J Bus Ethics (2016) 135:517–541
DOI 10.1007/s10551-014-2484-1

Exploring Factors Affecting Digital Piracy Using the Norm Activation and UTAUT Models: The Role of National Culture

Godwin Udo · Kallol Bagchi · Moutusy Maity

Received: 12 June 2014 / Accepted: 18 November 2014 / Published online: 9 December 2014

Abstract We develop and use an integrated individual-level model to explain the driving forces behind digital piracy (DP) practice in two nations. The proposed model combines the Norm Activation model and Unified Theory of Acceptance and Use of Technology models. This study also explores the effect of culture on intention (INT) to practice DP in two nations: US (individualistic) and India (collectivistic). A survey instrument was used to collect data from 231 US and 331 Indian participants. Use of the integrated model proves to be a powerful and a viable approach to understanding DP across cultures. In each nation, all 10 path coefficients on the research model are statistically significant thereby establishing the fact that personal norm, together with other factors, influences INT to engage in DP, which in turn, may influence the actual practice. The results reveal a support for cross-cultural generalizability and applicability of the proposed model. Culture clearly plays a strong moderating role in two out of the three paths tested. The implications of the findings are discussed.

Keywords Personal norms · Digital piracy · NAM · UTAUT · National culture

G. Udo (✉) · K. Bagchi
College of Business Administration, University of Texas at El Paso, El Paso, USA
e-mail: gudo@utep.edu

K. Bagchi
e-mail: kbagch@utep.edu

M. Maity
Indian Institute of Management Lucknow, Noida Campus, Noida, India
e-mail: mmaity@iiml.ac.in

Introduction

Since digital piracy (DP) has now become a worldwide phenomenon, much effort has been expended to explore the issues surrounding it. Some authors have outlined the reasons or the driving forces for it while others explore various deterrent approaches. DP is defined as the consumption of illegal copies of digital services such as music, and movies and has been shown to pose a threat to the industries (Gopal et al. 2004). Some of the explanations for DP found in the literature include economic, low infrastructural development, lack of regulatory enforcement, and social or cultural explanations (Bagchi et al. 2006). Other authors have identified the degree of importance of a variety of outcomes, self-efficacy (SEFF), and expectation of social interactions as reasons for DP. Bhattacharjee et al. (2006) indicate that over the years, mitigation of DP has yielded poor result because of the fact that little is known about its social aspects.

Taylor et al. (2009) believe that one of the reasons for the failed efforts to curtail DP is because little is known about the social–psychological roots of DP since most of the DP studies found in the literature use models that are cognitive and consequential. Cognitive and consequential models such as social cognitive theory (SCT) and traditional attitude models are based on expectancy–value foundations. These models are based on assumption that people assess the desirability and likelihood of possible choice outcomes through some form of expectancy-based calculus (Taylor et al. 2009). According to Taylor, the social–psychological foundations include more holistic examination of psychological processes leading to behavioral intentions (INTs). This type of models more fully accounts for motivation and the powerful role of emotions including anticipated regret in explaining behavioral INTs.

The social–psychological models are normative model which involves both emotional and utilitarian appeals. The authors state "We suggest that one reason for poor results involves how little is known about the social foundations underlying DP." The authors subsequently call for social–psychological models to explain DP practices. It is worth noting that social–psychological models can capture either social norms or personal norms (PNs). PNs [focus of Norm Activation Model (NAM)] are different from social norms (Harland et al. 2007). The expectations or sanctions stemming from PNs can be traced to individual's inner self whereas expectations or sanctions stemming from social norms can be traced to social environment. The present research is an effort to use NAM which captures PNs to understand DP.

Internet technologies have made it very difficult to enforce antipiracy laws because the technologies have created avenues and incentives for individuals to carry out this copyright violation (Wall 2005; Gopal et al. 2004). Only a few studies have investigated the motivation for piracy (Hinduja 2001; Higgins et al. 2007). These authors use mostly university students to explore reasons why people get involved in piracy and conclude that some social and economic factors may provide the cue for DP. Higgins et al. (2007) conclude that low self-control and social learning theory can explain piracy. Bhattacharjee et al. (2006) also sampled university students with the conclusion that low-income individuals are more likely to commit piracy.

The role of culture in information technology (IT) research is of interest as demonstrated by the number of published studies (see Leidner and Kayworth 2006 for a comprehensive literature review on culture in IT research). Many studies have highlighted the important role of culture on IT acceptance, diffusion, and development (Sia et al. 2009; Keil et al. 2000). Udo et al. (2010) propose that the espoused cultural values play a moderating role in the people's INT to use online services and that the role varies among different nations, due to cultural differences. Culture is particularly an interesting topic in combination with DP. Several authors have investigated various aspects of the impact of culture on DP (Yoon 2009, 2011; Cronan and Al-Rafee 2008; Cross 2006; Bono et al. 2006; Jain 2008) but none has used the approach we propose in our present study.

The objective of the present study is twofold: to develop and test an integrated model that explains the salient factors in DP and then to explore the moderating role of culture using two different cultures on the tested model. In effect, the present study has two objectives: (1) to fill the gap in the literature using a proposed model, which integrates the NAM and Unified Theory of Acceptance and Use of Technology (UTAUT) (henceforth called NAM–UTAUT) to explain the DP reasoning, and (2) to explore the cultural effect on DP using the integrated model across two distinct cultures. The present paper contributes to the understanding of the driving forces of DP within the NAM–UTAUT model and across cultures. Since the proposed associations have never been investigated using this integrated model, it is our belief that the study findings contribute to the existing body of knowledge. The application of NAM theory to DP provides assistance in the search for a new empirical understanding.

Though many studies have used UTAUT on different applications, only very few of them attempt to extend UTAUT by combining it with other models. Such a rare study is by Wang and Yang (2005) who attempted to add personality theories to UTAUT. Venkatesh et al. (2003) had since called for a research study that integrates UTAUT with other models and thereby increases the explanatory power of UTAUT. Stern (2000) called for a research approach that synthesizes theories with the aim of obtaining more powerful integrated models. Some authors (Harland et al. 1999; Wall et al. 2007) have responded to this call using different application areas than DP and have reported better results with integrated models.

By integrating NAM and UTAUT models, this research first proposes a model that can be used to better explain the effect of INT toward DP, thereby addressing the first research objective. The second objective is then achieved by attempting the specific research question: what role does cultural difference play in the digital pirates' INT to practice it? Or stated differently, is the proposed integrated model valid across different cultures (USA and India)? In essence, what is the impact of national culture on the PNs of digital pirates as explained by NAM–UTAUT model?

The remainder of the paper is grouped into the following sections: (2) theoretical background which presents related literature on DP, NAM, UTAUT, and national culture, (3) the proposed research model and hypotheses, (4) methodology, (5) analysis and results, (6) discussion, and (7) conclusion.

Theoretical Background

Digital Piracy (DP)

The heightened research interest in DP reflects the problematic importance of DP and its impact on the economy (Cronan and Al-Rafee 2008). The large number of research studies found in the literature can be grouped into four categories. The first group of studies explains the reasons people are involved in DP (Lau 2003; Walls and Harvey 2006; Peace et al. 2003). The second stream of studies uses established theories and models to investigate factors that influence DP practice (Cronan and Al-Rafee 2008; Al-Rafee and Cronan 2006; Thong and Yap 1998; Eining and

Christensen 1991). Some of the factors identified by these past studies include norms, social–legal attitudes, socio-cultural factor, situational factors, religion, perceived consequences, moral judgment, and past behavior (PB; Simpson et al. 1994; Banerjee et al. 1998; Cronan and Al-Rafee 2008; Wagner and Sanders 2001; Conner and Armitage 1998). The third group of studies is more or less about how digital material should be free and DP could be used innovatively to benefit the digital owners (Cross 2006; Bono et al. 2006; Jain 2008). A good instance of this group of study is that of Jain (2008) who uses a game theory approach to demonstrate that DP can alter the market composition including the strategies used by the firms due to the fact that DP reduces price competition. The fourth group of studies is about the deterrent controls of DP (Gopal and Sanders 1997; Gopal et al. 2004; Wolfe et al. 2008; Liang and Yan 2005; Higgins et al. 2007). It has been observed that DP deterrent controls result in higher profits to the digital owners and generally more effective than preventive controls (Gopal and Sanders 1997; Wolfe et al. 2008). Preventive and deterrent controls are the two most common strategies for combating DP. Preventive controls aim at using security software and hardware to impede DP by increasing the costs of engaging in the practice. They are often referred to as front-end strategies, for example, embedding special codes in the software to make illegal copying difficult. On the contrary, deterrent controls aim at making potential pirates aware of the punitive consequences of DP. Deterrence occurs when punishment for the commission of an offense deters the individual from committing the same offense in the future because of fear of the consequences (Gopal and Sanders 1997). Deterrent controls are referred to as back-end strategies and can be attained through education, legal actions, and media campaigns.

The theory of planned behavior (TPB) is one of the commonly used theories on DP (Cronan and Al-Rafee 2008; Peace et al. 2003). Other theories used in the past studies include deterrence theory (Higgins et al. 2005), self-control theory (Higgins et al. 2007), SCT (LaRose et al. 2005), and model of goal-directed behavior (Perugini and Bagozzi 2001). Peace et al.'s (2003) TPB model indicates that DP is influenced by attitude and subjective norms. TPB is found to be suitable for modeling moral obligation which is a significant predictor of INT in a number of studies (Conner and Armitage 1998). Since UTAUT incorporates dimensions of TPB along with seven other dimensions; we believe that UTAUT is even more suitable for this study.

The NAM

The NAM and its derivatives have been used to explain prosocial behaviors such as donating to charity or working to keep the environment clean (De Groot and Steg 2010; Steg and De Groot 2010; Onwezen et al. 2013; Schwartz 1977). Schwartz was the originator of this model. The NAM has been used in several study situations including reasons why people are involved in pro-environmental actions, individual energy consumption, and other prosocial INTs and behaviors such as donating blood, or volunteering. Prosocial behavior is considered as any act that benefits others. It has been shown that benefiting others or themselves is the primary motivation for those who act prosocially (De Groot and Steg 2010). According to Batson and Powell (2003), the understanding of prosocial behavior and its motivations is a key to personal or group relationships hence the reason it is relevant in many applications such as education, social work, environment, criminal justice, etc. Prosocial behavior, most times, is linked to morality (Batson and Powell 2003). According to the NAM model, prosocial behaviors originate from PNs which reflect "feelings of moral obligation to perform or refrain from specific actions" (Schwartz 1977). The NAM model reflects the fact that the PNs are influenced by two main factors namely: (i) awareness of consequences (ACs)—being aware that performing (or not performing) a certain behavior can lead to certain outcomes or consequences, and (ii) ascription of responsibility or outcome efficacy (AR/OE)—which is the feeling of responsibility for performing a certain behavior.

A number of NAM model interpretations are found in the literature. One of the NAM model interpretations (De Groot and Steg 2010) is shown on Fig. 1 below which is that AC and AR/OE affect PN which in turn affects prosocial behavior. Another interpretation is that the relationship between PN and prosocial behavior is moderated by AC and AR/OE (Steg and De Groot 2010). A third interpretation is that AC affects AR/OE while AR/OE affects PN which in turn affects prosocial behavior (Steg and De Groot 2010; Garling et al. 2003). Figure 1 is referred to as mediation model. With this interpretation, PN is activated when an individual acknowledges that acting prosocially will lead to positive consequences for other individual (i.e., ACs) and when that individual feels responsible for the negative consequences that could result from his/her failure to act (i.e., AR). In effect, if the individual's PNs are not activated, his/her actions (or a lack thereof) will be judged as not appropriate and so no prosocial action will take place. PN is therefore the mediator in the relationship between AR or AC and prosocial INT which may eventually lead to actual behaviors (Schwartz 1977).

Steg and De Groot (2010) set out to compare the different interpretations through five different studies and conclude that overall, a stronger and more logical interpretation is when AC and AR/OE jointly determine PN which in turn determines prosocial behavioral INT (i.e.,

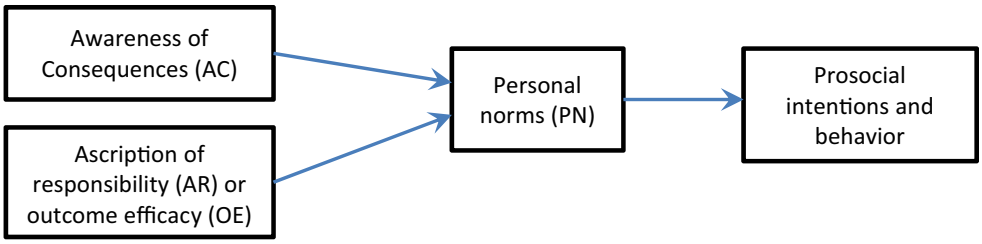

Fig. 1 The Norm Activation model

Fig. 1). The present study investigates the associations of the NAM model based on Fig. 1 interpretation (i.e., NAM as mediation model).

