criminal Justice Studies, 22*(4), 405-420.
Hohn, D. A., Muftic, L. R., and Wolf, K. (2006). Swashbuckling students: An exploratory study of Internet piracy. *Security Journal, 19*(2), 110-127.
Hollinger, R. C. (1993). Crime by computer: Correlates of software piracy and unauthorized account access. *Security Journal, 4*(1), 2-12.
Holt, T. J. and Kilger, M. (2012). Examining willingness to attack critical infrastructure online and offline. *Crime & Delinquency, 58*(5), 798-822.
Holt, T. J. and Morris, R. G. (2009). An exploration of the relationship between MP3 player ownership and digital piracy. *Criminal Justice Studies, 22*(4), 381-392.
Hu, X., Wu, G., Kuang, W., and Lu, B. (2010). A COMPARATIVE STUDY ON SOFTWARE PIRACY BETWEEN CHINA AND AMERICA. *MWAIS 2010 Proceedings*.
Hunter, J. E. and Schmidt, F. L. (1990). *Methods of Meta-Analysis: Correcting Error and Bias in Research Findings*. Newbury Park, CA: Sage.
Hunter, J. E. and Schmidt, F. L. (2004). *Methods of Meta-Analysis: Correcting Error and Bias in Research Findings*. Newbury Park, CA: Sage.
Ingram, J. R. and Hinduja, S. (2008). Neutralizing music piracy: An empirical examination. *Deviant Behavior, 29*(4), 334-366.
Jacobs, R. S., Heuvelman, A., Tan, M., and Peters, O. (2012). Digital movie piracy: A perspective on downloading behavior through social cognitive theory. *Computers in Human Behavior, 28*(3), 958-967.
Jeong, B.-K., Zhao, K., and Khouja, M. (2012). Consumer piracy risk: Conceptualization and measurement in music sharing. *International Journal of Electronic Commerce, 16*(3), 89-118.
Jung, I. (2009). Ethical judgments and behaviors: Applying a multidimensional ethics scale to measuring ICT ethics of college students. *Computers & Education, 53*(3), 940-949.
Karakaya, M. (2010). *Analysis of the key reasons behind the pirated software usage of Turkish Internet users: Application of Routine Activities Theory.* Unpublished D.C.D., University of Baltimore, Ann Arbor.
Kiksen, C. (2012). *Behavioural insights into music piracy.* Universiteit Van Amsterdam.
King, W. R. and Jun, H. (2005). Understanding the role and methods of meta-analysis in IS research. *Communications of the Association for Information Systems, 16*, 665-686.
Kini, R., Ramakrishna, H. V., and Vijayaraman, B. S. (2004). Shaping of moral intensity regarding software piracy: A comparison between Thailand and U.S. students. *Journal of Business Ethics, 49*(1), 91-104.
Kini, R. B., Ramakrishna, H. V., and Vijayaraman, B. S. (2003). An exploratory study of moral intensity regarding software piracy of students in Thailand. *Behaviour & Information Technology, 22*(1), 63-70.
Kinnally, W., Lacayo, A., McClung, S., and Sapolsky, B. (2008). Getting up on the download: college students' motivations for acquiring music via the web. *New Media & Society, 10*(6), 893-913.
Kos Koklic, M., Kukar-Kinney, M., and Vida, I. (2016). Three-level mechanism of consumer digital piracy: Development and cross-cultural validation. *Journal of Business Ethics, 134*(1), 15-27.

Kuo, F.-Y. and Hsu, M.-H. (2001). Development and validation of ethical computer self-efficacy measure: The case of softlifting. *Journal of Business Ethics, 32*(4), 299-315.
Kwong, T. C. H. and Lee, M. K. O. (2002, Jan 7-10). *Behavioral intention model for the exchange mode Internet music piracy.* Paper presented at the 35th Annual Hawaii International Conference on System Sciences, Hilton Waikoloa Village Island of Hawaii.
LaRose, R. and Kim, J. (2007). Share, steal, or buy? A social cognitive perspective of music downloading. *CyberPsychology & Behavior, 10*(2), 267-277.
LaRose, R., Lai, Y. J., Lange, R., Love, B., and Wu, Y. (2005). Sharing or piracy? An exploration of downloading behavior. *Journal of Computer-Mediated Communication, 11*(1), 1-21.
Lau, E. K.-w. (2007). Interaction effects in software piracy. *Business Ethics, 16*(1), 34-47.
Leonard, L. N. and Cronan, T. P. (2001). Illegal, inappropriate, and unethical behavior in an information technology context: A study to explain influences. *Journal of the Association for Information Systems, 1*(1), 12.
Liang, J. and Phau, I. (2012, July 19-22). *Illegal games downloaders vs illegal movies downloaders???! Both are still criminal!!* Paper presented at the 2012 Global Marketing Conference at Seoul, Seol, South Korea.
Liao, C., Lin, H.-N., and Liu, Y.-P. (2010). Predicting the use of pirated software: A contingency model integrating perceived risk with the theory of planned behavior. *Journal of Business Ethics, 91*(2), 237-252.
Loch, K. D., Carr, H. H., and Warkentin, M. E. (1992). Threats to information systems: Today's reality, yesterday's understanding. *MIS Quarterly, 16*(2), 173-186.
Lowry, P. B., Gaskin, J. E., and Moody, G. D. (2015). Proposing the multimotive information systems continuance model (MISC) to better explain end-user system evaluations and continuance intentions. *Journal of the Association for Information Systems, 16*(7), 515-579.
Lowry, P. B., Gaskin, J. E., Twyman, N. W., Hammer, B., and Roberts, T. L. (2013). Taking 'fun and games' seriously: Proposing the hedonic-motivation system adoption model (HMSAM). *Journal of the Association for Information Systems, 14*(11), 617-671.
Lysonski, S. and Durvasula, S. (2008). Digital piracy of MP3s: consumer and ethical predispositions. *Journal of Consumer Marketing, 25*(3), 167-178.
Mai, R. and Niemand, T. (2012). The pivotal role of different risk dimensions as obstacles in piracy product consumption. *AMA Winter Educators' Conference Proceedings, 23*, 291-301.
Malin, J. and Fowers, B. J. (2009). Adolescent self-control and music and movie piracy. *Computers in Human Behavior, 25*(3), 718-722.
Marcum, C. D., Higgins, G. E., Wolfe, S. E., and Ricketts, M. L. (2011). Examining the intersection of self-control, peer association and neutralization in explaining digital piracy. *Western Criminology Review, 12*(3), 60-67.
Moon, S.-I., Kim, K., Feeley, T. H., and Shin, D.-H. (2015). A normative approach to reducing illegal music downloading: The persuasive effects of normative message framing. *Telematics and Informatics, 32*(1), 169-179.
Moore, R. and McMullan, E. C. (2004). Perceptions of peer-to-peer file sharing among university students. *Journal of Criminal Justice and Popular Culture, 11*(1), 1-19.
Moores, T. and Dhillon, G. (2000). Software piracy: A view from Hong Kong. *Communications of the ACM, 43*(12), 88-93.
Moores, T. T., Nill, A., and Rothenberger, M. A. (2009). Knowledge of software piracy as an antecedent to reducing pirating behavior. *Journal of Computer Information Systems, 50*(1), 82-89.
Morris, R. G. and Higgins, G. E. (2009). Neutralizing potential and self-reported digital piracy: A multitheoretical exploration among college undergraduates. *Criminal Justice Review, 34*(2), 173-195.
Morris, R. G. and Higgins, G. E. (2010). Criminological theory in the digital age: The case of social learning theory and digital piracy. *Journal of Criminal Justice, 38*(4), 470-480.
Nandedkar, A. and Midha, V. (2012). It won't happen to me: An assessment of optimism bias in music

piracy. *Computers in Human Behavior, 28*(1), 41-48.
Peace, A. G. (1995). *A predictive model of software piracy: An empirical validation.* Unpublished Ph.D., University of Pittsburgh, Pittsburgh, PA.
Peace, A. G. and Galletta, D. (1996, Dec 16-18). *Developing a predictive model of software piracy behavior: An empirical study.* Paper presented at the International Conference on Information Systems 1996, Cleveland, Ohio, USA.
Peace, A. G., Galletta, D. F., and Thong, J. Y. L. (2003). Software piracy in the workplace: A model and empirical test. *Journal of Management Information Systems, 20*(1), 153-177.
Peterson, R. A. and Brown, S. P. (2005). On the use of beta coefficients in meta-analysis. *Journal of Applied Psychology, 90*(1), 175-181.
Phau, I. and Liang, J. (2012). Downloading digital video games: predictors, moderators and consequences. *Marketing Intelligence & Planning, 30*(7), 740-756.
Phau, I., Lim, A., Liang, J., and Lwin, M. (2014). Engaging in digital piracy of movies: a theory of planned behaviour approach. *Internet Research, 24*(2), 246-266.
Plouffe, C. R. (2008). Examining "peer-to-peer" (P2P) systems as consumer-to-consumer (C2C) exchange. *European Journal of Marketing, 42*(11-12), 1179-1202.
Plowman, S. and Goode, S. (2009). Factors affecting the intention to download music: Quality perceptions and downloading intensity. *Journal of Computer Information Systems, 2009*(Summer), 84-97.
Ramakrishna, H. V., Kini, R. B., and Vijayaraman, B. S. (2001). Shaping of moral intensity regarding software piracy in university students: Immediate community effects. *Journal of Computer Information Systems, 41*(4), 47-51.
Rawlinson, D. R. and Lupton, R. A. (2007). Cross-national attitudes and perceptions concerning software piracy: A comparative study of students from the United States and China. *Journal of Education for Business, 83*(2), 87-93.
RIAA (2015). Piracy online: Scope of the problem. Retrieved from https://www.riaa.com/physicalpiracy.php?content_selector=piracy-online-scope-of-the-problem
Rosenthal, R. (1979). The file drawer problem and tolerance for null results. *Psychological Bulletin, 86*(3), 638.
Rosenthal, R. (1991). *Meta-analytic Procedures for Social Research* (Vol. 6). Newbury Park, CA: Sage.
Rosenthal, R. and Rubin, D. B. (1982). Comparing effect sizes of independent studies. *Psychological Bulletin, 92*(2), 500.
Sang, Y., Lee, J.-K., Kim, Y., and Woo, H.-J. (2014). Understanding the intentions behind illegal downloading: A comparative study of American and Korean college students. *Telematics and Informatics, 32*(2), 333-343.
Seale, D. A. (2002). Why do we do it if we know it's wrong? A structural model of software piracy. In G. Dhillon (Ed.), *Social Responsibility in the Information Age: Issues and Controversies* (pp. 30-52). Hershey PA: Idea Group.
Setiawan, B. and Tjiptono, F. (2013). Determinants of consumer intention to pirate digital products. *International Journal of Marketing Studies, 5*(3), 48-55.
Shanahan, K. J. and Hyman, M. R. (2010). Motivators and enablers of SCOURing: A study of online piracy in the US and UK. *Journal of Business Research, 63*(9–10), 1095-1102.
Shang, R.-A., Chen, Y.-C., and Chen, P.-C. (2008). Ethical decisions about sharing music files in the P2P environment. *Journal of Business Ethics, 80*(2), 349-365.
Sharma, R. and Yetton, P. (2007). The contingent effects of training, technical complexity, and task interdependence on successful information systems implementation. *MIS Quarterly, 31*(2), 219-238.
Sharma, R. and Yetton, P. (2011). Top management support and IS implementation: further support for the moderating role of task interdependence. *European Journal of Information Systems, 20*(6), 703-712.
Sheehan, B., Tsao, J., and Yang, S. (2010). Motivations for gratifications of digital music piracy among

college students. *Atlantic Journal of Communication, 18*(5), 241–258.
Shemroske, K. (2012). *The ethical use of it: A study of two models for explaining online file sharing behavior.* University of Houston.
Shoham, A., Ruvio, A., and Davidow, M. (2008). (Un)ethical consumer behavior: Robin Hoods or plain hoods? *Journal of Consumer Marketing, 25*(4), 200-210.
Siponen, M. and Vance, A. (2010). Neutralization: New insights into the problem of employee information systems security policy violations. *MIS Quarterly, 34*(3), 487-502.
Siponen, M., Vance, A., and Willison, R. (2012). New insights into the problem of software piracy: The effects of neutralization, shame, and moral beliefs. *Information & Management, 49*(7–8), 334-341.
Smallridge, J. L. (2012). *Social learning and digital piracy: Do online peers matter?* Unpublished Ph.D., Indiana University of Pennsylvania, Indiana, PA.
Suter, T., Kopp, S., and Hardesty, D. (2006). The effects of consumers' ethical beliefs on copying behaviour. *Journal of Consumer Policy, 29*(2), 190-202.
Suter, T. A., Kopp, S. W., and Hardesty, D. M. (2004). The relationship between general ethical judgments and copying behavior at work. *Journal of Business Ethics, 55*(1), 61-70.
Sutton, S. (1998). Predicting and explaining intentions and behavior: How well are we doing? *Journal of Applied Social Psychology, 28*(15), 1317-1338.
Taylor, R. G. (2009). *Getting employees involved in information security: The case of strong passwords.* University of Houston, Houston, TX.
Taylor, S. A., Ishida, C., and Melton, H. (2014). A meta-analytic investigation of the antecedents of digital piracy. In R. T. Rust & M.-H. Huang (Eds.), *Handbook of Service Marketing Research* (pp. 437-464). Cheltenham, UK: Edward Elgar.
Taylor, S. A., Ishida, C., and Wallace, D. W. (2009). Intention to engage in digital piracy: A conceptual model and empirical test. *Journal of Service Research, 11*(3), 246-262.
Thatcher, A. and Matthews, M. (2012). Comparing software piracy in South Africa and Zambia using social cognitive theory. *African Journal of Business Ethics, 6*(1), 1-12.
Thong, J. Y. L. and Chee-sing, Y. (1998). Testing an ethical decision-making theory: The case of softlifting. *Journal of Management Information Systems, 15*(1), 213-237.
Van Belle, J.-P., Macdonald, B., and Wilson, D. (2014). Determinants of digital piracy among youth in South Africa. *Communications of the IIMA, 7*(3), 5.
Verplanken, B. (2006). Beyond frequency: Habit as mental construct. *British Journal of Social Psychology, 45*(3), 639-656.
Verplanken, B. and Aarts, H. (1999). Habit, attitude, and planned behaviour: Is habit an empty construct or an interesting case of goal-directed automaticity? *European Review of Social Psychology, 10*(1), 101-134.
Vida, I., Koklic, M. K., Kukar-Kinney, M., and Penz, E. (2012). Predicting consumer digital piracy behavior: The role of rationalization and perceived consequences. *Journal of Research in Interactive Marketing, 6*(4), 298-313.
Villazon, C. H. (2004). *Software piracy: An empirical study of influencing factors.* Unpublished D.B.A., Nova Southeastern University, Ann Arbor.
Wagner, S. C. and Sanders, G. L. (2001). Considerations in ethical decision-making and software piracy. *Journal of Business Ethics, 29*(1-2), 161-167.
Wang, C.-c., Chen, C.-t., Yang, S.-c., and Farn, C.-k. (2009). Pirate or buy? The moderating effect of idolatry. *Journal of Business Ethics, 90*(1), 81-93.
Wang, X. and McClung, S. R. (2011). Toward a detailed understanding of illegal digital downloading intentions: An extended theory of planned behavior approach. *New Media & Society, 13*(4), 663-677.
Wang, X. and McClung, S. R. (2012). The immorality of illegal downloading: The role of anticipated guilt and general emotions. *Computers in Human Behavior, 28*(1), 153-159.
Wang, Y.-S., Yeh, C.-H., and Liao, Y.-W. (2013). What drives purchase intention in the context of online

content services? The moderating role of ethical self-efficacy for online piracy. *International Journal of Information Management, 33*(1), 199-208.
Wolfe, S. E., Higgins, G. E., and Marcum, C. D. (2008). Deterrence and digital piracy: A preliminary examination of the role of viruses. *Social Science Computer Review, 26*(3), 317-333.
Wong, G., Kong, A., and Ngai, S. (1990). A study of unauthorized software copying among postsecondary students in Hong-Kong. *Australian Computer Journal, 22*(4), 114-122.
Wu, J. and Lederer, A. (2009). A meta-analysis of the role of environmentbased voluntariness in information technology acceptance. *MIS Quarterly, 33*(2), 419-432.
Wu, J. and Lu, X. (2013). Effects of extrinsic and intrinsic motivators on using utilitarian, hedonic, and dual-purposed information systems: A meta-analysis. *Journal of the Association for Information Systems, 14*(3), 153-191.
Yang, Z., Wang, J., and Mourali, M. (2014). Effect of peer influence on unauthorized music downloading and sharing: The moderating role of self-construal. *Journal of Business Research, 68*(3), 516-525.
Yoon, C. (2011a). Ethical decision-making in the Internet context: Development and test of an initial model based on moral philosophy. *Computers in Human Behavior, 27*(6), 2401-2409.
Yoon, C. (2011b). Theory of planned behavior and ethics theory in digital piracy: An integrated model. *Journal of Business Ethics, 100*(3), 405-417.
Yoon, C. (2012). Digital piracy intention: a comparison of theoretical models. *Behaviour & Information Technology, 31*(6), 565-576.
Yu, S. D. (2012). College students' justification for digital piracy: A mixed methods study. *Journal of Mixed Methods Research, 6*(4), 364-378.

ONLINE APPENDIX A: ARTICLES INCLUDED AND EXCLUDED FROM OUR META-ANALYSIS

Note to editors and reviewers: Per Elsevier's allowed policy, all appendices is included to further support the review process required for meta-analysis studies. They are not intended to be included with the final print version of the article, but instead will be provided as online supplementary appendices.

