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Internet Piracy – A User Behavioral Perspective
互聯網盜版 - 解構網絡用戶行為模式

Submitted to
Department of English and Communication
英文與傳播系
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy
哲學博士學位

by

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August 2007
二零零七年八月

Abstract

With increased bandwidth and transmission speed, the Internet allows digital copyrighted works to be distributed and transmitted with high efficiency, thus providing vast opportunities for the growth of pirating activities. Internet piracy – the unauthorized copying or sharing of digital copyrighted works online – is a growing concern in the information age as it is inflicting a significant impact on the well-being of businesses and individuals. Hong Kong has a high rate of Internet piracy despite its status as an economic and technological hub in Asia. However, the existing law and technologies cannot effectively curb the proliferation of pirating activities. The HKSAR government is a pioneer in criminalizing infringers who upload files for sharing, but enforcement actions seemed to have backfired and the government is now calling for public views to address the problem.

This dissertation looks at some root causes of piracy by exploring psycho-behavioral factors that influence individuals' pirating activities despite their knowledge of the illegality of such activities. It develops a conceptual model of Internet pirating behavior of Hong Kong Internet users based on psycho-behavioral theories (i.e. the theory of reasoned action and the theory of planned behavior), communication theory (i.e. uses and gratifications), literature on piracy (especially software piracy), and peer discussions that map out motivating factors influencing Internet pirating behavior.

The final data was collected in May 2006 using computer-assisted telephone interviewing (CATI) technology. A two-step Structural Equation Modeling (SEM) technique was used to validate the measurement model and test the model fit. Findings indicate that perceived personal advantages and subjective norms have a statistically significant influence on individuals' attitude towards Internet piracy, and the relationship found between perceived normative beliefs and subjective norms is also significant. The hypothesized relations between the intention to pirate and the four constructs - attitude, subjective norms, perceived behavioral control, and perceived needs for Internet piracy - are all supported. Finally, both intention and past offline piracy behavior are found to have a significant role in explaining the actual piracy behavior.

Identifying reasons why people pirate on the Internet from the user behavior perspective not only enhances the scholarly understanding of the problem but also offers valuable insights to government or regulatory bodies and the entertainment and software industry about the pirating scene (and the piraters' mentality) to help them plan or implement relevant and reasonable policies.

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Chapter One Introduction

1.1 Introduction

Internet piracy has become a thorny issue in this information age, rendering losses of billions of revenues to the global entertainment and software industries (Office of Technology Policy, 2002). The availability of the Internet allows copyrighted works to move between computers with no hard media transaction and little risk of detection, providing vast opportunities for the growth of pirating activities. Growing broadband penetration further encourages unauthorized distribution of copyrighted works. It is believed that piracy threatens and disrupts not only the mainstream industry, but also the global economy.

The industry and regulatory bodies in the United States and several European countries have responded by declaring war on piracy. Laws have been formulated and legal actions have been actively performed against those who allegedly infringe upon the copyright of creators or rightful owners. Even cities like Hong Kong attempt to implement more stringent copyright laws by issuing court orders to ISPs, demanding disclosure of subscribers' information and criminalizing those users who illegally download copyrighted works through the Internet.

Nevertheless, the war seems to be expanding and increasingly difficult for the industry to fight than it was before. Some scholars assert that draconian regulatory measures and penalties will not necessarily lead to a lower level of personal pirating behavior (Bentham, 1961; Gopal, Sanders, Bhattacharjee, Agrawal, & Wagner, 2004), and technological intervention is unlikely to be workable in the long run (Krebs, 2003).

As a response to the aggravating problem, Yu (2004) urged governments and the global industry to pay more attention to public needs, alleging that copyright is not just a complicated issue, but rather one of high public significance that affects people's everyday life. It is therefore important to investigate some of the root causes of the escalating problem by asking: "Why do individuals pirate online though they know it is illegal? What do they need or want?" This dissertation attempts to address these concerns by identifying reasons why people pirate online from a user behavior perspective to enhance our understanding of piracy and assist in formulating policies to address the problem.

1.1.1 Research problem

This study examines why people pirate copyrighted works on the Internet. It will explore the motivating factors – based on psycho-behavioral theories, communication theories, literature on software piracy, and peer discussion – that motivate people's tendency to engage in piracy behavior on the Internet.

1.1.2 Organization of the dissertation

This dissertation is divided into eight chapters, and each chapter is organized with subparts.

Chapter One provides an overall introduction to the study, which defines and describes Internet piracy. It provides a definition of "piracy," particularly "Internet piracy," and discusses the impact, both positive and negative, of Internet piracy on the

global entertainment and software industry, and examines various measures taken to curb the problem.

Chapter Two reviews the literature. Part One looks at the descriptive research on online piraters and the various attempts to build a profile of individuals who engage in Internet piracy. Part Two examines the ethical considerations of Internet piracy and reviews the arguments used by those who justify the morality of online piracy. Part Three covers the widespread phenomena of Internet piracy across the globe. Part Four covers the motivating factors of piracy: cost, fairness, deterrence, familiarity with computers and the overall economic consequences. Part Five reviews piracy studies with specific behavioral models used to explain and predict Internet piracy. Finally, Part Six provides justification for the proposed study by highlighting the limitations of previous studies.

Chapter Three reviews the relevant theories for theoretical development and constructs a conceptual framework of Internet piracy to be tested. Part One looks at Internet piracy as a form of media use and proposes the incorporation of the theory of uses and gratifications to the present study. Part Two reviews the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB) and explains why they form a suitable conceptual basis to explore Internet piracy in this study. Based on the review of the equity theory, uses and gratifications theories, past literature, peer discussions and the behavioral theories, a theoretical framework is developed.

Chapter Four presents the conceptual model and the hypotheses, and outlines the research methodology undertaken for this study. It includes an overview of the research design, questionnaire design and measurements (with a thorough review of the elicitation study used to assess the cognitive and normative belief structure of individuals), the

statistical techniques used to examine the hypothesized relationships, and the sampling methods.

Chapter Five presents the descriptive findings of this study, while Chapter Six examines the results in detail.

Chapter Seven offers conclusions and implications. It proposes practical ways for the entertainment and software industry, the government and regulatory bodies, and public institutions to refine the policies and strategies to deal with the issue of Internet piracy. Implications for existing and future research in the area of piracy or ethical behavior on the Internet are also presented.

Chapter Eight covers the limitations of this study, as well as future research opportunities and directions based on the results obtained.

1.2 Piracy and Internet Piracy

Internet piracy is a relatively new phenomenon and, unfortunately, a growing trend in the information age. Before investigating this ethically questionable behavior and exploring the piracy debate between copyright holders and users of copyrighted works, it is important to define piracy and Internet piracy within the scope of this paper.

'Piracy' is a blanket term covering a variety of illegal activities with regard to intellectual property. From the industry perspective, 'piracy' is normally used to describe the deliberate infringement on copyrights for commercial purposes, involving commercial gain without the consent of the copyright owner. On the other hand, with technological advancement – the advent of home-use tape and video recorders, and

microcomputers – piracy is widely practiced on a personal, non-commercial scale mainly for individual benefits.

The International Federation of Phonographic Industry (IFPI) refers to 'piracy' as the unauthorized copying and duplication of original recording on a large scale for commercial gain. Marshall (2004), in her paper studying the effects of piracy upon the music industry, presents a list of pirating activities including counterfeiting, pirating, bootlegging, home taping, tape trading and online file-sharing.

The Business Software Alliance (BSA) lists five common types of software piracy: End user piracy; Client-server overuse; Internet piracy; Hard-disk loading; and Software counterfeiting. The Motion Picture Association (MPA) presents a more comprehensive list of activities, including via optical disc and video cassette, the Internet, theatrical print theft, signal theft, broadcast piracy, public performance and parallel imports.[1]

Taking all these forms of piracy into account, the term 'piracy' can be defined as the unauthorized taking, copying, distributing, displaying or performing of copyrighted creative works for commercial or non-commercial purposes without compensating the rights owner. This study will focus on Internet piracy, the latest copyright infringement.[2]

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[1] The International Federation of Phonographic Industry (IFPI), the Motion Picture Association (MPA), & the Business Software Alliance (BSA) are three major representatives of the (audio-visual) entertainment and software industry. Visit
http://www.ifpi.org/site-content/antipiracy/what_is_piracy.html ,
http://www.mpaa.org and http://www.bsa.org for a more detailed description of specific forms of piracy relevant to the targeted industry.

[2] i.e. personal, non-commercial infringement -- as it is contestable as to whether this type of infringement should be criminalized under the copyright regime. Proponents of criminalization argue infringement at an aggregate level (even solely for personal use and enjoyment) will cause severe damage to the industry and hinder creativity; Conversely, opponents argue criminalization in the name of encouraging innovation is at the expense of maintaining public access to information which is also the prime objective of copyright policy. See Geraldine Szott Moohr, The crime of copyright infringement: An inquiry based on morality, harm, and criminal theory, 83 B.U.L.Rev., 734 (2003) (indicating the harm caused by commercial

Internet piracy

According to the Software and Information Industry Association (SPA, 1997), 'Internet piracy' refers to the illegal act of copying digital goods on the Internet, for any reason other than backup, without explicit authorization from and compensation to copyright holders. The BSA uses the term 'Internet piracy' to refer to any form of software piracy that involves the use of the Internet to distribute copyrighted software programs.[3] Throughout this dissertation, Internet piracy is defined as ***the unauthorized copying or sharing (uploading and downloading) of digital copyrighted works on the Internet - including software, movies, music, computer games[4] and television programs.*** In particular, this study will only deal with online piracy for non-commercial purposes.[5]

There are several ways for people to pirate online.[6] Internet infringement by means of e-mail, newsgroups, the Web, chat rooms, Internet Relay Chats (IRC), File Transfer Protocol (FTP) and link sites are popular in many countries. Over time, several other file-swapping services (like peer-to-peer – "P2P" – services) have appeared. These methods involve direct, unauthorized transfers of digital copyrighted works between users – 'peers' – typically through a service or network that encourages and assists the

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facilitators of infringement is dissimilar to that caused by those who infringe for personal use, and further imputing the total harm to the slight harm imposed by personal use presents significant fairness concerns).

[3] Visit http://www.bsa.org/resources/ for more information on Internet software piracy.

[4] Computer games are computer-based code written to be played on the computer, considered by many as a type of computer software. The term is sometimes used to refer to games that have audio-visual interface – why computer games are separated as an individual digital product in this study. Visit http://www.computeruser.com/resources/dictionary/definition.html?lookup=1018

[5] Piracy can be conducted with or without the intention of monetary gain. The former is undeniably against the law for it infringes the economic rights of owners to obtain compensation for their creative work and labor; while the latter is contestable due to its non-commercial nature which is often adopted as a defense of fair-dealing or fair-use in copyright disputes of specific countries.

[6] Visit BSA homepage http://www.bsa.org/resources/loader.cfm?url=/commonspot/security/getfile.cfm&pageid=1240&hitboxdone=yes for the article - "Vehicles for theft, forms of Internet software piracy."

activity without connecting to a central server.[7] Users can download these works from other peers' computers, and make files available to a large number of users completely free of charge.

The Internet thus allows copyrighted products to move from computer to computer, with no hard media transaction and little risk of detection. Those engaging in infringement have made use of these advantages to develop more sophisticated techniques to avoid responsibility for their actions.[8] Piracy that once required an understanding of complex computer processing codes can now be done with just the click of a mouse. These technologies, coupled with the wider availability of broadband connectivity in some countries[9], have led to the spread of illegal online distribution and file-sharing activities at an astounding speed.