The reason no study has used NAM on DP despite the fact that DP is a major societal phenomenon just like environment or energy consumption could be the fact that researchers fail to see DP as an opposite of prosocial occurrence. Usually, people get involved with DP in order to benefit themselves (or hurt other individuals) which is the reverse of why people donate to charity or work to keep the environment clean. Considering DP through the same lenses as pro-environment or donating blood could further explain the reasoning and motivation behind DP practices. In this study, we model DP as reversed (or anti) prosocial phenomenon. We believe that if DP could be perceived as anti-prosocial, we can then model the reduction of DP practice using NAM just the same way NAM is used to explain prosocial events. There are examples of how NAM can be used to prevent or reduce undesirable practices in the literature. For example, De Groot and Steg (2009) modeled prosocial behavior in the form of the reduction of car use to minimize pollution. Again, there are a few studies (e.g., Carlo et al. 2010; Liable et al. 2008; Miller and Eisenberg 1988) that successfully investigate prosocial and aggressive behaviors together in one study since both are opposite of each other. Onwezen et al. (2013) use NAM to explore the effects of pride and guilt on behavioral INTs. These authors conclude that both desirable emotions (e.g., pride) and negative emotions (e.g., guilt) have strong significant effects on PN and social norms. In the present study, we model DP as a negative behavior or reversed-prosocial behavior which makes it suitable for the NAM. Corbett (2005) explains in her reasonable person model that environmental activists' INTs are motivated by both altruistic and self-interest as well as PNs. Her reasoning offers support to the idea of using NAM to explain DP. Though DP is mostly done because of self-interest reasons, NAM (used mostly on altruistic events) can explain it since altruism and self-interest are opposite sides of the same coin.

In DP issues, for example, the PNs can be activated by beliefs that DP threatens the things the individual values such as motivation for IT advancement and job creation (that is AC beliefs) and the fact that the individual can act to reduce this threat (that is AR beliefs). Reducing DP can be seen as a type of prosocial behavior in technology context because reduced DP increases quality of life by saving money as well as increasing morality or ethical aspects of computing. We believe that NAM can emphasize beliefs about responsibility for causing or ability to alleviate threats of DP.

The UTAUT

The UTAUT model which was proposed by Venkatesh et al. (2003) is a unification of eight acceptance theories and models namely: technology adoption model (TAM), TPB, model combining the TAM and the TPB (C-TAM–TPB), motivational model, model of PC utilization, innovation diffusion theory, theory of reasoned action, and SCT. The original UTAUT is shown to account for over 70 % of the variance in user's INT to use a technology. The UTAUT is depicted in Fig. 2 below and is used to explore the systems user's INT to use a new system and to subsequently continue to use it after the initial experience. According to the model, there are three unified main constructs: performance expectancy (PE) and effect expectancy (EE; taken from TAM), social influence (SI; taken from TPB) that directly affect the behavioral INT to use a given technology; and facilitating conditions (FCs; also taken from TPB) that affects user behavior. Also, there are four moderating variables (gender, age, experience, and voluntariness) that influence the main constructs.

PE is defined as the degree to which a person believes that using the system will help him/her to improve their performance. EE is the degree of ease-of-use of the technology in question. SI is the degree to which a person perceives the importance other people believe he/she should use the technology while FCs is defined as the degree to which a person believes that infrastructure exists to support the use of the technology. In the original UTAUT, FC is proposed to affect use behavior as shown in Fig. 2. FC has been shown to impact the use behavior but it is worth noting that in the initial experimentation stages, FC did not come out as a significant predicator of use behavior (Venkatesh et al. 2003, p. 468). Our modified UTAUT does not include use behavior for two reasons: (a) in the original UTAUT, FC directly affects use behavior

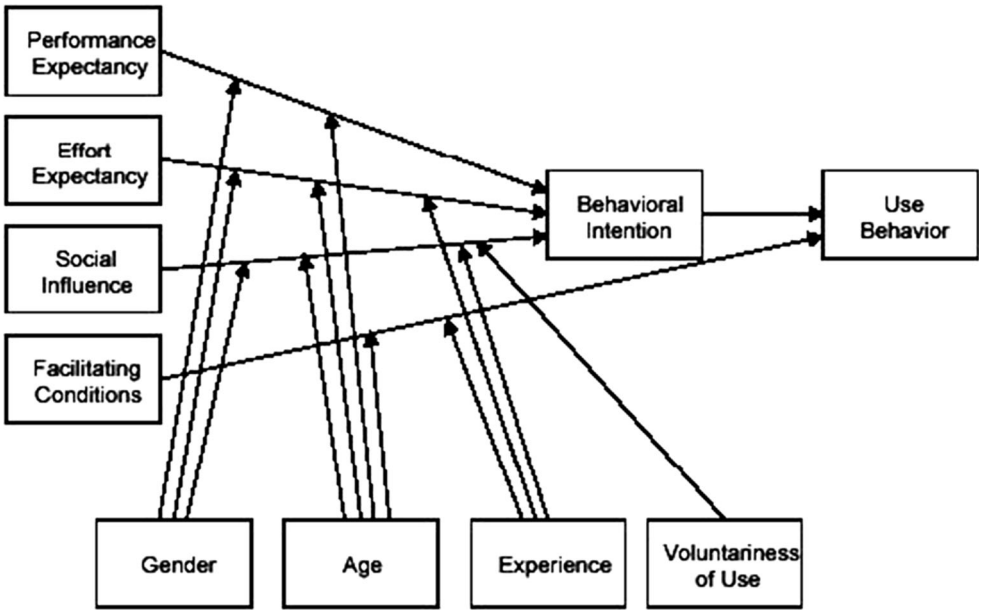

Fig. 2 UTAUT model (Venkatesh et al. 2003)

but since we do not capture the future use behavior, FC is dropped, and (b) we believe that the questionnaire items used to capture use behavior in the original UTAUT are misleading since these items are basically about frequency of PB. Instead of FC, we decided to include PB in the model which has been shown, in previous studies, as a significant determinant of INT (Cronan and Al-Rafee 2008; Ajzen 2002; Hagger et al. 2002).

We modify UTAUT by dropping use behavior and including PB and SEFF to the model. SEFF was part of the original UTAUT experimentations and is defined as the judgment of one's ability to use a technology (e.g., computer-based application) to accomplish a particular job or task. Previous studies provide conflicting findings about the effect of SEFF on the INT to practice DP (Thatcher and Matthews 2012) so it is necessary to explore this factor further. For parsimony sake, we use in this paper: PE, EE, SI, SEFF, and PB as the contributing factors from the modified UTAUT model. In the context of the current study, PE is defined as the degree to which individuals believe that practicing DP will help them improve their performance. EE in this study is the degree of ease to which individuals perceive DP practices to be. And PB is the frequency an individual admits to practicing DP and is measured by the self-reported frequency the participants admit to obtaining illegal copies of digital products in the past.

Since UTAUT incorporated eight different models, including TPB, and given the impressive power of explanation obtained by various researchers in many information systems applications, it is a worthwhile effort to apply the model to DP. Additional justification for using UTAUT on DP is the fact that TPB (an aspect of UTAUT) has been used for DP studies (Cronan and Al-Rafee 2008; Peace et al. 2003) which further strengthens the potential of UTAUT as a suitable tool for understanding DP. UTAUT model and its precursors have been used in several information systems studies to explore not only the acceptance of new IT but also to explore technology-related behavior of users such as examining the role of social media in research practices (Gruzd et al. 2012), acceptance of online social support (Lin and Bhattacharjee 2008), and explaining Internet addiction (Sally 2006). Lescevica et al. (2013) have successfully used UTAUT to analyze future market of some products that are based on the use of choreographies. We believe that these examples form sufficient support for the use of UTAUT on DP. Unlike TPB, UTAUT model does not include attitude toward behavior because attitude toward using technology was not found to be a significant determinant of behavior INT in the original experimentations. Though attitude has been found in previous studies (such as Cronan and Al-Rafee 2008; Peace et al. 2003) to determine behavioral INT, we did not consider it to be as crucial as the other study factors and hence we did not investigate it for parsimony sake. In arguing against inclusion of attitude in UTAUT model, Venkatesh et al. (2003) insist that the role of attitude is very limited in explaining INT and that it is, at best, a partial mediator between salient beliefs and the adoption INT.

It is logical to expect that if a pirated music meets performance expectation and if effort needed to obtain illegal copies is reasonably low, then more people will have the tendency or the motivation to be involved in the practice (i.e., behavior INT). Also, if there is an

encouraging (or abetting) SI, the INT to obtain illegal copies will be heightened (or reduced). This aforementioned reasoning makes UTAUT an appealing model for explaining DP practice.

National Culture and DP

Many studies have been conducted to investigate the impact of culture on IT piracy (Swinyard et al. 1990; Al-Rafee and Rouibah 2010; Yang et al. 2008; Shore et al. 2001; Moores 2008; Husted 2000). Majority of these studies conclude that cultural values do have direct or indirect impact of individuals' decision to pirate copyrighted products. Moores (2008) used data from 57 countries to study software piracy rate and concluded that the rate is determined by cultural factors more so than other factors such as economic wealth, inflation, or legislations. He identified Hofstede's power distance index and uncertainty avoidance as the two cultural dimensions that exert the most impact on DP. Husted (2000) study involved secondary data from 37 countries and Hofstede's scale with the aim of determining how these cultural dimensions affect rate of software piracy. He found only one (individualism) out of five dimensions to have significant direct effect on piracy rate. In his study, other factors were found to have significant effect including GNP per capita and income inequality. Yang et al. (2008) also used secondary data from 59 countries to investigate the effect of some factors including culture on global software piracy. Their findings include the fact that the cultural dimension of individualism negatively relates to piracy rate. That is the more individualistic a society is, the lower the rate of piracy in the society.

Shore et al. (2001) is one of the few studies that use primary data to compare the piracy rate across national cultures. The authors conclude that software ethics are country-dependent and that some of Hofstede's dimensions have some effects on softlifting and software piracy. Swinyard et al. (1990) used a pilot data collected in the US and Singapore to examine cross-cultural differences in morality and attitude toward software piracy. This study also points to the apparent significant effect of culture on software piracy. Using experimental design study based on religion, law, and awareness, Al-Rafee and Rouibah (2010) join the group of studies that demonstrate the significant effect of culture on piracy. Their study revealed that religion and awareness contribute to a decline in DP. Depken and Simmons (2004) established the association between power distance and software piracy: the high power countries tolerate piracy more than others. Some authors seem to agree that individualist countries are less likely to pirate than collectivist countries (Bagchi et al. 2006; Shore et al. 2001; Moores 2010). The common reason identified by these authors is that collectivists are more group-oriented and more willing to share substances and information than individualists who have higher regard toward individual accomplishments and inventions.

Evidence is available supporting the view point that technologically developed nations seem to pirate less than the less-technologically developed nations (Bagchi et al. 2006; Piquero and Piquero 2006). Piquero and Piquero (2006) find out that computer infrastructure affects the rate of piracy: the less the number of personal computers and the Internet access, the higher the rate of piracy. Bagchi et al. (2006) used secondary data from 37 countries to establish the link between IT infrastructure and piracy: the more the IT infrastructure, the lower the rate of piracy. Also, Shadlen et al. (2005) confirm that the more a nation invests in research and development, the less the nation is likely to practice piracy. The above discussions provide justification for the reason we choose the US and India for the present study. The two countries are different in every dimension of Hofstede scale. The US represents a technologically developed nation while India is a good example of a less-technologically developed nation. Based on Hofstede's dimensions of cultural values, the two countries are different especially in individualist–collectivist. Individualist–collectivist is the most used Hofstede's dimensions in research studies that compare multiple cultures. The US is an individualist society (score of 77) compared to India (score of 44). The second objective of the present study is to use the proposed integrated NAM–UTAUT model to explore the moderating effect of culture between these two nations.

The Integrated NAM–UTAUT Model and Hypotheses

The NAM model has been integrated with other model or theories in past studies. For example, some authors have integrated NAM with TPB (Abrahamse et al. 2009; Peters et al. 2011; Kaiser et al. 2005; Huijts et al. 2013). These studies conclude that the combined model has a better predictive power than either NAM or TPB alone because while NAM variables predict the effect of moral on behavioral INT, TPB variables predict the effect of personal interest on behavioral INT (Huijts et al. 2013). The NAM and UTAUT have strong complementary values in explaining behavior. The main differences between NAM and UTAUT are: (a) NAM focuses on altruism (which is to say the benefits to others are considered first before self-interest) whereas UTAUT stresses personal utility, (b) NAM emphasizes internal or PNs whereas UTAUT focuses on external or societal norms. Both models have been used in previous studies to analyze the reasoning behind behavioral INT of individuals to take part (or

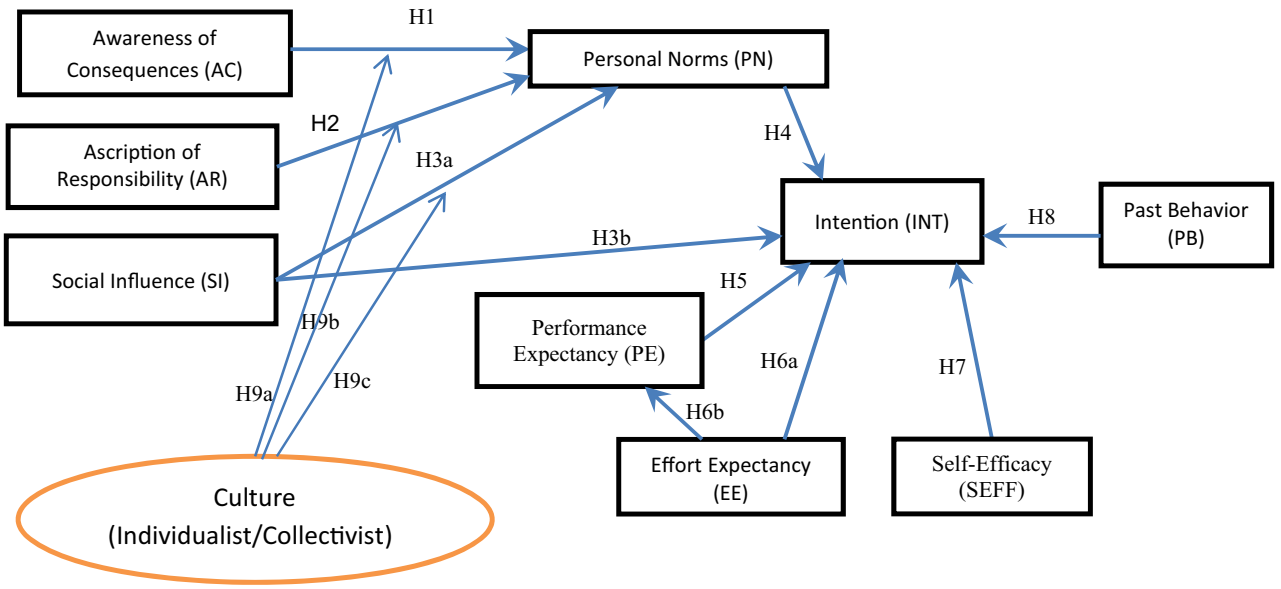

Fig. 3 The integrated NAM–UTAUT model

abstain from) prosocial, or anti-prosocial events (in the case of NAM) or use of a new technology (in the case of UTAUT). Given that DP is technology-based as well as an anti-prosocial episode, we believe that a model that integrates NAM and UTAUT (as shown in Fig. 3) is more suitable in explaining the reasons individuals embark on DP practice.