Table A.1. Summary of All Articles Included in Our Meta-Analysis

Citation	S	O	C	Attitude?	Intention?	Scenario?	Behavior?	Piracy type	Pub. type	Sample size	Respondent	Theory
Acılar (2010)	1	1	2	yes	no	no	no	S	J2	125	S	Other
Adams (2008)	1	1	3	no	no	no	yes	M	CB	124	S	SLT
Akbulut (2014)	3	1	22	yes	yes	no	no	M	J1	268, 610, 406	M	TPB+
Aleassa et al. (2011)	1	1	9	yes	yes	no	no	S	J1	323	S	TPB
Al-Jabri and Abdul-Gader (1997)	1	2	10	no	yes	no	yes	S	J1	278	S	TRA
Al-Rafee (2002)	1	1	10	yes	yes	no	no	M	CB	292	S	TPB+
Al-Rafee and Cronan (2006)	1	1	6	yes	no	no	no	S	J1	285	S	TPB
Al-Rafee and Dashti (2012)	2	2	10	no	yes	no	no	M	J1	285, 328	S	TPB
Amiroso and Case (2007)	1	1	5	no	yes	no	yes	M	CB	67	M	TAM
Amoroso et al. (2008)	1	2	5	yes	no	no	yes	M	CB	439	S	TAM
Bateman et al. (2013)	1	1	5	no	yes	no	no	M	J1	387	S	Other
Becker and Clement (2006)	2	1	15	no	no	no	yes	M	J1	370, 230	M	Other
Blake and Kyper (2013)	1	1	3	no	yes	no	no	M	J1	160	S	TPB+
Bonner and O'Higgins (2010)	1	1	3	no	no	no	yes	M	J1	84	S	Other
Bouhnik and Deshen (2013)	1	1	5	no	no	no	yes	M	CB	1072	S	Other
Bounagui and Nel (2009)	1	1	4	no	yes	no	no	M	J2	715	S	TAM
Bounie et al. (2006)	1	1	5	no	no	no	yes	M	J2	620	M	Other
Burruss et al. (2013)	1	1	7	no	no	no	yes	S	J1	574	S	SLT+
Butt (2006)	2	1	7	no	no	no	yes	M	CB	339, 196	S	TPB+
Chaipoopirutana and Combs (2011)	1	1	4	yes	yes	no	yes	S	CB	484	M	TPB
Chan and Lai (2011)	1	1	5	yes	no	no	yes	S	J1	266	C	TPB+
Chan et al. (2013)	1	1	9	yes	yes	no	no	S	J1	249	C	TPB
Chaudhry et al. (2011)	1	1	4	no	yes	no	yes	M	J1	254	S	Other
Chen et al. (2006)	1	1	2	no	yes	no	no	M	CB	834	M	Other
Chen et al. (2008b)	1	1	2	no	yes	no	no	M	J1	834	S	Other
Chen et al. (2009)	1	2	7	yes	yes	no	no	S	J1	584	C	TPB
Chen and Yen (2011)	1	1	4	yes	yes	no	no	M	J1	335	M	Other
Chen (2013)	1	1	4	yes	no	no	no	M	J1	211	S	Other
Cheng et al. (1997)	1	1	3	no	no	no	yes	S	J1	340	M	Other
Chiang and Djeto (2007)	1	1	3	no	no	no	yes	M	J1	472	S	Other
Chiang and Huang (2007)	1	1	5	yes	yes	no	no	M	J1	399	S	TPB
Chiang and Assane (2008)	1	1	6	no	no	no	yes	M	J1	456	S	Other
Chiang and Assane (2009)	1	1	4	no	yes	no	no	M	J1	531	S	Other

Citation	S	O	C	Attitude?	Intention?	Scenario?	Behavior?	Piracy type	Pub. type	Sample size	Respondent	Theory
Chiou et al. (2005)	1	2	8	yes	yes	no	no	M	J1	207	S	Other
Chiou et al. (2011)	1	1	4	no	no	yes	no	M	J1	471	S	PMT
Choi (2013)	1	1	3	no	yes	no	no	S	CB	354	C	TRA
Christensen and Eining (1991)	1	1	3	yes	no	no	yes	S	J2	262	S	TRA
Cockrill and Goode (2012)	1	1	3	no	yes	no	no	M	J1	482	M	TPB
Cox and Collins (2014)	1	2	12	no	no	no	yes	M	J1	6103	C	Other
Coyle et al. (2009)	1	1	5	no	yes	no	no	M	J1	204	S	Other
Cronan and Al-Rafee (2008)	1	1	13	yes	yes	no	no	S	J1	280	S	TPB
Cuevas (2009)	1	1	9	yes	yes	no	yes	M	CB	912	S	TPB
D'Arcy and Hovav (2007)	1	1	2	no	yes	yes	no	S	J2	507	M	Other
d'Astous et al. (2005)	1	1	10	yes	yes	no	no	M	J1	139	S	TPB
Dilmperi et al. (2011)	1	2	5	no	no	no	yes	M	J1	214	S	Other
Dionísio et al. (2013)	1	1	7	no	no	no	yes	M	J1	468	S	TPB+
Djekic and Loebbecke (2007)	1	4	8	no	no	no	yes	S	J1	794	C	Other
Fetscherin (2009)	2	2	16	no	no	no	yes	M	J1	630, 155	S	Other
Forman (2009)	1	1	6	no	yes	no	no	S	CB	407	S	other
Garbharran and Thatcher (2011)	1	1	3	no	yes	no	no	S	CB	456	P	SCT
Gartside and Heales (2006b)	1	2	4	no	yes	no	no	M	CB	112	M	TPB+
Gartside and Heales (2006a)	1	1	2	no	yes	no	no	M	CB	112	M	TPB+
Gerlach et al. (2009)	2	2	6	no	no	no	yes	S	J1	241, 277	S	Other
Gerlich et al. (2010)	1	6	29	no	no	no	yes	M	J2	302	S	Other
Goles et al. (2008)	1	1	11	yes	yes	no	no	S	J1	455	S	TPB+
Gopal and Sanders (1997)	1	1	4	no	no	yes	no	S	J1	123	S	DT
Green (2007)	1	2	2	no	no	no	yes	M	J1	375	S	TAM
Gunter (2008)	1	3	12	no	no	yes	no	M	J2	587	S	SLT
Gunter (2009a)	1	3	24	no	no	yes	no	M	J2	541	S	DT+
Gunter et al. (2010)	2	1	6	no	no	no	yes	M	J1	6249, 5470	S	SCT
Gupta et al. (2004)	1	4	36	no	no	no	yes	S	J1	689	C	TRA
Haines and Haines (2007)	1	4	4	no	no	yes	no	M	CB	170	S	Other
Hansen and Walden (2013)	2	3	14	yes	no	no	no	M	J1	143, 196	C	Other
Harrington (1996)	1	1	3	no	no	yes	no	S	J1	218	P	DT
Hashim (2010)	1	1	7	no	yes	no	no	S	CB	198	S	TPB
Hennig-Thurau et al. (2007)	1	2	6	no	no	no	yes	M	J1	1075	C	Other
Hietanen and Räsänen (2009)	1	1	4	no	no	no	yes	M	CB	6083	C	Other
Higgins (2004)	1	1	26	yes	no	yes	no	S	J1	318	S	Other
Higgins et al. (2005)	1	1	10	no	no	yes	no	S	J2	382	S	DT
Higgins et al. (2006)	1	2	3	no	yes	no	no	M	J2	392	S	SLT+
Higgins (2006)	1	1	3	no	no	no	yes	S	J2	392	S	SLT+

Citation	S	O	C	Attitude?	Intention?	Scenario?	Behavior?	Piracy type	Pub. type	Sample size	Respondent	Theory
Higgins et al. (2006)	1	1	10	yes	no	yes	no	S	J2	318	S	SLT+
Higgins et al. (2007)	1	1	16	yes	no	yes	no	S	J1	338	S	SLT+
Higgins (2007b)	3	3	21	no	yes	no	yes	S	J1	292(T)	S	Other
Higgins (2007a)	1	1	6	no	no	yes	no	S	J2	382	S	RCT+
Higgins et al. (2008a)	1	1	5	no	no	no	yes	M	J1	358	S	Other
Higgins et al. (2008b)	4	1	12	no	no	no	yes	M	J2	292 (T)	S	NT
Higgins et al. (2012)	1	1	5	no	no	no	yes	M	J1	287	S	SLT
Hinduja (2000)	1	2	8	no	no	no	yes	S	J2	433	S	NT
Hinduja (2007)	1	1	12	yes	no	no	no	S	J1	433	S	NT
Hinduja and Ingram (2008)	1	1	6	no	no	no	yes	M	J1	2032	S	SLT
Hinduja (2008)	1	1	1	no	no	no	yes	S	J1	433	S	Other
Hinduja and Ingram (2009)	1	1	3	no	no	no	yes	M	J1	2032	S	SLT
Hinduja (2012)	1	1	2	no	no	no	yes	S	J1	2032	S	Other
Hohn et al. (2006)	1	1	5	no	no	no	yes	M	J1	114	S	Other
Hollinger (1993)	1	2	11	no	no	no	yes	S	J1	1766	S	Other
Holt and Morris (2009)	1	1	8	no	no	no	yes	M	J2	605	S	Other
Holt et al. (2012)	1	2	10	no	no	no	yes	M	J2	435	S	SLT
Hsieh and Tze-Kuang (2012)	1	1	2	no	yes	no	no	S	J2	209	S	Other
Hsieh et al. (2012)	1	1	2	yes	no	no	no	S	J1	133	S	Other
Hu et al. (2010)	2	2	16	no	yes	no	no	S	CB	364, 310	S	TPB+
Huang (2005)	1	1	3	no	no	no	yes	M	J1	114	S	Other
Huimin et al. (2010)	1	1	2	no	no	no	yes	M	CB	284	S	TPB+
Ilevbare (2008)	1	1	1	yes	no	no	no	M	J2	250	S	Other
Ingram and Hinduja (2008)	1	1	6	no	no	no	yes	M	J1	2032	S	NT
Jacobs et al. (2012)	1	1	5	no	no	no	yes	M	J1	348	C	SCT
Jambon and Smetana (2012)	1	1	3	no	no	no	yes	M	J1	188	S	Other
Jung (2009)	1	3	12	yes	no	yes	no	M	J1	77	S	Other
Karakaya (2010)	1	1	5	yes	yes	no	no	S	CB	595	C	Other
Khang et al. (2012)	1	1	12	yes	yes	no	no	M	J2	378	S	TPB
Kiksen (2012)	1	2	44	yes	yes	no	yes	M	CB	138	C	TRA
King and Thatcher (2014)	1	1	1	no	yes	no	no	S	J1	402	P	TRA
Kinnally et al. (2008)	1	5	23	no	no	no	yes	M	J1	565	S	Other
Koklic et al. (2014)	5	4	36	yes	yes	no	yes	M	J1	529, 207, 455, 184, 943	C	NT
Kwan and Tam (2010)	1	1	2	no	yes	no	no	S	CB	541	P	Other
Kwong and Lee (2002)	1	2	7	yes	yes	no	no	M	CB	110	S	Other
Kyper and Blake (2009)	1	1	3	no	yes	no	no	M	CB	20	S	TAM
Lalović et al. (2012)	1	1	4	no	no	no	yes	M	J2	253	S	TPB
LaRose et al. (2005)	1	1	7	no	no	no	yes	S	J1	265	S	SCT
LaRose and Kim (2007)	1	3	16	no	yes	no	no	M	J1	134	S	SCT
Lau (2003)	1	1	2	yes	no	no	no	S	J2	263	C	Other

Citation	S	O	C	Attitude?	Intention?	Scenario?	Behavior?	Piracy type	Pub. type	Sample size	Respondent	Theory
Lau (2007)	1	1	3	yes	no	no	no	S	J1	263	P	Other
Leonard and Cronan (2001)	1	1	7	no	no	yes	no	M	J1	423	S	Other
Levin et al. (2004)	1	1	2	no	no	no	yes	M	J1	204	S	Other
Li and Nergadze (2009)	1	2	11	no	yes	no	yes	M	J2	306	S	DT
Liang (2007)	1	1	5	yes	yes	no	no	M	CB	872	S	TPB+
Liang (2010)	1	1	5	yes	yes	no	no	M	CB	206	S	NT
Liang and Phau (2011)	1	1	4	yes	no	no	no	M	CB	201	C	NT
Liang and Phau (2012a)	2	1	8	yes	no	no	no	M	CB	235, 174	M	NT
Liao et al. (2010)	1	1	10	yes	yes	no	no	S	J1	305	C	TPB
Limayem et al. (2004)	1	1	4	no	yes	no	yes	S	J1	127	S	TPB
Lin et al. (1999)	1	1	2	no	yes	no	no	M	CB	246	P	TPB
Liu and Fang (2003)	1	1	2	no	yes	no	yes	S	J2	122	C	TRA
Lorde et al. (2010)	1	1	6	no	yes	no	no	M	J2	390	S	TPB
Lysonski and Durvasula (2008)	1	1	12	no	yes	no	yes	M	J1	364	S	Other
Mai and Niemand (2012)	1	1	8	yes	yes	no	no	M	CB	158	C	TPB
Makin (2002)	1	1	5	yes	yes	no	no	M	CB	208	S	TPB
Malin and Fowers (2009)	1	1	4	yes	no	no	no	M	J1	200	S	Other
Mandel and Leipzig (2012)	1	1	2	no	no	no	yes	M	J2	222	C	Other
Marcum et al. (2011)	1	1	13	yes	yes	no	no	M	J2	358	S	NT+
Massad (2014)	1	1	2	no	no	no	yes	M	J2	423	M	Other
McCorkle et al. (2012)	1	2	8	no	no	no	yes	M	J2	451	P	TRA
Moon et al. (2015)	4	4	8	yes	no	no	no	M	J1	60, 59, 60, 58	S	Other
Moores and Dhillon (2000)	1	1	5	no	no	no	yes	S	J1	243	S	Other
Moores and Chang (2006)	1	1	5	no	no	yes	yes	S	J1	243	S	Other
Moores et al. (2009)	1	1	9	yes	no	no	yes	S	J1	103	S	TPB
Moores and Esichaikul (2011)	1	3	9	no	no	no	yes	S	J1	213	S	TPB
Morris and Higgins (2009)	1	3	24	no	yes	no	yes	M	J1	585	S	NT+SLT+
Morris and Higgins (2010)	3	3	12	no	no	yes	no	M	J1	585(T)	S	NT+SLT
Morton and Koufteros (2008)	1	1	9	yes	yes	no	no	M	J1	216	S	TPB+DT
Nandedkar and Midha (2009)	1	1	5	yes	yes	no	no	M	CB	108	S	Other
Nandedkar and Midha (2012)	1	1	5	yes	yes	no	no	M	J1	219	S	TRA
Nill et al. (2010)	1	1	6	no	no	no	yes	S	J1	108	P	Other
Okurame and Ogunfowora (2011)	1	1	3	yes	no	no	no	S	J2	240	S	Other
Orr (2011)	1	1	2	no	no	no	yes	M	CB	97	S	Other
Panas and Ninni (2011)	1	1	9	yes	yes	no	no	M	J2	799	S	TPB+
Peace (1995)	2	2	20	no	yes	no	no	S	CB	203, 171	S	TPB+DT
Peace and Galletta (1996)	1	1	9	yes	yes	no	no	S	CB	203	P	TPB+DT+
Peace (1997)	1	1	4	no	no	no	yes	S	J1	283	P	Other
Peace et al. (2003)	1	1	11	yes	yes	no	no	S	J1	201	P	TPB+DT

Citation	S	O	C	Attitude?	Intention?	Scenario?	Behavior?	Piracy type	Pub. type	Sample size	Respondent	Theory
Phau and Ng (2010)	1	1	6	yes	no	no	no	S	J1	344	S	TRA
Phau and Liang (2012)	1	1	5	yes	no	no	no	M	J2	206	S	TPB+
Phau et al. (2013)	1	1	4	yes	yes	no	no	M	J2	284	S	NT
Phau et al. (2014)	1	1	11	yes	yes	no	no	M	J1	452	S	TPB
Plouffe (2008)	1	1	3	no	yes	no	no	M	J1	116	S	Other
Plowman and Goode (2009)	1	1	4	yes	yes	no	no	M	J1	206	S	TPB+DT+
Popham (2011)	1	1	3	no	no	no	yes	M	J1	13351	S	Other
Rahim et al. (1999)	1	1	2	no	no	no	yes	S	J2	120	S	Other
Rahim et al. (2000b)	1	1	5	no	no	no	yes	S	J2	169	P	Other
Rahim et al. (2000a)	1	2	10	no	yes	no	no	S	J2	432	S	Other
Rahim et al. (2001)	1	3	18	no	yes	no	no	S	J2	205	S	Other
Ramakrishna et al. (2001)	1	3	3	yes	no	no	no	S	J1	843	S	Other
Ramayah et al. (2008)	1	1	2	no	no	no	yes	S	J2	116	S	TPB+
Rawlinson and Lupton (2007)	2	2	20	yes	no	no	yes	S	J2	343, 226	S	Other
Reiss (2010)	1	1	4	yes	no	no	no	S	CB	10	S	Other
Robertson et al. (2012)	1	1	3	no	no	no	yes	M	J1	196	S	TPB+DT
Rybina (2011)	1	1	3	no	yes	no	no	M	J2	226	M	TPB
Sang et al. (2014)	2	2	8	no	yes	no	no	M	J1	250, 257	S	TPB
Sansfacon and Amiot (2014)	1	1	4	no	yes	no	no	S	J2	114	S	Other
Seale (2002)	2	2	12	no	no	no	yes	S	CB	230, 162	P	TPB+
Setiawan and Tjiptono (2013)	1	1	11	yes	yes	no	no	M	J2	218	S	TPB+
Setterstrom et al. (2012)	1	1	4	no	yes	no	no	S	CB	323	S	TRA
Shanahan and Hyman (2010)	2	1	12	no	no	no	yes	M	J1	296, 312	S	Other
Shang et al. (2008)	1	4	12	no	yes	no	no	M	J1	451	S	Other
Sheehan et al. (2010)	1	1	6	yes	no	no	no	M	J1	415	S	Other
Shemroske (2012)	1	2	6	yes	yes	no	no	S	CB	276	S	TPB+
Shoham et al. (2008)	1	2	10	yes	no	no	yes	M	J2	178	S	TPB+
Simon and Chaney (2005)	1	5	14	no	no	no	yes	S	J2	480	S	Other
Simpson et al. (1994)	1	1	4	no	no	no	yes	S	J1	209	S	Other
Sims et al. (1996)	1	2	5	no	no	no	yes	S	J1	340	S	Other
Sinha and Mandel (2008)	1	1	1	yes	yes	no	no	M	J1	359	S	Other
Siponen et al. (2012)	1	1	11	no	yes	no	no	S	J1	183	S	NT+DT
Sirkeci and Magnúsdóttir (2011)	1	1	3	no	no	no	yes	M	J2	140	C	Other
Smallridge (2012)	1	4	54	no	yes	no	no	S	CB	304	S	Other
Smallridge and Roberts (2013)	1	4	10	no	yes	no	yes	M	J2	356	S	Other
Suki et al. (2011)	1	1	2	no	yes	no	no	S	J2	259	C	TRA
Sun et al. (2013)	1	1	4	no	yes	no	no	S	CB	253	S	DT
Super (2008)	1	1	5	no	no	no	yes	M	CB	463	S	NT
Suter et al. (2004)	1	2	12	no	no	no	yes	M	J1	297	C	Other

Citation	S	O	C	Attitude?	Intention?	Scenario?	Behavior?	Piracy type	Pub. type	Sample size	Respondent	Theory
Tan (2002)	1	1	8	no	yes	no	no	S	J1	377	C	other
Taylor et al. (2009)	2	1	10	yes	yes	no	no	M	J1	857, 874	S	Other
Taylor (2012b)	1	1	3	yes	yes	no	no	M	J2	285	S	Other
Taylor (2012a)	2	1	8	yes	yes	no	yes	M	J2	321, 267	S	Other
Thatcher and Matthews (2012)	2	2	17	yes	yes	no	no	S	J2	71, 69	S	SCT
Van Belle et al. (2014)	1	4	25	yes	yes	no	yes	S	J2	225	S	Other
van der Byl and Van Belle (2008)	1	1	4	yes	no	no	no	M	J2	88	M	Other
Vannoy and Medlin (2014)	1	1	5	no	no	no	yes	M	CB	233	S	RCT
Vermeir (2009)	1	1	4	no	no	no	yes	M	J2	490	S	Other
Vida et al. (2012)	1	1	3	no	yes	no	no	M	J2	1213	C	other
Villazon (2004)	1	1	5	yes	yes	no	yes	M	CB	242	S	TPB+
Wan et al. (2009)	1	1	6	no	yes	no	no	M	J1	300	C	TPB
Wang (2005)	1	1	5	no	yes	no	no	M	J2	456	S	Other
Wang et al. (2005)	1	1	5	yes	yes	no	no	S	J1	302	C	Other
Wang and McClung (2011)	1	1	6	no	yes	no	no	M	J1	552	S	TPB+
Wang et al. (2012)	1	8	9	no	no	no	yes	M	J1	665	S	SLT
Wang and McClung (2012)	1	2	10	yes	yes	no	no	M	J1	304	S	TPB
Wang et al. (2013)	1	1	2	no	yes	no	no	M	J1	124	C	SCT
Wingrove et al. (2010)	1	1	3	no	yes	no	no	M	J1	241	S	DT
Wolfe et al. (2008)	1	1	13	no	yes	no	no	M	J1	355	S	DT+
Wong et al. (1990)	1	3	24	no	no	no	yes	S	J1	504	S	Other
Wood and Glass (1996)	1	1	2	yes	no	no	no	S	J1	272	S	Other
Woolley (2010)	1	1	3	yes	no	no	yes	M	J2	207	S	TRA
Wu and Yang (2013)	1	6	18	no	yes	no	no	M	J1	252, 201	S	Other
Xu et al. (2005)	1	1	1	no	yes	no	no	M	CB	76	S	Other
Yang et al. (2014)	2	4	12	no	no	no	yes	M	J1	306, 278	S	Other
Yoo et al. (2008)	1	1	9	yes	yes	no	no	S	CB	145	S	DT
Yoon (2011b)	1	1	8	yes	yes	no	no	M	J1	270	S	TPB
Yoon (2012)	1	1	4	no	yes	no	no	M	J1	317	S	TPB+
Yu (2012)	1	1	3	yes	no	no	no	M	J1	359	S	NT
Yu (2013)	1	1	4	no	yes	no	no	M	J1	383	S	NT
Zhang et al. (2009)	1	1	3	no	no	no	yes	M	J2	207	S	DT+
Zhang et al. (2010)	2	1	6	no	yes	no	no	M	J2	160, 147	S	TPB