1.3 The Impact of Global Internet Piracy on the Entertainment and Software Industry

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[7] Napster, which arrived in 1999 as a P2P system, uses a central server to store an index of songs. Thus the service can be shut down easily when the server is removed. Recently, pure P2P programs/networks - like Kazaa, Gnutella, FreeNet, WinMX, BitTorrent (BT) and others - totally eliminate the server. More recent P2P networks – e.g. WASTE – are more secure network with encryption and authentication technology that allows users to stake out small, private networks to trade files and instant messages among trusted groups of friends. Since there is no central point at which these systems can be shut down (end-to-end communication), more and more Internet users flock to these services, creating a continue challenge to the entertainment industry and policy makers.

[8] These techniques involved encrypting various communications, using third parties' Internet accounts, moving infringing files off-shore, and hiding one's identities through various technical means. A popular mean of hiding one's identity on the Internet is by using IP blockers, e.g. Phoenix Labs and PeerGuardian. Most of these blockers integrate support for multiple lists, list editing, automatic updates, and blocking all of IPv4 (TCP, UDP, ICMP, etc), making it the safest and easiest way to protect people's privacy on P2P networks.

[9] The ITU's New Broadband Statistics for 1 January 2005 shows the top 20 economies worldwide in broadband penetration, with Korea and Hong Kong kept the top rankings they received in 2004. Visit http://www.itu.int/osg/spu/newslog/ITUs+New+Broadband+Statistics+For+1+January+2005.aspx

1.3.1 Negative impact of Internet piracy

While the Internet vastly raises opportunities to sell products and services, and makes information products more available to consumers, it also creates new opportunities to infringe others' copyright. The IFPI commercial piracy report (2004) shows that global disc piracy growth rate has declined from a record high of 48 percent in 2001 to 4 percent in 2003, glorifying the success to the commitment and strategy of governments and industries of combating and raiding pirates at sources of operation. Ironically and simultaneously, there has been a continual rise of piracy on the Internet since the start of the millennium. It is argued that as the Internet continually gets easier, faster, and less expensive, many physical piraters will migrate to the Net to carry out their piracy practice.

Internet piracy is a problematic issue jeopardizing billions of revenues of the global entertainment and software industry. Napster – the pioneer of P2P file-sharing services – attracted 30 to 70 million visitors who used it to gain unauthorized access to copyrighted materials (Office of Technology Policy, 2002). According to a study by Parks Associates regarding consumer use of P2P networks and the number of music files stored on PC, more than 40 percent of U.S. home Internet users have downloaded MP3 files onto their home computers (Pastore, March 28, 2002); while an analysis suggests that between 400,000 to 600,000 movies are illegally downloaded every day (Reuters, May 30, 2002). Ipsos-Insight – the global marketing research firm – has revealed that one-fifth of American music downloaders have downloaded full-length motion pictures (Tempo, 2004).

BSA commissioned a survey in 2002 and found that half of the Internet users downloaded commercial software and 70 percent reported they would not pay for the downloaded software. A huge blow to the U.S. economy, totaling billions of dollars and thousands of jobs lost and stealing hundreds of thousands of tax revenues that could have gone to community improvement projects (Business Software Alliance, May 29, 2002). Despite its status as a developed economic and information technology hub in Asia, 54 and 53 percent of the software installed on computers in Hong Kong were pirated in 2005 and 2006 respectively, representing a loss of over US$180 million (4th Annual BSA and IDC Global Software Piracy Study, 2007).

Moving further, in a worldwide Internet piracy study conducted by Online Testing Exchange (Worldwide Internet piracy study, July, 2004), Internet piracy has resulted in billions of dollars in losses to the entertainment industry. It is estimated that when all P2P services are considered, more than 2.6 billion movie files are copied each month. Of the eight countries surveyed in the study, an average 24 percent of Internet users have downloaded a movie.

Meanwhile, it is argued that the exponential growth of Internet piracy is a result of the high level of broadband penetration worldwide.[10] With the efficiency brought by

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[10] The result is alarming in Korea, where six out of ten users have downloaded movies. The growth of Internet piracy in Korea is explained by its broadband penetration (the highest in the world) and weak legislation to regulate e-commerce in copyrighted materials. According to the IFPI commercial piracy report 2004, the estimated number of unauthorized P2P file-sharing sites in Korea is as high as 500. The largest P2P site has an estimated 10 million members and permits 1,000 to 15,000 simultaneous connections.

Following Korea, China is also a major Internet and broadband market. At the end of 2002, the number of Internet households was 6.6 million, up 76 percent since 2001. Broadband grew 164 percent in the same period and reached nearly one million households. Authorities reported significant increases in Internet distribution of pirated products. During the first nine months of 2003, the MPA had issued 260 Cease and Desist letters to Internet Service Providers (ISPs) in China requesting a massive shut down of illegal site operations. In response to the request, ISPs had to take down 93 pirated websites (MPAA, 2003). As one of the most connected economies in Asia, Hong Kong is also experiencing rapid growth in its Internet market. According to Paul Budde Communication (August, 2004), Hong Kong, with a population

broadband connection, the quality and quantity assured with digital compression technologies, and the low or even no cost in acquiring creative works, the Internet has intensified the popularity and extensiveness of piracy practices.

Piracy represents not only the loss in legitimate sales of the industry, but also the loss for consumers, retailers, and the whole society.[11] The RIAA argues that consumers will be the ultimate victim as pirated products can be of poor quality which do not include the superior quality, artwork and accompanied information offered by legitimate products. The necessity of opening up one's computer in order to copy or download digital products also raises privacy and security concerns. These products may not work and can even infect an unsuspecting consumer's system with viruses that can damage the computer. As the industry needs to cover the cost of developing new talent and to keep their businesses operational, the shortcut savings enjoyed by Internet piraters will also drive up the costs of legitimate products for everyone.

Retailers also lose as they cannot compete with the extremely low cost of products offered by online sites or file-sharing networks. As businesses cannot survive, there will be fewer job offers, thus more people will be unemployed. Finally and most importantly, the society loses. Musicians, artists, engineers, and producers are unable to get the royalties and moral rights they earn and deserve. Piracy deprives the incentives of

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slightly over 6.8 million, has the highest rate of growth in the global household Internet penetration, with an estimated 3.5 million Internet subscribers in the territory. Internet subscriptions were evenly divided between dial-up and broadband by end-2003. The Economist Intelligence Unit (October, 2004) reported the number of broadband accounts (both household and office) to have risen from under 700,000 at the beginning of 2002 to 1.3 million at the end of June 2004, exceeding the 1.04 million dial-up Internet accounts. The broadband penetration rate of Hong Kong at present is the second-highest in the world after that of Korea.

[11] The RIAA published an issue on "Anti piracy: Old as the Barbary Coast, New as the Internet," at http://www.riaa.com/issues/piracy/default.asp (about the negative impact of piracy).

these people to invest in further experimentation and creation, and eventually impedes innovative development of the society.

1.3.2 Positive impact of Internet piracy

Conversely, some argue that Internet piracy creates negligible economic disadvantages for the major labels and only slight disadvantages for the actual creators or artists who are pirated. The effects of piracy are complex and multifaceted (Marshall, 2004), and statistics released by the mainstream industry do not reflect their complexities.[12] Some advocates even argue that Internet piracy can have a positive impact upon the mainstream industry.

A report from Forrester Research Inc. indicates that online piracy is not responsible for the drop in music sales, since assuming that everyone who downloaded a music file would have purchased the item is questionably illogical. It also speculates that online piracy by means of sharing services offers new opportunities for big labels to restore industry growth as these services make easy the locating of large pool of copyrighted products (Forrester, 2002).

Meanwhile, Internet piracy can produce a "network effect" that helps the industry promote established and upcoming products (Osorio, 2002). It attracts and creates initial

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[12] A study conducted by Hui and Png (2002) shows that piracy figures are overestimated by the industry to lobby campaigns against piracy practice rather than to use it as a reflection of the reality. According to Jeremy Phillips (1999), the effects of the world of illegal recordings is difficult to ascertain as there are no annual returns reported on the scale of illegal activities, so figures put forward for losses caused by piracy are in danger of being subjective, hypothetical and methodologically flawed. Steven Hetcher - Prof of Law at Vanderbilt University in the US - during an interview with The Curb Center of Vanderbilt on 6 February 2004 also asserts that viewing file-sharing or downloading as theft is a complicated issue as it is difficult to demonstrate the harm and wrongfulness of the act. Downloading is technically simple and the harm is not in any way clear. As unauthorized copies have become difficult to find and to count, finding and counting illicit copies is a poor approximation of the industry's injury.

adopters of the products, who in turn influence others to sample and buy the products through word of mouth (Haruvy, Mahajan, & Prasad, 2004). Some believe that sampling and trying out information products through online file-sharing can increase consumer interest in new products, thus stimulate purchases.[13]

Some scholars further argue that copyright exemption would promote industry development. Many popular software programs obtained large market shares by passing on to users at no extra cost freeware or shareware (termed as public domain software).[14] Others [15] have achieved their dominant market position by being illicitly copied by unauthorized users. No matter how widespread illegal copying is, the software market is booming (Lessig, 2001; Litman, 1996). It seems that the trialability of new products permitted by Internet piracy is crucial as it assists consumers to determine the value of the officially released commodity, and acts as an impetus for a larger number of high quality and packaged products in the legitimate market, thus advancing cultural expression and creativity.

In addition, pirating for a higher and more superior purpose – such as helping friends, building relations, earning better grades, completing a task or supporting a cause of a group – is another means to normalize the negative image of piracy (Hinduja, 2003). Many users believe that Internet piracy for the purpose of personal use or sharing is "fair

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[13] A survey conducted by Jupiter indicated that P2P users are more likely to have increased their music buying than non-users, and their use of the service only serves to fuel their enthusiasm in music. Another report by Yankelovich Partners also found that two-thirds of those who downloaded free music were motivated to actually consume music after hearing them online (Stereophile Staff, July 23, 2000). Like everyday radio broadcasts, file-sharing simply serves as a means for users to try before they buy.

[14] Such as Netscape, Eudora or Torpark, and a few extremely popular P2P networks.

[15] For instance, WinZip, Adobe Acrobat, Photoshop and web browsers.

use"[16] which is an exception of the exclusive right of copyright owners, and is a defense under the copyright law.[17]

Finally, some researchers explain that piracy allows original works to be widely available to everyone who may not be able to afford them at the original price (Ang, Cheng, Lim, & Tambyah, 2001). The issue of affordability is a concern for many third-world lower developed countries (LDCs), since most products are developed and set according to pricing standards of Organization for Economic Cooperation and Development (OECD) countries (Morres & Dhillon, 2000; Gopal & Sanders, 2000). Developed countries have well-developed markets and the legal framework that help to deal with the problem of illegal copying, which is very different from LDCs where there is a general lack of the concept of intellectual property right and protection. It is thus argued that Internet piracy enables LDCs to catch up with technological and economic progress, narrowing the gap between the knowledge rich and the knowledge poor. Moreover, the large user base generated by network effects increases incentives for companies to invest into local markets of LDCs, furthering socio-economic development and advancement (Osorio, 2002).