Taylor et al. (2009) reviewed types of models used in the study of DP across social science disciplines and concluded that these models are mostly cognitive and consequentialist in nature and as such limited in their power to explain the psychological factors affecting DP. The authors went on to recommend models that are attitude-based since these type of models are believed to account more fully for the motivation and the role of emotions in the study of behavioral INT. Until this time, NAM and UTAUT have not been integrated and no studies are found that use NAM, UTAUT, or a combination of the two models to explain DP. The current study attempts to respond to Stern's (2000) call in the area of DP. This approach is appropriate and logical given the fact that NAM is altruistic while UTAUT is focused on self-interest and a person could be motivated by both altruistic and selfish reasons for the same INT (Corbett 2005). We believe that integrating NAM and UTAUT constructs may result in a wider range of impacts on DP INT than either model could. Peace et al. (2003) specifically conclude that PN is the best predictor of INT to pirate software and as discussed earlier, NAM models PNs.

The NAM–UTAUT integrated model as proposed in the current study has captured PNs and is believed to be able to better explain the factors affecting DP. In effect, we are attempting to show, through the proposed model, that the driving forces surrounding DP can better be explained from both normative and technology-based perspectives. NAM alone underscores the effect of PNs on INT while UTAUT by itself emphasizes the effects of SI, PE, EE, SEFF, and PB on INT. The proposed model simply explores the effect of PNs on INT in the presence of other variables taken from UTAUT model. The rest of the proposed integrated model is explained below.

Intention (INT)

INT is described as the extent to which an individual person has developed a plan to perform or not perform some specific action in future time. Though not an actual behavior, INT has been used by many studies as an indicator that captures the motivation for future actual behavior (Udo et al. 2010; Venkatesh et al. 2003; Rai et al. 2002). In the case of DP, INT is the pirate's plan to engage in DP in the future and is a function of PN, SI, PE, EE, SEFF, and PB.

Awareness of Consequences (ACs)

ACs is one of the three original factors in NAM and reflects the ability of an individual to be aware that performing (or not performing) a certain behavior can lead to certain outcomes or consequences. In the context of DP, AC is the ability for an individual to be aware of the consequences for involving in pirating. Several studies (De Groot and Steg 2009; Steg et al. 2005; Peters et al. 2011; Kaiser et al. 2005; Huijts et al. 2013) indicate that AC positively affects PN. De Groot and Steg (2009) used three separate studies

(energy policy, car use reduction, and construction of distribution centers) to show that AC has a positive effect on PN. Also Huijts et al. (2013) find AC to be significant variable that explains PN in a study that used NAM to examine the INT of people to demonstrate against building hydrogen plants which have negative effect on the environment. Specifically, we predict that the more people are aware of the consequences of DP, the more their PNs will be influenced. The AC-related hypothesis for the study, as shown on the proposed model, is:

H_1 ACs of DP positively influences the PNs of those who engage in the practice.

Ascription of Responsibility (AR)

AR is defined as the feeling of responsibility for performing a certain behavior. Schultz et al. (2005) document the effect of AR on PN in their study of environment. The participants were asked to indicate how serious were each of the six identified environmental problems in their community and also worldwide. A single item was then used to ask the participants to indicate how responsible they feel for the local environmental problems and also for the worldwide environmental problems. The study (Schultz et al. 2005) findings indicate that AR has a positive effect on PN in both cases. The study conducted by Steg and De Groot (2010) also leads to the same conclusion that AR influences PN in a positive way. With regard to the present study, AR is a sense of feeling responsible for the adverse effects of DP which a pirate may experience. We predict that if people have strong feeling of responsibility for the adverse effects of DP practice, their PN may be positively influenced but if they have no feeling of responsibility their PN will be unchanged toward DP and hence they will continue the practice unabated. Therefore, our AR-related hypothesis is as follows:

H_2 AR for the adverse effects of DP positively influences the PNs of those who engage in the practice.

Social Influence (SI)

Venkatesh et al. (2003) describe SI as the degree to which a person perceives it is not socially acceptable to use a certain technology. SI could be the individual's perception of his/her employer's, colleague's, or customer's opinion of his/her technology adoption and use (Venkatesh and Morris 2000). It is the degree of attention an individual pays to his/her referral groups (Hsu and Lu 2004). Some authors have investigated the effect of SI on IT adoption and have come to the same conclusion that it has a significant influence (Eckhardt et al. 2009; Lua et al. 2005; Hsu and Lu 2004). This influence could enhance the motivation to (or restrain from) using the technology in question. In the case of DP, we argue that a strong SI may lead to a more positive PN and a less INT to engage in DP practice. Accordingly, the following SI-related hypotheses are presented:

H_{3a} SI positively affects PN about DP.

H_{3b} SI negatively affects (i.e., discourages) INT to engage in DP.

Personal Norm (PN)

PN is described by Schwartz (1977) as "feelings of moral obligation to perform or refrain from specific actions." PN is activated when an individual acknowledges that acting prosocially will lead to positive consequences for other individual (i.e., ACs) and when that individual feels responsible for the negative consequences that could result from his/her failure to act (i.e., AR). In effect, if the individual's norms are not activated, his/her actions (or no actions) will be judged as appropriate and so no prosocial action will take place. PN is therefore the mediator in the relationship between AR or AC and prosocial INT which could lead to actual behavior in the future. In the present study, PN is interpreted as the moral obligation people may feel that makes them engage or refrain from DP. Those with little moral feelings will be more engaged in DP than those with strong moral feelings. Some authors (Schwartz 1977; Schwartz and Howard 1980; Huijts et al. 2013) have established a significant positive relationship between PN and prosocial INT. Since DP is a reversed-prosocial episode, PN is expected to be negatively related to INT. These authors have shown that PN guides behavioral INT. In fact, Huijts et al. (2013) maintains that PN is the most important predictor of INT to act prosocially. It is worth noting that PNs are different from social norms. Social norms are activated and sustained by the external environment whereas PNs stem from the inner person of the individual.

The PN-related hypothesis can be stated as:

H_4 The more the PNs of an individual are activated with regards to DP, the less the individual's INT to engage in DP.

Performance Expectancy (PE)

PE is defined in UTAUT as the degree to which a person believes that using the system or an approach will help him/her to improve their job performance. An example of one of the original items (Venkatesh et al. 2003) used in measuring PE is "I would find the system useful in my job." In the context of the present study, PE is defined as the degree to which a pirate believes that using pirated digital product will help improve his/her task performance.

For example, if a pirate believes that certain pirated application software would help improve his/her job or task performance, then to the pirate the PE of this software is higher. PE has consistently been found to be a significant predictor of INT (Wu and Wang 2005; Wu et al. 2006; He and Lu 2007. The investigation of 3G services in Taiwan by Wu et al. (2008) confirmed PE as having a positive significant influence on INT. He and Lu (2007) conclude that PE plays a significant role in consumers' INT to use mobile advertising. PE was also found to be a significant predictor of INT to use e-filing system (Schaupp et al. 2010). In the case of DP, we postulate that if the pirates expect a high task performance from illegal copies of digital products, they will likely be more engaged in DP practice. The PE-related hypothesis is framed as:

H_5 Higher PE can lead to higher INT to engagement in DP practice.

Effort Expectancy (EE)

EE is the degree of ease-of-use of the technology in question. Several studies have concluded that EE does positively affect both the user's behavioral INT to use a new system and his or her perceived PE (Shih 2004; Kuisma et al. 2007; Kim et al. 2009; Yoon 2009; Castaneda et al. 2007). If a user perceives an information system to require little or no effort, he/she will likely intend to continue to use the system after the initial experience (Davis 1989). In the case of DP, if pirating is easy or effortless then the individuals will be more likely to intend to engage in the practice. The EE-related hypotheses can be stated as:

H_{6a} EE is positively related to PE.

H_{6b} EE is positively related to INT to engage in DP.

Self-Efficacy (SEFF)

SEFF is defined as the judgment of one's ability to use a technology (e.g., computer or Internet) to accomplish a particular job or task (Bandura 1986). SEFF was hypothesized to be insignificant in INT to adopt a new technology, as it is argued that the effect is minimized by the fact that part of it is captured by EE (Venkatesh et al. 2003). In contrast, Compeau et al. (1999) found that SEFF can be influential in developing individual esteem and sense of accomplishment and also in improving performance. Thatcher and Matthews (2012) conclude that SEFF has no significant effect on DP INT. Thatcher and Perrewe (2002) and Igbaria (1995) also investigated the role of SEFF in the use of a given technology and concluded that it plays a significant and positive role. The end-user's skill level in manipulating a given technology has been shown to affect the outcome of the system's effectiveness (Kuisma et al. 2007; Kim et al. 2009). Ford et al. (2003) established a strong relationship between individual differences and behavior in Internet search. Rowley (2006) argues that increasing a customer's knowledge and skill sets is a requirement for strategic use of IT. It has been alleged that some digital pirates engage in the DP practice for the thrill and for proving to themselves (and others) that they possess the knowhow (Zhang et al. 2009). It can be argued that DP is seen by pirates as a performance enhancer and its use INT may also be dictated by an increased self-esteem. SEFF is used in the present study because of the importance of the pirate's judgment of his/her ability to engage in DP without being caught. Those pirates with high SEFF may have a reduced chance of being caught. Also, research findings are conflicting regarding the effect of SEFF on INT to practice DP (Thatcher and Matthews 2012); it is therefore necessary to further investigate it. The SEFF-related hypothesis therefore is:

H_7 SEFF positively influences INT to engage in DP.

Past Behavior (PB)

PB is defined as the frequency of occurrence of a certain behavior in the past and is believed to positively influence INT (Taylor et al. 2009). Hagger et al. (2002) indicate that PB is a determinant of both INT and actual behavior but Ajzen (2002) points out that PB is not always a good predictor of future behavior. According to him, only when INT and behavior are compatible can one expect PB to determine both INT and actual behavior. Cronan and Al-Rafee (2008) conclude that the more frequent the past piracy behavior, the greater the individual's INT to pirate digital products. Vida et al. (2012) further confirm that PB increases the future INT to practice DP. It makes sense to think that if an individual had previously engaged in DP, he/she would more likely have the INT to continue the practice. The PB relevant hypothesis can be stated as:

H_8 The more the frequency of PB on DP, the greater the INT to continue with the practice.

Moderating Effect of Culture Using NAM–UTAUT

Since the users' culture has been shown in many past studies (e.g., Moores 2008; Shore et al. 2001; Husted 2000; Leidner and Kayworth 2006) to have direct or indirect effect on aspects of IT including DP, it is a worthwhile effort to explore the moderating effects of culture further (Baron and Kenny 1986; Henseler and Fassot 2010). According to Moores (2008), Hofstede's power distance index and uncertainty avoidance have the most influence on DP compared to other factors (economic wealth,

inflation, or legislations) he investigated. Husted (2000) identifies individualism as the only cultural dimension with a significant impact on piracy. Unlike Moores (2008), Husted found non-cultural factors (e.g., income inequality and GDP per capita) to play a more dominant role on the rate of software piracy. Yang et al. (2008) is one of the studies that confirm the fact that the cultural dimension of individualism negatively relates to piracy rate. Their finding indicates that more individualistic societies seem to practice less DP.

Given the integrated model proposed in this study we suspect culture to play an important role in moderating the relationship between AC, AR, and SI on one side and PN on the other side. Since most of the previous studies discussed above find cultural to have some impact on piracy, we postulate that such impact would be in the way culture moderates the relationship between PNs and its three predicting variables as shown in Fig. 3. In this preliminary attempt to explore the effect of culture on INT to practice DP, we use an integrated NAM–UTAUT model to explain the driving forces behind DP practice in the US and India. The two nations are very different in Hofstede's cultural dimensions. The greatest differences between the two nations are on individualism–collectivism and power distance indexes. Based on the Hofstede's dimensions, India is a collectivists' society while the US is individualists' society. The difference in people's behavior from these two groups lies with how each group responds to in-groups and out-groups (Sia et al. 2009). According to Sia et al. (2009), collectivists, such as Indians, prefer to interact more with in-group members than out-group members whereas the individualists (e.g., the US) are indifferent toward both in-group and out-group members. The authors highlight this as the main difference between any two opposite cultural groups. For the purpose of the present study, the consequences of the difference in behavior between the two groups could be as follows: (1) collectivists are likely to be more aware of the consequences of DP than individualists since information propagate more rapidly within the collectivists group, (2) individualists are likely to display more AR than collectivists since collective responsibility is harder to obtain than individual responsibility, and (3) SI is likely to be stronger among the collectivists because this group values peer endorsement more than the individualists (Sia et al. 2009).