Table note: S = # of independent studies in article; O = # of unique DVs; C = # of unique correlations / effect size statistics; for piracy type (M = media such as music, movies, or games; S = software); for publication type (CB = conference, book, or dissertation; J1 = ISI-rated journal; J2 = non-ISI-rated journal); for sample size (T) = time ordered or longitudinal data; for respondent type (M = mixed student and consumer or student and professions, S = student, P = professional, C = consumer); for theory (DT = deterrence theory; NT = neutralization theory; Other = other theories not listed here; RCT = rational choice theory; SCT = social cognitive theory; SLT = social learning theory; TAM = technology acceptance model; TPB = theory of planned behavior; TRA = theory of reasoned action; + = additional theories)

Table A.2. Summary of Empirical Digital Piracy Studies Excluded from Our Meta-Analyses

Citation	Why Excluded	Further explanation
Aleassa (2009)	Duplicate data	Earlier version of later published data
Al-Rafee (2002)	Duplicate data	Dissertation version of journal version, which was published as Al-Rafee and Cronan (2006) and Cronan and Al-Rafee (2008)
Al-Rafee and Rouibah (2010)	Data limitations	No useful data
Andrés (2006)	Out-of-scope	Wrong scope of data for our purposes
Bai and Waldfogel (2012)	Data limitations	No useful data
Behel (1998)	Out-of-scope	No IVs in common (all about equity / fairness, which we did not study).
Behel (1998)	Out-of-scope	only about fairness / equity predictors of piracy
Bhal and Leekha (2008)	Out-of-scope	Wrong scope of data for our purposes
Bhattacharjee et al. (2006a)	Out-of-scope	Wrong DV
Bhattacharjee et al. (2006b)	Out-of-scope	Wrong DV
Bounie et al. (2007)	Data limitations	wrong data form, it is descriptive
Boyle III (2010)	Data limitations	No useful data
Butt (2006)	Invalid	Did not use validated instruments.
Chen et al. (2008a)	Language	Could not read / translate
Chiou et al. (2012)	Out-of-scope	it's about priming around softlifting; doesn't have right data
Chiou et al. (2012)	Out-of-scope	No IVs in common with our scope.
Choi (2013)	Embargo	Dissertation was placed on “embargo” and was unavailable.
Choi et al. (2014)	Out-of-scope	Wrong scope of data for our purposes
Cronan et al. (2006)	Data limitations	No useful data
Cuadrado et al. (2009)	Data limitations	No useful data
Danaher et al. (2010)	Data limitations	No useful data
Djekic and Loebbecke (2005)	Duplicate data	conference version of published journal version
Dörr et al. (2013)	Out-of-scope	Wrong scope of data for our purposes
Douglas et al. (2007)	Out-of-scope	No IVs in common (all about equity / fairness, which we did not study).
Egan and Taylor (2010)	Data limitations	No useful data
Faulk (2011)	Out-of-scope	Wrong scope of data for our purposes
Gan and Koh (2006)	Out-of-scope	Wrong scope of data for our purposes
Gerlich et al. (2007)	Data limitations	No useful data
Glass and Wood (1996)	Data limitations	No useful data
Goode and Kartas (2012)	Out-of-scope	Wrong scope of data for our purposes
Gopal et al. (2004)	Data limitations	No useful data
Grolleau et al. (2008)	Data limitations	No useful data
Gunter (2009b)	Embargo	Dissertation was placed on “embargo” and was still unavailable as of 01-Oct-2013.
Guo (2010)	Duplicate data	Dissertation version of journal version, which was published as Guo et al. (2011)
Higgins and Makin (2004a)	Duplicate data	duplicate use of data from Higgins and Makin (2004b)
Higgins et al. (2009)	Data limitations	No useful data
Hinduja (2001)	Data limitations	descriptive data

Hinduja (2003)	Not available	valid email but no reply; nothing available
Hinduja (2005)	Embargo	Dissertation was placed on "embargo" and was still unavailable as of 01-Oct-2013.
Hinduja and Higgins (2011)	Data limitations	Wrong kind of data
Hsu and Su (2008)	Data limitations	data in wrong form
Hsu and Shiue (2008)	Data limitations	No useful data
Husted (2000)	Data limitations	Secondary data of national software piracy rate provided by the Business Software Alliance
Im and Van Epps (1992)	Out-of-scope	Wrong level of data
Jeong et al. (2012)	Out-of-scope	Wrong scope of data for our purposes
Jeong and Yoon (2014)	Data limitations	No useful data
Kartas and Goode (2012)	Out-of-scope	Wrong scope of data for our purposes
Kavuk et al. (2011)	Data limitations	data in wrong form
Kini et al. (2000)	Out-of-scope	Wrong scope of data for our purposes
Kini et al. (2003)	Data limitations	No useful data
Kini et al. (2004)	Out-of-scope	Wrong DV
Kini (2008)	Invalid	Does not use properly validated scales.
Kovačić (2007)	Out-of-scope	Exploring the determinants of cross-national variation in software piracy (on national level)
Kwong et al. (2003)	Data limitations	No useful data
Larsson et al. (2013)	Data limitations	No useful data
Latson (2004)	Data limitations	Descriptive only
Leurkittikul (1994)	Not available	Dissertation not available
Levin et al. (2007)	Out-of-scope	experimental data not broken down into means
Liang and Phau (2012b)	Out-of-scope	No pirating DV; comparing differences between pirates
Limayem et al. (1999)	Duplicate data	Earlier version of later published data
Logsdon et al. (1994)	Data limitations	Wrong kind of data
Mishra et al. (2006)	Data limitations	Data in wrong form
Mishra et al. (2007)	Out-of-scope	Level of data
Moore and McMullan (2004)	Data limitations	Data in wrong form
Moores and Dhaliwal (2004)	Data limitations	Lack of applicable data.
Nergadze (2004)	Duplicate data	Dissertation version of Li and Nergadze (2009)
Oh and Teo (2010)	Out-of-scope	Wrong scope of data for our purposes
Parthasarathy and Mittelstaedt (1995)	Not available	valid email but no reply; nothing available
Proserpio et al. (2005)	Out-of-scope	Wrong scope of data for our purposes
Pujara and Chaurasia (2012)	Out-of-scope	wrong level of piracy study
Redondo and Charron (2013)	Data limitations	No useful data
Reinig and Plice (2010)	Out-of-scope	Wrong scope of data for our purposes
Reiss and Cintrón (2011)	Not available	Cannot find article through any source; author has no academic affiliation and cannot be contacted
Robinson and Reithel (1994)	Out-of-scope	Wrong scope of data for our purposes
Rochelandet and Le Guel (2005)	Data limitations	Data in wrong form
Seale et al. (1998)	Data limitations	No useful data
Shemroske (2012)	Data limitations	No useful data

Shore et al. (2001)	Data limitations	Wrong kind of data
Simmons (1999)	Not available	Cannot locate
Simmons (2004)	Data limitations	Lack of applicable data.
Simmons (2004)	Not available	Cannot locate author; nothing available
Sinha et al. (2010)	Data limitations	No useful data
Siponen et al. (2010)	Duplicate data	Earlier version of journal version, which was published as Siponen et al. (2012)
Skinner and Fream (1997)	Data limitations	Wrong form of data
Stanley (2011)	Out-of-scope	Wrong DV
Swinyard et al. (1990)	Data limitations	Wrong form of data
Swinyard et al. (2013)	Data limitations	Wrong form of data
Tang and Farn (2005)	Data limitations	Wrong form of data
Taylor and Shim (1993)	Out-of-scope	Wrong IVs and DVs
Taylor et al. (2009)	Data limitations	Wrong form of data
Theng et al. (2010)	Data limitations	too exploratory and descriptive (only pilot sample of 30)
Thong and Chee-sing (1998)	Not available	Authors no longer have original data; nothing can be used from the printed article
Veitch and Constantiou (2011)	Not available	valid email but no reply; nothing available
Veitch and Constantiou (2012)	Not available	valid email but no reply; nothing available
Veitch and Constantiou (2012)	Not available	valid email but no reply; nothing available
Villazon and Dion (2004)	Out-of-scope	On predicting ethical self-efficacy
Wagner (1998)	Duplicate data	Dissertation version of journal version, which was published as Wagner and Sanders (2001)
Wagner and Sanders (2001)	Data limitations	Wrong form of data
Wang et al. (2006)	Data limitations	No useful data
Warkentin et al. (2004)	Data limitations	Wrong kind of data
Wells (2012)	Embargo	Dissertation was placed on “embargo” and was unavailable.
Woolley and Eining (2006)	Data limitations	Wrong form of data
Woon and Pee (2004)	Data limitations	No useful data
Yang et al. (2008)	Out-of-scope	Wrong scope of data for our purposes
Yang et al. (2009)	Out-of-scope	Wrong scope of data for our purposes
Zamoon (2006)	Data limitations	No useful data

Table A.3. Studies for Which We Only Used Part of the Data Originally Studied

Citation	Further explanation
Hietanen and Räsänen (2009)	cannot find authors; can use partial data
Villazon (2004)	valid email but no reply; can use partial data
Sinha and Mandel (2008)	valid email but no reply; can use only one comparison
Sirkeci and Magnúsdóttir (2011)	Too busy to provide data; can use partial data from the article.
Ramakrishna et al. (2001)	valid email but no reply; can use partial data
Leonard and Cronan (2001)	Authors no longer have original data; Can use partial amount from article
Peace (1997)	Authors no longer have original data; Can use partial amount from article
Popham (2011)	valid email but no reply; can use partial data
Smallridge (2012)	Will try to find and provide data (12-Mar-2015); can use partial data
Chiu et al. (2008)	valid email but no reply; can use only one comparison
Dilmperi et al. (2011)	cannot find authors (affiliations changed); can use partial data
Hinduja (2000)	valid email but no reply; can use partial data
Amoroso et al. (2008)	cannot find valid email; can use partial data
Lin et al. (1999)	valid email but no reply; can use partial data
Hinduja (2012)	valid email but no reply; can use partial data
Shemroske (2012)	valid email but no reply; can use partial data
Sheehan et al. (2012)	23-Feb-2015 they replied they were trying to find their data, never sent; can use partial data

Table A.4. Digital Piracy Literature Search Terms Used

Copyright infringement	Illegal downloading	Online piracy	Pirated movies
Copyright violation	Illegal file sharing	Peer-to-peer file sharing	Pirated music
Digital movie distribution	Illegal music sharing	Peer-to-peer file sharing	Pirated software
Digital music distribution	Movie download	Peer-to-peer network	Softlifting
Digital piracy	Movie piracy	Piracy	Software piracy
Digital theft	Music download	Pirated games	Unauthorized file download
File sharing	Music piracy		

Table A.5. Resources Used for Paper Searching

Bibliographic databases	ABI/INFORM™, ACM Digital Library™, Dissertation Abstracts™, EBSCO™, IEEE Xplore Digital Library™, PROQUEST™, Science Direct™
Citation indexing service	Web of Science
Search engine	Google Scholar
Working paper repositories	Social Science Research Network (SSRN), Citeulike, Academia.edu, ResearchGate

ONLINE APPENDIX B: MAPPING THE DIGITAL PIRACY LITERATURE TO KEY CONSTRUCTS

Note to editors and reviewers: Per Elsevier's allowed policy, all appendices is included to further support the review process required for meta-analysis studies. They are not intended to be included with the final print version of the article, but instead will be provided as online supplementary appendices.

Table B.1. Summary of all Major Predictors in the Digital Piracy Literature Mapped to SCT

Construct	Definition in a piracy context with example supporting citations	SCT theoretical role applied to piracy	Key IVs mapped to construct in the literature for meta-analysis purposes
Immorality	The degree to which individuals believe piracy is okay to do, ethical, or morally correct (e.g., Kini et al., 2004; Seale, 2002; Shang et al., 2008; Siponen et al., 2012; Wagner & Sanders, 2001; Yoon, 2011a).	Moral disengagement: Encourages piracy	Immorality, relativism, egoism, unethical beliefs, Machiavellianism, lack of shame of piracy, and negative moral norms
Low self-control	The degree to which individuals have little ability to control their general behaviors (not specific to piracy but affecting their general impulse control that also affects piracy) (e.g., Burruss et al., 2013; Higgins, 2004; Higgins et al., 2012; Malin & Fowers, 2009; Morris & Higgins, 2009).	Self-efficacy and self-regulation: Encourages piracy	Low self-control, risk-taking propensity, deficient self-regulation, and low personal control.
Morality	The degree to which individuals believe piracy is wrong, unethical, or immoral, regardless of the reasons why. Notably, ethics is a subset of morality in that it focuses on the rational assessment of morality. Morality can include rational (e.g., ethics) and irrational (e.g., religious) assessments (e.g., Kini et al., 2004; Seale, 2002; Shang et al., 2008; Siponen et al., 2012; Wagner & Sanders, 2001; Yoon, 2011a).	Moral disengagement: Thwarts piracy	Morality, moral judgment, Kantianism, utilitarianism, moral obligation, moral intensity, idealism, ethical concerns, ethics, altruism, deontological judgment, anticipated guilt, religious intensity, and shame about piracy.
Negative social influence	When individuals are socially persuaded to accept piracy as a result of social learning (e.g., Burruss et al., 2013; Higgins, 2006; Higgins & Makin, 2004a).	Social learning: Encourages piracy	Social influence (negative), subjective norms (negative), facilitating conditions (negative), peer association (negative), software pirating peers, peer deviation, differential association (negative), coercive pressure, and descriptive norms (negative)
Neutralization	Represents the various rationalizations or justifications that participants engage in to rationalize that committing piracy is okay to do, and to thus disengage from or underestimate potential moral violations, social costs, or other negative consequences of committing piracy (e.g, Koklic et al., 2014; Siponen et al., 2012; Vida et al., 2012; Yu, 2012).	Moral disengagement: Encourages piracy	General neutralization, general rationalization, claims that most people do it, justifications they cannot afford the product, denial of responsibility, condemning the condemners, and denial of injury/harm/immorality, and general moral disengagement.

Table B.1. Summary of all Major Predictors in the Digital Piracy Literature Mapped to SCT (Continued)

Construct	Definition in a piracy context with example supporting citations	SCT theoretical role applied to piracy	Key IVs mapped to construct in the literature for meta-analysis purposes
Perceived behavioral control	The degree to which individuals believe they can control and perform piracy behaviors effectively and control the desired outcomes (e.g., Cronan & Al-Rafee, 2008; Gerlich et al., 2010; Kwong & Lee, 2002; Moores et al., 2009; Shemroske, 2012). This is synonymous with the idea of piracy self-efficacy, per the underlying SCT literature (Ajzen, 1991; Bandura, 1990; Bandura & Bryant, 2002).	Self-efficacy and self-regulation: Encourages piracy	Perceived behavioral control, high personal locus of control, behavioral control, and self-efficacy of piracy.
Perceived risks	The degree to which individuals believe engaging in piracy is risky or fraught with uncertain possibilities of negative outcomes or costs—distinct from the more concept of sanctions (Cockrill & Goode, 2012; Jeong et al., 2012; Koklic et al., 2014; Liao et al., 2010; Wong et al., 1990).	Outcome expectancies: Thwarts piracy	Perceived risk, risk of catching a computer virus, personal risk, chance of getting a computer virus, general perceived harm, potential negative social consequences, and potential financial costs/risks.
Perceived sanctions	The degree to which individuals believe that engaging in piracy can lead to formal or informal sanctions (or punishments), which can be further explained in terms of severity (how strong) and certainty (how likely). Celerity (how swift) is technically a part of this definition but rarely used in the piracy literature (e.g., Higgins et al., 2005; Jeong et al., 2012; Lysonski & Durvasula, 2008; Moores & Dhillon, 2000; Peace & Galletta, 1996).	Outcome expectancies: Thwarts piracy	Perceived sanctions, general sanctions, certainty of sanctions/punishment, severity of sanctions/punishment, prosecution likelihood, potential penalties, deterrence, and chance of being caught by officials.
Piracy habit	Individuals' degree to which they have engaged in piracy on a repeated, habitual basis (e.g., Jacobs et al., 2012; LaRose & Kim, 2007; Yoon, 2011b).	Social learning: Encourages piracy	Piracy habit, negative habit, previous piracy, degree of previous piracy behavior, habit strength, and amount of illegal downloading per month last year.
Positive social influence	When individuals are socially persuaded to reject piracy as a result of social learning (e.g., Burruss et al., 2013; Higgins, 2006; Higgins & Makin, 2004a).	Social learning: Thwarts piracy	Social influence (positive), subjective norms (positive), facilitating conditions (positive), social consensus, peer association (positive); social factors (positive), social persuasiveness (positive), and descriptive norms (positive).
Rewards	Various perceived extrinsic and intrinsic influences, motivations, or positive outcomes that encourage one to engage in piracy (e.g., Djekic & Loebbecke, 2007; Setiawan & Tjiptono, 2013; Sheehan et al., 2010; Suter et al., 2006; Suter et al., 2004; Wang et al., 2009).	Outcome expectancies: Encourages piracy	Extrinsic rewards, saving money, expanding one's digital music collection, perceived utility/value, costs of software, general net economic benefits; intrinsic rewards, curiosity, fun, thrill, enjoyment of goods, specific artist adoration, and experiencing variety.