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[16] "Fair use" is one of the three exceptions of the US Copyright Act. It allows a user to duplicate a copyrighted work for educational or research purposes - such as criticism, news reporting, teaching, or scholarship - as long as the work is not used for profit and its potential value is not negatively affected. Available online: http://www.siia.net/piracy/programs/fairuse.htm

The "fair use" concept also varies from place to place, and has different names (such as "fair dealing" in Hong Kong, the United Kingdom, and Canada) and other limitations outside the USA. However, the basic idea of both fair use and fair dealing is similar, and can be possible defenses against an action for infringement of an exclusive right of copyright. Visit http://en.wikipedia.org/wiki/Fair_dealing for the definition of "fair dealing" and its application in Australia, Canada, and the United Kingdom.

[17] A court case is BMB Canada Inc. v. John Doe. The Court ruled that it is similar for a library that places a photocopying machine in a room filled of copyrighted materials, as well as for a computer user that places a personal copy on a shared directory linked to a P2P network. So now, downloading files for personal use in Canada does not amount to copyright infringement. See BMG Canada Inc. et al. v. John Doe (2004) FC 488 at http://reports.fja.gc.ca/fc/2004/pub/v3/2004fc34396.html

The controversy on the impact of Internet piracy will continue. It is not the interest of this study to carry on the debate regarding the positive and negative effects of piracy. Until now, it has been clear that technological sophistication has represented the future of piracy. Although there is a lack of accurate and representative figures related to industry losses as a result of Internet piracy, the unauthorized Internet distribution and exchange cannot be underestimated. Internet piracy at an aggregate level is believed to inflict losses on the entertainment and software industry at an unprecedented intensity, and will likely be a major drain on the economy and people's morality in the long run.

1.4 Two Major Responses to Internet Piracy – Law and Technologies

1.4.1 Copyright law[18]

All creative works with which we are traditionally familiar – e.g. academic journals, books, songs, graphics, pictures, motion pictures, paintings, slogans, banners etc. – are the exclusive intellectual property of copyright owners, and they are given exclusive rights that enable them to control the use of these works in a number of ways, such as copying, issuing copies to the public, renting computer programs or sound recordings to the public, making copies available to the public via the Internet, broadcasting, or adapting the works.

Different countries have different legal terms or criteria on what types of works are protected under what conditions and for how long. But the primary objective of copyright law is the same – to maintain a balance between the limited exclusive rights of

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[18] This section on "Copyright law" integrates information offered by the HK Intellectual Property Department (http://www.info.gov.hk/ipd/eng/), the US Copyright Office (http://www.copyright.gov/), and a few legal and academic institutes.

copyright owners for adequate rewards to recoup their investments of time, money, creativity, skill and labor, and the rights of society and the public to have access to ideas and information in order to further free expression and innovation.

With the advent of the Internet, the turn of the century seems to have brought chaos to the understanding and implementation of copyright law. According to Jessica Litman (2003), copyright law is going through a stage of readjustment under the development of a networked digital technology, and the law has become a tool for conventional entertainment industries to declare war on the new digital media.

1.4.2 A three-pronged approach to curb Internet piracy - Lobbying, Legislation, Litigation

Technological change has prompted copyright holders to seek more protection from the law for their increasingly vulnerable products (Moohr, 2003). The entertainment and software industry has become more alert and filed lawsuits all over the world in an attempt to knock down illegal operations on the Internet and combat cases of copyright infringements.

With heightened concerns toward the problem of Internet piracy and compelled by the constant lobbying of the mainstream industry, many countries and cities have strengthened existing copyright law, expanding criminal liability for copyright infringements that are not undertaken for financial purposes.[19] These provisions are

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[19] For instance, with relevance to Internet piracy, the US Congress has passed the No Electronic Theft Act (NET) in 1997, which provides criminal punishment for "reproducing or distributing, including by electronic means, during any 180-day period, of one or more copies or phonorecords of one or more copyrighted works, which have a total retail value of more than $1,000." The Act was viewed as "closing the loophole" of the old statutory scheme – which only condemned those who intentionally distributed

greatly supported by the software and entertainment industries as they subject those who copy for noncommercial, personal use to criminal penalties.

Following a series of lobbying and legislative campaigns, there are a few successful industry lawsuits to date.[20] The industry believes that the rounds of lawsuits

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copied information products over the Internet for commercial purposes. The NET added an extra provision that criminalizes infringements that are **not** undertaken for a financial purpose. Visit the US Department of Justice homepage - http://www.usdoj.gov/criminal/cybercrime/17usc506.htm - for No Electronic Theft Act, 17 U.S.C. 506(a)(2) Criminal Offenses and Terms of Punishments.

Another recent amendment is the Digital Millennium Copyright Act (DMCA), which was passed and signed into law in 1998. The Act takes a more proactive stance by criminalizing acts – e.g. circumventing of or dealing in a technology that disables electronic protection systems that are devised to restrict access or to protect copyright of information products – that may likely lead to copyright infringement. The Act also grants right owners broad subpoena powers to obtain users' personal information from online services providers. Visit http://thomas.loc.gov/cgi-bin/query/z?c105:H.R.2281.ENR: for the Digital Millennium Copyright Act 1998, HR.2281, 17 U.S.C. 1201-1205 Copyright Protection and Management Systems; s. 512 (h) Subpoena to identify infringers.

Similar legislation is found in the United Kingdom – the Copyright and Related Rights Regulations 2003. It is a civil offense for a person performing an unauthorized act of circumvention of "effective technological measures" – i.e. measures controlling the use of a copyright work through an access control or protection process such as encryption or scrambling technologies. It is assumed that music or movie files need to be 'cracked' before they can be uploaded or circulated on the Internet, thus the act of 'cracking' is outlawed based on the provision. The Regulations also apply to the circumvention of "rights information system" – technology designed to track and impede unauthorized consumer file swapping and use of the work. It further introduces new criminal offences for unauthorized "communication to the public" of copyrighted works by electronic transmission, in which the public can access the works anytime, anywhere. Apparently, the different methods available to share files on the Internet fall within the ambit of these new legislative provisions. Visit http://www.legislation.hmso.gov.uk/si/si2003/20032498.htm for The Copyright and Related Rights Regulations 2003, S.I. 2003 No. 2498.

[20] In the A&M Records Inc. v. Napster Inc. case, the Ninth Circuit Court's decision announces that those who uploaded music onto the Napster system violated the right of distribution, and those who downloaded files from other computers violated the right of reproduction. The court also dismissed Napster's defense of fair use and substantial non-infringing use, and held that downloading sites or P2P services will be liable for secondary, contributory infringement. See A&M Records, Inc. v. Napster, Inc. (00-16401), 02/12/01, US Court of Appeals for the Ninth Circuit at http://www.ce9.uscourts.gov/web/newopinions.nsf/0/c4f204f69c2538f6882569f100616b06?OpenDocument for a summary of the case.

On 8 September 2003, the Recording Industry Association of America (RIAA) representing the music industry in America filed the first wave of civil lawsuits against 261 people across the country who uploaded an average of 1,000 songs to P2P networks**.** The RIAA sent thousands of subpoenas seeking the names of music sharers and settled with a handful of file sharers for around US$3,000 each (Cassavoy, 2003; Gross, 2004b). After two years of the lawsuit campaign, the RIAA had sued over 11,500 Americans for file sharing (as of November 2005, the number is over 15,000), and it continues to announce approximately 700 new suits each month. See, RIAA v. The People – Two Years Later, a document presented at the first annual P2P Litigation Summit, Nov. 3, 2005, http://www.eff.org/IP/P2P/RIAAatTWO_FINAL.pdf

The Motion Picture Association of America (MPAA) representing all major Hollywood movie studios also follows the RIAA's path and began suing people on 16 November 2004, who are illegally

are essential educational tools, which aim at increasing social awareness that the 'sharing' activity sometimes portrayed as harmless or even respectable by P2P users is in fact illegal, and raising a raft of concerns about security and other contents of such services.[21]

Furthermore, many foreign law enforcement counterparts join forces to strike at the very core of the international online piracy world. In April 2004, the U.S. Department of Justice and law enforcement bodies of 10 other nations seized more than 200 computers in an Internet piracy sweep (termed the "Operation Fastlink"). The operation was assisted by the Business Software Alliance (BSA), the Entertainment Software Association (ESA), the Motion Picture Association of America (MPAA), and the Recording Industry Association of America (RIAA) (Gross, 2004a).

As growing Internet use and broadband penetration spurs an increase in unauthorized distribution of digital copyrighted works, it is likely that there will be more lawsuits against major Internet distributors and users internationally.

1.4.3 Use of advanced technology to prevent Internet piracy

Policy makers and the industry also adopt preventive technological measures to impede online piracy activities.

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downloading motion pictures off P2P networks (Boliek, 2004). The suit numbers are between 200 and 300, and were filed in different venues across the US.

[21] According to IFPI report, these litigations have evidently heightened the awareness of the illegality of unauthorized file-swapping in the USA - from 37 percent before the lawsuits to 64 percent in December 2003. What's more, an average of 66 percent of respondents in four surveyed countries in Europe is aware that unauthorized file-swapping is illegal. This is even higher than the corresponding levels of awareness in the USA (64 percent) in December 2003, after three waves of US lawsuits by the RIAA against individual users (IFPI, January, 2004).

Lessig (1999) supports the idea that a technology solution to deal with a technology problem and introduces the "code" as the online regulator to supplement the law and market as the chief control to piracy. He suggests the immaterial and incontrollable nature of cyberspace has been overstated, and argues the architecture of the Internet gives rise to new ways – encryption technologies in particular – to reinforce the underlying legal prohibition against the unauthorized use of copyrighted works.

Content creators are now working closely with technology companies to develop new tools and technologies to combat illegal uses of file-sharing and distribution networks. For example, the BSA has deployed the most advanced online anti-piracy services offered by MediaForce to combat Internet piracy.[22]

The Federal Communications Commission (FCC) in 2003 also approved an anti-piracy mechanism that allows programmers to attach an encrypted security code – a digital broadcast flag – to digital broadcasts, barring consumers from sending unauthorized copies of popular shows around the worldwide web (Federal Communications Commission, 2003).

In addition, big media technology companies are securing content distributed via the Internet by means of Digital Rights Management (DRM) technology.[23] The industry

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[22] The anti-piracy service patrols the Internet and finds unauthorized copies of software programs across popular file trading forums - such as P2P programs/networks, IRC channels, websites, FTP sites and newsgroups. It also provides case management tool that tracks and archives notifications sent to infringers, monitors for compliance, and escalates non-compliant cases. Visit the BSA website: http://www.bsa.org/usa/press/newsreleases/Business-Software-Alliance-Announces-Deployment-of-MediaForce-Online-AntiPiracy-Services.cfm for more details regarding the anti-piracy technologies offered by MediaForce.

[23] For example, SyncCast – a leading Internet Streaming Hosting Provider and digital media technology company – uses DRM technology to provide companies, such as AOL, Time Warner, Walt Disney Internet Group, AT&T, and Google, with real-time reporting of content licensing and consumption by utilizing the IP addresses to identify the location of website visitors. The report also includes when the content was licensed (time and date); where the content was licensed (country, state, city); and what was licensed (file names, byte size, version, server-side end user licensing agreements).The DRM Solution technology of SyncCast is detailed in SyncCast News Room online, at

further develops legitimate download services that enable consumers to easily and affordably purchase digital content on the Internet.[24]

With the availability of these legal alternatives, the beginning of 2004 showed an increase in consumption of legal Internet downloads. A survey conducted by IFPI in December 2003 found that one in four Internet users was aware of legal alternatives for downloading music.[25] At the same time, Ipsos-Insight's quarterly tracker of American digital music behavior also reveals as many as 21 percent of American downloaders had paid a fee to download digital music off the Internet in December 2003, which translates into 10 million downloaders within the U.S. population (Tempo, 2004). A similar study was released a year later, and this time the number of paid downloaders rose to 24 million Americans (Tempo, 2005). As the demands for digital contents increase, it is believed the years ahead will see the launch of even more legal download services worldwide.