The relevant hypotheses for exploring the moderating role of national culture can be stated as follows:

H_{9a} The positive impact of ACs on PNs will be stronger in collectivist culture than in individualist culture.

H_{9b} The positive impact of AR on PNs will be stronger in individualist culture than in collectivist culture.

H_{9c} The positive impact of SI on PNs will be stronger in collectivist culture than in individualist culture.

The first eight hypotheses originate directly from the proposed research model (Fig. 3) above. The first three hypotheses (H_1, H_2, H_{3a}, and H_4) are about the basic NAM while the next four hypotheses ($H_{5–8}$) are about the UTAUT model. The ninth hypothesis is about the role of national culture on DP as captured by the proposed research model.

Methodology

Procedure

The same pre-tested survey instrument was used in both Indian and the US participants. From India, 331 usable responses and from the US, 231 usable responses were obtained and used in the study. The US participants were undergraduate students from a large Southwest US University while the Indian participants were also students from a major public university in India. English was the language of instruction in both countries. The survey was administered within the same semester in both countries. All the participants were informed that participation was voluntary and that only the aggregated results will be published with no indication of individual participants. The participants were instructed not to take part in the study if they had no experience with DP. The non-responses bias was not detected in a separate test conducted for this purpose.

The demographics of the two groups of participants are shown on Table 1. Majority of the US participants (89 %) were in the age range of 20–30 years with only 10 % being older than 30 years compared to the Indian participants with 66 % in the 20–30 years bracket and about 34 % of them being older than 30 years of age. Overwhelming majority of Indian participants were males (84 %) compared to the US participants with majority being females (54 %). Over one-third of the participants expressed no guilty feeling for practicing DP. The percentage of participants who expressed no guilt was about equal in each country: 38 and 37 % in India and the US, respectively. But when it comes to the question about INT to continue to practice DP, Indian participants (33 %) outnumber the US participants (17 %), indicating that higher percentage of Indian participants intends to continue with the practice. About 38 % of Indian participants claimed they use pirated products at work while about 75 % of them claimed to have pirated products at home. In the US, 13 % of the participants claimed to use pirated products at work while 49 % claimed to have the unauthorized digital products at their homes.

Table 1 Demographics of participants

Descriptions	India (%)	US (%)
Age (DG3)		
20–30 years	66	89
31–40 years	32	8
>40 years	2	2
Gender (DG4)		
Male	84	46
Female	16	54
No guilty feeling for DP (D25)	38	37
Guilty feeling	34	36
Intention to continue to practice	33	17
DP in next 12 months (T17) no intention to continue	19	57
Practice DP at work (DG1)	38	13
Practice DP at home (DG2)	75	49
Currently have pirated products?	67	34
Know of others with pirated products?	16	25
Number of times in last 6 months		
1–2	31	64
3–5	18	11
>5	32	0

Instrument

A research model has been proposed in the present study based on literature review of previous studies. It is grounded on two adopted theories: the NAM and UTAUT. A survey instrument was developed based on current relevant literature and the survey items were taken from previous studies as shown in "Appendix 1: The NAM–UTAUT Constructs and Source" section. The survey items were selected from previous studies in order to ensure that the content validity is preserved but modified to suit DP. The items that capture the three factors of NAM (ACs, AR, and PN and INT) were taken from Steg et al. (2005) and Schwartz and Howard (1980) while the items measuring the five factors of UTAUT (PE, EE, SI, SEFF, INT) were adapted from Venkatesh et al. (2003) as shown on "Appendix 1: The NAM–UTAUT Constructs and Source" section. PB item was taken from Cronan and Al-Rafee (2008) which is the same item used in Venkatesh et al. (2003). PB was the only variable in the study captured with only one questionnaire item. Just as in Cronan and Al-Rafee (2008) and Venkatesh et al. (2003), we converted the frequency of PB into five-point Likert scale (1 = never, 2 = 1–2, 3 = 3–5, 4 = 6–10, 5 = >10). A seven-point Likert scale was used to capture the rest of the constructs of variables in the study.

The integrated model in the present study is made up of nine constructs with each being captured by multiple items. For example, AC items measure how deeply the participants believed DP can create serious economic and societal problems. The AC construct was captured with four items (see "Appendix 1: The NAM–UTAUT Constructs and Source" section) which were all on seven-point: strongly disagree (1) to strongly agree (7) Likert scales. The means and standard deviation (STD) for the instrument items are shown on Tables 2 and 3. Cronbach's α, which indicates the reliability, for the AC scale is modest, in the case of India, at 0.712 (the US is 0.793) while the composite reliability is 0.785 for India (the US is 0.780) as shown on Tables 2 and 3. From Tables 2 and 3, it can be seen that the measuring instrument has the required validity and reliability since the Cronbach's α for all the study variables range from 0.712 to 0.921, while the composite reliability ranges from 0.570 to 0.931 in the case of India. For the US, the Cronbach's α for all the study variables range from 0.699 to 0.957, while the composite reliability ranges from 0.763 to 0.964. Table 4 displays the correlations and square root of average extracted of constructs for both nations.

Analysis and Results

PLS modeling was performed using WarpPLS 4.0 software (Kock 2013). Table 5 displays model fit and quality indices of the proposed model. The table also displays the meaning of each index. Each of the nine indices meets and exceeds the acceptable level of a good fit. For example, the acceptable level of average block VIF (AVIF), according to WarpPLS, is less than or equal to 5 and the study's value is 1.376 for India and 1.398 for the US; the recommended Tenenhaus goodness of fit (GoF) is greater than or equal to 0.36 (Kock 2013, 2014) and the study's value is 0.468 and 0.50 for India and the US, respectively. Also the study's statistical suppression ratio (SSR) is 1.0 for both nations whereas WarpPLS 4.0 ranks a model as acceptable if the SSR is greater than 0.70. SSR is the extent to which a model is free from statistical suppression instances (when a path coefficient is greater, in absolute terms, than the corresponding correlation associated with a pair of linked variables; Kock 2013). In effect, the indices generated by WarpPLS 4.0 indicate that the study model is sound and solid for both nations.

Measurement Model Analysis

We conducted a confirmatory factor analysis (CFA) in order to measure the model reliability while convergent validity was assessed by reviewing the *t*-tests for the factor loadings. All items used in the final analysis loaded at acceptable levels (Cronbach $\alpha > 0.70$; Nitse et al. 2004). The CFA loadings clearly indicate the eight major independent variables and the

Table 2 Summary of loadings, reliability, and validity—US

Constructs	Items	Standardized loadings	Mean (1–7)	STD	Composite reliability	Cronbach's α	AVE	VIF
Awareness of consequences (AC, 4 items)	AC1	.968	5.04	1.52	.780	.793	.697	1.301
	AC2	.855	4.84	1.66				
	AC3	.949	5.44	1.40				
	AC4	.939	5.26	1.55				
Ascription of responsibility (AR, 3 items)	AR1	.613	3.46	1.88	.623	.898	.643	1.194
	AR2	.902	2.87	1.72				
	AR3	.893	2.83	1.69				
Personal norms (PN, 6 items)	PN1	.778	3.84	1.76	.903	.888	.782	2.247
	PN2	.940	3.84	1.93				
	PN3	.957	4.17	1.95				
	PN4	.983	4.49	1.83				
	PN5	.969	4.64	1.67				
	PN6	.987	3.78	1.80				
Performance expectancy (PE, 4 items)	PE1	.984	2.84	1.80	.950	.949	.909	1.689
	PE2	.987	3.03	1.85				
	PE3	.997	3.0	1.91				
	PE4	.996	2.62	1.87				
Effort expectancy (EE, 4 items)	EE1	.938	3.66	1.95	.903	.898	.838	1.713
	EE2	.973	3.50	1.99				
	EE3	.981	4.11	2.0				
	EE4	.997	3.65	2.0				
Social influence (SI, 4 items)	SI1	.979	4.14	1.84	.862		.784	1.696
	SI2	.979	4.24	1.89		.814		
	SI3	.974	4.42	1.85				
	SI4	.959	4.64	1.87				
Self-efficacy (SEFF, 4 items)	SEFF1	.997	3.42	1.91	.950	.957	.910	1.772
	SEFF2	.981	3.55	1.90				
	SEFF3	.971	3.45	1.92				
	SEFF4	.992	3.42	1.94				
Past behavior (PB, 1 item)	PB	1.0	1.98	1.32	1.0	1.0	1.0	2.248
Intentions (INT, 3 items)	INT1	.998	2.61	1.72	.964	.962	.984	2.380
	INT2	.998	2.80	1.79				
	INT3	.995	2.61	1.73				

one dependent variable (INT). See "Appendix 2.1: Normalized Pattern Loadings and Cross-Loadings: US" and "Appendix 2.2: Normalized Pattern Loadings and Cross-Loadings: India" sections for factor loadings in both groups. Significant loading of items are shown in bold in tables of Appendix 2.1 and Appendix 2.2. As a measure of discriminant validity, the average variance extracted (AVE) was examined. In this method, the constructs are considered different if the AVE is greater than their shared variance. The square root of the AVE for a given construct (as shown in bold in Table 4) should be greater than the absolute value of the standardized correlation of the given construct with any other construct in the analysis (Anderson and Gerbing 1988). Generally, it is assumed that a construct displays convergent validity if the square root of AVE is at least 0.50. For this study, as shown on Table 4, the square root of AVE values of constructs varied between 0.621 and 0.905 in the case of India and between 0.646 and 0.948 in the case of the US, which confirms the convergent validity of the survey instrument.

Usually, the construct validity is ensured by convergent and discriminant validity. To test for discriminant validity (the degree to which the measurement items are dissimilar), we examined the correlations of the latent variables. No major differences in correlation magnitude or sign were observed among variables. The implication of these results is that the survey instrument was interpreted in the same manner by all respondents in both nations. It also implies that there is no multi-collinearity among the items. PB

Table 3 Summary of loadings, reliability, and validity—India

Constructs	Items	Standardized loadings	Mean (1–7)	STD	Composite reliability	Cronbach's α	AVE	VIF
Awareness of consequences (AC, 4 items)	AC1	0.986	4.68	1.96	.785	.712	.488	1.493
	AC2	0.975	4.69	1.69				
	AC3	0.920	5.45	1.46				
	AC4	0.956	5.64	1.40				
Ascription of responsibility (AR, 3 items)	AR1	0.582	4.80	1.78	.570	.878	.386	1.122
	AR2	0.881	4.14	1.83				
	AR3	0.830	4.12	1.81				
Personal norms (PN, 6 items)	PN1	0.975	4.30	1.83	.913	.893	.636	1.988
	PN2	0.993	3.81	1.90				
	PN3	0.962	4.32	1.85				
	PN4	0.979	4.61	1.74				
	PN5	0.943	4.58	1.74				
	PN6	0.986	4.17	1.90				
Performance expectancy (PE, 4 items)	PE1	0.979	4.26	1.84	.920	.892	.743	1.888
	PE2	0.981	4.35	1.85				
	PE3	0.998	4.09	1.85				
	PE4	0.975	3.56	1.95				
Effort expectancy (EE, 4 items)	EE1	0.987	3.89	1.89	.872	.833	.632	1.610
	EE2	0.992	3.83	1.83				
	EE3	0.903	4.88	1.80				
	EE4	0.987	4.26	1.87				
Social influence (SI, 4 items)	SI1	0.978	3.86	1.80	.791	.712	.514	1.427
	SI2	0.997	3.93	1.83				
	SI3	0.879	4.67	1.81				
	SI4	0.745	4.81	1.99				
Self-efficacy (SEFF, 4 items)	SEFF1	0.982	4.34	1.75	.899	.921	.690	1.547
	SEFF2	0.986	4.20	1.72				
	SEFF3	0.959	4.07	1.67				
	SEFF4	0.980	4.11	1.67				
Past behavior (PB, 1 item)	PB	1.0	2.88	1.45	1.0	1.0	1.0	2.015
Intentions (INT, 3 items)	INT1	0.984	3.60	1.89	.931	.921	.819	1.756
	INT2	0.996	3.91	1.91				
	INT3	0.973	3.55	1.99				

(with a single-item construct) also indicated a good validity with VIF of 2.248 and 2.015 for the US and India, respectively. Overall, the results could be interpreted to mean that most of the variables provide good measures to their respective constructs in each group.

WarpPLS 4.0 was used to test measurement reliability (Kock 2014). WarpPLS 4.0 is proven to be more robust than other techniques. In terms of the parameter estimates (factor loadings), the loading items for each factor were set exactly as suggested by the model (Kock 2014). There was no cross-loading of items of the constructs used in the study. The metric for each scale was established by fixing the coefficient for one indicator to 1.00 for each of the nine factors. Other than the fixed loadings, each item evidenced highly significant *t*-statistics ($p < 0.000$), suggesting that all indicator variables provide good measures to their respective constructs. These results generally supported the convergent validity of the indicators (Anderson and Gerbing 1988).