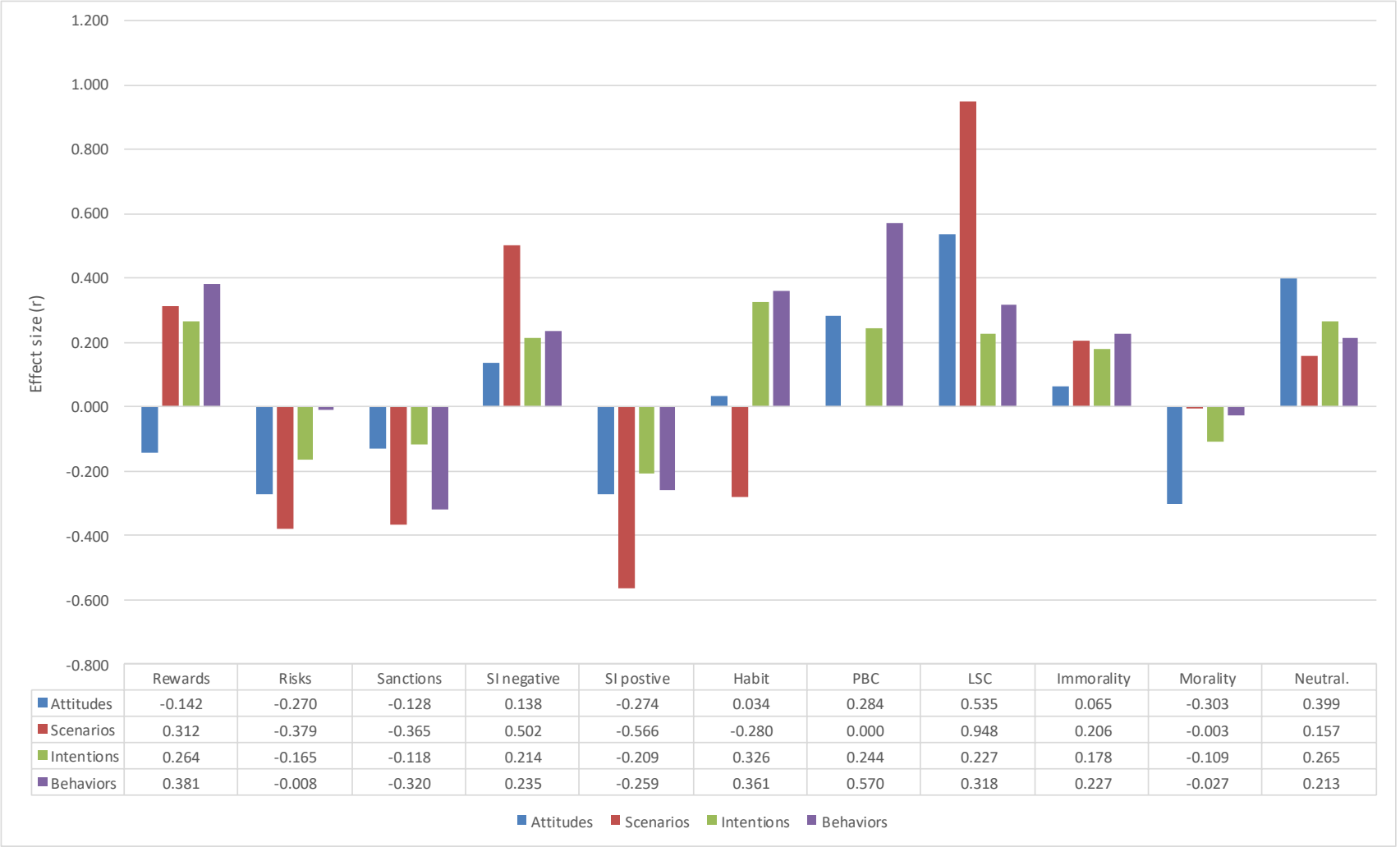
ONLINE APPENDIX C: DETAILS FOR MODERATION ANALYSES

Table C.1. Moderated Results of the Major Predictors of Digital Piracy by Predicted Outcome Type (Attitudes, Intentions from Scenarios, Self-Report Intentions, and Actual Behaviors)

	Characteristics			Estimated effect size and 95% confidence interval			Heterogeneity and Tau^2			
Predictor of piracy by type	**k**	**N**	**Effect?**	**r**	**Lower limit**	**Upper limit**	**Q-value**	**df (Q)**	**I^2**	**T^2**
Key factors from the literature that support a cost/benefit outcome expectancies perspective										
Rewards (A)	17	8,122	None (n/s)	-.142	-.387	.121	5787.3	16	99.7	.693
Rewards (S)	4*	2,942	Medium-to-large	.312	.247	.502	264.8	3	98.9	.117
Rewards (I)	27	14,473	Small-to-medium	.264	.060	.447	2125.7	26	98.8	.148
Rewards (B)	53	61,304	Medium-to-large	.381	.247	.502	20319.8	52	99.8	.299
Risks (A)	16	7,653	Small-to-medium	-.270	-.351	-.185	220.4	15	93.2	.030
Risks (S)	2*	620	Medium-to-large	-.379	-.570	-.149	5.9	1	83.2	.017
Risks (I)	27	16,348	Small-to-medium	-.165	-.230	-.100	542.5	26	95.2	.034
Risks (B)	19	37,046	None (n/s)	-.008	-.086	.070	781.1	18	97.7	.026
Sanctions (A)	27	10,574	None (n/s)	-.128	-.266	.015	3046.8	26	99.2	.286
Sanctions (S)	13	12,423	Medium-to-large	-.365	-.528	-.176	2229.5	12	99.5	.165
Sanctions (I)	36	15,209	None (n/s)	-.118	-.238	.005	3108.3	35	98.9	.203
Sanctions (B)	31	47,915	Small-to-medium	-.195	-.320	-.064	3081.1	30	99.0	.073
Key factors from the literature that support a social learning perspective										
SI negative (A)	49	23,103	Small-to-medium	.138	.011	.262	10306.9	48	99.5	.422
SI negative (S)	14	11,673	Large	.502	.303	.659	1211.1	13	98.9	.095
SI negative (I)	78	34,800	Small-to-medium	.214	.115	.309	2650.5	77	97.1	.073
SI negative (B)	61	77,115	Small-to-medium	.235	.124	.340	16784.8	60	99.6	.219
SI positive (A)	16	6,507	Small-to-medium	-.274	-.423	-.110	469.8	15	96.8	.074
SI positive (S)	1*	738	None (n/s)	-.566	-.867	.036	0.0	0	0.0	.000
SI positive (I)	26	9,877	Small-to-medium	-.209	-.334	-.078	2089.9	25	98.8	.211
SI positive (B)	24	18,820	Small-to-medium	-.259	-.384	-.124	1464.3	23	98.4	.083
Piracy habit (A)	28	3,693	None (n/s)	.034	-.159	.224	4791.9	27	99.4	.396
Piracy habit (S)	3*	1,796	None (n/s)	-.280	-.706	.295	378.4	2	99.5	.294
Piracy habit (I)	23	10,526	Medium-to-large	.326	.123	.502	3262.3	22	99.3	.314
Piracy habit (B)	26	13,448	Medium-to-large	.361	.174	.522	1743.3	25	98.6	.127
Key factors from the literature that support a self-efficacy and self-regulation perspective										
PBC (A)	17	6,853	Small-to-medium	.284	.139	.418	450.7	16	96.5	.070
PBC (S)	0	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
PBC (I)	45	20,218	Small-to-medium	.244	.154	.330	1037.2	44	95.8	.050
PBC (B)	11	5,629	Large	.570	.430	.684	1805.5	10	99.5	.275
LSC (A)	11	6,376	Large	.535	.227	.746	3151.8	10	99.7	.432
LSC (S)	6*	3,700	Extreme	.948	.867	.980	1342.3	5	99.6	.245
LSC (I)	13	3,687	None (n/s)	.227	-.106	.514	830.9	12	98.6	.174
LSC (B)	26	35,849	Medium-to-large	.318	.091	.514	13616.6	25	99.8	.424
Key factors from the literature that support a morality and moral disengagement perspective										
Immorality (A)	24	14,763	None (n/s)	.065	-.102	.230	1515.3	23	98.5	.106
Immorality (S)	4*	937	None (n/s)	.206	-.203	.554	93.1	3	96.8	.139
Immorality (I)	21	9,544	Small-to-medium	.178	.000	.345	1640.8	20	98.8	.176
Immorality (B)	28	13,779	Small-to-medium	.227	.076	.369	4110.3	27	99.3	.229
Morality (A)	52	24,127	Medium	-.303	-.412	-.186	12239.9	51	99.6	.454
Morality (S)	26	23,032	None (n/s)	-.003	-.177	.172	1330.2	25	98.1	.060

Morality (I)	58	29,027	None (n/s)	-.109	-.224	.009	4284.1	57	98.7	.144
Morality (B)	53	59,530	None (n/s)	-.027	-.149	.096	10228.9	52	99.5	.180
Neutralization (A)	5*	1,855	Medium-to-large	.399	.208	.562	390.1	4	98.9	.168
Neutralization (S)	4*	1,973	None (n/s)	.157	-.079	.377	78.1	3	96.2	.053
Neutralization (I)	17	9,479	Small-to-medium	.265	.155	.368	2945.5	16	99.5	.276
Neutralization (B)	33	20,155	Small-to-medium	.213	.133	.290	2674.9	32	98.8	.029

Note. * = k is lower than the suggested 10 study threshold; A = attitudes; I = intentions; B = behaviors; S = scenarios. r = correlation point estimation of overall effects; k = number of studies, N = sample size, n/s = not significant. All point estimations of r assume and use the random effects model. Effect size key: large ≥ .50; medium-to-large > .30 < .50; medium .30; small-to-medium ≥ .10 < .30; small < .10; none = not significant; rewards outcomes were significantly different at Q = 12.38 (df = 3), $p = 0.006$; risk outcomes were significantly different at Q = 24.47 (df = 3), $p = 0.000$; sanctions outcomes were not significantly different at Q = 5.24 (df = 3), $p = 0.155$; negative social influence outcomes were significantly different at Q = 8.97 (df = 3), $p = 0.030$; positive social influence outcomes were not significantly different at Q = 1.74 (df = 3), $p = 0.628$; habit outcomes were significantly different at Q = 9.88 (df = 3), $p = 0.020$; PBC outcomes were significantly different at Q = 14.2 (df = 2), $p = 0.001$; LSC outcomes were significantly different at Q = 31.70 (df = 3), $p = 0.000$; immorality outcomes were not significantly different at Q = 2.11 (df = 3), $p = 0.550$; morality outcomes were significantly different at Q = 13.04 (df = 3), $p = 0.005$; neutralization comparisons were not significantly different at Q = 3.87 (df = 3), $p = 0.275$.



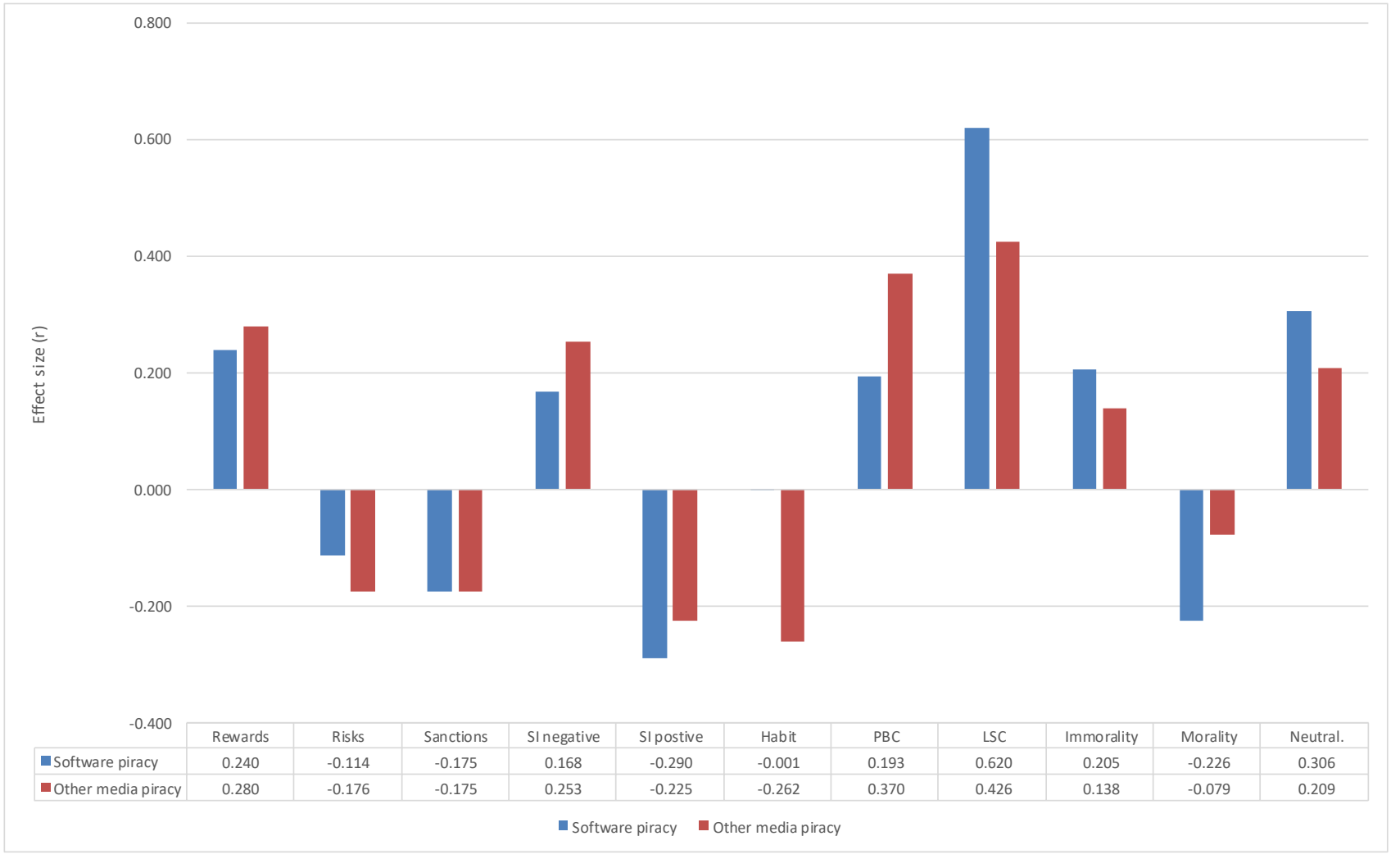
	Rewards	Risks	Sanctions	SI negative	SI postive	Habit	PBC	LSC	Immorality	Morality	Neutral.
Attitudes	-0.142	-0.270	-0.128	0.138	-0.274	0.034	0.284	0.535	0.065	-0.303	0.399
Scenarios	0.312	-0.379	-0.365	0.502	-0.566	-0.280	0.000	0.948	0.206	-0.003	0.157
Intentions	0.264	-0.165	-0.118	0.214	-0.209	0.326	0.244	0.227	0.178	-0.109	0.265
Behaviors	0.381	-0.008	-0.320	0.235	-0.259	0.361	0.570	0.318	0.227	-0.027	0.213

Figure C.1. Chart of the Computed Effect Sizes for the Key Piracy Factors by DV Type (Attitudes, Scenarios, Intentions, and Behaviors

Table C.2. Moderated Results of the Major Predictors of Digital Piracy by Media Type (Software vs. Other Media [Music, Movies, and Games])

	Characteristics			Estimated effect size and 95% confidence interval			Heterogeneity and Tau^2			
Predictor of piracy by type	**k**	**N**	**Effect?**	**r**	**Lower limit**	**Upper limit**	**Q-value**	**df (Q)**	**I^2**	**T^2**
Key factors from the literature that support a cost/benefit outcome expectancies perspective										
Rewards (S)	37	16,628	Small-to-medium	.240	.063	.403	17614.5	36	99.8	.698
Rewards (M)	64	70,213	Small-to-medium	.280	.147	.402	12371.2	63	99.5	.179
Risks (S)	27	14,062	Small-to-medium	-.114	-.185	-.042	1096.1	26	97.6	.025
Risks (M)	37	47,605	Small-to-medium	-.176	-.235	-.117	781.5	36	95.4	.018
Sanctions (S)	39	25,989	Small-to-medium	-.175	-.293	-.052	3784.4	38	98.9	.147
Sanctions (M)	68	60,132	Small-to-medium	-.175	-.264	-.082	9185.9	67	99.3	.157
Key factors from the literature that support a social learning perspective										
SI negative (S)	68	37,002	Small-to-medium	.168	.057	.276	10405.2	67	99.4	.269
SI negative (M)	134	109,716	Small-to-medium	.253	.176	.326	23407.1	133	99.4	.206
SI positive (S)	24	21,231	Small-to-medium	-.290	-.412	-.158	2586.8	23	99.1	.124
SI positive (M)	43	14,711	Small-to-medium	-.225	-.322	-.123	1653.7	42	97.5	.112
Piracy habit (S)	14	7,134	None (n/s)	-.001	-.254	.252	5104.4	13	99.8	.679
Piracy habit (M)	66	30,579	Small-to-medium	.262	.148	.369	4304.5	65	98.5	.137
Key factors from the literature that support a self-efficacy and self-regulation perspective										
PBC (S)	26	11,170	Small-to-medium	.193	.048	.330	448.4	25	94.4	.039
PBC (M)	47	21,530	Medium-to-large	.370	.272	.461	4456.2	46	98.9	.194
LSC (S)	29	16,638	Large	.620	.426	.760	18796.2	28	99.9	.863
LSC (M)	27	32,974	Small-to-medium	.288	.017	.521	9057.0	26	99.7	.313
Key factors from the literature that support a morality and moral disengagement perspective										
Immorality (S)	28	14,370	Small-to-medium	.205	.046	.355	3008.3	27	99.1	.211
Immorality (M)	49	24,653	Small-to-medium	.138	.016	.257	5369.4	48	99.1	.181
Morality (S)	60	30,514	Small-to-medium	-.226	-.341	-.106	18130.2	59	99.7	.541
Morality (M)	129	105,202	None (n/s)	-.079	-.163	.005	15193.7	128	99.2	.143
Neutralization (S)	19	9,282	Medium	.306	.205	.401	3430.7	18	99.5	.290
Neutralization (M)	40	24,180	Small-to-medium	.209	.137	.279	2737.5	39	98.6	.028

Note. * = k is lower than the suggested 10 study threshold; S = software piracy; M = media piracy (movies or music). r = correlation point estimation of overall effects; k = number of studies, N = sample size, n/s = not significant. All point estimations of r assume and use the random effects model. Effect size key: large ≥ .50; medium-to-large > .30 < .50; medium .30; small-to-medium ≥ .10 < .30; small < .10; none = not significant; rewards outcomes were not significantly different at Q = .13 (df = 1), p = 0.702; risk outcomes were not significantly different at Q = 1.75 (df = 1), p = 0.186; sanctions outcomes were not significantly different at Q = 0.00 (df = 1), p = 0.996; negative social influence outcomes were not significantly different at Q = 1.56 (df = 1), p = 0.212; positive social influence outcomes were not significantly different at Q = .61 (df = 1), p = 0.434; habit outcomes were not significantly different at Q = 3.42 (df = 1), p = 0.064; PBC outcomes were significantly different at Q = 4.24 (df = 1), p = 0.040; LSC outcomes were significantly different at Q = 4.64 (df = 1), p = 0.031; immorality outcomes were not significantly different at Q = .44 (df = 1), p = 0.507; morality outcomes were significantly different at Q = 3.86 (df = 1), p = 0.049; neutralization comparisons were not significantly different at Q = 2.41 (df = 1), p = 0.121.