1.5 Problems with the Law and Technologies

1.5.1 Problems with the law as the sole regulator

The huge losses declared by the software and entertainment industry are likely to lead to more vigorous lobbying campaigns and frequent litigations against cases of

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http://www.synccast.com/newsroom/default.asp?page=news&sub=20030605, on 5 June 2003. A similar DRM project - Digitalcopyright.hk - launched in Hong Kong by the Cyberport i-Resource Centre funded by the HK Government. Its aim is to provide the infrastructure to facilitate protection and distribution of digital contents of content owners. Visit
http://www.cyberport.hk/cyberport/en/home/facilities_n_services/irc/damp/
[24] Napster launched a new legal downloading service in the UK and Canada in May 2004, and Apple launched iTunes in April 2003 and further launched this service in three European countries in June 2004. Similarly, Sony Connect announced a European roll-out for the summer of 2004 (IFPI, January, 2004). The British Phonographic Industry (BPI) in March 2004 also announced that the sales of legal downloads in the UK have overtaken cassette singles and 7-inch singles, glorifying the rapid growth of the nation's legal downloading infrastructure.
[25] Conducted by GfK Media for IFPI in Denmark, France, Germany and Italy (n = 3,500, random sample). Online source: http://www.ifpi.org/site-content/library/online-music-report-2004.pdf (p.4).

copyright infringement. These campaigns will intensify with the proliferation of online copying and sharing. However, legislative measures are not unproblematic.

Many scholars have pointed out that criminalizing piracy for personal use may undermine fair use, depriving individuals of the exceptional right to access information. For example, the overextension of exclusive rights created by the DMCA and its anticircumvention provisions heighten concerns that encryption technology will circumscribe the fair use of online copyrighted materials. The broad subpoena powers granted to right owners also raise privacy concerns among information users.

Jeremy Bentham (1961) emphasizes the ineffectiveness of deterrence by means of criminal sanctions and punishments to prevent future harm, saying that the law is appropriate only as a last resort when the mischief cannot be prevented and causes detriments to public interests, and when it is more cost-effective and beneficial to use the law among other types of regulatory control. There are billions of cases out there, thus enormous resources are required to track and hunt down near-anonymous piraters who can move freely around the global network. So, as the argument goes, it will be costly and ineffective to criminalize Internet piracy.

Illegitimacy of the law

Others contend that extensive and pervasive legal control will not necessarily lead to less piracy behavior, and civil or criminal penalties will do little to ensure compliance with a law that people do not voluntarily obey (Gopal, Sanders, Bhattacharjee, Agrawal, & Wagner, 2004).

People will continue to find ways to share information, and many sharers also believe that information should be free.[26] Almost everything now is protected by copyright, thus many criticize copyright law as an illegitimate and unfair tool – a form of monopoly for the industry – rather than as a means for driving innovation (Cooper & Harrison, 2001).

While some surveys suggest a modest reduction in file sharing since the recording industry lawsuits against individuals began in 2003, empirical monitoring of the P2P networks has shown P2P usage increasing.[27] Furthermore, because many users are not on P2P networks all the time or are not uploading files, the actual number of P2P users is expected to be much higher. Last, the widespread publicity attending the frequent lawsuits and even criminal sanction in cities like Hong Kong may have made the respondents more reluctant to admit their downloading activities.

The enforceability of online legal contracts – e.g. click-wrap or browse-wrap contracts (Darden & Thorpe, 2003) – is also suspect. It seems unlikely that reciting or reminding consumers upon copyright protections in a virtual contract can rectify the long-standing disrespect of copyright, though in any case the contract is likely to go unread.

Consumer confusion – Is non-commercial use illegal?

[26] According to legal experts, the Napster case has illustrates the ineffectiveness of legal prohibitions, and consumers continue to engage in file-sharing of copyrighted materials as new file-sharing services come up as Napster's progeny, bringing with them more decentralized services (Green, 2002a). A research from Ipsos-Reid (Napster Use in Canada to Suffer Dramatically, 2001, May 2) shows two-thirds of Canadian Napster users are not willing to follow the law and pay for legal music, and they will continue to find ways to download and swap music for free once a service starts to charge.

[27] Research companies like the Big Champagne that monitors the network traffic indicates the amount of traffic on P2P networks doubled between September 2003 (when the lawsuits began) and June 2005. See "P2P Volume Climbs Again in June, User Levels Near 9 Million," Digital Music News, retrieved July 8, 2005: http://www.digitalmusicnews.com/yesterday/july2005#070805p2p.

Moreover, copyright law as the domain of specialists lack public exposure.[28] The public often holds mistaken views about the legality of copying information on the Internet, particularly for personal use.

Litman (1994) points out that consumers do not understand copyright law because it does not make much sense to normal users, and most Internet users have a mistaken view that anything – unless explicitly declared or stated otherwise – posted and appeared online is open to the public, thus free from copyright. In 1996, Litman restates that copyright law – which is lengthy, complicated, and counterintuitive – has been addressed almost exclusively to highly specific commercial and institutional actors who participated in copyright-related businesses. Members of the public are generally excluded from the drafting process and negotiations of the copyright law.[29]

Unlike tangible or physical properties, intellectual properties have the characteristics of public properties where the consumption utility is not reduced by sharing with others. Therefore, the use of information does not deprive or diminish anyone of its use at the same time or in the future (Cooper-Dreyfuss, 1988; Hettinger, 1989).[30] Thus personal use is seemingly consistent with the idea of sharing information, and the public may view information products as not subjected to absolute control by any

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[28] According to Goldstein, P. (1994) in Copyright's highway: From Gutenberg to the Celestial Jukebox (NY: Hill and Wang), the concept of copyright law only exists among grassroots with the arrival of the photocopy machines, before that the majority of ordinary consumers hardly had access to a printing press and thus fell outside the scope of copyright law.

[29] Hardy (2003) offers similar explanation as Litman, and focuses on common views about property and intellectual property. He suggests that a rational understanding of the abstract rights in intangible property is not as strong or immediate as the intuition formed through people's lifelong experience about tangible property. The distinction made by Hardy about property and intellectual property highlights the peculiar nature of the latter, i.e., intellectual property, as "nonrivalrous" and "nonexclusive."

[30] The characteristics of intellectual property were clearly spelt out by Thomas Jefferson: "The peculiar character (of knowledge) is that no one possesses the less, because every other possesses the whole of it. He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me." (The letter from Thomas Jefferson to Isaac McPherson (Aug 23, 1813), in 6 The Writings Of Thomas Jefferson, 180-81, H.A. Washington ed., J.B. Lippincott & Co., Philadelphia 1871).

single person or entity. In this sense, the costs of using them without permission are obscured and use does not seem immoral.

Moreover, it is now possible to reproduce almost anything regarded as information. They can be reproduced infinitely at low or no cost and spread all over the world and in no way injure the ability of the original right holder of the work to go on holding it. Then, as the argument goes, piracy on the Internet is a seemingly harmless crime, in which the harm done is difficult to be seen and calculated (Barlow, 1994).

Finally, many doubt whether unauthorized use of knowledge, ideas and information for non-commercial purpose is "theft" or "stealing." There is always a distinction between commercial and non-commercial behavior. Since personal use of copyrighted materials without authorization is unlikely to impose large-scale harm to the community[31], and there is no robust consensus of the immorality of the conduct, it is unjustifiable to support treating infringement for personal use as a crime (Green, 2002b; Moohr, 2003).

Given the distinctions in the interests of copyright holders and public users, and in the moral content of commercial and noncommercial infringement, a blanket legal prohibition against all infringement seems to be illegitimate and inappropriate. A rigid criminal law may even undermine the main objective of the copyright regime – to encourage creative ideas and expressions – thus constraining individual talents and limiting future innovations.

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[31] The analysis of harm done to the society due to piracy reveals problematic issues. See Moohr G. S., supra note 2, where the author points out that identifying and measuring economic losses of copyright holders from infringement is problematic, especially when it is important to actually calculate the real harm caused by an accumulated loss from many small infringements by many individuals, not the negligible, minimal harm caused by a single infringer.

Cross-border jurisdiction

Lawsuits against more advanced file-sharing services, as well as downloading sites, have centered on jurisdictional and enforceability concerns.[32] Therefore, it is unclear whether these services can be shut down easily (James, 2001).

According to Samuels (2003), there are lots of cases that are not being litigated. There are simply lots of infringements taking place out there that are not surfacing in cases. Thus actual litigation has little effect on the free availability of copyrighted works on the Internet accessible by global users. Even if courts of other countries (where infringements are conducted) have the ability to enforce rulings, it certainly raises the costs and risk of copyright litigation, especially in targeting individual infringers.

1.5.2 Problems of technological control

Technological intervention is unlikely to be workable in the long-run. Technology is always one step ahead, more than the law can handle -- as demonstrated in the aftermath of Napster. Many describe it as a technology arms race as when people develop technology for illegal purposes, law enforcement catches up with them; then people tend to respond by improving or designing new techniques that make activities harder to detect but easier to do to outwit law enforcement and industry efforts to shut them down (Krebs, 2003).

Evidence is found in the film industry's effort to develop the encryption algorithm for DVDs. In an attempt to avoid the piracy problem that had overwhelmed the recording

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[32] For instance, some pirated sites are located off-shore (Cooper & Harrison, 2001; Healey, 2001) where copyright law is lax or even absent, and some do not have a centralized server offering directories of users and file transfers for easy tracking.

and software industry, movie studios conditioned DVD distribution of their copyrighted works with the development of the "Content Scrambling System" (CSS) that would prevent unauthorized copying. However, the Internet also provided hackers with a readily available channel for distributing the "De-CSS" program they developed. Despite the courtroom success and the threat of severe sanctions under the Copyright Act and DMCA, De-CSS remains widely available to anyone with an Internet connection.[33]

Legitimate online download

Although the industry has taken advantage of the opportunity to offer legitimate and fair-priced downloading services, the host of unauthorized Internet sites and P2P services sprung up in late nineties have seduced many Internet users with the lure of free downloads before legitimate services had a chance to get set up. These sites and services provide unfair competition to legitimate services that significantly increased their business risk.

Moreover, the relatively low penetration of broadband services in many countries until late 2002/early 2003 markedly limits the growth of legitimate online services. Latest legal services (those listed in footnote 25) only took off in 2003 in the U.S. and other European countries where the problem of Internet piracy is already listed on the political agenda, a series of legal, technological and social campaigns against pirating activities are taking place, and citizens have a rather high level of awareness towards the illegality of the behavior. However, in the short run, legal services are unlikely to be widely

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[33] Visit http://encyclopedia.thefreedictionary.com/Anti-piracy for examples of anti-piracy campaigns: The Motion Pictures Association of America (MPAA) encryption of DVD movies using the CSS cipher and prohibiting the distribution and use of DeCSS.

adopted as distribution channels in the international market due to its unforeseeable future, and the different demands and value of the consumer markets.[34]

The real problem persists

Finally, a stark fact is that even people know it is wrong to pirate but they do it anyway (Athey, 1990; Wickham, Plotnicki & Athey, 1992).