Structural Model Fit Analysis

After establishing the adequacy of measurement model, the structural model was next examined to test the hypotheses. The results are summarized in Table 6. All three NAM independent constructs have a significant impact on PN or PN in both cultures, with R^2 of 0.54 and 0.54 for India and the US, respectively. Also all five UTAUT independent variables (including PN) have a significant impact on INT

Table 4 Correlations and square root of average extracted of constructs—India and US

Cultures	AC	AR	PN	PE	EE	SI	SEFF	PB	INT
India									
AC	**0.699**								
AR	0.204	**0.621**							
PN	0.559	0.286	**0.798**						
PE	−0.164	0.058	−0.223	**0.862**					
EE	−0.164	0.010	−0.181	0.509	**0.795**				
SI	0.274	0.139	0.485	−0.330	−0.213	**0.717**			
SEFF	−0.112	0.076	−0.169	0.548	0.401	−0.182	**0.831**		
PB	0.342	0.065	0.464	−0.516	−0.480	0.367	−0.424	**0.730**	
INT	−0.281	−0.061	−0.326	0.464	0.506	−0.324	0.413	−0.566	**0.905**
US									
AC	**0.697**								
AR	0.203	**0.436**							
PN	0.456	0.372	**0.782**						
PE	−0.195	0.046	−0.157	**0.909**					
EE	−0.117	−0.032	−0.079	0.425	**0.838**				
SI	0.257	0.246	0.628	−0.121	−0.079	**0.784**			
SEFF	−0.071	−0.031	−0.092	0.477	0.551	−0.156	**0.910**		
PB	−0.141	−0.094	−0.264	0.273	0.375	−0.154	0.413	**0.695**	
INT	−0.215	−0.127	−0.296	0.577	0.562	−0.180	0.528	0.540	**0.948**

Note square roots of average variances extracted (AVEs) shown on diagonal

in the expected direction ($p < 0.001$) with R^2 of 0.42 and 0.62 for India and the US, respectively. In both nations, PN and SI are negatively associated with INT while PE, EE, SEFF, and PB are positively associated with INT as expected.

According to Wold (1985), the quality criteria used in judging structural model fit are (a) path coefficients, (b) composite reliability, and (c) R^2. For a confirmatory model, a composite reliability of 0.7 or better, and an R^2 of 0.67 indicate a good model (Chin et al. 1996). Chin et al. (1996) rates R^2 of 0.67, 0.33, and 0.19 as "substantial," "moderate," and "weak," respectively. In the proposed model, the composite construct reliabilities range between 0.579 and 0.931 for India and between 0.763 and 0.964 for the US (see Tables 2 and 3). Based on these three quality criteria, the proposed model is somewhere between substantial and moderate in both countries. Figures 4 and 5 display the path coefficients and the significant levels for the Indian and the US studies, respectively. In each culture, all of the model paths are significant at least at the $p < 0.05$ level except SI → PN with $p < 0.09$ in the US and PE → INT with $p < .06$ in India. PB → INT path was highly significant ($p < 0.001$) in both cultures.

Culture Differences in NAM–UTAUT Model

Now that the proposed integrated model is proven to be valid across cultures, the next effort is to examine the effect of national culture using the model. In this attempt, we use the multi-group PLS analysis (Eberl 2010) described by Keil et al. (2000) which is a component-based structural equation modeling that compares structural model differences across groups. The parameters for comparison are coefficients obtained from WarpPLS which include the path coefficients and their standard errors for corresponding paths across different groups or nations as is the case in this study. The formula for the pooled standard error (S_{12}) is as follows:

$$S_{12} = \left(\sqrt{\frac{(N_1 - 1)^2}{(N_1 + N_2 - 2)} \cdot S_1^2 + \frac{(N_2 - 1)^2}{(N_1 + N_2 - 2)} \cdot S_2^2} \right) \cdot \left(\sqrt{\frac{1}{N_1} + \frac{1}{N_2}} \right),$$

$$t_{\text{spooled}} = (\text{PC}_1 - \text{PC}_2) / \left[S_{\text{pooled}} \times (1/N_1 + 1/N_2) \right],$$

where S_{12} is the pooled estimator for the variance, t_{spooled} is the t-statistic with $(N_1 + N_2 - 2)$ degrees of freedom, N_i is the sample size of dataset for nation$_i$, SE_i is the standard error of path in structural model of nation,$_i$ and PC_i is the path coefficient in structural model of nation$_i$.

Considering the Indian model, ACs or AC is the strongest influence on PNs followed by SI and then AR whereas with the US model, SI has the most impact on PN followed by AC and then AR. Table 7 provides the results of the multi-group analysis. In effect, with the Indian participants, AC has the strongest impact on PN indicating that because of the collectivist nature of the Indian participants,

Table 5 Model fit and quality indices

	Study value		Recommended value
	India	US	
Average path coefficient (APC)	0.290	0.318	
Average R^2 (ARS)	0.363	0.399	
Average adjusted R^2 (AARS)	0.358	0.393	
Average block VIF (AVIF)	1.376	1.398	Acceptable if $\leq$5; ideally $\leq$3.3
Tenenhaus GoF (GoF)	0.468	0.500	Small $\geq$0.1, medium $\geq$0.25, large $\geq$0.36
Simpson's paradox ratio (SPR)	1.00	1.000	Acceptable if $\geq$0.7
R^2 contribution ratio (RSCR)	1.00	1.000	Acceptable if $\geq$0.9
Statistical suppression ratio (SSR)	1.00	1.000	Acceptable if $\geq$0.7
Nonlinear bivariate causality direction ratio (NLBCDR)	1.00	1.000	Acceptable if $\geq$0.7

WarpPLS 4.0 model fit and quality indices thresholds	
Average block variance inflation factor (AVIF)	A measure that quantifies the severity of multi-collinearity. It measures how much the variance of reg coefficient is increased because of collinearity
Tenenhaus goodness of fit (GoF)	A measure of model's explanatory power
Simpson's paradox ratio (SPR)	A measure of the extent to which a model is free Simpson's paradox instance (i.e., path coefficient and correlation coefficient having different signs)
R^2 contribution ratio (RSCR)	A measure of the extent to which a model is free from negative R^2 contributions
Statistical suppression ratio (SSR)	A measure of the extent to which a model is free from suppression instances (i.e., path coefficient > correlation coefficient)
Nonlinear bivariate causality direction ratio (NLBCDR)	A measure of the extent to which bivariate nonlinear coefficient provide support for the hypothesized direction of causality

informing the group about the consequences of DP is the most effective way of minimizing the practice. A collectivist society is more likely to share the information on the consequences of DP and so the desired information will propagate speedily among the group members. Hence, their PN will be more positively impacted against DP than in individualist society. In the US, SI is the most influential factor that impacts PN, which implies that the US participants value more the SI than do the Indian participants. This finding is out of step with the common belief and notion that individualists are less influenced by the opinions of important others and therefore less likely to respond in accordance with their peers compared to the collectivists. The multi-group analysis results in Table 7 indicate that there is a significant difference in the effect of AC on PN and also in the effect of SI on PN caused by cultural differences between India and the US. However, the difference in the AR–PN path coefficient between the two nations is not significant implying that though AR–PN path is significant in each of the two nations; national culture does not play any statistically significant role. Hypothesis H_{9b} is the only unsupported one in the study meaning that there is no difference caused by culture in terms of how the two groups claim responsibility on DP. The interpretation could be that the two cultures are nearly similar in their sense of responsibility on DP.

Discussion

The present study aimed at using the NAM–UTAUT integrated model to explain the driving forces for DP. This study secondly aimed at using the proposed model to explore the role of culture in DP by comparing two different cultures: India and the US. The motivation for this study was the fact that the integrated model could yield a more powerful explanation for DP practice and also to validate the model across cultures. The study findings can be summarized as follow:

(1) NAM–UTAUT model is effective in explaining the factors of DP and hence how the practice could be mitigated. All 10 paths are highly significant for each culture and based on R^2 values, the integrated model can be ranked somewhere between substantial and

Table 6 Path coefficients, p value, R^2—US and India

Paths	US			India		
	Standardized coefficients	Significance p value	Adjusted R^2	Standardized coefficients	Significance p value	Adjusted R^2
AC → PN	0.25	<.001		0.40	<.001	
AR → PN	0.20	<.001		0.29	<.001	
SI → PN	0.51	<.001	0.54	0.35	<.001	0.54
SI → INT	−0.07	<.09		−0.13	<.001	
PN → INT	−0.17	<.005		−0.08	<.05	
PE → INT	0.32	<.001		0.07	<.06	
EE → PE	0.43	<.001	0.183	0.53	<.001	0.28
EE → INT	0.27	<.001		0.27	<.001	
SEFF → INT	0.15	<.001		0.16	<.001	
PB → INT	0.25	<.001	0.62	0.22	<.001	0.42

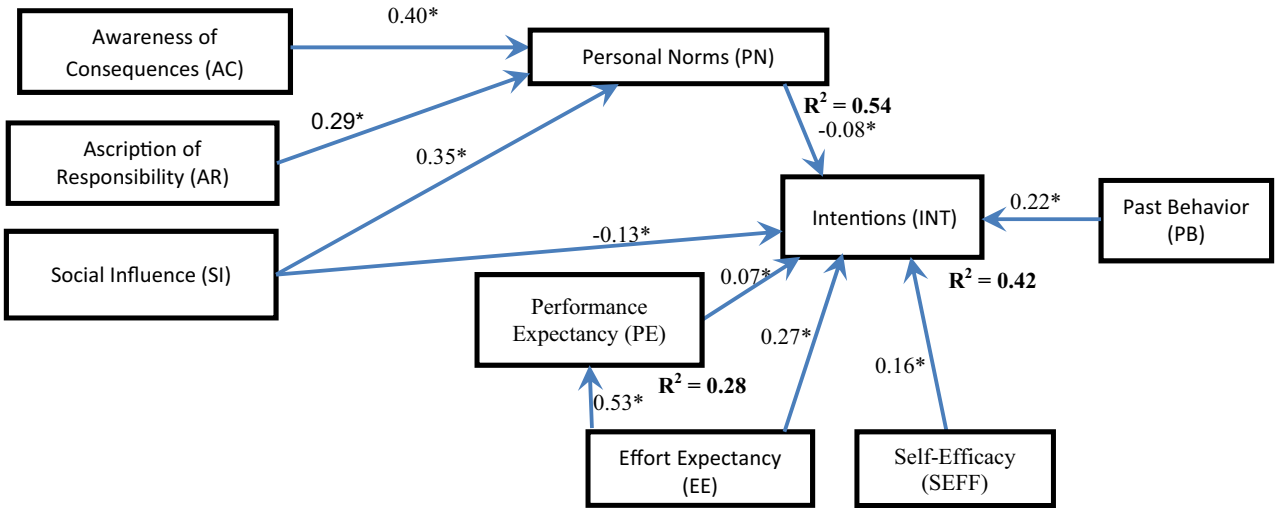

Fig. 4 Tested model—India

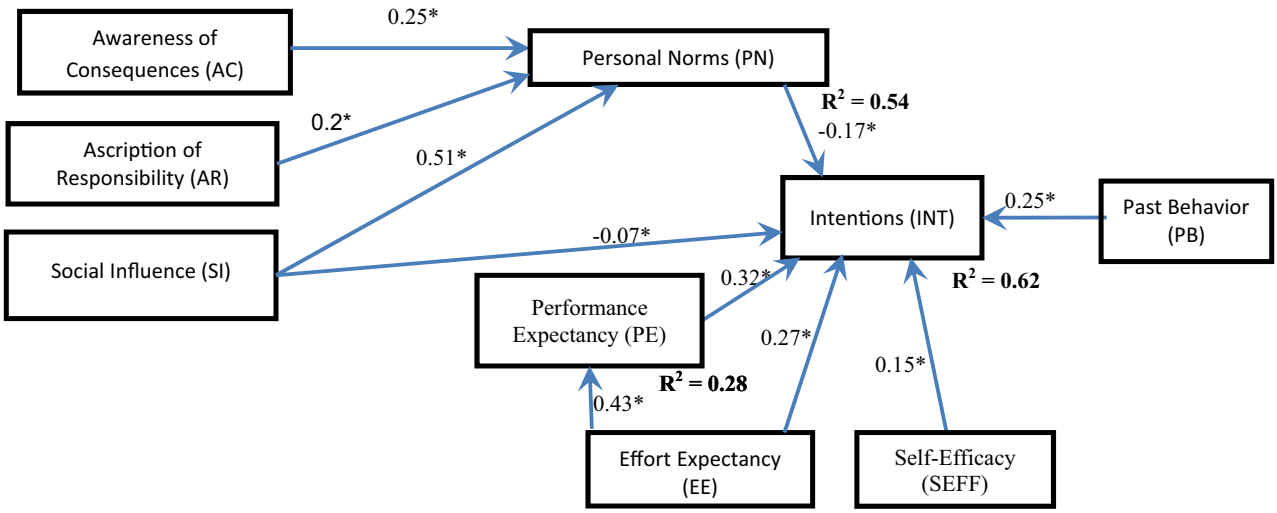

Fig. 5 Tested model—US

Table 7 Path comparison based on culture

Paths	US path coefficient	India path coefficient	$t_{spooled}$	Hypothesis supported?
H_{9a}: AC → PN	0.25	0.40	−2.069	Yes; $p < .04$
H_{9b}: AR → PN	0.20	0.29	−1.2412	No; $p < .22$
H_{9c}: SI → PN	0.51	0.353	2.1652	Yes; $p < .03$

moderate (Chin et al. 1996). In essence, all the hypotheses (except H_{9b}) are supported.

(2) In each culture, ACs, AR, and SIs positively affect PN. This finding clearly indicates that NAM can be used to explain an undesirable event just as the model has been effectively used to explain desirable events.