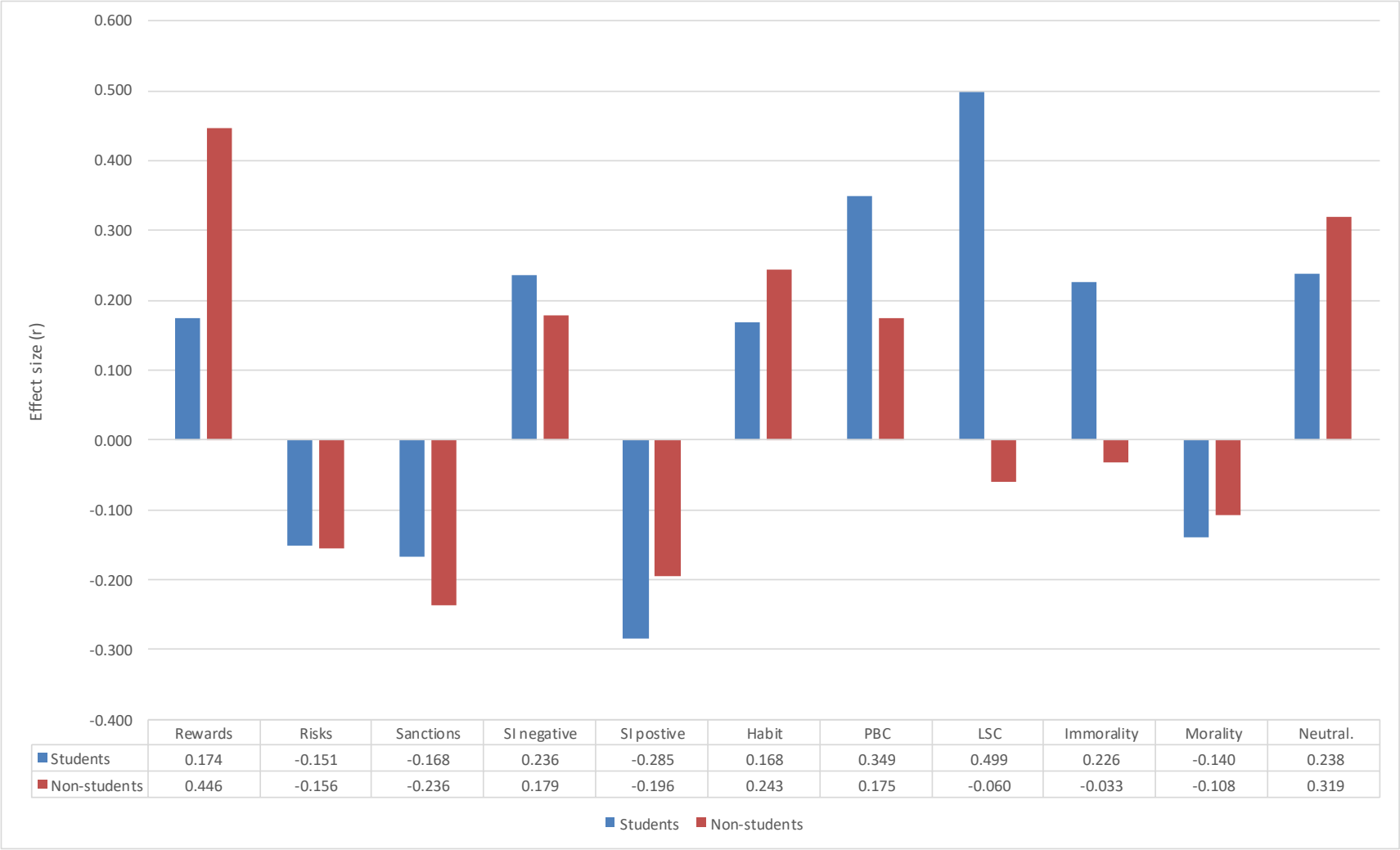
	Rewards	Risks	Sanctions	SI negative	SI postive	Habit	PBC	LSC	Immorality	Morality	Neutral.
Software piracy	0.240	-0.114	-0.175	0.168	-0.290	-0.001	0.193	0.620	0.205	-0.226	0.306
Other media piracy	0.280	-0.176	-0.175	0.253	-0.225	-0.262	0.370	0.426	0.138	-0.079	0.209

Figure C.2. Chart of the Computed Effect Sizes for the Key Piracy Factors by Piracy Media Type (Software versus Other Media)

Table C.3. Moderated Results of the Major Predictors of Digital Piracy by Respondent Type (Students vs. Non-students [Consumer, Professional])

	Characteristics			Estimated effect size and 95% confidence interval			Heterogeneity and Tau^2			
Predictor of piracy by type	**k**	**N**	**Effect?**	**r**	**Lower limit**	**Upper limit**	**Q-value**	**df (Q)**	**I^2**	**T^2**
Key factors from the literature that support a cost/benefit outcome expectancies perspective										
Rewards (S)	60	35,906	Small-to-medium	.174	.027	.313	15356.8	59	99.6	.402
Rewards (N)	33	46,103	Medium-to-large	.446	.273	.591	14755.3	32	99.8	.294
Risks (S)	42	22,623	Small-to-medium	-.151	-.209	-.092	1635.1	41	97.5	.072
Risks (N)	18	36,720	Small-to-medium	-.156	-.242	-.067	238.8	17	92.9	.008
Sanctions (S)	67	41,540	Small-to-medium	-.168	-.262	-.071	11373.5	66	99.4	.258
Sanctions (N)	29	41,105	Small-to-medium	-.236	-.371	-.091	1668.6	28	98.3	.048
Key factors from the literature that support a social learning perspective										
SI negative (S)	168	106,202	Small-to-medium	.236	.165	.304	32583.0	167	99.5	.284
SI negative (N)	25	36,448	None (n/s)	.179	-.010	.355	824.0	24	97.1	.029
SI positive (S)	42	22,521	Small-to-medium	-.285	-.382	-.183	2931.1	41	98.6	.133
SI positive (N)	21	11,993	Small-to-medium	-.196	-.337	-.046	1303.0	20	98.5	.110
Piracy habit (S)	57	25,799	Small-to-medium	.168	.023	.306	8954.6	56	99.4	.334
Piracy habit (N)	12	8,068	None (n/s)	.243	-.070	.513	2008.7	11	99.5	.253
Key factors from the literature that support a self-efficacy and self-regulation perspective										
PBC (S)	56	26,160	Medium-to-large	.349	.253	.437	4798.3	55	98.9	.173
PBC (N)	16	5,572	None (n/s)	.175	-.020	.357	437.5	15	96.6	.079
LSC (S)	53	47,344	Large	.499	.311	.649	36824.6	52	99.9	.710
LSC (N)	2*	1,300	None (n/s)	-.060	-.840	.802	57.9	1	98.3	.086
Key factors from the literature that support a morality and moral disengagement perspective										
Immorality (S)	51	29,042	Small-to-medium	.226	.102	.343	4907.8	50	98.9	.163
Immorality (N)	18	6,785	None (n/s)	-.033	-.243	.179	3566.2	17	99.5	.363
Morality (S)	143	79,508	Small-to-medium	-.140	-.222	-.056	33529.4	142	99.6	.393
Morality (N)	40	52,310	None (n/s)	-.108	-.262	.052	1787.0	39	97.8	.307
Neutralization (S)	43	21,674	Small-to-medium	.238	.174	.301	4075.8	42	98.9	.041
Neutralization (N)	14	10,262	Medium-to-large	.319	.210	.420	1201.5	13	98.9	.119

Note. * = k is lower than the suggested 10 study threshold; S = student; N = non-student (consumer or professional); r = correlation point estimation of overall effects; k = number of studies, N = sample size, n/s = not significant. All point estimations of r assume and use the random effects model. Effect size key: large ≥ .50; medium-to-large > .30 < .50; medium .30; small-to-medium ≥ .10 < .30; small < .10; none = not significant; rewards outcomes were significantly different at Q = 5.76 (df = 1), $p = 0.016$; risk outcomes were not significantly different at Q = .01 (df = 1), $p = 0.924$; sanctions outcomes were not significantly different at Q = 0.60 (df = 1), $p = 0.440$; negative social influence outcomes were not significantly different at Q = .33 (df = 1), $p = 0.566$; positive social influence outcome were not significantly different at Q = .99 (df = 1), $p = 0.320$; habit outcomes were not significantly different at Q = .20 (df = 1), $p = 0.658$; PBC outcomes were not significantly different at Q = 2.71 (df = 1), $p = 0.100$; LSC outcomes were not significantly different at Q = 1.01 (df = 1), $p = 0.315$; immorality outcomes were significantly different at Q = 4.29 (df = 1), $p = 0.038$; morality outcomes were significantly different at Q = .14 (df = 1), $p = 0.724$; neutralization comparisons were not significantly different at Q = 1.60 (df = 1), $p = 0.206$.



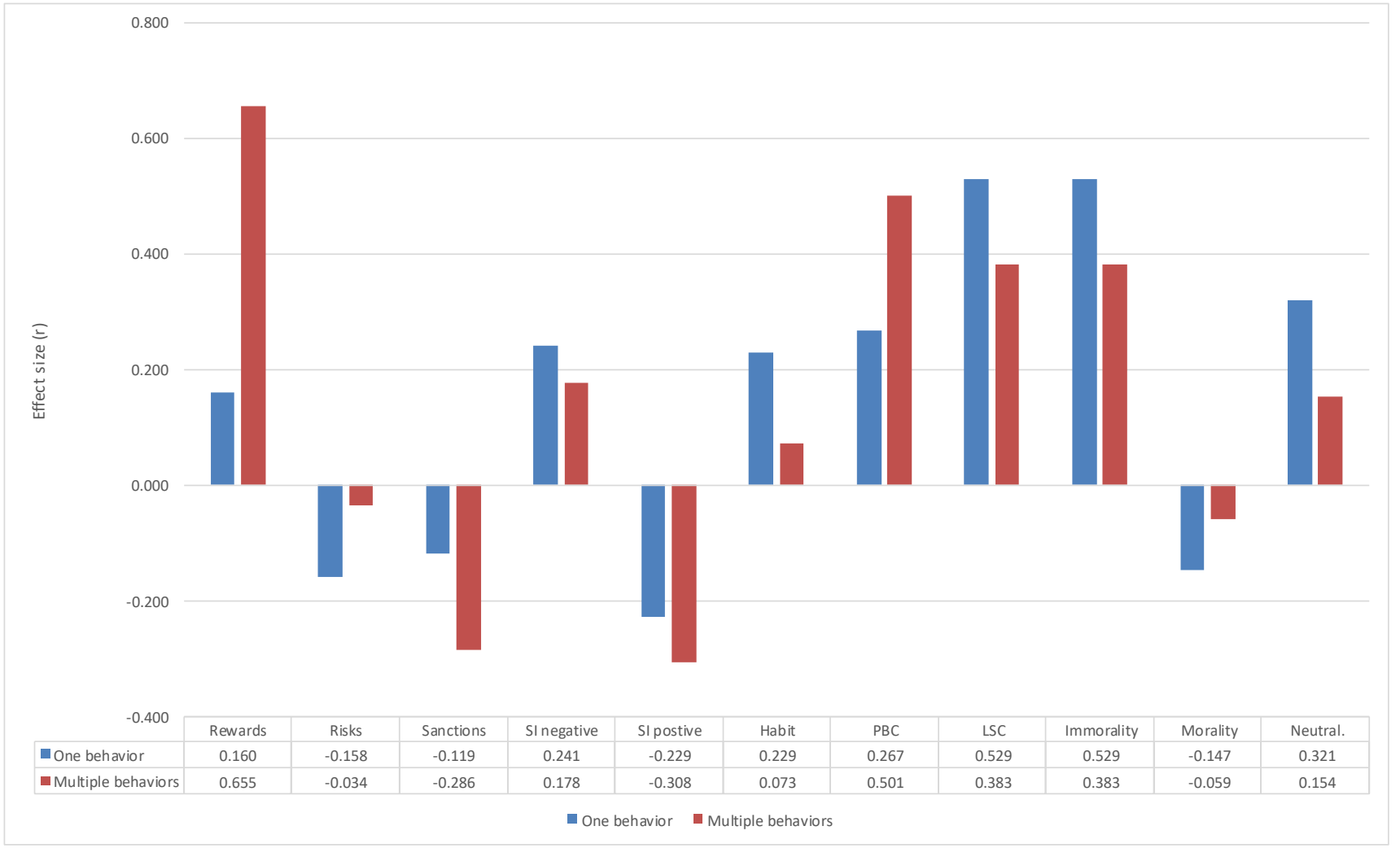
	Rewards	Risks	Sanctions	SI negative	SI postive	Habit	PBC	LSC	Immorality	Morality	Neutral.
Students	0.174	-0.151	-0.168	0.236	-0.285	0.168	0.349	0.499	0.226	-0.140	0.238
Non-students	0.446	-0.156	-0.236	0.179	-0.196	0.243	0.175	-0.060	-0.033	-0.108	0.319

Figure C.3. Chart of the Computed Effect Sizes for the Key Piracy Factors by Respondent Type (Students versus Non-Students

Table C.4. Moderated Results of the Major Predictors of Digital Piracy by Number of Digital Piracy Behaviors Studied (One versus Multiple)

	Characteristics			Estimated effect size and 95% confidence interval			Heterogeneity and Tau^2			
Predictor of piracy by number	**k**	**N**	**Effect?**	**r**	**Lower limit**	**Upper limit**	**Q-value**	**df (Q)**	**I^2**	**T^2**
Key factors from the literature that support a cost/benefit outcome expectancies perspective										
Rewards (M)	18	9,786	Large	.655	.508	.765	5432.6	17	99.7	.440
Rewards (O)	83	77,055	Small-to-medium	.160	.057	.259	16764.4	82	99.5	.202
Risks (M)	4*	1,900	None (n/s)	-.034	-.213	.148	8.6	3	64.9	.004
Risks (O)	60	59,767	Small-to-medium	-.158	-.204	-.112	1880.3	59	96.9	.033
Sanctions (M)	35	27,966	Small-to-medium	-.286	-.399	-.164	4455.4	34	99.2	.154
Sanctions (O)	72	58,155	Small-to-medium	-.119	-.206	-.030	7908.9	71	99.1	.143
Key factors from the literature that support a social learning perspective										
SI negative (M)	52	45,013	Small-to-medium	.178	.050	.300	8401.3	51	99.4	.176
SI negative (O)	150	101,705	Small-to-medium	.241	.167	.311	25793.4	149	99.4	.248
SI positive (M)	17	12,104	Medium	-.308	-.450	-.149	1459.9	16	98.9	.144
SI positive (O)	50	23,838	Small-to-medium	-.229	-.319	-.134	2718.3	49	98.2	.110
Piracy habit (M)	6*	2,064	None (n/s)	.073	-.351	.472	720.6	5	99.3	.425
Piracy habit (O)	74	35,649	Small-to-medium	.229	.108	.343	10786.3	73	99.3	.290
Key factors from the literature that support a self-efficacy and self-regulation perspective										
PBC (M)	12	6,536	Large	.501	.339	.634	2775.5	11	99.6	.366
PBC (O)	61	26,164	Small-to-medium	.267	.183	.347	1299.4	60	95.4	.048
LSC (M)	21	29,194	Medium-to-large	.383	.050	.639	15176.6	20	99.9	.586
LSC (O)	35	20,418	Large	.529	.304	.697	18935.6	34	99.8	.780
Key factors from the literature that support a morality and moral disengagement perspective										
Immorality (M)	21	29,194	Medium-to-large	.383	.050	.639	15176.6	20	99.9	.586
Immorality (O)	35	20,418	Large	.529	.304	.697	18935.5	34	99.8	.780
Morality (M)	44	32,936	None (n/s)	-.059	-.204	.089	5143.8	43	99.2	.155
Morality (O)	145	102,780	Small-to-medium	-.147	-.226	-.067	29279.1	144	99.5	.276
Neutralization (M)	29	10,456	Small-to-medium	.154	.066	.240	1357.5	28	97.9	.017
Neutralization (O)	30	23,006	Medium-to-large	.321	.241	.398	4768.5	29	99.4	.194

Note. * = k is lower than the suggested 10 study threshold; O = one behavior; M = multiple behaviors; r = correlation point estimation of overall effects; k = number of studies, N = sample size, n/s = not significant. All point estimations of r assume and use the random effects model. Effect size key: large ≥ .50; medium-to-large > .30 < .50; medium .30; small-to-medium ≥ .10 < .30; small < .10; none = not significant; rewards outcomes were significantly different at Q = 24.36 (df = 1), $p = 0.000$; risk outcomes were not significantly different at Q = 1.71 (df = 1), $p = 0.191$; sanctions outcomes were significantly different at Q = 4.79 (df = 1), $p = 0.029$; negative social influence outcomes were not significantly different at Q = .73 (df = 1), $p = 0.393$; positive social influence outcomes were not significantly different at Q = .74 (df = 1), $p = 0.389$; habit outcomes were not significantly different at Q = .47 (df = 1), $p = 0.493$; PBC outcomes were significantly different at Q = 6.29 (df = 1), $p = 0.012$; LSC outcomes were not significantly different at Q = .659 (df = 1), $p = 0.417$; immorality outcomes were not significantly different at Q = .39 (df = 1), $p = 0.532$; morality outcomes were not significantly different at Q = 1.08 (df = 1), $p = 0.299$; neutralization comparisons were significantly different at Q = 7.75 (df = 1), $p = 0.005$.



	Rewards	Risks	Sanctions	SI negative	SI postive	Habit	PBC	LSC	Immorality	Morality	Neutral.
One behavior	0.160	-0.158	-0.119	0.241	-0.229	0.229	0.267	0.529	0.529	-0.147	0.321
Multiple behaviors	0.655	-0.034	-0.286	0.178	-0.308	0.073	0.501	0.383	0.383	-0.059	0.154

Figure C.4. Chart of the Computed Effect Sizes for the Key Piracy Factors by Number of Piracy Behaviors Studied (One versus Multiple)

ONLINE APPENDIX D: LIST OF ABBREVIATIONS

Table D. Summary of all abbreviations and their full names in the main text and appendixes

Abbreviations	Full names
ANOVA	Analysis of variance
CMA	Comprehensive Meta-Analysis
CSE	Computer self-efficacy
DT	Deterrence theory
DV	Dependent variable
IV	Independent variable
ISI	Institution for Scientific Information
LSC	Low self-control
NT	Neutralization theory
PBC	Perceived behavioral control
SCT	Social cognitive theory
SEM	Structural equation modelling
SI	Social influence
SLT	Social learning theory
TAM	Technology acceptance model
TPB	Theory of planned behavior
TRA	Theory of reasoned action

REFERENCES FOR ONLINE APPENDICES

Acılar, A. (2010). Demographic factors affecting freshman students' attitudes towards software piracy: An empirical study. *Issues in Informing Science and Information Technology, 7*, 321-328.

Adams, A. (2008). *Downloading media files: A theoretical approach to understanding undergraduate downloading of media files.* University of Florida.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211.

Akbulut, Y. (2014). Exploration of the antecedents of digital piracy through a structural equation model. *Computers & Education, 78*(1), 294-305.

Al-Jabri, I. and Abdul-Gader, A. (1997). Software copyright infringements: An exploratory study of the effects of individual and peer beliefs. *Omega, 25*(3), 335-344.

Al-Rafee, S. and Cronan, T. P. (2006). Digital piracy: Factors that influence attitude toward behavior. *Journal of Business Ethics, 63*(3), 237-259.

Al-Rafee, S. and Dashti, A. E. (2012). A cross cultural comparison of the extended TPB: The case of digital piracy. *Journal of Global Information Technology Management, 15*(1), 5-24.

Al-Rafee, S. and Rouibah, K. (2010). The fight against digital piracy: An experiment. *Telematics and Informatics, 27*(3), 283-292.

Al-Rafee, S. A. (2002). *Digital piracy: Ethical decision-making.* Unpublished Ph.D., University of Arkansas, Ann Arbor.

Aleassa, H. (2009). *Investigating consumers' software piracy using an extended theory of reasoned action.* Unpublished Ph.D., Southern Illinois University at Carbondale, Carbondale, IL.

Aleassa, H., Pearson, J. M., and McClurg, S. (2011). Investigating software piracy in Jordan: An extension of the theory of reasoned action. *Journal of Business Ethics, 98*(4), 663-676.

Amiroso, D. and Case, T. (2007, August 9-12). *Music sharing in Russia: Understanding behavioral intention and use of music downloading.* Paper presented at the 13th Americas Conference on Information Systems, Keystone, Colorado, USA.