The copyright battle is not yet over, it has just begun. Despite new copyright laws which have been tailor-made in favor of copyright owners, and regardless of lawsuits launched by the entertainment and software industry in various countries in the world, disregard for copyright laws remains widespread.

Although the IFPI estimates that the number of infringing music files on traditional web and FTP sites remained flat during 2003, and unauthorized files found on P2P systems have dropped from its peak of 1.1 billion in June 2003 to around 800 million by June 2004 (IFPI, June, 2004), these data, which are mainly collected in the U.S. and a few European countries, do not reveal the whole truth worldwide.[35]

Unauthorized copying and file-sharing on the Internet is an international problem and continues to thrive. Millions of users still engage in massive copying and sharing of copyrighted works (Samuels, 2003). The question then is: Why is this happening? Why

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[34] Oriental Daily (October 11, 2004). 網上下載或判監. Orientaldaily.com, http://orientaldaily.on.cc/cgi-bin/nsrch.cgi?seq=425125 (currently Hong Kong has no legitimate (paid) online download services set up by the industry like those in the USA and European countries, and most users use the massive amount of sites based in China to download free contents). Although the Hong Kong Broadband Network (HKBN) has launched its totally free legal movie download platform at the beginning of 2006, a service which would allow any Internet users to legally download five movies for free, there are still restrictions (e.g. time) imposed on users which make the service non-user-friendly. See
http://www.digitalmediaasia.com/default.asp?ArticleID=14470
[35] For example, Pew Analyst Mary Madden pointed out that there are methodological problems of company surveys - for example, phone interviews are used such that respondents may be reluctant to self-report their illegal conduct. comScore Analyst Graham Mudd also indicated that different results will likely be obtained if studies were conducted overseas with more diverse users and wider varieties of file-sharing/downloading services. Visit http://www.businessweek.com/technology/content/jan2004/tc20040116_9177_tc024.htm

do people engage in illegal activity over networks and services on the Internet? Addressing these questions is the focus of this study.

1.6 Purpose of Research

1.6.1 The importance of studying Internet piracy

Internet piracy has become a pervasive and corrosive problem to governments, regulatory bodies, and the global entertainment and software market. This study will further existing theories on human behavior and media use, contribute to society by finding the behavioral causes of Internet piracy, as well as provide greater understanding about the pirating scene to assist in the planning and implementation of relevant and reasonable policies to curtain such behavior.

Contributions to research and theoretical development

Research on digital piracy is scarce as the focus in existing literature has been on software piracy – especially optical disc and end user piracy.[36] Moreover, most of those studies conducted in academia used relatively small student samples of the business discipline, limiting the representativeness and generalizability of results to explain other types of pirating behavior among the increasing heterogeneous Internet users and piraters. Most of the studies have investigated only a small number of motivating factors of the ethical behavior and used abstract/latent variables (e.g. attitude) to explain the phenomenon. Very few studies have tried to tap into the beliefs of individuals toward the behavior concerned. Finally, the majority of the studies have been conducted in Western

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[36] For more types of physical software piracy, visit http://www.bsa.org/usa/antipiracy/Types-of-Piracy.cfm

societies with population holding and prioritizing specific perceptions, attitudes and values toward piracy, thus results cannot be easily applied to the problem in an Asian Chinese context.[37]

This research adopts, incorporates and expands on existing theories on human behavior and media use to develop a more comprehensive belief-behavior structural model of Internet piracy. To broaden our understanding of individuals' belief formations and the priority given to those beliefs (which are cultural-specific) that ultimately determine their intention and actual performance of the piracy behavior online, this study concentrates on individuals' belief composition towards Internet piracy. Ultimately, this research develops a conceptual model of psycho-behavioral patterns that explains the relationship between motivations/intentions and actual behavior of online piracy. This model not only serves as a good basis on which a better understanding of online piracy but also provides understanding and practical solutions to various issues of online piracy.

Benefits to policy makers and the industry

The Internet -- coupled with high-speed connection -- allows copyrighted works to be distributed and transmitted with high efficiency, providing vast opportunities for the growth of piracy. Thus Internet piracy has prompted economic and ethical concerns in our society, causing a drain on the global entertainment and software market, and indirectly pressuring regulators to push for harsher control to deal with the problem.

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[37] Trevor T. Moores and Jasbir Dhaliwal (2004), A reversed context analysis of software piracy issue in Singapore, Information & Management, 41, (p.1037-1042), points out that different individuals of different contexts will have different expectations and needs that motivate them to pirate; even if the resulting motivators are the same, different priorities will likely be given to those motivating factors such that different approaches or policies may be required to combat the piracy problem.

As discussed earlier, law and technologies cannot "avoid"[38] the problem of Internet piracy. Even though the problem of Internet piracy bears resemblance to its analogue predecessors, it is nevertheless different in scale. The Internet allows instantaneous, near-anonymous, large scale and global distribution of music, films, software and other literary works at virtually no cost. Thus, technologies available on the relatively new Internet have brought about its own regulatory issues and concerns. The threat of litigation has thus far proved difficult and ineffective against infringers with no assets and no physical address, and the problem of cross-jurisdiction makes litigation and enforcement of judgments costly, or even impossible.

Technological solutions have, so far, been unsuccessful. As soon as the industry finds a new way to protect their material, the public subsequently find out a way to decrypt the material and distribute it on the networks. Technology has often been analogized as an arms race.

Since existing law and technologies cannot effectively deal with Internet piracy – a prevalent behavioral problem among individuals at home or at work – it is important first to look at the root causes of the escalating problem, to focus on the demand side of the equation by asking: "Why do people pirate on the Internet even though they know it is against the law? How do people see the copyright law, and piracy behavior? What do people need, want, or deserve?"

Understanding the real cause of the piracy problem allows different voices to be heard, thus providing regulators with a greater understanding of the problem to assist

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[38] The word "avoid" is used instead of "eliminate" or "eradicate" because information piracy has been a deep-rooted problem ever since the arrival of the printing press. The goal of law and litigation throughout this time has been to at least tone-down the problem of piracy, make people see a certain degree of harm in their actions, and be sensitized to the issue.

them in planning and implementing more realistic, legitimate, and consistent policies. This understanding, coupled with limiting, or at least lowering, Internet piracy, also provides the entertainment and software industry with information on how to explore the Internet as an attractive means for customers to obtain legal downloads.

1.6.2 Objectives of the study

Therefore, this research will focus on exploring the motivations underlying people's pirating behavior on the Internet. Here are the three main objectives:

1. To develop and elaborate a belief-behavior structural model of Internet piracy – which is guided by existing psychological, behavioral theories, communication theories, past literature, peer discussion – that identifies key motivating factors (or constructs) influencing different types of Internet pirating behavior. The factors influencing the intention to pirate and the actual pirating behavior will be examined – by "pre-testing, reviewing and refining" – in order to conceptualize the determinants of online pirating behavior relevant to the geographic and cultural context.

2. To examine the hypothetical relationship between the factors by conducting a telephone survey with Internet users (who are either piraters or non-piraters) to empirically test the validity of the proposed behavioral model.

3. To inform policy-making authorities and the industry of the major reasons why people pirate on the Internet from a user behavioral perspective to assist them in the process of policy planning and development.

Chapter Two Literature Review

Research investigating the serious problem of Internet piracy is in its infancy. The literature to date focused almost exclusively on software piracy[39] *(e.g. Al-Jabri & Abdul-Gader, 1997; Cheng, Sims, & Teegen, 1997; Eining & Christensen, 1991; Hinduja, 2001; Ho, 1995; Limayem, Khalifa, & Chin, 1999; Moores & Dhillon, 2000; Peace, 1997; Rahim, Seyal, & Rahman, 2001; Reid, Thompson, & Logsdon, 1992; Sims, Cheng, & Teegen, 1996; Simpson, Banerjee, & Simpson, 1994; and Solomon & O'Brien, 1990),* with only a few studies emerged after the millennium focusing on digital audio or music piracy (*e.g. Cooper & Harrison, 2001; Gopal, Sanders, Bhattacharjee, Agrawal, & Wagner, 2004; Hui & Png, 2003; Kwong, Yau, Lee, Sin, & Tse, 2003; and Marshall, 2004).*[40] These studies examined the issue of piracy from different viewpoints and are reviewed as follows.

2.1 Descriptive Research

Some studies attempted to elicit a profile of individuals most likely to engage in software piracy and to determine the influence of different demographic attributes on pirating behavior. For example, individuals who are younger, male, and experienced with computer tend to pirate more (*sample studies are: Kwong et al., 2003; Lending & Slaughter, 1999; Loch & Conger, 1996; Peace, 1997; Solomon & O'Brien, 1990; Tan,*

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[39] A key reason is that the software industry has had the largest revenue losses due to digital piracy (with an estimated $30 billion in lost revenues in 2003) (First Annual Business Software Alliance and IDC Global Software Piracy Study, July 2004), and digital piracy is a relatively recent phenomenon.

[40] This may be explained by the increasing popularity of unauthorized file-sharing activities on the Internet with the arrival of P2P or more advanced file-sharing networks, which stirs a series of lawsuits against program/network distributors and even individual sharers. The first of these cases is the famous Napster case in 2000.

2002). Similar results in many studies also commonly reported that female is less likely to pirate than male (*for example, Hinduja, 2003; Rahim et al., 2001; Seale, Polakoski, & Schneider, 1998; Simpson et al., 1994; Sims et al., 1996; Wood & Glass 1996*). Some possible explanations are that females are driven by social norms more than males (Wilson et al., 1975) and they evidenced greater sensitivity than males towards ethical behaviors (Pereira & Kanekar, 1984), thus they view piracy less positively than males (Ang et al., 2001). Nevertheless, there were studies that showed no significant difference between male's and female's ethical beliefs and their willingness to commit unethical acts (*e.g. Athey, 1992; Davis & Welton, 1991; Oz, 1990).*

As mentioned, many studies confirmed that younger people are more prone to piracy behavior (*e.g. Al_Rafee & Cronan, 2006; Lending & Slaughter, 1999; Peace, 1997; Tan, 2002; Tom et al., 1998).* Again, contrasting results are obtained that demonstrate either no significant difference between younger and older individuals' beliefs or actual performance of the behavior (*e.g. Ang et al., 2001; Oz, 1990),* or a positive relationship showing older individuals pirate more than younger ones (Sims, Cheng, & Teegen, 1996).

Finally, some studies found a significant effect of family income on people's intention to buy counterfeit products or pirate software (*e.g., Cheng, Sims, & Teegen, 1997; Lending& Slaughter, 1999; Rahim et al., 2001; Tom et al., 1998*), while Kwong et al. (2003) found no effect of the income variable on the intention to buy pirated CDs. Basically results can vary across studies due to geographical context and cultural differences of the sample population, thus leading to contrasting results.

2.2 Ethical Consideration of Piracy

As piracy is a moral issue, many authors also viewed software piracy as a critical ethical concern that can be conceptualized as an "ethical questionable behavior" (Fukukawa, 2002).