(3) PN has a negative impact on INT to pirate in each culture. This is a logical finding since pirating is an anti-social phenomenon. NAM usually reflects a positive effect of PN on prosocial INT such as blood donation or giving to charity.

(4) In each culture, SI exerts both direct (negative) and indirect (positive) impacts on the INT to pirate.

(5) PB or frequency of pirating in the past is shown to have a positive effect on INT to pirate in each culture (same conclusion as Cronan and Al-Rafee 2008).

(6) SI has a stronger impact in the US than in India. We expected an opposite finding since collectivists (say Indians) value peer endorsement and make reference to in-group rather than out-group. A possible explanation could be that some of participants did not fully understand parts of the questions or statements on the questionnaire.

(7) ACs has a stronger impact in India than in the US. Logically, collectivists are likely to be more aware of the consequences of DP than individualists since information propagate more rapidly within the collectivists group.

(8) AR is a significant predictor of PN in each culture but there is no cultural difference in its effect as far as India and the US are concerned.

NAM has been shown to be effective in explaining altruistic behavior while UTAUT has equally been shown to be effective in explaining technology-related behavior and DP is both a reverse of altruistic and a technology-related phenomenon; leading us to believe that the NAM–UTAUT model is more comprehensive and powerful in the case of DP. The results strongly confirm our suspicion. As shown in Figs. 4 and 5, all 10 path coefficients are highly significant at $p < 0.01$. These findings are significant contribution to the relevant body of knowledge but the more significant outcome of this study is the resulting research model and the accompanying survey instrument which can be used by researchers in the future to investigate DP or similar topics.

NAM portion of the proposed integrated model is significant ($R^2 = 0.54$ for India and 0.54 for the US). With this result, we have established for the first time that NAM can be used to explain the INT to practice DP (an anti-social phenomenon). As confirmed by previous studies (Huijts et al. 2013; Steg and De Groot 2010) ACs or AC and AR or AR both positively determine pirates' PN. Accordingly, H_1 and H_2 are supported by these findings. As a new dimension and also an extension to NAM, SI is found to play two significant roles in the integrated NAM–UTAUT model. SI is a strong predictor of PNs in each culture. The stronger the SI experienced by the pirates, the more positive their PNs. In either culture, SI is also a predictor of INT or INT to pirate. The results indicate that SI positively affects the pirates' PN which in turn, adversely impacts their INT to practice DP. As it turns out, SI with its dual role may be the most important factor in explaining DP, especially in the US. The path coefficient between SI and PN is 0.51 and 0.35 for the US and Indian participants, respectively (with $p < 0.001$). The path coefficient between SI and INT is −0.07 and −0.13 for the US ($p < .09$) and India ($p < .01$), respectively. With these results, H_{3a} and H_{3b} are supported in each nation. In effect, SI, AC, and AR jointly and positively explain PN with a sufficient ability to explain 54 % of the variance in DP in each culture. The implication of this finding is that if the AC, AR, or SI for a potential pirate is enhanced or boosted, the individual's PNs will be proportionally increased and of course, increased PN can lead to decreased INT to practice DP. To help curb DP, vendors and interested parties should work on increasing the SI of the suspected or potential pirates. This may include programs that encourage social consciousness of the danger of DP. For example, DP could be traced to unemployment for young people since DP decreases innovation and job creation.

We also establish that in either culture, PN negatively mediates the effect of AC and AR on INT as maintained by the original NAM. That is to say the stronger the PN, the less the degree of INT to practice DP. As shown in Figs. 4 and 5, the path coefficient between PN and INT is −0.08 and −0.17 for India ($p < .05$) and the US ($p < .001$), respectively. This finding confirms the conclusion reached by previous studies (such as Steg and De Groot 2010). This result supports hypothesis, H_4 and also provides the answers to one of our research questions. It can be concluded that NAM is as good a tool (if not better) for explaining DP INT as it is for prosocial events.

As stated earlier, the contributions of UTAUT to the proposed integrated model are SI, PE, EE, SEFF, and PB effects on INT. The readers are referred to the discussion on the effects of SI above. PE or perceived ease-of-use has a positive, significant effect on INT and so do EE, SEFF, and PB thereby supporting hypotheses H_{5-8} in both the US and India. The effects of these four variables on INT have been established in previous studies though with different applications than DP. Our study's findings confirm Venkatesh et al.'s (2003) conclusions that PE positively influences INT to use a given technology. Our results indicate that those participants who expected DP to help them with their job performance also reported their INT to continue in the practice. Stated differently, our findings indicate that if pirated software happens to be less useful in terms of accomplishing one's tasks, then there will be less interest or INT to pirate it. The implication of this finding could be that vendors of digital products should consider building in feature-disabling capability in pirated copies such as turning off crucial features in a product during the process of making multiple copies.

EE or EE is found in this study to positively affect INT. This finding is similar to many previous studies such as Yoon (2009) and Davis (1989). We find out that, participants who intend to continue with DP practice are those ones who find it easy to pirate the digital products in question. The participants who use much effort to obtain pirated products seem to indicate less INT to continue with the practice. The lesson for digital product owners should be to find ways to build-in barriers or obstacles with the sole aim of discouraging DP. SEFF or SEFF (defined as the judgment of one's ability to use a technology) is also found to be positively associated with INT thereby confirming the finding of previous studies (e.g., Compeau et al. 1999; Thatcher and Perrewe 2002; Igbaria 1995). The digital pirates belong to the high-skill group in the society and in the workplace. The low-skill individuals are less likely to engage in DP. The implication of this finding could be that 80 % of the efforts on antipiracy should be directly at 20 % of the top potential pirates. This type of thinking could help with criminal investigation, law enforcement, and even strategic investment in antipiracy technologies.

Another interesting conclusion of the present study is on the effect of culture as captured by the UTAUT portion of the integrated model. As noted earlier, all the four UTAUT factors significantly affect INT to pirate. However, no significant differences exist between the two cultures when the UTAUT path coefficients are compared. It can be concluded that India and the US are nearly similar in terms of the moderating role of SI and also in terms of their PE, EE, and SEFF. This conclusion is logical given the fact that when it comes to IT, the two countries are comparable. Though a developing nation, India is very advanced in computer science skills and IT use. This is one of the reasons India is the world leading IT services provider such as outsourcing and cloud computing. It is no surprise that in this study, no significant difference is observed between the two cultures in terms of efforts expectancy, effort expectation, or SEFF needed for the INT to practice DP. Further research that uses NAM–UTAUT model to compare two cultures that are different in UTAUT part of the model would be useful.

Conclusion

The present paper contributes to the understanding of the driving forces of DP within the NAM–UTAUT model. To the best of our knowledge, this is the first attempt to investigate DP behavioral INT using this integrated model. The study findings contribute to the existing body of knowledge that attempts to understand the reasoning behind DP. The application of NAM theory to DP provides assistance in the search for a new empirical understanding. This integrated comprehensive model seems to cover a wider range of factors affecting DP. The resultant model is very significant across cultures. As called for by previous studies (Venkatesh et al. 2003; Stern 2000), the present study has enhanced the usefulness of two popular research models. The proposed model can be used to formulate policies to reduce DP practices. We hope we have developed a research model that researchers can use in the future to investigate DP or related behaviors across cultures.

Managerial and Research Contributions

As a contribution to theory and research methodology, the present study has proposed and tested a well-grounded model and the accompanying measurement constructs. It has increased our understanding of what measure could be effective in curbing DP. First, this study extends the UTAUT model as called for by Venkatesh et al. (2003). The usefulness (explanatory value) of UTAUT has been enhanced. Secondly, NAM model has been used to explain the anti-prosocial INT of DP. As far as we know, no other study has attempted to use NAM on DP. The third contribution of the proposed study is testing the integrated model in the context of INT for DP across cultures.

One of the major contributions of this paper is in positing a combined model (NAM–UTAUT) to explain the phenomenon of DP. It is important because NAM is a prosocial model and UTAUT is a TAM. The combined model can be used in studying adoption INTs of social situations such as Green computing and other socially important activities.

Yet another contribution is that the model is tested for two nations, the US and India and the similarities and differences in adoption scenarios in two nations are explained with cultural variables.

NAM is about invoking PNs of individuals. Expectation and invocation of PNs comes from personal self and act as an inner voice to an individual. "Adherence to these expectations, that is, to a personal norm, may lead to enhanced self-appreciation and pride, while acting against them may result in feelings of guilt and self-depreciation" (Schwartz and Howard 1980; Harland et al. 2007). As can be seen in both models, PN is influencing negatively the intent to pirate. Such guilt and depreciation in a firm-specific situation where DP is practiced may result in loss in productivity of a worker and managers must be aware of it. To avoid such harmful effect in a firm, managers in general and IT managers in particular, may indulge in a preventing-mode or more aggressively in a promotion-mode of not doing DP (by strongly promoting a set of moral rules to discourage the practice of DP) in order to prevent damage to the firm.

The role of SI on the pirates' INT to continue to practice DP has been added to our understanding of this phenomenon. The researchers and policy makers can now target or manipulate SI in order to minimize DP. By establishing a program that internalizes the undesirability of DP among peers and other social value systems, DP could be mitigated in a more acceptable and subtle way. Another approach could be to find ways to isolate potential pirates from known pirate who are likely to adversely influence the would-be pirates. By extending the output of NAM to incorporate UTAUT constructs, the vendors and other stakeholders of digital products can now more fully understand the effect of such factors as PE, EE, and SEFF and hence can control for them. Product developers can build in features that make it harder to produce unauthorized copies and/or equally difficult to use the pirated copies to perform meaningful tasks.

The strength of the DP factors depends on national culture. For individualist culture, SI seems to be the lead factor whereas for collectivist culture, ACs seems to be the lead factor that impacts PN. The reason here could be that effort to mitigate DP should not be uniform across nations but rather it should be culture-specific in order to obtain maximum outcome.

Limitations and Future Study

The main weakness in this study could be the fact that only students participated. Although majority of the student participants were also employees and although we sought responses from students on their DP behavior at work and at home, it would be more appropriate to survey other groups of people. This limitation is not uncommon in DP research and has even been said to constitute strength instead of weakness. Previous DP studies (such as Hinduja 2001; Higgins et al. 2007; Bhattacharjee et al. 2006; Cronan and Al-Rafee 2008) used student participants. Some authors argue that younger population, and not older ones, is usually the most noted pirates. The younger population is more skillful, has less income, and has more interests in music, games, and copyrighted apps, among other digital products. As shown in this study by the percentage of participants who claim to use pirated products at work, students seem to be the appropriate group for this study. The implication of the limitation posed by using only student participants is that the results should be interpreted with caution. Generalization of the findings could lead to error in practice. Future study should compare the findings herein with those of a more representative sample taken from the general population. Another limitation of this study is the fact that only two nations were used to explore the moderating effect of national culture. Although the two nations are far apart on the cultural dimension of individualism/collectivism and so the findings could apply accordingly to nations in between, the fact still remains that data for this study was collected from these two nations. The implication of this limitation is until more nations are investigated, the generalization of the present study findings is limited to these two nations. A more appropriate approach would be to survey participants from several more nations in order to verify the effect of culture on DP base on NAM–UTAUT model. The future efforts will focus on applying socio-technical phenomena or applications to the proposed model. Such socio-technical applications could include hacking, abuse of IT at work, unethical use of IT, etc. We also intend to extend the study to multiple nations and diverse populations. Being a preliminary study and given the limitations of the present study, it is prudent for readers to interpret the findings with caution until more investigation is done.

Appendix 1: The NAM–UTAUT Constructs and Source

Awareness of consequences (*ACs*; 1 = strongly disagree to 7 = strongly agree)	Steg et al. (2005), Schwartz and Howard (1980)
AC1. Digital piracy is a problem for society	
AC2. Less copying may help reduce digital piracy	
AC3. Copyright infringement is a problem	
AC4. The financial loss to the concerned industry is a problem	
Ascription of responsibility (*AR*; 1 = strongly disagree to 7 = strongly agree)	Steg et al. (2005), Schwartz and Howard (1980)
AR1. I am jointly responsible for the "digital piracy" problem	
AR2. I feel jointly responsible for the financial loss to the concerned industries	
AR3. I feel jointly responsible for copyright infringement	
Personal norms (*PNs*; 1 = strongly disagree to 7 = strongly agree)	Steg et al. (2005), Schwartz and Howard (1980)
PN1. I feel morally obliged not to indulge in digital piracy, regardless of what others do	
PN2. I feel guilty when I practice digital piracy	
PN3. I feel morally obliged to prevent/refrain from digital piracy instead of using materials obtained through digital piracy	
PN4. People like me should do everything they can to decrease digital piracy	
PN5. If I buy a new digital good, I feel morally obliged to buy it without taking recourse to digital piracy	
PN6. I would be a better person if I refrained from practicing digital piracy	
Performance expectancy (*PE*; 1 = strongly disagree to 7 = strongly agree)	Venkatesh et al. (2003)
PE1. I would find digitally pirated material useful in my job	
PE2. Using digitally pirated material enables me to accomplish tasks more quickly	
PE3. Using digitally pirated material increases my productivity	
PE4. If I use digitally pirated material, I will increase my chances of getting a raise	
Effort expectancy (*EE*; 1 = strongly disagree to 7 = strongly agree)	Venkatesh et al. (2003)
EE1. I have the resources necessary to undertake digital piracy	
EE2. It would be easy for me to become skillful at digital piracy	
EE3. I could find digitally pirated material easily	
EE4. Learning to undertake digital piracy is easy for me	
Social influence (*SI*; 1 = strongly disagree to 7 = strongly agree)	Venkatesh et al. (2003)
SI1. People who influence my behavior think that I should not use digitally pirated material	
SI2. People who are important to me think that I should not use digitally pirated material	
SI3. The senior management of this business has been helpful in preventing the use of digitally pirated material	
SI4. In general, the organization has not supported the use of digitally pirated material	
Self-efficacy (*SEFF*; 1 = strongly disagree to 7 = strongly agree)	Venkatesh et al. (2003)
SEFF1. I could complete a job or task using digitally pirated material if there was no one around to tell me what to do as I go	
SEFF2. I could complete a job or task using digitally pirated material if I could call someone for help if I got stuck	
SEFF3. I could complete a job or task using digitally pirated material if I had a lot of time to complete the job for which the software as provided	
SEFF4. I could complete a job or task using digitally pirated material if I had just the built-in facility for assistance	
Intentions (*INTs*; 1 = strongly disagree to 7 = strongly agree)	Venkatesh et al. (2003), Cronan and Al-Rafee (2008)
INT1. I intend to practice digital piracy in the next 12 months	
INT2. I predict I would practice digital piracy in the next 12 months	
INT3. I plan to practice digital piracy in the next 12 months	
Past behavior (PB; 1 = never, 2 = 1–2, 3 = 3–5, 4 = 6–10, 5 = >10)	Cronan and Al-Rafee (2008), Venkatesh et al. (2003)
AB3. How many times in last 6 months did you practice "digital piracy"?	