Amoroso, D., Dembla, P., Wang, H., Greiner, M., and Liu, P. (2008, August 14-17). *Understanding music sharing behavior in China: Development of an instrument.* Paper presented at the 14th Americas Conference on Information Systems, Toronto, ON, Canada.

Andrés, A. R. (2006). Software piracy and income inequality. *Applied Economics Letters, 13*(2), 101-105.

Bai, J. and Waldfogel, J. (2012). Movie piracy and sales displacement in two samples of Chinese consumers. *Information Economics and Policy, 24*(3-4), 187.

Bandura, A. (1990). Perceived self-efficacy in the exercise of control over AIDS infection. *Evaluation and Program Planning, 13*(1), 9-17.

Bandura, A. and Bryant, J. (2002). Social cognitive theory of mass communication. *Media Effects: Advances in Theory and Research, 2*, 121-153.

Bateman, C. R., Valentine, S., and Rittenburg, T. (2013). Ethical decision making in a peer-to-peer file sharing situation: The role of moral absolutes and social consensus. *Journal of Business Ethics, 115*(2), 229-240.

Becker, J. U. and Clement, M. (2006). Dynamics of illegal participation in peer-to-peer networks—Why do people illegally share media files? *Journal of Media Economics, 19*(1), 7-32.

Behel, J. D. (1998). *An investigation of equity as a determinant of software piracy behavior.* Unpublished Ph.D., University of Arkansas, Ann Arbor.

Bhal, K. T. and Leekha, N. D. (2008). Exploring cognitive moral logics using grounded theory: The case of software piracy. *Journal of Business Ethics, 81*(3), 635-646.

Bhattacharjee, S., Gopal, R., Lertwachara, K., and Marsden, J. R. (2006a). Whatever happened to payola? An empirical analysis of online music sharing. *Decision Support Systems, 42*(1), 104-120.

Bhattacharjee, S., Gopal, R. D., Lertwachara, K., and Marsden, J. R. (2006b). Consumer search and retailer strategies in the presence of online music sharing. *Journal of Management Information Systems, 23*(1), 129-159.

Blake, R. H. and Kyper, E. S. (2013). An investigation of the intention to share media files over peer-to-peer networks. *Behaviour & Information Technology, 32*(4), 410-422.
Bonner, S. and O'Higgins, E. (2010). Music piracy: ethical perspectives. *Management Decision, 48*(9), 1341-1354.
Bouhnik, D. and Deshen, M. (2013, November 1-6). *Adolescents' perception of illegal music downloads from the internet: An empirical investigation of Israeli high school students' moral atittude and behviour.* Paper presented at the American Society for Information Science and Technology, Montreal, Quebec, Canada.
Bounagui, M. and Nel, J. (2009). Towards understanding intention to purchase online music downloads. *Management Dynamics, 18*(1), 15-26.
Bounie, D., Bourreau, M., and Waelbroeck, P. (2006). Piracy and the demand for films: Analysis of piracy behavior in french universities. *Review of Economic Research on Copyright Issues, 3*(2), 15-27.
Bounie, D., Bourrreau, M., and Waelbroeck, P. (2007). Pirates or explorers? Analysis of music consumption in French graduate schools. *Brussels Economic Review, 50*(2), 167-192.
Boyle III, C. J. (2010). *The effectiveness of a digital citizenship curriculum in an urban school.* Johnson & Wales University.
Burruss, G. W., Bossler, A., and Holt, T. J. (2013). Assessing the mediation of a Fuller social learning model on low self-control's influence on software piracy. *Crime & Delinquency, 59*(8), 1157-1184.
Butt, A. (2006). *Comparative analysis of software piracy determinants among Pakistani and Canadian university students: Demographics, ethical attitudes and socio-economic factors.* Unpublished M.Sc., Simon Fraser University (Canada), Ann Arbor.
Chaipoopirutana, S. and Combs, H. W. (2011, June 16-18). *An empirical study of consumer attitudes toward software piracy.* Paper presented at the Association of Consumer Research Asia-Pacific Conference, Beijing, China.
Chan, R. Y. K. and Lai, J. W. M. (2011). Does ethical ideology affect software piracy attitude and behaviour? An empirical investigation of computer users in China. *European Journal of Information Systems, 20*(6), 659-673.
Chan, R. Y. K., Ma, K. H. Y., and Wong, Y. H. (2013). The software piracy decision-making process of Chinese computer users. *Information Society, 29*(4), 203-218.
Chaudhry, P. E., Chaudhry, S. S., Stumpf, S. A., and Sudler, H. (2011). Piracy in cyber space: Consumer complicity, pirates and enterprise enforcement. *Enterprise Information Systems, 5*(2), 255-271.
Chen, C.-C. (2013). Music piracy behaviors of university students in view of consumption value. *African Journal of Business Management, 7*(39), 4059.
Chen, H.-G., Hung, S.-Y., Chang, S.-I., and Chen, Y.-J. (2008a). A cross-cultural study on the determinants of software piracy. *Journal of e-Business, 10*(3), 643-664.
Chen, M.-F., Pan, C.-T., and Pan, M.-C. (2009). The joint moderating impact of moral intensity and moral judgment on consumer's use intention of pirated software. *Journal of Business Ethics, 90*(3), 361-373.
Chen, M. F. and Yen, Y. H. (2011). Costs and utilities perspective of consumers' intentions to engage in online music sharing: Consumers' knowledge matters. *Ethics & Behavior, 21*(4), 283-300.
Chen, Y.-C., Shang, R.-A., and Lin, A.-K. (2008b). The intention to download music files in a P2P environment: Consumption value, fashion, and ethical decision perspectives. *Electronic Commerce Research and Applications, 7*(4), 411-422.
Chen, Y.-C., Shang, R.-A., Lin, A.-K., and Kao, C.-Y. (2006, July 6-9). *The intention to download music files in a p2p environment: Rational choice, fashion, and ethical decision perspectives.* Paper presented at the 10th Pacific Asia Conference on Information Systems, Kuala Lumpur, Malaysia.
Cheng, H. K., Sims, R. R., and Teegen, H. (1997). To purchase or to pirate software: An empirical study. *Journal of Management Information Systems, 13*(4), 49-60.
Chiang, E. P. and Assane, D. (2008). Music piracy among students on the university campus: Do males

and females react differently? *Journal of Socio-Economics, 37*(4), 1371-1380.
Chiang, E. P. and Assane, D. (2009). Estimating the willingness to pay for digital music. *Contemporary Economic Policy, 27*(4), 512-522.
Chiang, E. P. and Djeto, A. (2007). Determinants of music copyright violations on the university campus. *Journal of Cultural Economics, 31*(3), 187-204.
Chiang, L. C. and Huang, C. Y. (2007). Use of pirated compact discs on four college campuses: A perspective from Theory of Planned Behavior. *Psychological Reports, 101*(2), 361-364.
Chiou, J.-S., Cheng, H.-I., and Huang, C.-Y. (2011). The effects of artist adoration and perceived risk of getting caught on attitude and intention to pirate music in the United States and Taiwan. *Ethics & Behavior, 21*(3), 182.
Chiou, J.-S., Huang, C.-y., and Lee, H.-h. (2005). The antecedents of music piracy attitudes and intentions. *Journal of Business Ethics, 57*(2), 161-174.
Chiou, W.-B., Wan, P.-H., and Wan, C.-S. (2012). A new look at software piracy: Soft lifting primes an inauthentic sense of self, prompting further unethical behavior. *International Journal of Human-Computer Studies, 70*(2), 107-115.
Chiu, H.-C., Hsieh, Y.-C., and Wang, M.-C. (2008). How to encourage customers to use legal software. *Journal of Business Ethics, 80*(3), 583-595.
Choi, E.-Y. (2013). *Investigating factors influencing game piracy in the eSports settings of South Korea.* Unpublished Ph.D., The University of New Mexico, Ann Arbor.
Choi, H., Au, Y., and Liu, C. (2014, August 7-9). *Is digital piracy an enemy of the mobile app industry? An empirical study on piracy of mobile apps.* Paper presented at the 20th Americas Conference on Information Systems, Savannah, Georgia, USA.
Christensen, A. L. and Eining, M. M. (1991). Factors influencing software piracy: Implications for accountants. *Journal of Information Systems, 5*(1), 67-80.
Cockrill, A. and Goode, M. M. (2012). DVD pirating intentions: Angels, devils, chancers and receivers. *Journal of Consumer Behaviour, 11*(1), 1-10.
Cox, J. and Collins, A. (2014). Sailing in the same ship? Differences in factors motivating piracy of music and movie content. *Journal of Behavioral and Experimental Economics, 50*, 70-76.
Coyle, J. R., Gould, S. J., Gupta, P., and Gupta, R. (2009). 'To buy or to pirate': The matrix of music consumers' acquisition-mode decision-making. *Journal of Business Research, 62*(10), 1031-1037.
Cronan, T. P. and Al-Rafee, S. (2008). Factors that influence the intention to pirate software and media. *Journal of Business Ethics, 78*(4), 527-545.
Cronan, T. P., Foltz, C. B., and Jones, T. W. (2006). Piracy, computer crime, and IS misuse at the university. *Association for Computing Machinery. Communications of the ACM, 49*(6), 84-90.
Cuadrado, M., Miguel, M. J., and Montoro, J. D. (2009). Consumer attitudes towards music piracy: A Spanish case study. *International Journal of Arts Management, 11*(3), 4-15,83.
Cuevas, F. (2009). *Student awareness of institutional policy and its effect on peer to peer file sharing and piracy behavior.* Florida State University, Talahasse, FL.
D'Arcy, J. and Hovav, A. (2007). Towards a best fit between organizational security countermeasures and information systems misuse behaviors. *Journal of Information System Security, 3*(2), 3-30.
d'Astous, A., Colbert, F., and Montpetit, D. (2005). Music piracy on the Web–How effective are anti-piracy arguments? Evidence from the theory of planned behaviour. *Journal of Consumer Policy, 28*(3), 289-310.
Danaher, B., Dhanasobhon, S., Smith, M. D., and Telang, R. (2010). Converting pirates without cannibalizing purchasers: The impact of digital distribution on physical sales and internet piracy. *Marketing Science, 29*(6), 1138-1151.
Dilmperi, A., King, T., and Dennis, C. (2011). Pirates of the web: The curse of illegal downloading. *Journal of Retailing and Consumer Services, 18*(2), 132-140.
Dionísio, P., Leal, C., Pereira, H., and Salgueiro, M. F. (2013). Piracy among undergraduate and graduate students: Influences on unauthorized book copies. *Journal of Marketing Education, 35*(2), 191–200.

Djekic, P. and Loebbecke, C. (2005, May 26-28). *The impact of technical copy protection and Internet services usage on software piracy.* Paper presented at the 13th European Conference on Information Systems Regensburg, Germany.
Djekic, P. and Loebbecke, C. (2007). Preventing application software piracy: An empirical investigation of technical copy protections. *Journal of Strategic Information Systems, 16*(2), 173-186.
Dörr, J., Wagner, D.-V. T., Benlian, A., and Hess, T. (2013). Music as a service as an alternative to music piracy? *Business & Information Systems Engineering, 5*(6), 383-396.
Douglas, D. E., Cronan, T. P., and Behel, J. D. (2007). Equity perceptions as a deterrent to software piracy behavior. *Information & Management, 44*(5), 503-512.
Egan, V. and Taylor, D. (2010). Shoplifting, unethical consumer behaviour, and personality. *Personality and Individual Differences, 48*(8), 878-883.
Faulk, G. K. (2011). The relation of prerecorded music media format and the U. S. recording industry piracy claims: 1972-2009. *Research in Business and Economics Journal, 4*, 1-21.
Fetscherin, M. (2009). Importance of cultural and risk aspects in music piracy: a cross-national comparison among university students. *Journal of Electronic Commerce Research, 10*(1), 42-55.
Forman, A. E. (2009). *An exploratory study on the factors associated with ethical intention of digital piracy.* Unpublished Ph.D., Nova Southeastern University, Ann Arbor.
Gan, L. L. and Koh, H. C. (2006). An empirical study of software piracy among tertiary institutions in Singapore. *Information & Management, 43*(5), 640-649.
Garbharran, A. and Thatcher, A. (2011). Modelling social cognitive theory to explain software piracy intention. In M. Smith & G. Salvendy (Eds.), *Human Interface and the Management of Information. Interacting with Information* (Vol. 6771, pp. 301-310). Berlin, Germany: Springer Berlin Heidelberg.
Gartside, J. and Heales, J. (2006a, Dec 10-13). *Is music piracy normal? Behavioral effects of social and technological barriers.* Paper presented at the International Conference on Information Systems 2006, Milwaukee, WI.
Gartside, J. and Heales, J. (2006b, August 4-6). *A model of music piracy.* Paper presented at the 12th Americas Conference on Information Systems, Acapulco, México.
Gerlach, J. H., Kuo, F.-Y. B., and Lin, C. S. (2009). Self sanction and regulative sanction against copyright infringement: A comparison between U.S. and China college students. *Journal of the American Society for Information Science and Technology, 60*(8), 1687-1701.
Gerlich, R. N., Lewer, J. J., and Lucas, D. (2010). Illegal media file sharing: The impact of cultural and demographic factors. *Journal of Internet Commerce, 9*(2), 104-126.
Gerlich, R. N., Turner, N., and Gopalan, S. (2007). Ethics and music: a comparison of students at predominantly white and black colleges, and their attitudes toward file sharing. *Academy of Educational Leadership Journal, 11*(2), 1-11.
Glass, R. S. and Wood, W. A. (1996). Situational determinants of software piracy: An equity theory perspective. *Journal of Business Ethics, 15*(11), 1189-1198.
Goles, T., Jayatilaka, B., George, B., Parsons, L., Chambers, V., Taylor, D. et al. (2008). Softlifting: Exploring determinants of attitude. *Journal of Business Ethics, 77*(4), 481-499.
Goode, S. and Kartas, A. (2012). Exploring software piracy as a factor of video game console adoption. *Behaviour & Information Technology, 31*(6), 547-563.
Gopal, R. D. and Sanders, G. L. (1997). Preventive and deterrent controls for software piracy. *Journal of Management Information Systems, 13*(4), 29-47.
Gopal, R. D., Sanders, G. L., Bhattacharjee, S., Agrawal, M., and Wagner, S. C. (2004). A behavioral model of digital music piracy. *Journal of Organizational Computing and Electronic Commerce, 14*(2), 89-105.
Green, H. (2007). Digital music pirating by college students: An exploratory empirical study. *Journal of American Academy of Business, Cambridge, 11*(2), 197-204.
Grolleau, G., Mzoughi, N., and Sutan, A. (2008). Please do not pirate it, you will rob the poor! An experimental investigation on the effect of charitable donations on piracy. *Journal of Socio-*

Economics, 37(6), 2417-2426.
Gunter, W. D. (2008). Piracy on the high speeds: A test of social learning theory on digital piracy among college students. *International Journal of Criminal Justice Sciences, 3*(1), 54-68.
Gunter, W. D. (2009a). Internet scallywags: A comparative analysis of multiple forms and measurements of digital piracy. *Western Criminology Review, 10*(`), 15-28.
Gunter, W. D. (2009b). *Piracy of the new millennium: An application of criminological theories to digital piracy.* University of Delaware.
Gunter, W. D., Higgins, G. E., and Gealt, R. E. (2010). Pirating youth: Examining the correlates of digital music piracy among adolescents. *International Journal of Cyber Criminology, 4*(1&2), 657-671.
Guo, K. H. (2010). *Information systems security misbehavior in the workplace: The effects of job performance expectation and workgroup norm.* The University of Hong Kong.
Guo, K. H., Yuan, Y., Archer, N. P., and Connelly, C. E. (2011). Understanding nonmalicious security violations in the workplace: A composite behavior model. *Journal of Management Information Systems, 28*(2), 203-236.
Gupta, P. B., Gould, S. J., and Pola, B. (2004). "To Pirate or not to pirate": A comparative study of the ethical versus other influences on the consumer's software acquisition-mode decision. *Journal of Business Ethics, 55*(3), 255-274.
Haines, R. and Haines, D. (2007, December 9-12). *Fairness, guilt, and perceived importance as antecedents of intellectual property piracy intentions.* Paper presented at the International Conference on Information Systems 2007, Montreal, Quebec, Canada.
Hansen, J. and Walden, E. (2013). The role of restrictiveness of use in determining ethical and legal awareness of unauthorized file sharing. *Journal of the Association for Information Systems, 14*(9), 521-549.
Harrington, S. J. (1996). The effect of codes of ethics and personal denial of responsibility on computer abuse judgments and intentions. *MIS Quarterly, 20*(3), 257-278.
Hashim, M. J. (2010). *Nudging the digital pirate: Piracy and the conversion of pirates to paying customers.* Purdue University.
Hennig-Thurau, T., Henning, V., and Sattler, H. (2007). Consumer file Sharing of motion pictures. *Journal of Marketing, 71*(4), 1-18.
Hietanen, H. A. and Räsänen, P. (2009). Reasons affecting frequency of file-sharing among finnish Internet users. *Available at SSRN 1414209*. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1414209
Higgins, G., Wilson, A., and Fell, B. (2005). An application of deterrence theory to software piracy. *Journal of Criminal Justice and Popular Culture, 12*(3), 166-184.
Higgins, G. E. (2004). Can low self-control help with the understanding of the software piracy problem? *Deviant Behavior, 26*(1), 1-24.
Higgins, G. E. (2006). Gender differences in software piracy: The mediating roles of self-control theory and social learning theory. *Journal of Economic Crime Management, 4*(1), 1-30.
Higgins, G. E. (2007a). Digital piracy, self-control theory, and rational choice: An examination of the role of value. *International Journal of Cyber Criminology, 1*(1), 33-55.
Higgins, G. E. (2007b). Digital piracy: An examination of low self-control and motivation using short-term longitudinal data. *CyberPsychology & Behavior, 10*(4), 523-529.
Higgins, G. E., Fell, B. D., and Wilson, A. L. (2006). Digital piracy: Assessing the contributions of an integrated self-control theory and social learning theory using structural equation modeling. *Criminal Justice Studies, 19*(1), 3-22.
Higgins, G. E., Fell, B. D., and Wilson, A. L. (2007). Low self-control and social learning in understanding students' intentions to pirate movies in the United States. *Social Science Computer Review, 25*(3), 339-357.
Higgins, G. E. and Makin, D. A. (2004a). Does social learning theory condition the effects of low self-control on college students' software piracy? *Journal of Economic Crime Management, 2*(2), 1-22.