Higgins and Makin's study (2004) showed that moral belief in pirating behavior may inhibit individuals from pirating. Similar findings are reported in the literature on moral beliefs towards software piracy. Thong and Yap (1998) studied the ethical decision-making process regarding softlifting – the illegal copying of software for personal use. Results found that deontological (i.e. sets of universal rules defining what is right) and teleological (i.e. base on consequences to address the right or wrong of an action) evaluations are used to arrive at an ethical judgment of a moral issue, and will subsequently affect a person's moral intention to pursue softlifting behavior. Gopal and Sanders (1998) reported a significant effect of ethics on the individual behavioral mechanics (i.e. the decision–making process) of engaging in software piracy. Kwong et al. (2003) also showed that individuals who consider piracy as unethical and costly to the society will hold an unfavorable attitude towards the behavior, reflecting the teleological ethical judgment cited in Thong and Yap's study.

Conversely, Logsdon, Thompson, and Reid (1994) offered limited support for the hypothesized relationship between the level of moral judgment and the actual performance of pirating behavior. Analysis indicated a high level of tolerance toward unauthorized copying. Software piracy is perceived as an issue of low moral intensity, rejecting the common thought that the higher one's level of moral judgment, the less likely that one will approve of or engage in unauthorized copying.

Consistent findings are found in a number of studies, and in particular, some have identified that people of the academia do not regard piracy as improper or unethical (Hinduja, 2003; Wood, Longenecker, McKinney, & Moore, 1988). Most students or faculty members believe that copying does not jeopardize any ethics or morality (c; Taylor & Shim, 1993), and copying is a normal, socially, and ethically accepted behavior is widespread (Solomon & O'Brien, 1990), serving the educational purposes and work-related needs of individuals if a profit motive is absent from the reasoning behind engaging in piracy (Leventhal, Instone, & Chilson, 1992; Wong 1995). Individuals simply do not perceive piracy as inappropriate, and some even do not believe their friends and superiors think that it is inappropriate (Christensen & Eining, 1991).

Rahim et al. (2001) further realized that a prevailing or authorized attitude is likely to support software pirating activities. This suggests that individuals are attitudinally oriented to favor piracy practice. This finding is similar to results obtained by Reid et al. (1992), who reported the existence of a prevailing attitude among students toward sanctioning the use of copyright software.

2.3 Piracy from a Cultural Perspective

Some research has gone a step further to investigate specific contextual factors – cultural and organizational – that affect individuals' moral beliefs towards the behavior. In a cross-cultural analysis study, Swinyard, Rinne, and Kau (1990) examined differences in morality and the actual behavior towards software piracy in Singapore and the United States. Results concluded that cultural histories of Asians lead to a more casual attitude than Americans toward software piracy, and by calling the behavior as immoral is

inappropriate due to the difference in moral values between the East and the West in respect of the ethical behavior.

A comparative study (Lending & Slaughter, 1999) sketching on the work of Hofstede (1993) also highlighted the importance of culture to understand the differences in ethical beliefs and behaviors toward piracy. The study discovered that software piracy attitudes are ethically less sensitive and more widespread in a technological focused university - with a culture that tolerates more ambiguity, values individualism and masculinity – than a business focused university. Thus the result justified the claim that different cultures will result in different attitudes and behaviors towards piracy practice.

A more recent study (i.e. Kyoon, Gobal, Sanders, & Whinston, 2004) incorporated economic theory in a cultural analysis of why people pirate software. It arrived at the conclusion that Hofstede's *Individualism-Collectivism* together with a country's Gross Domestic Product (GDP) can explain almost three-quarters of the software piracy rate.

2.4 Motivating Factors of Piracy

Cost

There are ample studies that attempted to explore the underlying reasons of pirating behavior. Among them, cost, law enforcement, and economic conditions have been the focus in many studies. Cheng et al. (1997) identified and ranked the reasons why individuals pirate software. It is found that price – including the price of software and one's affordability – is an important determinant of pirating behavior, followed by the short life span of entertainment software products that makes it vulnerable to piracy.

Similar research on the subject also showed that price is positively related to pirating activities (*e.g. Cheng et al., 1997; Gopal & Sanders, 2000; Harrington, 1989; Prendergast, Leung & Phau, 2002; Moores & Dhillon, 2000; Moores & Dhaliwal, 2004; Peace, Galletta, & Thong, 2003; Rahim, Rahman, & Seyal, 2000*), and many argued that the high price of software or entertainment products will affect users' attitude towards software piracy, which in turn restrict potential users of many countries to have legal ownership.

A study conducted in Hong Kong (Moores & Dhillon, 2000) revealed that the cost of purchasing legal software in the city is expensive for students and the general public. Cost is found to be an important factor driving many HK people to pirate. Results even showed that the cost of software is higher than the cost of hardware products.

Fairness

The cost factor will likely extend to the issue of perceived fairness of receiving services or information offered by the legitimate market or industry, which might drive the intention to pirate or the actual piracy behavior. Such a concept of perceived fairness in social exchange is similar to Joshi's (1989) proposed equity dimensions (based on equity theory[41]) of reciprocal, procedural, and distributive fairness of providing IT services. The concept is later applied to a study of software piracy by Glass and Wood (1996). It argued that individuals might not have recognized piracy as a moral issue since individuals might not perceive piracy as an ethical problem. Rather, individuals may

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[41] Equity theory was introduced more than 40 years ago (Homans 1961) and has become a major theory in social exchange, justice and fairness within organizations (Kabanoff, 1991). It has been used extensively in the organizational behavior studies and is applied to the area of information systems in the past ten years (Joshi, 1989, 1990).

consider their pirating act as a form of social exchange, that is, a calculation of how much one will likely gain (i.e. the outcome situational variables) to how much one will have to contribute (i.e. the input situational variables) in the course of carrying out the behavior, which in turn, will have direct effect on one's intention to pirate software. Results showed that the more favorable the ratio of outcomes (one's gain) to inputs (one's contribution), the more one will consider their input as fair, the more likely one is to commit piracy by offering software for others to copy.

Deterrence

In addition, punishment, law enforcements, and legal actions are vital factors that might instigate to reduce pirating activities. A few studies reported that individuals' lack of awareness of the law against piracy, or the low or inadequate censure of the ethical behavior are plausible explanations of the widespread of software piracy in many countries (Goodman, 1991; Logsdon et al., 1994; Moores & Dhillon, 2000). A more recent study looking at software piracy in the workplace (Peace, Galletta, & Thong, 2003) concluded that the perceived severity of punishment when caught committing software piracy, as well as the level of certainty of getting caught have direct negative effects on individuals' attitude towards piracy behavior, and the latter is also found to have a significant negative effect on perceived behavioral control.

At roughly the same period, there are studies emerged focusing on digital audio piracy. Gopal et al. (2004) developed a model for digital music pirating behavior based on existing research on software piracy. The study attempted to examine the influence of club size, core ethical beliefs, deterrent strategies, and economic benefits of piracy on

ethical behavior. The study indicated that economic benefits and ethical beliefs have significant effects on music piracy. However, it is found that deterrent strategies – which draw from prior research on software piracy (Gopal & Sander, 1998) – have a limited effect on audio piracy.

The tech-savvy

More relevant to the issue of Internet piracy is an exploratory study conducted by Hinduja (2001) that established the correlative and contributory factors in online software pirating. Results indicated that individuals equipped with high-speed Internet access pirate software with greater incidence and frequency than those without, supporting the proposition that broadband connectivity increases the likelihood of online software piracy. A subsequent study by the same author in 2003 demonstrated that those who are more technologically adept and use the Internet for a broader range of purposes are more likely to possess the knowledge and abilities to pirate software online with greater frequency.

Economic consequence of piracy

Others try to investigate the impact of digital software or music piracy on the legitimate market. Hui and Png (2003) found that legitimate demand for recorded music decreases with the increase in pirating activities between the periods 1994 to 1998, however the impact on sales is considerably less than estimated by the industry. A case study conducted by Marshall (2004) in analyzing the effects of bootlegging upon the music industry also concluded that bootlegs can be lucrative sources that benefit the record industry, overthrowing false claims of huge losses made by the industry. Haruvy,

Mahajan, and Prasad (2004) further supported the positive role of software piracy on the legitimate market, saying that at the time of launching of a digital product, piracy can help to establish initial adopters of the product, who in turn influence others to buy the product.

2.5 Piracy Studies with Specific Models

Coming back to the study of pirating behavior, some literature are found using a particular behavioral model to explain and predict software pirating behavior. Most of these studies try to modify or elaborate the popular model of "the Theory of Reasoned Action (TRA) and Planned Behavior (TPB)" established by Fishbein and Ajzen (1975), as well as Triandis model of "the Theory of Interpersonal Behavior (TIB)" to study the ethical behavior.

The TRA is well established in the consumer behavior literature and has been found consistent with expectancy value theories and exchange theory (Harder, 1991). Its modified version, the TPB, argues that the intention to perform a behavior is affected by the attitude towards the target behavior, the social influence to perform/not to perform the behavior, and individuals' control over performing the behavior (Ajzen, 1991). The TRA and TPB will be explained more in detail in Chapter Three.

Many studies that followed start to borrow the TRA or TPB as the core of developing their research framework of software piracy. Eining and Christensen (1991) developed and tested a model of software piracy by including computer attitudes, norms, material consequences, effective factors, and socio-legal attitudes as determinants of the

intention to pirate. Results indicated that all variables except socio-legal attitude contribute to explain the problem of software piracy.

However, Eining and Christensen's model has a number of deficiencies – e.g. unreliable measures of variables and false assumptions. Building on those deficiencies, Simpson et al. (1994) has designed and developed a model to explain determinants of the tendency to pirate software. They showed that five factors - stimulus to act (i.e. a specific need of the software), socio-cultural factor (i.e. culture / value of reference groups), legal factors (i.e. systems of rewards and punishments), personal factors (i.e. personal demographic), and situation factors (i.e. time available and location to pirate) - will invoke the ethical dilemma and the ethical decision process that lead to the actual behavior. They also discovered that the perceive wrongfulness of piracy does not mean that it will have a significant influence on the actual pirating behavior. This implies that individual's unethical perceptions of piracy does not affect their actual propensity to pirate.

In an exploratory study carried out by Al-Jabri and Abdul-Gader (1997), a model (based on the TRA) is derived to explain the effects of individual and peer beliefs on software copyright infringement. The two variables are found to have significant effects on ethical intention to observe or infringe software copyright, and hence on the actual pirating behavior. Lin, Hsu, Kuo and Sun (1999) also included a theoretical model from the TRA that testifies the factors affecting piracy intention. Their results proposed that the attitude and subjective norms are influenced by their ethical perception of piracy issues and organizational ethical climates.

An extension of the TRA - the TPB – is applied by Banerjee, Cronan, and Jones (1998) to develop an ethical framework to model the ethical behavior intentions of IS professionals. Their model incorporates factors – i.e. attitude and personal normative beliefs (TPB), moral judgment, locus of control, organizational climate, and environmental and individual attributes – to test the model. Results showed that personal normative beliefs, organizational climate, and organization-scenario variable are significantly predictors of intentions to perform ethical behavior. Though many of the variables are found to be statistically insignificant, it provides a start for the incorporation of the TPB to model a more comprehensive framework in ethical behavior studies.

A more specific and targeted study of software piracy that based on the TPB is carried out by Seale et al. (1998). Their model indicated that social norms and expertise required (similar to subjective norms and perceived behavior control in the TPB) have a significant and direct effect on software pirating behavior.