Appendix 2.1: Normalized Pattern Loadings and Cross-Loadings: US

	AC	AR	PN	PE	EE	SI	SEFF	PB	INT
AC1	**0.968**	−0.174	0.077	0.12	−0.039	−0.048	0.023	−0.008	−0.09
AC2	**0.855**	0.091	−0.168	−0.04	−0.323	0.068	0.142	−0.219	0.23
AC3	**0.949**	−0.107	−0.22	−0.107	0.118	0.109	0.051	−0.005	−0.011
AC4	**0.939**	0.171	−0.157	−0.182	0.116	0.091	−0.023	0.026	0.088
AR1	0.274	**0.613**	−0.34	0.077	0.019	0.265	−0.003	0.375	0.464
AR2	0.155	**0.902**	−0.189	0.034	0.007	0.146	−0.005	0.205	0.251
AR3	0.125	**0.893**	−0.176	0.092	0.027	0.145	0.016	0.213	0.283
PN1	0.083	0.417	**0.778**	−0.211	−0.094	0.034	0.163	−0.013	0.365
PN2	−0.088	0.04	**0.94**	−0.073	−0.145	−0.101	0.016	−0.14	0.224
PN3	−0.087	0.067	**0.957**	−0.159	0.045	0	0.04	−0.134	0.16
PN4	−0.096	−0.067	**0.983**	−0.021	0.053	0.081	0.072	−0.065	−0.035
PN5	0.099	−0.086	**0.969**	0.125	−0.065	−0.081	−0.123	0.026	−0.032
PN6	−0.039	−0.015	**0.987**	−0.043	0.04	−0.121	−0.044	−0.056	0.005
PE1	−0.008	0.026	0.067	**0.984**	−0.124	−0.051	0.068	0.031	0.059
PE2	−0.052	0.014	0.03	**0.987**	0.004	−0.013	0.06	0.041	−0.128
PE3	−0.005	−0.005	−0.023	**0.997**	0.05	0.018	−0.019	−0.007	−0.047
PE4	−0.008	0.062	0.009	**0.996**	−0.033	−0.022	−0.002	−0.002	−0.051
EE1	0.132	0.045	−0.233	0.013	**0.938**	0.18	0.012	0.014	−0.12
EE2	0.015	−0.162	−0.031	0.045	**0.973**	0.013	−0.024	−0.067	−0.135
EE3	0.054	−0.015	0.007	−0.133	**0.981**	−0.117	−0.031	0.033	0.04
EE4	−0.031	−0.033	0.053	0.005	**0.997**	−0.041	−0.006	−0.013	0.01
SI1	−0.061	−0.083	−0.049	0.097	−0.081	**0.979**	0.018	−0.099	−0.042
SI2	0.006	−0.089	−0.088	0.093	−0.102	**0.979**	0.004	−0.031	−0.081
SI3	0.028	0.114	0.084	−0.112	0.087	**0.974**	−0.012	0.08	0.07
SI4	0.066	−0.184	−0.088	0.054	0.167	**0.959**	−0.009	−0.043	−0.03
SEFF1	0.018	0.036	−0.034	0.037	0.001	−0.019	**0.997**	−0.022	−0.008
SEFF2	0.067	0.073	0.041	0.047	−0.034	−0.086	**0.981**	0.046	−0.115
SEFF3	−0.075	−0.107	0.145	0.049	−0.07	0	**0.971**	0.054	−0.093
SEFF4	0.033	0.005	0.066	−0.065	−0.007	−0.021	**0.992**	0.069	−0.04
PB	0	0	0	0	0	0	0	**1**	0
INT1	−0.03	−0.025	−0.019	−0.008	−0.02	0.028	0.024	−0.027	**0.998**
INT2	0.036	0.001	−0.007	0.007	0.025	−0.018	−0.014	0.027	**0.998**
INT3	−0.046	0.047	0.058	−0.005	−0.032	−0.002	−0.007	−0.027	**0.995**

Appendix 2.2: Normalized Pattern Loadings and Cross-Loadings: India

	AC	AR	PN	PE	EE	SI	SEFF	INT	PB
AC1	**0.986**	−0.105	0.118	0.031	0.016	0.019	−0.031	−0.014	−0.026
AC2	**0.975**	0.066	−0.107	−0.072	−0.041	−0.031	0.076	−0.041	0.131
AC3	**0.92**	−0.116	−0.136	−0.045	−0.084	0.102	−0.052	−0.031	0.315
AC4	**0.956**	0.195	−0.171	0.009	0.013	−0.017	−0.009	0.087	−0.105
AR1	0.301	**0.582**	−0.107	0.045	−0.109	0.081	−0.057	0.376	0.282
AR2	0.299	**0.881**	−0.238	0.02	−0.061	0.033	−0.035	0.209	0.166

	AC	AR	PN	PE	EE	SI	SEFF	INT	PB
AR3	0.294	**0.83**	−0.265	0.065	−0.086	0.13	−0.029	0.305	0.179
PN1	−0.009	0.065	**0.975**	−0.044	−0.019	−0.09	−0.011	0.183	−0.014
PN2	−0.029	0	**0.993**	−0.057	−0.021	−0.094	−0.001	−0.023	0.003
PN3	−0.115	−0.106	**0.962**	0.137	0.064	0.026	−0.063	−0.126	−0.088
PN4	−0.116	−0.036	**0.97**	−0.057	−0.018	−0.04	−0.01	−0.157	0.123
PN5	0.2	−0.077	**0.943**	0.05	−0.001	0.05	−0.142	−0.043	0.195
PN6	0.073	−0.011	**0.986**	−0.005	−0.091	−0.08	0.019	0.079	−0.005
PE1	0.097	−0.034	−0.027	**0.979**	0.018	−0.036	0.081	0.094	−0.112
PE2	−0.034	−0.159	0.017	**0.981**	−0.067	−0.01	0.072	−0.035	−0.031
PE3	0.025	0.014	−0.026	**0.998**	−0.011	0.017	−0.038	−0.004	0.027
PE4	−0.157	0.025	0.078	**0.975**	0.003	0.013	−0.031	−0.101	0.084
EE1	0.03	0.102	−0.089	0.054	**0.987**	0.029	−0.028	−0.003	0.044
EE2	−0.019	−0.017	−0.043	0.01	**0.992**	−0.008	0.01	−0.047	−0.104
EE3	−0.004	−0.306	0.256	−0.102	**0.903**	−0.087	0.057	0.06	−0.032
EE4	−0.099	0.085	0.009	−0.073	**0.987**	0.029	0.013	−0.031	−0.019
SI1	0.11	0.01	−0.068	0.153	0.057	**0.978**	0.006	0.002	−0.028
SI2	−0.003	0.036	−0.002	0.047	0.01	**0.997**	−0.028	−0.025	−0.03
SI3	−0.061	−0.057	0.027	−0.381	−0.112	**0.879**	0.069	0.114	0.209
SI4	−0.046	−0.106	0.146	−0.24	−0.053	**0.745**	0.273	0.027	−0.113
SEFF1	0.037	−0.036	0.085	0.141	−0.033	−0.056	**0.982**	0.05	0.013
SEFF2	0.023	−0.02	0.083	−0.11	0	−0.079	**0.986**	0.043	−0.006
SEFF3	0.052	0.063	−0.173	−0.084	−0.038	0.068	**0.959**	−0.147	0.092
SEFF4	−0.115	0	0.003	−0.049	0.082	0.057	**0.98**	0.049	−0.104
PB	0	0	0	0	0	0	0	**1**	0
INT1	−0.009	0.011	−0.005	0.081	0.012	0.048	−0.05	−0.14	**0.984**
INT2	0.006	−0.007	0.003	−0.041	−0.004	−0.025	0.025	0.069	**0.996**
INT3	−0.066	0.054	−0.022	0.115	−0.049	0.098	−0.049	−0.13	**0.973**

References

Abrahamse, W., Steg, L., Gifford, R., & Vlek, C. (2009). Factors influencing car use for commuting and the intention to reduce it: A question of self-interest or morality? *Transportation Research Part F: Traffic Psychology and Behaviour, 12*(4), 317–324.

Ajzen, I. (2002). Residual effects of past on later behavior: Habituation and reasoned action perspectives'. *Personality and Social Psychology Review, 6*(2), 107–122.

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

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

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411–423.

Bagchi, K., Kirs, P., & Cerveny, R. (2006). Global software piracy: Can economic factors alone explain the trend? *Communications of the ACM, 49*(6), 70–75.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Banerjee, D., Cronan, T. P., et al. (1998). Modeling IT ethics: A study in situational ethics. *MIS Quarterly, 22*(1), 31–60.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual strategic and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173–1182.

Batson, C., & Powell, A. A. (2003). Altruism and prosocial behavior. In T. Millon & M. J. Lerner (Eds.), *Handbook of psychology: Personality and social psychology* (Vol. 5, pp. 463–484). Hoboken, NJ: Wiley.

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

Bono, S., Rubin, A., Stubblefield, A., & Green, M. (2006). Security through legality. *Communications of the ACM, 49*(6), 41–43.

Carlo, G., Mestre, M. V., Samper, P., Tur, A., & Armenta, B. E. (2010). Feelings or cognitions? Moral cognitions and emotions as longitudinal predictors of prosocial and aggressive behaviors. *Personality and Individual Differences, 48*, 872–877.

Castaneda, J. A., Munoz-Leiva, F., & Luque, T. (2007). Web acceptance model (WAM): Moderating effects of user experience. *Information and Management, 44*, 384–396.

Chin, W., Marcolin, B., & Newsted, P. R. (1996) A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and voice mail emotion/adoption study. In *Proceedings of ICIS* (pp. 21–41).

Compeau, D., Higgins, C. A., & Huff, S. (1999). Social cognitive theory and individual reactions to computing technology: A longitudinal study. *MIS Quarterly, 23*(2), 145–158.

Conner, M., & Armitage, C. (1998). Extending the theory of planned behavior: A review and avenues for further research. *Journal of Applied Social Psychology, 28*(15), 1429–1464.

Corbett, J. (2005). Altruism, self-interest and the reasonable person model of environmentally responsible behavior. *Science Communication, 26*(4), 368–389.

Cronan, T. P., & Al-Rafee, S. (2008). Factors that influence the intention to pirate software and media. *Journal of Business Ethics, 78*, 527–545.

Cross, T. (2006). Academic freedom and the hacker ethic. *Communications of the ACM, 49*(6), 37–40.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use and user acceptance of information technology. *MIS Quarterly, 13*(3), 319–339.

De Groot, J. I. M., & Steg, L. (2009). Morality and prosocial behavior: The role of awareness, responsibility and norms in the norm activation model. *Journal of Social Psychology, 149*, 425–449.

De Groot, J. I. M., & Steg, L. (2010). Morality and nuclear energy: Perceptions of risks and benefits, personal norms, and willingness to take action related to nuclear energy. *Risk Analysis, 30*(9), 1363–1373.

Depken, C. A., & Simmons, L. C. (2004). Social construct and the propensity for software piracy. *Applied Economics Letters, 11*(2), 97–100.

Eberl, M. (2010). Chapter 21: An application of PLS in multi-group analysis—The need for differentiated corporate-level marketing in the mobile communications industry. In V. Vinzi, W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of partial least squares*: *Concepts*, *methods and applications*. *Springer handbook of computational statistics* (pp. 495–496). Heidelberg: Springer

Eckhardt, A., Laumer, S., & Weitzel, T. (2009). Who influences whom? Analyzing workplace referents' social influence on IT adoption and non-adoption. *Journal of Information Technology, 24*, 11–24.

Eining, M., & Christensen, A. (1991). A psycho-social model of software piracy: The development and test of a model. In R. Dejorie, G. Fowler, & D. Paradice (Eds.), *Ethical issues in information systems*. Boston: Boyd and Fraser.

Ford, D. P., Connelly, C. E., & Meister, D. B. (2003). Information systems research and Hofstede's culture's consequences: An uneasy and incomplete partnership. *IEEE Transactions on Engineering Management, 50*(1), 8–25.

Garling, T., Fujii, S., Garling, A., & Jakobsson, C. (2003). Moderating effects of social value orientation on determinants of proenvironmental intention. *Journal of Environmental Psychology, 23*, 1–9.