Higgins, G. E. and Makin, D. A. (2004b). Self-control, deviant peers, and software piracy. *Psychological Reports, 95*(3), 921-931.
Higgins, G. E., Marcum, C. D., Freiburger, T. L., and Ricketts, M. L. (2012). Examining the role of peer influence and self-control on downloading behavior. *Deviant Behavior, 33*(5), 412-423.
Higgins, G. E., Wolfe, S. E., and Marcum, C. D. (2008a). Digital piracy: An examination of three measurements of self-control. *Deviant Behavior, 29*(5), 440-460.
Higgins, G. E., Wolfe, S. E., and Marcum, C. D. (2008b). Music piracy and neutralization: A preliminary trajectory analysis from short-term longitudinal data. *International Journal of Cyber Criminology, 2*(2), 324-336.
Higgins, G. E., Wolfe, S. E., and Ricketts, M. L. (2009). Digital piracy: A latent class analysis. *Social Science Computer Review, 27*(1), 24-40.
Hinduja, S. (2001). Correlates of Internet software piracy. *Journal of Contemporary Criminal Justice, 17*(4), 369-382.
Hinduja, S. (2003). Trends and patterns among online software pirates. *Ethics and Information Technology, 5*(1), 49-61.
Hinduja, S. (2005). *An empirical test of the applicability of general criminological theories to Internet crime.* Michigan State University.
Hinduja, S. (2007). Neutralization theory and online software piracy: An empirical analysis. *Ethics and Information Technology, 9*(3), 187-204.
Hinduja, S. (2008). Deindividuation and internet software piracy. *CyberPsychology & Behavior, 11*(4), 391-398.
Hinduja, S. (2012). General strain, self-control, and music Piracy. *International Journal of Cyber Criminology, 6*(1), 951-967.
Hinduja, S. and Higgins, G. E. (2011). Trends and patterns among music pirates. *Deviant Behavior, 32*(7), 563-588.
Hinduja, S. and Ingram, J. R. (2008). Self-control and ethical beliefs on the social learning of intellectual property theft. *Western Criminology Review, 9*(2), 52-72.
Hinduja, S. and Ingram, J. R. (2009). Social learning theory and music piracy: The differential role of online and offline peer influences. *Criminal Justice Studies, 22*(4), 405-420.
Hinduja, S. K. (2000). *Broadband connectivity and software piracy in a university setting.* Unpublished M.S., Michigan State University, Ann Arbor.
Hohn, D. A., Muftic, L. R., and Wolf, K. (2006). Swashbuckling students: An exploratory study of Internet piracy. *Security Journal, 19*(2), 110-127.
Hollinger, R. C. (1993). Crime by computer: Correlates of software piracy and unauthorized account access. *Security Journal, 4*(1), 2-12.
Holt, T. J., Bossler, A. M., and May, D. C. (2012). Low self-control, deviant peer associations, and juvenile cyberdeviance. *American Journal of Criminal Justice, 37*(3), 378-395.
Holt, T. J. and Morris, R. G. (2009). An exploration of the relationship between MP3 player ownership and digital piracy. *Criminal Justice Studies, 22*(4), 381-392.
Hsieh, P.-H., Chuan, K., and Martin, Y. (2012). Cultural effects on perceptions of unauthorized software copying. *Journal of Computer Information Systems, 53*(1), 42-47.
Hsieh, P.-H. and Tze-Kuang, L. (2012). Does age matter? Students' perspectives of unauthorized software copying under legal and ethical considerations. *Asia Pacific Management Review, 17*(4), 361-377.
Hsu, J. L. and Shiue, C. W. (2008). Consumers' willingness to pay for non-pirated software. *Journal of Business Ethics, 81*(4), 715-732.
Hsu, J. L. and Su, Y. L. (2008). Usage of unauthorized software in Taiwan. *Social Behavior and Personality, 36*(1), 1-8.
Hu, X., Wu, G., Kuang, W., and Lu, B. (2010, May 21-22). *A comparative study on software piracy between China and America.* Paper presented at the 5th Annual Midwest Association for Information Systems Conference, Moorhead, MN.

Huang, C.-Y. (2005). File sharing as a form of music consumption. *International Journal of Electronic Commerce, 9*(4), 37-55.

Huimin, T., Phau, I., and Lwin, M. (2010, July 2). *Investigating factors influencing attitudes and intentions towards downloading.* Paper presented at the Recent Advances in Retailing and Services Science Conference 2010, Istanbul, Turkey.

Husted, B. W. (2000). The impact of national culture on software piracy. *Journal of Business Ethics, 26*(3), 197-211.

Ilevbare, F. M. (2008). Psychosocial factors influencing attitudes towards Internet piracy among nigerian university students. *Ife Psychologia, 16*(1), 132-145.

Im, J. H. and Van Epps, P. D. (1992). Software piracy and software security measures in business schools. *Information & Management, 23*(4), 193-203.

Ingram, J. R. and Hinduja, S. (2008). Neutralizing music piracy: An empirical examination. *Deviant Behavior, 29*(4), 334-366.

Jacobs, R. S., Heuvelman, A., Tan, M., and Peters, O. (2012). Digital movie piracy: A perspective on downloading behavior through social cognitive theory. *Computers in Human Behavior, 28*(3), 958-967.

Jambon, M. M. and Smetana, J. G. (2012). College students' moral evaluations of illegal music downloading. *Journal of Applied Developmental Psychology, 33*(1), 31-39.

Jeong, B.-K., Zhao, K., and Khouja, M. (2012). Consumer piracy risk: Conceptualization and measurement in music sharing. *International Journal of Electronic Commerce, 16*(3), 89-118.

Jeong, B. and Yoon, T. (2014, August 7-9). *The role of regulatory focus and message framing on persuasion of anti-piracy educational campaigns.* Paper presented at the 20th Americas Conference on Information Systems, Savannah, Georgia, USA.

Jung, I. (2009). Ethical judgments and behaviors: Applying a multidimensional ethics scale to measuring ICT ethics of college students. *Computers & Education, 53*(3), 940-949.

Karakaya, M. (2010). *Analysis of the key reasons behind the pirated software usage of Turkish Internet users: Application of Routine Activities Theory.* Unpublished D.C.D., University of Baltimore, Ann Arbor.

Kartas, A. and Goode, S. (2012). Use, perceived deterrence and the role of software piracy in video game console adoption. *Information Systems Frontiers, 14*(2), 261-277.

Kavuk, M., Keser, H., and Teker, N. (2011). Reviewing unethical behaviors of primary education students' internet usage. *Procedia-Social and Behavioral Sciences, 28*, 1043-1052.

Khang, H., Ki, E.-J., Park, I.-K., and Baek, S.-G. (2012). Exploring antecedents of attitude and intention toward Internet piracy among college students in South Korea. *Asian Journal of Business Ethics, 1*(2), 177-194.

Kiksen, C. (2012). *Behavioural insights into music piracy.* Universiteit Van Amsterdam.

King, B. and Thatcher, A. (2014). Attitudes towards software piracy in South Africa: Knowledge of Intellectual Property Laws as a moderator. *Behaviour & Information Technology, 33*(3), 209-223.

Kini, R. (2008). Software piracy in Chilean e-society. In M. Oya, R. Uda & C. Yasunobu (Eds.), *Towards Sustainable Society on Ubiquitous Networks* (Vol. 286, pp. 289-301). New York, NY: Springer US.

Kini, R., Ramakrishna, H. V., and Vijayaraman, B. S. (2004). Shaping of moral intensity regarding software piracy: A comparison between Thailand and U.S. students. *Journal of Business Ethics, 49*(1), 91-104.

Kini, R. B., Ramakrishna, H. V., and Vijayaraman, B. S. (2003). An exploratory study of moral intensity regarding software piracy of students in Thailand. *Behaviour & Information Technology, 22*(1), 63-70.

Kini, R. B., Rominger, A., and Vijayaraman, B. (2000). An empirical study of software piracy and moral intensity among university students. *Journal of Computer Information Systems, 40*(3), 62-72.

Kinnally, W., Lacayo, A., McClung, S., and Sapolsky, B. (2008). Getting up on the download: college students' motivations for acquiring music via the web. *New Media & Society, 10*(6), 893-913.

Koklic, M. K., Kukar-Kinney, M., and Vida, I. (2014). Three-level mechanism of consumer digital piracy: Development and cross-cultural validation. *Journal of Business Ethics, In press*.
Kovačić, Z. J. (2007). Determinants of worldwide software piracy. Retrieved from http://www.proceedings.informingscience.org/InSITE2007/InSITE07p127-150Kova406.pdf
Kwan, S. S. K. and Tam, K. Y. (2010, July 9-12). *An affective model for unauthorized sharing of software*. Paper presented at the 14th Pacific Asia Conference on Information Systems, Taipei, Taiwan.
Kwong, K. K., Yau, O. H. M., Lee, J. S. Y., Sin, L. Y. M., and Tse, A. C. B. (2003). The effects of attitudinal and demographic factors on intention to buy pirated CDs: The case of Chinese consumers. *Journal of Business Ethics, 47*(3), 223-235.
Kwong, T. C. H. and Lee, M. K. O. (2002, Jan 7-10). *Behavioral intention model for the exchange mode Internet music piracy*. Paper presented at the 35th Annual Hawaii International Conference on System Sciences, Hilton Waikoloa Village Island of Hawaii.
Kyper, E. S. and Blake, R. H. (2009, August 6-9). *An investigation of the intention to share files over P2P Networks.* Paper presented at the 15th Americas Conference on Information Systems, San Francisco, California, USA.
Lalović, G., Reardon, S. A., Vida, I., and Reardon, J. (2012). Consumer decision model of intellectual property theft in emerging markets. *Organizations and Markets in Emerging Economies, 3*(1), 58-74.
LaRose, R. and Kim, J. (2007). Share, steal, or buy? A social cognitive perspective of music downloading. *CyberPsychology & Behavior, 10*(2), 267-277.
LaRose, R., Lai, Y. J., Lange, R., Love, B., and Wu, Y. (2005). Sharing or piracy? An exploration of downloading behavior. *Journal of Computer-Mediated Communication, 11*(1), 1-21.
Larsson, S., Svensson, M., and de Kaminski, M. (2013). Online piracy, anonymity and social change: Innovation through deviance. *Convergence-the International Journal of Research into New Media Technologies, 19*(1), 95-114.
Latson, C. C. (2004). *Contemporary pirates: An examination of the perceptions and attitudes toward the technology, progression, and battles that surround modern-day music piracy in colleges and universities.* Unpublished M.A., University of North Texas, Ann Arbor.
Lau, E. K.-w. (2007). Interaction effects in software piracy. *Business Ethics, 16*(1), 34-47.
Lau, E. K. W. (2003). An empirical study of software piracy. *Business Ethics: A European Review, 12*(3), 233-245.
Leonard, L. N. and Cronan, T. P. (2001). Illegal, inappropriate, and unethical behavior in an information technology context: A study to explain influences. *Journal of the Association for Information Systems, 1*(1), 12.
Leurkittikul, S. (1994). *An empirical comparative analysis of software piracy: The United States and Thailand.* Unpublished D.B.A., Mississippi State University, Ann Arbor.
Levin, A. M., Dato-on, M. C., and Manolis, C. (2007). Deterring illegal downloading: the effects of threat appeals, past behavior, subjective norms, and attributions of harm. *Journal of Consumer Behaviour, 6*(2-3), 111-122.
Levin, A. M., Mary Conway, D.-o., and Rhee, K. (2004). Money for nothing and hits for free: the ethics of downloading music from peer-to-peer web sites. *Journal of Marketing Theory and Practice, 12*(1), 48-60.
Li, X. and Nergadze, N. (2009). Deterrence effect of four legal and extralegal factors on online copyright infringement. *Journal of Computer-Mediated Communication, 14*(2), 307-327.
Liang, J. (2010). A study on digital piracy of games in Western Australia. Curtin University.
Liang, J. and Phau, I. (2011, Jul 3-7). *A study on digital piracy of movies: Internet users' perspective.* Paper presented at the 20th Annual World Business Congress, Poznan, Poland.
Liang, J. and Phau, I. (2012a, Jul 19-22). *Comparison of attitudes towards digital piracy between downloaders and non-downloaders.* Paper presented at the 2012 Global Marketing Conference at Seoul, Seoul, Republic of Korea.

Liang, J. and Phau, I. (2012b, July 19-22). *Illegal games downloaders vs illegal movies downloaders??!! Both are still criminal!!* Paper presented at the 2012 Global Marketing Conference at Seoul, Seol, South Korea.

Liang, Z. (2007). *Understanding Internet piracy among university students: A comparison of three leading theories in explaining peer-to-peer music downloading.* University at Albany, State University of New York, Albany, NY.

Liao, C., Lin, H.-N., and Liu, Y.-P. (2010). Predicting the use of pirated software: A contingency model integrating perceived risk with the theory of planned behavior. *Journal of Business Ethics, 91*(2), 237-252.

Limayem, M., Khalifa, M., and Chin, W. (1999, December 13-15). *Factors motivating software piracy: A longitudinal study.* Paper presented at the International Conference on Information Systems 1999, Charlotte, North Carolina, USA.

Limayem, M., Khalifa, M., and Chin, W. W. (2004). Factors motivating software piracy: a longitudinal study. *IEEE Transactions on Engineering Management, 51*(4), 414-425.

Lin, T.-C., Hsu, M. H., Kuo, F.-Y., and Sun, P.-C. (1999, Jan 5-8). *An intention model-based study of software piracy.* Paper presented at the 32nd Annual Hawaii International Conference on Systems Sciences, Maui, HI.

Liu, L.-P. and Fang, W.-C. (2003). Ethical decision-making, religious beliefs and software piracy. *Asia Pacific Management Review, 8*(2), 185-200.

Logsdon, J. M., Thompson, J. K., and Reid, R. A. (1994). Software piracy: Is it related to level of moral judgment? *Journal of Business Ethics, 13*(11), 849-857.

Lorde, T., Devonish, D., and Beckles, A. (2010). Real pirates of the caribbean: Socio-psychological traits, the environment, personal ethics and the propensity for digital piracy in Barbados. *Journal of Eastern Caribbean Studies, 35*(1), 1-35,98.

Lysonski, S. and Durvasula, S. (2008). Digital piracy of MP3s: consumer and ethical predispositions. *Journal of Consumer Marketing, 25*(3), 167-178.

Mai, R. and Niemand, T. (2012). The pivotal role of different risk dimensions as obstacles in piracy product consumption. *AMA Winter Educators' Conference Proceedings, 23*, 291-301.

Makin, D. A. (2002). *Internet file sharing: A theory of planned behavior approach.* University of Louisville, Louisville, KY.

Malin, J. and Fowers, B. J. (2009). Adolescent self-control and music and movie piracy. *Computers in Human Behavior, 25*(3), 718-722.

Mandel, P. and Leipzig, B. S. (2012). Determinants of digital piracy: A re-examination of results. *Jahrbucher Fur Nationalokonomie Und Statistik, 232*(4), 394-413.

Marcum, C. D., Higgins, G. E., Wolfe, S. E., and Ricketts, M. L. (2011). Examining the intersection of self-control, peer association and neutralization in explaining digital piracy. *Western Criminology Review, 12*(3), 60-67.

Massad, V. J. (2014). Musicians and digital pirating: A paradox. *International Journal of Business and Social Science, 5*(7), 1-7.

McCorkle, D., Reardon, J., Dalenberg, D., Pryor, A., and Wicks, J. (2012). Purchase or pirate: A model of consumer intellectual property theft. *Journal of Marketing Theory & Practice, 20*(1), 73-86.

Mishra, A., Akman, I., and Yazici, A. (2006). Software piracy among IT professionals in organizations. *International Journal of Information Management, 26*(5), 401-413.

Mishra, A., Akman, I., and Yazici, A. (2007). Organizational software piracy: an empirical assessment. *Behaviour & Information Technology, 26*(5), 437-444.

Moon, S.-I., Kim, K., Feeley, T. H., and Shin, D.-H. (2015). A normative approach to reducing illegal music downloading: The persuasive effects of normative message framing. *Telematics and Informatics, 32*(1), 169-179.

Moore, R. and McMullan, E. C. (2004). Perceptions of peer-to-peer file sharing among university students. *Journal of Criminal Justice and Popular Culture, 11*(1), 1-19.

Moores, T. and Dhillon, G. (2000). Software piracy: A view from Hong Kong. *Communications of the*

ACM, 43(12), 88-93.
Moores, T. T. and Chang, J. C.-J. (2006). Ethical decision making in software piracy: Initial development and test of a four-component model. *MIS Quarterly, 30*(1), 167-180.
Moores, T. T. and Dhaliwal, J. (2004). A reversed context analysis of software piracy issues in Singapore. *Information & Management, 41*(8), 1037-1042.
Moores, T. T. and Esichaikul, V. (2011). Socialization and software piracy: A study. *Journal of Computer Information Systems, 2011*(Spring), 1-9.
Moores, T. T., Nill, A., and Rothenberger, M. A. (2009). Knowledge of software piracy as an antecedent to reducing pirating behavior. *Journal of Computer Information Systems, 50*(1), 82-89.
Morris, R. G. and Higgins, G. E. (2009). Neutralizing potential and self-reported digital piracy: A multitheoretical exploration among college undergraduates. *Criminal Justice Review, 34*(2), 173-195.
Morris, R. G. and Higgins, G. E. (2010). Criminological theory in the digital age: The case of social learning theory and digital piracy. *Journal of Criminal Justice, 38*(4), 470-480.
Morton, N. A. and Koufteros, X. (2008). Intention to commit online music piracy and its antecedents: An empirical investigation. *Structural Equation Modeling: A Multidisciplinary Journal, 15*(3), 491-512.
Nandedkar, A. and Midha, V. (2009, Dec 15-18). *Optimism in music piracy: A pilot study.* Paper presented at the International Conference on Information Systems 2009, Phoenix, Arizona.
Nandedkar, A. and Midha, V. (2012). It won't happen to me: An assessment of optimism bias in music piracy. *Computers in Human Behavior, 28*(1), 41-48.
Nergadze, N. (2004). *Deterrence factors for copyright infringement online.* Louisiana State University.
Nill, A., Schibrowsky, J., and Peltier, J. W. (2010). Factors that influence software piracy: a view from Germany. *Communications of the ACM, 53*(6), 131-134.
Oh, L.-B. and Teo, H.-H. (2010). To blow or not to blow: An experimental study on the intention to whistleblow on software piracy. *Journal of Organizational Computing and Electronic Commerce, 20*(4), 347-369.
Okurame, D. E. and Ogunfowora, A. S. (2011). Impact of gender and opportunity recognition on attitude to piracy of computer industry products. *Gender & Behaviour, 9*(1), 3419-3434.
Orr, S. T. (2011). *Beliefs and behaviors regarding illegal music piracy.* University of Arizona.
Panas, E. E. and Ninni, V. E. (2011). Ethical decision making in electronic piracy: An explanatory model based on the diffusion of innovation theory and theory of planned behaviour. *International Journal of Cyber Criminology, 5*(2), 836-859.
Parthasarathy, M. and Mittelstaedt, R. A. (1995). Illegal adoption of a new product: a model of software piracy behavior. *Advances in Consumer Research, 22*, 693-693.
Peace, A. (1997). Software piracy and computer-using professionals: A survey. *Journal of Computer Information Systems, 38*(1), 94-99.
Peace, A. G. (1995). *A predictive model of software piracy: An empirical validation.* Unpublished Ph.D., University of Pittsburgh, Pittsburgh, PA.
Peace, A. G. and Galletta, D. (1996, Dec 16-18). *Developing a predictive model of software piracy behavior: An empirical study.* Paper presented at the International Conference on Information Systems 1996, Cleveland, Ohio, USA.
Peace, A. G., Galletta, D. F., and Thong, J. Y. L. (2003). Software piracy in the workplace: A model and empirical test. *Journal of Management Information Systems, 20*(1), 153-177.
Phau, I. and Liang, J. (2012). Downloading digital video games: predictors, moderators and consequences. *Marketing Intelligence & Planning, 30*(7), 740-756.
Phau, I., Lim, A., Liang, J., and Lwin, M. (2014). Engaging in digital piracy of movies: a theory of planned behaviour approach. *Internet Research, 24*(2), 246-266.
Phau, I. and Ng, J. (2010). Predictors of usage intentions of pirated software. *Journal of Business Ethics, 94*(1), 23-37.
Phau, I., Teah, M., and Lwin, M. (2013). Pirating pirates of the Caribbean: The curse of cyberspace.