The TIB model developed by Triandis (1980) - which Limayem et al. (1999) argued is a more comprehensive model as it includes all components of the TRA and TPB plus additional ones – has been adopted by Limayem et al. to determine factors affecting software piracy intentions and behavior. Social factors, beliefs of consequences of piracy, and habit are found to affect software piracy intentions. However, contrary to findings of the TRA and TPB, intention does not lead to the actual act of pirating software.

More recently, Peace, Galleta, and Thong (2003) tested a model of software piracy intention on mature, working students. Again, TRA and TPB are used as the core in their model, together with the incorporation of the expected utility theory and the

deterrence theory. Six factors are hypothesized to influence intention to pirate, they are – punishment severity, software costs, punishment certainty, attitude, subjective norms, and perceived behavioral control. Comparable results are found, with attitude, subjective norms, and perceived behavioral control as significant predictors of software piracy intention. The deterrence variables and costs are also found to have significant negative effects on attitude and perceived behavioral control towards software piracy.

Finally, the latest and most relevant match with this paper is a study of digital piracy conducted by Al-Rafee and Cronan (2006). They investigated factors that influence the attitude of university students towards digital piracy. Factors hypothesized to have an effect on attitude are subjective norms, cognitive and affective beliefs, perceived importance of the piracy issue, moral judgment, Machiavellianism and individual attributes (i.e. age and sex). Results indicated all but sex have a significant influence on students' attitude towards digital piracy behavior.

2.6 Drawbacks

An overview of existing literature has clearly revealed a lack of research in the area of digital piracy. Although there is a gradual rise in the number of studies exploring the illegal practice on the Internet, those studies - focusing either on software or music piracy, and their economic impact on the legitimate market - pay little attention to some of the root causes of the escalating problem.

A high proportion of earlier studies focuses exclusively on physical software piracy. However, almost all of them, and even the latest attitudinal study of digital piracy, are conducted in the academia using relatively small student samples of the business

discipline, limiting the representativeness and generalizability of results to explain other types of pirating behavior among the increasing heterogeneous users of copyrighted products – as the Internet and broadband connection (in particular) have brought more people from all sectors to the connected medium.

Research outcomes are also inconclusive about the many causes of the problem as past studies have only identified a few motivating factors. Almost all studies stopped at the level of individuals' attitude or intention towards piracy behavior, arguing they are the best predictors of the actual performance of the behavior. This assumption of a direct positive relationship between the predictors and the target behavior is inconclusive, as it overlooks the influence of the dynamic externalities on human decision and behavior.

Moreover, the majority of these studies are conducted within the English-speaking societies holding specific perceptions and value towards pirating behavior, which can hardly be applied to study the problem in a local Chinese context.

In terms of the methodology, most studies use regression in their analysis which are likely to lead to an overestimation of finding significant relationships between the predictor and outcome variables. Even for studies that use the more comprehensive structural equation modeling (SEM) approach, which takes into account the simultaneous relationships between the variables as well as the errors (SEM will be covered more extensively in Chapter Four & Five), they use it either as a complement to existing regression analyses or as a model modification tool, which undermines the purposes and functions of SEM in justifying a hypothesized path model of piracy behavior.

As have been shown, the TRA and its extended model, the TPB, are widely adopted as theoretical basis to study individual behavior, and are found to influence

several software piracy studies. Many scholars considered the model as an especially well researched intention model in predicting and explaining behavior across a wide variety of disciplines (Lin et al., 1999). Thus the models are believed to offer a suitable basis, within the context of this study, to explore Internet pirating behavior.

Chapter Three Theoretical Development

3.1 Uses and Gratifications

3.1.1 Internet use

Before looking at Internet piracy from a psycho-behavioral perspective, it is important to first understand it as one form of media use (i.e. Internet use in this study). To study Internet use is to focus on the multidimensional concept of use of the new medium. What is of significance in this study is not the time or frequency of use, but the use purposes and what drives individual use.

To look at Internet use in a more organized and systematic way, this study refers to media uses and gratifications research to distinguish the different purposes of Internet use in obtaining desirable outcomes for individuals. Based on uses and gratifications theory, the purpose of individuals' use of the Internet is to fulfill their social or psychological needs to obtain gratifications or satisfactions (Rubin, 1994). Thus, Internet use in the post-adoption process involves the examination of different use (or needs) dimensions, such as information seeking, relaxation, social networking, ego actualization etc. (Zhu & He, 2002). Earlier studies identified similar Internet use purposes, such as Charney and Greenberg's (2001) gratification factors of "keeping informed," "communication," and "diversion and entertainment" for the Internet, in which "keeping informed" as well as "communication" have explained 36% of the variance in individuals' weekly time spent on the new medium.

Such categorization of use purposes is also confirmed in LaRose, Mastro and Eastin's (2001) study, where they've mapped the gratification dimensions onto incentive

categories (i.e. outcome expectations of performing a behavior) to better understand the motivations of Internet use. The three incentive categories – (1) activity (i.e. fun, entertaining, exciting, or boredom-relieving activities), (2) social (i.e. social interaction or communication), and (3) novel sensory (i.e. information seeking) – are significant predictors of Internet usage.

3.1.2 "Expectancy-value" & "problem-solving" theory

Apart from understanding what needs individuals have, the uses and gratifications theory also emphasizes how social and psychological needs drive individuals to make use of different media (or one medium over another) to obtain gratifications (Rubin, 1994). Zhu and He (2002) proposed the collaboration of the expectancy-value theory (Palmgreen & Rayburm, 1985) and problem-solving theory (Rosengren, 1974) to account for media use.

The expectancy-value theory emphasizes that use of a medium is affected by individuals' perceived benefits offered by using the medium, and also individuals' evaluation of the importance of these perceived beneficial outcomes. This is similar to the *perceived behavioral beliefs or cognitive beliefs* in explaining individual attitudes towards a behavior in attitude-behavioral research, where individuals' attitude towards the performance of a behavior is goal-driven, and subsequent performances of the behavior is a result of a calculative process that involved the expected outcomes and the evaluation of these outcomes.[42]

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[42] The perceived behavioral beliefs/cognitive beliefs in measuring attitude towards performance of a behavior will be revisited in the following section on TRA and TPB, as well as in Chapter 3.3.1.1.

The problem-solving theory takes a different approach. It sets two criteria for individuals to choose the best medium among competing media channels in order to fulfill their needs. First, there must be a perceived problem with the existing medium in satisfying one's needs; and second, there must be a solution available (i.e. an alternative replacement of the existing medium). Only when both conditions are identified will individuals be motivated to use the viable alternative.

Zhu and He (2002) combined the two theories and finally establish a new construct for the Internet – Perceived Need for New Media (PNNM) or Perceived Need for the Internet (PNI). The authors argued that individuals will adopt and use the Internet only when they feel their social or psychological needs cannot be satisfied by conventional media, and that the new media will be able to meet the needs.

3.1.3 Internet piracy

Uses and gratifications theory, together with the subsidiary expectancy-value and problem-solving theories, sheds light on how we should understand individuals' use of the Internet to perform piracy behavior.

Based on previous gratifications research, the problem-solving theory[43], and the new PNI theory, I've identified five gratification (needs) factors (which go well with the piracy context) and used them as foundation to compare individual's choice between (online) pirated and legal means of obtaining information products to satisfy the needs. The five needs dimensions are:

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[43] Here, the problem-solution theory provides an analytic tool in the situation of information product acquisitions in which there are competing channels to obtain the information (i.e. either by traditional legal means or by pirating on the Internet).

i. Work/study/research needs (similar to "information seeking")

ii. Entertainment needs (similar to "diversion and entertainment")

iii. Needs for trial (this is specific to the piracy context, and can be found in the extensive literature on human adoption or consumption)

iv. Needs for personal collection (also specific to the piracy context, and similar to "diversion and entertainment")

v. Needs for personal relations (similar to "communication")

In addition, the five dimensions form a new construct – Perceived Needs for Internet Piracy (PNIP) – in this study. The construct will further be discussed in the section on "Theoretical Framework."

As mentioned earlier, the expectancy-value theory in media use research demonstrates the importance of looking at the perceived advantages associated with use of the media as well as individuals' evaluation of the advantages. It is assumed that the advantageous (or disadvantageous) outcomes would later affect individuals' adoption or use of the media. Nevertheless, this concept has long been tested in human behavior research. Since Internet piracy is a form of media use, which is considered a human behavior, it is now that we turn to understand more about the core of the many psycho-behavioral research – the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB) – for further developing a theoretical model of this study.

3.2 TRA & TPB

Internet piracy can be conceptualized as an ethical behavior. Several theoretical frameworks have been used to examine the decision-making processes of different behaviors. Among them, the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975) and its extension – the Theory of Planned Behavior (TPB) (Ajzen, 1985, 1991) – have been the most popular of all behavioral models, and provide a suitable foundation to study Internet pirating behavior.

TRA and TPB are established attitude-behavioral theories that capture the basic components to explain a social behavior. Both theories have found extensive applications in many fields, whether applied directly, or as a foundation for expanded conceptualization of a behavior.

Early researchers had experimented and tried to understand relationships between attitude and behavior without much success. Severin and Tankard (2001) mentioned that people's verbal report of their attitudes might not be very good predictors of their actual behavior. Around 1970, Icek Ajzen and Martin Fishbein developed a model which includes attitude as one of the important factors influencing behavioral intention (Severin & Tankard, 2001). The model - the *Theory of Reasoned Action (TRA)* **-** has been used and tested across various research and disciplines. Although many of the models used in current research are the extensions of the theory, the basic ideas stem from this first model developed by Ajzen and Fishbein.

In TRA, behavioral intention (BI) is comprised of two determinants – attitude and subjective norm. Attitude refers to "an individual's positive or negative feelings (evaluative affect) about performing the target behavior" (Fishbein & Ajzen 1975, p. 216).

In other words, it is the extent to which an individual feels favorable or unfavorable towards carrying out the behavior. Attitude is also the closest match to ethical judgment in ethical behavior research. Both attitude and ethical judgment have been used to explain intention/behavior (Banerjee, Cronan, & Jones, 1998; Dubinsky & Loken, 1989; Flannery & May, 2000; Randall & Gibson, 1991).

Subjective norm refers to "the person's perception that most people who are important to him think he should not perform the behavior in question" (Fishbein & Ajzen 1975, p. 302). This means the perceived social pressure of an individual towards performing the behavior.

The TRA suggests that a person's behavior is not directly determined by his/her attitude, rather, it is determined by his/her intention to perform the behavior. In turn, this intention is a function of his/her attitude towards the behavior and subjective norm (Ajzen & Fishbein, 1980) (see Figure 1). Thus when a person possesses a more positive attitude and greater social influence towards performing a behavior, he/she will develop a stronger intention to perform the behavior; and the stronger intention to perform the behavior, the more likely should be its performance. In sum, an individual's behavioral intention is the most immediate factor influencing his/her behavior.

Insert Figure 1 here

As the Theory of Reasoned Action began to take hold in social science, Ajzen and other researcher realized that this theory was not adequate and had several limitations

(Godin & Kok, 1996). In particular, the TRA was criticized for its inability to predict all behavior, as it assumes that an individual has total control over the execution of an intention. However, not all behavior is cognitively motivated. Individuals may encounter unexpected or uncontrollable obstacles that impede the execution of intention. In order to allow for those behaviors that are under total control to those that cannot be controlled, Ajzen, in 1985, proposes an additional construct - *Perceived Behavioral Control (PBC)* - to the TRA model in order to account for situations where an individual has less than complete control over the behavior (Taylor & Todd, 1995). This extension of the TRA becomes the widely known *Theory of Planned Behavior (TPB)*. This additional construct, PBC, refers to "the perceived ease or difficulty of performing the behavior" (Ajzen 1991, p. 188), thus it takes into account of the extent of control (the perceive ease and ability of individuals) in performing a behavior (see Figure 2).