Gopal, R., & Sanders, G. L. (1997). Preventive and deterrent controls for software piracy. *Journal of Management Information Systems, 13*, 29–47.

Gopal, R., Sanders, G. L., Bhattacharjee, S., Agrawal, M., & Wagner, S. (2004). A behavioral model of digital music piracy. *Journal of Organizational Computing and Electronic Commerce, 14*, 89–105.

Gruzd, A., Staves, K., & Wilk, A. (2012). Connected scholars: Examining the role of social media in research practices of faculty using the UTAUT model. *Computers in Human Behavior, 28*(6), 2340–2350.

Hagger, M., Chatzisarantis, N., & Biddle, S. (2002). A meta-analytic review of the theories of reasoned action and planned behavior in physical activity: Predictive validity and contribution of additional variables. *Journal of Sport and Exercise Psychology, 24*, 3–32.

Harland, P., Staats, H., & Wilke, H. (1999). Explaining proenvironmental intention and behavior by personal norms and the theory of planned behavior. *Journal of Applied Social Psychology, 29*(12), 2505–2528.

Harland, P., Staats, H., & Wilke, H. (2007). Situational and personality factors as direct or personal norm mediated predictors of pro-environmental behavior: Questions derived from norm-activation theory. *Basic and Applied Social Psychology, 29*(4), 323–334.

He, D., & Lu, Y. (2007). Consumers perceptions and acceptances towards mobile advertising: An empirical study in China. In *Proceedings of International Conference Wireless Communications*, *Networking and Mobile Computing*.

Henseler, J., & Fassot, G. (2010). Chapter 30: Testing moderating effects in PLS models: An illustration of available procedures. In V. Vinzi, W. Chin, J. Henseler & H. Wang (Eds.), *Springer handbook of computational statistics* (pp. 713–735). Heidelberg: Springer.

Higgins, G. E., Fell, B. D., & Wilson, A. L. (2007). 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., Wilson, A. L., & Fell, B. D. (2005). An application of deterrence theory to software piracy. *Journal of Criminal Justice and Popular Culture, 12*, 166–194.

Hinduja, S. (2001). Trends and patterns among online software pirates. *Ethics and Information Technology, 5*, 49–61.

Hsu, C. L., & Lu, H. P. (2004). Why do people play on-line games? An extended TAM with social influences and flow experience. *Information and Management, 41*(7), 853–868.

Huijts, N. M. A., De Groot, J. I. M., Molin, E. J. E., & van Wee, B. (2013). Intention to act towards a local hydrogen refueling facility: Moral considerations versus self-interest. *Transportation Research A: Policy and Practice, 48*, 63–74.

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

Igbaria, M. (1995). The effects of self-efficacy on computer usage. *Omega, 23*(6), 587–605.

Jain, S. (2008). Digital piracy: A competitive analysis. *Market Science, 27*(4), 610–626.

Kaiser, F. G., Hubner, G., & Bogner, F. X. (2005). Castrating the theory of planned behavior with the value–belief–norm model in explaining conservation behavior. *Journal of Applied Social Psychology, 35*, 2150–2170.

Keil, M., Tan, B. C. Y., Wei, K. K., Saarinen, T., Tuunainen, V., & Wassenaar, A. (2000). A cross-cultural study on escalation of commitment behavior in software projects. *MIS Quarterly, 24*(2), 299–325.

Kim, Y. J., Chun, J. U., & Song, J. (2009). Investigating the role of attitude in technology acceptance from an attitude strength perspective. *International Journal of Information Management, 29*(1), 67–77.

Kock, N. (2013). *WarpPLS 4.0 user manual*. Laredo, TX: ScriptWarp Systems.

Kock, N. (2014). Advanced mediating effects tests, multi-group analyses, and measurement model assessments in PLS-based SEM. *International Journal of E-Collaboration, 10*(1), 1–13.

Kuisma, T., Laukkanen, T., & Hiltunen, M. (2007). Mapping the reasons for resistance to internet banking: A means-end approach. *International Journal of Information Management, 27*(2), 75–85.

LaRose, R., Lai, Y. J., Lange, R., Love, B., & Wu, Y. (2005). Sharing or piracy? An exploration of downloading behavior. *Journal of Computer Mediated Communication, 11*(1), 1–21.

Lau, E. (2003). An empirical study of software piracy. *Business Ethics, 12*(3), 233–245.

Leidner, D. E., & Kayworth, T. (2006). Review: A review of culture in information systems research: Toward a theory of information technology culture conflict. *MIS Quarterly, 30*(2), 357–399.

Lescevica, M., Ginters, E., & Mazza, R. (2013). Unified theory of acceptance and use of technology (UTAUT) for market analysis

of FP7 CHOReOS products. *Procedia Computer Science, 26*, 51–68.

Liable, D., Eye, J., & Carlo, G. (2008). Dimensions of conscience in mid-adolescence. Link with social behavior, parenting, and temperament. *Journal of Youth and Adolescence, 37*, 875–887.

Liang, Z., & Yan, Z. (2005). Software piracy among college students: A comprehensive review of contributing factors, underlying processes, and tackling strategies. *Journal of Educational Computing Research, 33*, 115–140.

Lin, C. P., & Bhattacharjee, A. (2008). Learning online social support: An investigation of network information technology based on UTAUT. *Cyber Psychology and Behavior, 11*(3), 268–272.

Lua, J., Yaob, J. E., & Yua, C. S. (2005). Personal innovativeness, social influences and adoption of wireless internet services via mobile technology. *Journal of Strategic Information Systems, 14*, 245–268.

Miller, P. A., & Eisenberg, N. (1988). The relation of empathy to aggression and externalizing/antisocial behavior. *Psychological Bulletin, 103*, 324–344.

Moores, T. T. (2008). An analysis of the impact of economic wealth and national culture on the rise and fall of software piracy rates. *Journal of Business Ethics, 81*, 39–51.

Moores, T. T. (2010). Untangling the web of relationships between wealth, culture, and global software piracy rates: A path model. *Journal of Global Information Technology, 18*(1), 1–14.

Nitse, P., Parker, K., Krumwiede, D., & Ottaway, T. (2004). The impact of color in the E-commerce marketing of fashions: An exploratory study. *European Journal of Marketing, 38*(7), 898–915.

Onwezen, M. C., Antonides, G., & Bartels, J. (2013). The norm activation model: An exploration of the functions of anticipated pride and guilt in pro-environmental behavior. *Journal of Economic Psychology, 39*, 141–153.

Peace, A. G., Galletta, D. F., & Thong, J. Y. L. (2003). Software piracy in the workplace: A model and empirical test. *Journal of Management Information Systems, 20*(1), 153–177.

Perugini, M., & Bagozzi, R. P. (2001). The role of desires and anticipated emotions in goal-directed behaviours: Broadening and deepening the theory of planned behaviour. *British Journal of Social Psychology, 40*, 79–98.

Peters, A., Cutscher, H., & Scholz, R. W. (2011). Psychological determinants of fuel consumption of purchased new cars. *Transportation Research Part F: Traffic Psychology and Behaviour, 14*, 229–239.

Piquero, N., & Piquero, A. (2006). Democracy and intellectual property: Examining trajectories of software piracy. *The Annals of the American Academy of Political and Social Science, 605*(1), 104–127.

Rai, A., Lang, S. S., & Welker, R. B. (2002). Assessing the validity of IS success models: An empirical test and theoretical analysis. *Information Systems Research, 13*(1), 50–69.

Rowley, J. (2006). An analysis of the E-service literature: Towards a research agenda. *Internet Research, 16*(3), 339–359.

Sally, L. P. M. (2006). Prediction of Internet addiction for undergraduates in Hong Kong. Unpublished Degree'sThesis, Hong Kong Baptist University, Hong Kong.

Schaupp, L. C., Carter, L., & McBride, M. E. (2010). E-file adoption: A study of U.S. taxpayers intentions. *Computers in Human Behavior, 26*(4), 636–644.

Schultz, P. W., Gouveia, V. V., Cameron, L. D., Tankha, G., Schmuck, P., & Franek, M. (2005). Value and their relationship to environmental concern and conservation behavior. *Journal of Cross-Cultural Psychology, 36*, 457–475.

Schwartz, S. H. (1977). Normative influences on altruism. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 10, pp. 221–279). New York: Academic Press.

Schwartz, S. H., & Howard, J. A. (1980). Explanations of the moderating effect of responsibility denial on the personal norm–behavior relationship. *Social Psychology Quarterly, 43*, 441–446.

Shadlen, K. C. A., Schrank, A., & Kurtz, M. J. (2005). The political economy of intellectual property protection: The case of software. *International Studies Quarterly, 49*(1), 45–71.

Shih, H. P. (2004). An empirical study on predicting user acceptance of E-shopping on the web. *Information and Management, 41*(3), 351–368.

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

Sia, C. L., Lim, K. H., Leung, K., Lee, M. K. O., Huang, W. W., & Benbasat, I. (2009). Web strategies to promote internet shopping: Is cultural-customization needed? *MIS Quarterly, 33*(3), 491–512.

Simpson, P., Banerjee, D., & Simpson, C. L. (1994). Softlifting: A model of motivating factors. *Journal of Business Ethics, 13*, 431–438.

Steg, L., & de Groot, J. (2010). Explaining prosocial intentions: Testing causal relationships in the norm activation model. *British Journal of Social Psychology, 49*, 725–743.

Steg, L., Dreijerink, L., & Abrahamse, W. (2005). Factors influencing the acceptability of energy policies: Testing VBN theory. *Journal of Environmental Psychology, 25*, 415–425.

Stern, P. (2000). Toward a coherent theory of environmentally-significant behaviour. *Journal of Social Issues, 56*(3), 407–424.

Swinyard, W. R., Rinne, H., & Kau, A. K. (1990). The morality of software piracy: A cross-cultural analysis. *Journal of Business Ethics, 9*, 655–664.

Taylor, S. A., Ishida, C., & Wallace, D. (2009). Intention to engage in digital piracy: A conceptual model and empirical test. *Journal of Service Research, 11*(3), 246–262.

Thatcher, A., & Matthews, M. (2012). Comparing software piracy in South Africa and Zambia using social cognitive theory. *African Journal of Business Ethics, 6*(1), 1–12.

Thatcher, J. B., & Perrewe, P. L. (2002). An empirical examination of individual traits as antecedents to computer anxiety and computer self-efficacy. *MIS Quarterly, 26*(4), 381–396.

Thong, J., & Yap, C. (1998). Testing an ethical decision-making theory: The case of softlifting. *Journal of Management Information Systems, 15*(1), 213–237.

Udo, G. J., Bagchi, K. K., & Kirs, P. J. (2010). An assessment of customers' E-service quality perception, satisfaction and intention. *International Journal of Information Management, 30*(6), 481–492.

Venkatesh, V., & Morris, M. G. (2000). Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior. *MIS Quarterly, 24*(1), 115–139.

Venkatesh, V., Morris, M., Davis, G., & Davis, F. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 7*(3), 425–478.

Vida, I., Koklic, M. K., Kukar-Kinney, M., & 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.

Wagner, S., & Sanders, G. (2001). Considerations in ethical decision-making and software piracy. *Journal of Business Ethics, 29*(1/2), 161–167.

Wall, D. S. (2005). The internet as a conduct for criminal activity. In A. Pattavina (Ed.), *Information technology and the criminal justice system* (pp. 78–94). Thousand Oaks, CA: Sage Publications.

Wall, R., Devine-Wright, P., & Mill, G. A. (2007). Comparing and combining theories to explain pro-environmental intentions: The

case of commuting-mode choice. *Environment and Behavior, 39*(6), 731–753.

Walls, W., & Harvey, P. (2006). Digital pirates in practice: Analysis of market transactions in Hong Kong's pirate software arcades. *International Journal of Management, 23*(2), 207–215.

Wang, H. I., & Yang, H. L. (2005). The role of personality traits in UTAUT model under online stocking. *Contemporary Management Research, 1*(1), 69–82.

Wold, H. (1985). *Encyclopedia of statistical science*. New York: Wiley.

Wolfe, S. E., Higgins, G. E., & Marcum, C. D. (2008). Deterrence and digital piracy: A preliminary examination of the role of viruses. *Social Science Computer Review, 26*(3), 317–333.

Wu, Y., Tao, Y., & Yang, P. (2008). The use of unified theory of acceptance and use of technology to confer the behavioral model of 3G mobile telecommunication users. *Journal of Statistics and Management Systems, 11*(5), 919–949.

Wu, J. H., & Wang, S. C. (2005). What drives mobile commerce? An empirical evaluation of the revised technology acceptance model. *Information and Management, 42*, 719–729.

Wu, J. H., Wang, S. C., & Lin, L. M. (2006). Mobile computing acceptance factors in the healthcare industry: A structural equation model. *International Journal of Medical Informatics, 76*(1), 66–77.

Yang, D., Sonmez, M., Bosworth, D., & Fryxell, G. (2008). Global software piracy: Searching for further explanations. *Journal of Business Ethics, 87*, 269–283.

Yoon, C. (2009). The effects of national culture values on consumer acceptance of E-commerce: online shoppers in China. *Information and Management, 45*, 294–301.

Yoon, C. (2011). Theory of planned behavior and ethics theory in digital piracy: An integrated model. *Journal of Business Ethics, 100*, 405–417.

Zhang, L., Smith, W. W., & Mcdowell, W. C. (2009). Examining digital piracy: Self-control, punishment, and self-efficacy. *Information Resources Management Journal, 22*(1), 24–44.