Journal of Marketing Management, 30(3-4), 312-333.
Plouffe, C. R. (2008). Examining "peer-to-peer" (P2P) systems as consumer-to-consumer (C2C) exchange. *European Journal of Marketing, 42*(11-12), 1179-1202.
Plowman, S. and Goode, S. (2009). Factors affecting the intention to download music: Quality perceptions and downloading intensity. *Journal of Computer Information Systems, 2009*(Summer), 84-97.
Popham, J. (2011). Factors influencing music piracy. *Criminal Justice Studies, 24*(2), 199-209.
Proserpio, L., Salvemini, S., and Ghiringhelli, V. (2005). Entertainment pirates: Determinants of piracy in the software, music and movie industries. *International Journal of Arts Management, 8*(1), 33-47.
Pujara, T. and Chaurasia, S. (2012). Understanding the drivers for purchasing non-deceptive pirated products: An Indian experience. *IUP Journal of Marketing Management, 11*(4), 34-50.
Rahim, M. M., Rahman, M. N. A., and Seyal, A. H. (2000a). Softlifting intention of students in academia: A normative model. *Malaysian Journal of Computer Science, 13*(1), 48-55.
Rahim, M. M., Rahman, M. N. A., and Seyal, A. H. (2000b). Software piracy among academics: An empirical study in Brunei Darussalam. *Information Management & Computer Security, 8*(1), 14-26.
Rahim, M. M., Seyal, A. H., and Rahman, M. N. A. (1999). Software piracy among computing students: A Bruneian scenario. *Computers & Education, 32*(4), 301-321.
Rahim, M. M., Seyal, A. H., and Rahman, M. N. A. (2001). Factors affecting softlifting intention of computing students: An empirical study. *Journal of Educational Computing Research, 24*(4), 385-405.
Ramakrishna, H. V., Kini, R. B., and Vijayaraman, B. S. (2001). Shaping of moral intensity regarding software piracy in university students: Immediate community effects. *Journal of Computer Information Systems, 41*(4), 47-51.
Ramayah, T., Chin, L. G., and Ahmad, N. H. (2008). Internet piracy among business students: An application of Triandis Model. *International Journal of Business and Management Science, 1*(1), 85-95.
Rawlinson, D. R. and Lupton, R. A. (2007). Cross-national attitudes and perceptions concerning software piracy: A comparative study of students from the United States and China. *Journal of Education for Business, 83*(2), 87-93.
Redondo, I. and Charron, J.-P. (2013). The payment dilemma in movie and music downloads: An explanation through cognitive dissonance theory. *Computers in Human Behavior, 29*(5), 2037-2046.
Reinig, B. A. and Plice, R. K. (2010, 5-8 Jan. 2010). *Modeling software piracy in developed and emerging economies.* Paper presented at the 43rd Hawaii International Conference on System Sciences, Koloa, Kauai, HI.
Reiss, J. (2010). *Student digital piracy in the Florida State University System: An exploratory study on its infrastructural effects.* Unpublished Ed.D., University of Central Florida, Ann Arbor.
Reiss, J. and Cintrón, R. (2011). College students, piracy, and ethics: Is there a teachable moment? *International Journal of Technoethics, 2*(3), 23-38.
Robertson, K., McNeill, L., Green, J., and Roberts, C. (2012). Illegal downloading, ethical concern, and illegal behavior. *Journal of Business Ethics, 108*, 215-227.
Robinson, R. K. and Reithel, B. J. (1994). The software piracy dilemma in public administration: A survey of university software policy enforcement. *Public Administration Quarterly, 17*(4), 485.
Rochelandet, F. and Le Guel, F. (2005). P2P music sharing networks: why the legal fight against copiers may be inefficient. *Review of Economic Research on Copyright Issues, 2*(2), 69-82.
Rybina, L. (2011). Music piracy in transitional post-soviet economies: ethics, legislation, and expertise. *Eurasian Business Review, 1*(1), 3-17.
Sang, Y., Lee, J.-K., Kim, Y., and Woo, H.-J. (2014). Understanding the intentions behind illegal downloading: A comparative study of American and Korean college students. *Telematics and Informatics, 32*(2), 333-343.

Sansfacon, S. and Amiot, C. E. (2014). The impact of group norms and behavioral congruence on the internalization of an illegal downloading behavior. *Group Dynamics-Theory Research and Practice, 18*(2), 174-188.

Seale, D. A. (2002). Why do we do it if we know it's wrong? A structural model of software piracy. In G. Dhillon (Ed.), *Social Responsibility in the Information Age: Issues and Controversies* (pp. 30-52). Hershey PA: Idea Group.

Seale, D. A., Polakowski, M., and Schneider, S. (1998). It's not really theft!: Personal and workplace ethics that enable software piracy. *Behaviour & Information Technology, 17*(1), 27-40.

Setiawan, B. and Tjiptono, F. (2013). Determinants of consumer intention to pirate digital products. *International Journal of Marketing Studies, 5*(3), 48-55.

Setterstrom, A. J., Pearson, J. M., and Aleassa, H. (2012, Jan 4-7, 2012). *An exploratory examination of antecedents to software piracy: A cross-cultural comparison.* Paper presented at the 45th Hawaii International Conference on System Sciences, Maui, HI.

Shanahan, K. J. and Hyman, M. R. (2010). Motivators and enablers of SCOURing: A study of online piracy in the US and UK. *Journal of Business Research, 63*(9–10), 1095-1102.

Shang, R.-A., Chen, Y.-C., and Chen, P.-C. (2008). Ethical decisions about sharing music files in the P2P environment. *Journal of Business Ethics, 80*(2), 349-365.

Sheehan, B., Tsao, J., and Pokrywczynski, J. (2012). Stop the music! How advertising can help stop college students from downloading music illegally. *Journal of Advertising Research, 52*(3), 309.

Sheehan, B., Tsao, J., and Yang, S. (2010). Motivations for gratifications of digital music piracy among college students. *Atlantic Journal of Communication, 18*(5), 241–258.

Shemroske, K. (2012). *The ethical use of it: A study of two models for explaining online file sharing behavior.* University of Houston.

Shoham, A., Ruvio, A., and Davidow, M. (2008). (Un)ethical consumer behavior: Robin Hoods or plain hoods? *Journal of Consumer Marketing, 25*(4), 200-210.

Shore, B., Venkatachalam, A. R., Solorzano, E., Burn, J. M., Hassan, S. Z., and Janczewski, L. J. (2001). Softlifting and piracy: behavior across cultures. *Technology in Society, 23*(4), 563-581.

Simmons, L. C. (1999). *Cross-cultural determinants of software piracy.* Unpublished Ph.D., The University of Texas at Arlington, Ann Arbor.

Simmons, L. C. (2004). An exploratory analysis of software piracy using cross-cultural data. *International Journal of Technology Management, 28*(1), 139-148.

Simon, J. C. and Chaney, L. H. (2005). Trends in students' perceptions of the ethicality of selected computer activities. *Academy of Legal, Ethical and Regulatory Issues, 9*(1), 107.

Simpson, P., Banerjee, D., and Simpson, C., Jr. (1994). Softlifting: A model of motivating factors. *Journal of Business Ethics, 13*(6), 431-438.

Sims, R. R., Cheng, H. K., and Teegen, H. (1996). Toward a profile of student software piraters. *Journal of Business Ethics, 15*(8), 839-849.

Sinha, R. K., Machado, F. S., and Sellman, C. (2010). Don't think twice, it's all right: Music piracy and pricing in a DRM-free environment. *Journal of Marketing, 74*(2), 40-54.

Sinha, R. K. and Mandel, N. (2008). Preventing digital music piracy: The carrot or the stick? *Journal of Marketing, 72*(1), 1-15.

Siponen, M., Vance, A., and Willison, R. (2010). *New insights for an old problem: Explaining software piracy through neutralization theory*. Paper presented at the 43rd Hawaii International Conference on System Sciences.

Siponen, M., Vance, A., and Willison, R. (2012). New insights into the problem of software piracy: The effects of neutralization, shame, and moral beliefs. *Information & Management, 49*(7–8), 334-341.

Sirkeci, I. and Magnúsdóttir, L. B. (2011). Understanding illegal music downloading in the UK: a multi-attribute model. *Journal of Research in Interactive Marketing, 5*(1), 90-110.

Skinner, W. F. and Fream, A. M. (1997). A social learning theory analysis of computer crime among college students. *Journal of Research in Crime and Delinquency, 34*(4), 495-518.

Smallridge, J. L. (2012). *Social learning and digital piracy: Do online peers matter?* Unpublished Ph.D., Indiana University of Pennsylvania, Indiana, PA.
Smallridge, J. L. and Roberts, J. R. (2013). Crime specific neutralizations: An empirical examination of four types of digital piracy. *International Journal of Cyber Criminology, 7*(2), 125-140.
Stanley, H. L. (2011). *From the right or the left: Generation Y and their views on piracy, copyright, and file sharing.* Thesis, University of South Alabama.
Suki, N. M., Ramayah, T., and Suki, N. M. (2011). Understanding consumer intention with respect to purchase and use of pirated software. *Information Management & Computer Security, 19*(3), 195-210.
Sun, Y., Lim, K. H., and Fang, Y. (2013). *Do facts speak louder than words? Understanding the sources of punishment perceptions in software piracy behavior.* Paper presented at the 17th Pacific Asia Conference on Information Systems.
Super, M. A. (2008). *Why you might steal from Jay-Z: An examination of filesharing using techniques of neutralization theory.* The University of Texas at El Paso, El Paso, TX.
Suter, T., Kopp, S., and Hardesty, D. (2006). The effects of consumers' ethical beliefs on copying behaviour. *Journal of Consumer Policy, 29*(2), 190-202.
Suter, T. A., Kopp, S. W., and Hardesty, D. M. (2004). The relationship between general ethical judgments and copying behavior at work. *Journal of Business Ethics, 55*(1), 61-70.
Swinyard, W. R., Rinne, H., and Kau, A. K. (1990). The morality of software piracy: A cross-cultural analysis. *Journal of Business Ethics, 9*(8), 655-664.
Swinyard, W. R., Rinne, H., and Kau, A. K. (2013). The morality of software piracy: A cross-cultural analysis. In A. C. Michalos & D. C. Poff (Eds.), *Citation Classics from the Journal of Business Ethics* (Vol. 2, pp. 565-578). AZ Dordrecht, The Netherlands: Springer Netherlands.
Tan, B. (2002). Understanding consumer ethical decision making with respect to purchase of pirated software. *Journal of Consumer Marketing, 19*(2), 96-111.
Tang, J.-H. and Farn, C.-K. (2005). The effect of interpersonal influence on softlifting intention and behaviour. *Journal of Business Ethics, 56*(2), 149-161.
Taylor, G. S. and Shim, J. P. (1993). A comparative examination of attitudes toward software piracy among business professors and executives. *Human Relations, 46*(4), 419-433.
Taylor, S. A. (2012a). Evaluating digital piracy intentions on behaviors. *Journal of Services Marketing, 26*(7), 472-483.
Taylor, S. A. (2012b). Implicit attitudes and digital piracy. *Journal of Research in Interactive Marketing, 6*(4), 281-297.
Taylor, S. A., Ishida, C., and Wallace, D. W. (2009). Intention to engage in digital piracy: A conceptual model and empirical test. *Journal of Service Research, 11*(3), 246-262.
Thatcher, A. and Matthews, M. (2012). Comparing software piracy in South Africa and Zambia using social cognitive theory. *African Journal of Business Ethics, 6*(1), 1-12.
Theng, Y.-L., Tan, W. T., Lwin, M. O., and Shou-Boon, S. F. (2010). An exploratory study of determinants and corrective measures for software piracy and counterfeiting in the digital age. *Computer and Information Science, 3*(3), 30-49.
Thong, J. Y. L. and Chee-sing, Y. (1998). Testing an ethical decision-making theory: The case of softlifting. *Journal of Management Information Systems, 15*(1), 213-237.
Van Belle, J.-P., Macdonald, B., and Wilson, D. (2014). Determinants of digital piracy among youth in South Africa. *Communications of the IIMA, 7*(3), 5.
van der Byl, K. and Van Belle, J.-P. (2008). Factors influencing South African attitudes toward digital piracy. *Communications of the IBIMA, 1*(1), 202-211.
Vannoy, S. and Medlin, D. (2014, August 7-9). *Risks versus rewards: Understanding the predictors of music piracy.* Paper presented at the 20th Americas Conference on Information Systems, Savannah, Georgia, USA.
Veitch, R. and Constantiou, I. (2012, December 16-19). *User decisions among digital piracy and legal alternatives for film and music.* Paper presented at the International Conference on Information

Systems 2012, Orlando, Florida, USA.
Veitch, R. W. and Constantiou, I. (2011, July 7-11). *Digital product acquisition in the context of piracy: A proposed model and preliminary findings.* Paper presented at the 15th Pacific Asia Conference on Information Systems, Brisbane, Queensland, Australia.
Vermeir, I. (2009, Octobor 23-26). *The consumer who knew too much: online movie piracy by young adults.* Paper presented at the North American Conference of the Association for Consumer Research 2008, San Francisco, California, U.S.A.
Vida, I., Koklic, M. K., Kukar-Kinney, M., and Penz, E. (2012). Predicting consumer digital piracy behavior: The role of rationalization and perceived consequences. *Journal of Research in Interactive Marketing, 6*(4), 298-313.
Villazon, C. H. (2004). *Software piracy: An empirical study of influencing factors.* Unpublished D.B.A., Nova Southeastern University, Ann Arbor.
Villazon, C. H. and Dion, P. (2004). Software piracy: A study of formative factors. *Journal of Applied Management and Entrepreneurship, 9*(4), 66-85.
Wagner, S. C. (1998). *Software piracy and ethical decision making.* Unpublished Ph.D., State University of New York at Buffalo, Ann Arbor.
Wagner, S. C. and Sanders, G. L. (2001). Considerations in ethical decision-making and software piracy. *Journal of Business Ethics, 29*(1-2), 161-167.
Wan, W. W. N., Luk, C. L., Yau, O. H. M., Tse, A. C. B., Sin, L. Y. M., Kwong, K. K. et al. (2009). Do traditional Chinese cultural values nourish a market for pirated CDs? *Journal of Business Ethics, 88*, 185-196.
Wang, C.-C. (2005). Factors that influence the piracy of DVD/VCD motion pictures. *Journal of American Academy of Business, Cambridge, 6*(1), 231-237.
Wang, C.-c., Chen, C.-t., Yang, S.-c., and Farn, C.-k. (2009). Pirate or buy? The moderating effect of idolatry. *Journal of Business Ethics, 90*(1), 81-93.
Wang, F., Zhang, H., and Ouyang, M. (2006). Understanding Chinese consumers in software piracy. *American Marketing Association. Conference Proceedings, 17*, 223.
Wang, F., Zhang, H., Zang, H., and Ouyang, M. (2005). Purchasing pirated software: an initial examination of Chinese consumers. *Journal of Consumer Marketing, 22*(6), 340-351.
Wang, J., Yang, Z., and Bhattacharjee, S. (2012). Same coin, different sides: Differential impact of social learning on two facets of music piracy. *Journal of Management Information Systems, 28*(3), 343.
Wang, X. and McClung, S. R. (2011). Toward a detailed understanding of illegal digital downloading intentions: An extended theory of planned behavior approach. *New Media & Society, 13*(4), 663-677.
Wang, X. and McClung, S. R. (2012). The immorality of illegal downloading: The role of anticipated guilt and general emotions. *Computers in Human Behavior, 28*(1), 153-159.
Wang, Y.-S., Yeh, C.-H., and Liao, Y.-W. (2013). What drives purchase intention in the context of online content services? The moderating role of ethical self-efficacy for online piracy. *International Journal of Information Management, 33*(1), 199-208.
Warkentin, M., Davis, K., and Bekkering, E. (2004). Introducing the check-off password system (COPS): An advancement in user authentication methods and information security. *Journal of Organizational and End User Computing 16*(3), 41-58.
Wells, R. (2012). *An empirical assessment of factors contributing to individuals' propensity to commit software piracy in the Bahamas.* Unpublished Ph.D., Nova Southeastern University, Ann Arbor.
Wingrove, T., Korpas, A. L., and Weisz, V. (2010). Why were millions of people not obeying the law? Motivational influences on non-compliance with the law in the case of music piracy. *Psychology, Crime & Law, 17*(3), 261-276.
Wolfe, S. E., Higgins, G. E., and Marcum, C. D. (2008). Deterrence and digital piracy: A preliminary examination of the role of viruses. *Social Science Computer Review, 26*(3), 317-333.
Wong, G., Kong, A., and Ngai, S. (1990). A study of unauthorized software copying among postsecondary students in Hong-Kong. *Australian Computer Journal, 22*(4), 114-122.

Wood, W. and Glass, R. (1996). Sex as a determinant of software piracy. *Journal of Computer Information Systems, 36*(2), 37-43.
Woolley, D. J. (2010). The cynical pirate: How cynicsm effects music piracy. *Academy of Information & Management Sciences Journal, 13*(1), 31-43.
Woolley, D. J. and Eining, M. M. (2006). Software Piracy among Accounting Students: A Longitudinal Comparison of Changes and Sensitivity. *Journal of Information Systems, 20*(1), 49-63.
Woon, I. M. Y. and Pee, L. G. (2004, December 10-11). *Behavioral factors affecting internet abuse in the workplace - An empirical investigation.* Paper presented at the 3rd Annual Workshop on HCI Research in MIS, Washington D.C.
Wu, W.-P. and Yang, H.-L. (2013). A comparative study of college students' ethical perception concerning internet piracy. *Quality & Quantity, 47*(1), 111-120.
Xu, H., Wang, H., and Teo, H.-H. (2005, Jan 03-06). *Predicting the usage of p2p sharing software: The role of trust and perceived risk.* Paper presented at the 38th Annual Hawaii International Conference on System Sciences.
Yang, D., Fryxell, G. E., and Sie, A. K. Y. (2008). Anti-piracy effectiveness and managerial confidence: Insights from multinationals in China. *Journal of World Business, 43*(3), 321.
Yang, D., Sonmez, M., Bosworth, D., and Fryxell, G. (2009). Global software piracy: Searching for further explanations. *Journal of Business Ethics, 87*(2), 269-283.
Yang, Z., Wang, J., and Mourali, M. (2014). Effect of peer influence on unauthorized music downloading and sharing: The moderating role of self-construal. *Journal of Business Research, 68*(3), 516-525.
Yoo, C. W., Kim, M. C., Chan, Y., and Tuan, V. Q. (2008, August 14-17). *Factors motivating software piracy in Vietnam.* Paper presented at the 14th Americas Conference on Information Systems, Toronto, ON, Canada.
Yoon, C. (2011a). Ethical decision-making in the Internet context: Development and test of an initial model based on moral philosophy. *Computers in Human Behavior, 27*(6), 2401-2409.
Yoon, C. (2011b). Theory of planned behavior and ethics theory in digital piracy: An integrated model. *Journal of Business Ethics, 100*(3), 405-417.
Yoon, C. (2012). Digital piracy intention: a comparison of theoretical models. *Behaviour & Information Technology, 31*(6), 565-576.
Yu, S. (2013). Digital piracy justification: Asian students versus american students. *International Criminal Justice Review, 23*(2), 185-196.
Yu, S. D. (2012). College students' justification for digital piracy: A mixed methods study. *Journal of Mixed Methods Research, 6*(4), 364-378.
Zamoon, S. (2006). *Software piracy: Neutralization techniques that circumvent ethical decision-making.* Unpublished Ph.D., University of Minnesota, Minneapolis, MN.
Zhang, L., Smith, W. W., and McDowell, W. C. (2009). Examining digital piracy: Self-control, punishment, and self-efficacy. *Information Resources Management Journal, 22*(1), 24-44.
Zhang, X.-I., Shim, M., and Gim, G. (2010). An Empirical Study of the Piracy Behavior on Digital Content. *Korean Information Systems Technology Association Journal, 9*(4), 37-55.