Compared to the TRA, the TPB has found to be more valid in predicting behavior (Madden, Ellen, & Ajzen, 1992), and has been widely applied in many fields of research investigating social behavior. Ajzen (1991) presented a review of several studies that successfully used TPB to predict intention and behavior in a wide variety of settings. TPB has also been successfully applied to the understanding of individual acceptance and usage of many different technologies (Harrison, Mykytyn, & Riemenschneider, 1997; Mathieson 1991; Taylor & Todd 1995). Due to its robustness in studying behavior, it is taken here as a theoretical foundation.

Insert Figure 2 here

3.3 Theoretical Framework

According to Ajzen and Fishbein (1980), in order to gain a deeper understanding of the factors influencing behavioral intention or the actual behavior, it is required to look for the determinants of the attitudinal and normative components that lead to the actual performance of pirating behavior. These determinants are beliefs individuals hold about themselves and their environment, in other words, information individuals have about themselves and the world in which they live. Beliefs are thus viewed as underlying a person's attitudes, subjective norms, and perceived behavioral control, and they ultimately determine intentions and behavior.

This study proposes to explore and identify the beliefs (i.e. explanatory factors) that might explain why Internet users are driven to engage in pirating behavior on the Internet. These explanatory factors – derived from the review of the equity theory, uses and gratifications theories, past literature, peer discussions, and a qualitative elicitation study (to be discussed in Chapter Four) - are analyzed in relation to components proposed by the TRA and TPB. A conceptual framework to study the relationship between 12 constructs and the sole dependent variable "Online Piracy Behavior" has been developed (Figure 6).

3.3.1 The importance of Attitude

Attitude refers to an individual's positive or negative feelings or beliefs (a mental position) towards the target behavior or the outcomes of performing the behavior. It is the degree to which performance of the behavior is positively or negatively valued. Ajzen (2001) further postulated that the simplest way to access people's attitude towards the behavior is to ask them to think about and elicit positive and negative aspects of the attitude behavior.

A review of ethics research shows that attitude is the best predictor of intention in 29 out of 30 studies (Trafimow & Finlay, 1996). Research has shown attitude to be important predictors of students' cheating, softlifting, lying behaviors (Beck & Ajzen, 1991), and intention to pirate software (Peace, Galleta, & Thong, 2003). The reason why it is important to examine attitude more closely in this study is that individual attitude can be altered through persuasion, interventions and other means as shown in the psychology literature regarding attitude change (Ajzen, 1980; Bohner, 2002). Since attitude will affect intention, it is believed that changing attitude can influence intention, which might in turn influence the final behavior. Thus understanding attitude is important in order to discourage online piracy behavior.

However, some studies that use the TRA or TPB to examine attitude towards pirating behavior are loosely conducted and lack a clear structure (Kwong et al., 2003). Very often, attitude is measured by different sets of belief statements elicited by respondents, which are later statistically combined or selected by researchers to confirm their reliability and applicability. For example, when comparing the differences between people who consume counterfeit products and those who do not (Ang et al., 2001; Tom et

al., 1998), different studies have employed completely different sets of statements without a verified framework for those statements. Even studies that employ the same set of statements to capture individuals' favorable or unfavorable attitude toward software piracy (Rahim et al., 2001; Higgins & Makin, 2004), and which obtain significant results still lack a clear structure of the statements. What's more, attitude in these studies are considered as a generic variable instead of a construct or latent variable.

Some of the studies also use direct measures of attitude alone (Lending & Slaughter, 1999), by asking respondents to judge a behavior as being favorable or unfavorable which will certainly miss out a more complex attitudinal belief structure of individuals toward the behavior concerned.

Therefore, in this study, five latent factors have been identified (based on the integration of past research results, and existing criminology and ethical concepts) as determinants of the variable attitude. The five factors are: **Cognitive Beliefs, Ethical Beliefs, Computer Deindividuation, Perceived Unfairness of the Industry, and Subjective Norms.**

Five Determinants of Attitude

a. Cognitive Beliefs

According to the TPB, attitude is determined by the behavioral beliefs of individuals toward the target behavior, and these beliefs are elicited from a representative sample under investigation (see Chapter Four for a detailed description of the elicitation study). These elicited beliefs are then used to predict attitude (Ajzen, 1985).

Studying individuals' beliefs towards a behavior is famous in exploratory research of particular behaviors, or in intervention research that intend to change people's attitudes towards a behavior by changing their beliefs with the implementation of certain intervention programs. These beliefs are named Cognitive Beliefs in psychology research and literature (Fishbein & Middlestadt, 1995).

In this study, and similar to the *expectancy-value theory* as discussed, cognitive beliefs refers to individuals' opinions about the likely consequences of performing piracy on the Internet, and the evaluation they give on these consequences. Note that people's cognitive beliefs is a complex set of positive and negative opinions towards online piracy behavior, and different individuals will place different importance of the outcome of online piracy which may in turn affect their final attitude towards the behavior.

b. Ethical Belief

A lot of misbehavior or crimes regarding new or digital media use have been studied from an ethical, moral perspective (Banerjee, Cronan et al., 1998; Loch & Conger, 1996; Simpson, Banerjee et al., 1994). Ethical belief is different from attitudinal belief although ethical judgment is the closest match to attitude in the TPB model. The former refers to individuals' ethical judgment or evaluation about the degree of rightness of performing the target behavior; while the latter deals with the positive or negative evaluation of the consequences of performing the behavior.

Some research in ethical decision making referred ethical beliefs to moral obligation, which dealt with whether individuals will or will not feel guilty towards the performance of the behavior in question (Banerjee, Cronan et al., 1998; Randall &

Gibson, 1991; Schwartz & Tessler, 1972). Since Internet piracy is a morally questionable behavior, the attitude towards the behavior which in turn leads to the decision to pirate or not depends on individuals' level of guilt and ethical judgments about the right or wrong of performing the behavior (Fullerton, Kerch, & Dodge, 1996).

c. Computer Deindividuation

Computer deindividuation refers to a feeling of being alienated or separated from others that can lead to performance of a behavior that is believed to have violated established norms or rules of appropriateness (Zimbardo, 1969). Under deindividuation, a person will likely loss awareness of the existence of others, he/she will feel more anonymous to the outside world, thus will loosen their control or inhibition concerning social unacceptable behavior. People normally experience a sense of anonymity and privacy when using the computer. Thus they will more frequently commit inappropriate or unethical behavior when they feel they are being isolated or they will have little chance of being identified. Sproull and Kiesler (1985) referred this as a "filter model" of computer-mediated communication, in which deindividuating effect will lead individuals to produce behavior that is more self-centered and less socially regulated than usual.

Some studies attempted to understand ethical decisions in computer use show that deindividuation appears important for some types of decisions (Ajzen & Fishbein, 1980; Lea & Spears, 1991; Loch & Conger, 1996). In particular, a pilot study by Loch and Conger (1996) examining deindividuation in TRA found a significant relationship between deindividuation and attitude toward reading other's email. Limayem (1999) also

suggested including deindividuation in the study of pirating behavior (though as a moderating variable).

d. Perceived Unfairness of the Industry

Perceived unfairness of the industry refers to the extent to which an individual feels unfavorable, or unsympathetic towards the software and entertainment industry. The idea comes from equity theory[44], which describes individuals' search for fairness during social exchanges (Glass & Wood, 1996). Individuals will assess the ratio of what they gain to what they need to contribute during the exchange. A perceived unfair relationship arises when individuals are not receiving a fair return for the efforts or resources that they put into the exchange. Applying this to online piracy, individuals may feel the money that they pay for legitimate consumption of information products from the industry (their inputs) does not amount to what they should obtain from the industry (their gains/outcomes) due to poor quality products or services that do not worth their price. Thus they may try to redress the imbalance between the industry and customers that is perceived as unfair, by looking for ways (e.g. by pirating online) to increase their gains (i.e. obtaining information services or products of similar quality to the originals) but decrease their inputs to a minimum (i.e. the minimal cost needed to pirate online).

Some studies applied similar concept and argued that the industry abuse its market power in unfair and illegitimate business practices (Kwong et al., 2003; Piron & Fernandez, 1995) – e.g. charging an unreasonably high price or taking advantage of their

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[44] Equity theory was introduced more than 40 years ago (Homans 1961) and has become a major theory in social exchange, justice and fairness within organizations (Kabanoff, 1991). It has been used extensively in the organizational behavior studies and is applied to the area of information systems in the past ten years (Joshi, 1989, 1990).

market positions – thus engaging customers to act against the industry interests by supporting pirating activities. Pirating behavior is a result of consumers' negative attitude toward the unfair practice of the industry, and is a respond of weakening the financial capability of the industry (Eining & Christensen, 1991; Vitell & Muncy, 1992). This justification of the act of piracy actually neutralizes individuals' attitude and the ethical behavior by shifting the blame to the industry for their greed (Harrington, 2000; Hinduja, 2003).

e. Subjective Norms & Attitude

Subjective norms refers to users' perception of whether most people (acquaintances) or entities important to him or her think Internet piracy should be performed or not. A number of studies showed that subjective norms has an indirect effect on behavior through attitude (Chang, 1998; Shepherd & O'Keefe, 1984; Shimp & Kavas, 1984; Vallerand, Pelletier et al., 1992). Since attitude is the overall judgment of the favorability to perform or not to perform piracy on the Internet, thus it is likely that important others might influence individuals' decision making on the judgmental level, leading to a change of individual attitude towards piracy behavior.

Antecedents of Attitude

Based on the discussion, a model consisting of 5 factors that influence attitude is formed below:

Attitude = Function (Cognitive Beliefs, Ethical Beliefs, Computer Deindividuation, Perceived Unfairness of the Industry, Subjective Norms)

Figure 3 depicts the relationships of the five factors in affecting attitude.

Insert Figure 3 here

3.3.2 Determinants of Intention

According to the TPB model, intention is determined by attitude, subjective norms, and perceived behavioral control. This section will look at these 3 factors and will further introduce one more factor that is believed to influence intention.

a. Attitude

As mentioned, attitude is the overall evaluation or judgment of Internet piracy behavior. Many studies of different disciplines have been done in looking at attitude and its influence on intentions and the actual behavior. In this study, attitude will be studied as an independent variable on its own influencing intention to pirate, and will also be treated as a dependent variable to explore "what causes individuals to have such attitude towards online piracy behavior."

b. Subjective norms

Subjective norms refers to users' perception of whether most people (acquaintances) or entities important to him or her think Internet piracy should be performed or not. It is the pressure in the form of informal, non-rule-based norms to perform or not to perform pirating behavior online. Individuals develop personal codes of conduct through the influence of and interaction with people in their family and social circles, and people will come to accept the moral standards of the culture in which they are raised (Higgins & Makin, 2004; Robinson & Darley, 1995). It is common practice that people will consult others before making any decisions in this day in age. For many it is rare to make an important life decision very quickly without consulting some sort of sources so that they feel they have made the most educated and best decision for themselves.

However, mass acceptance of a behavior does not necessarily constitute ethical behavior (Pelfrey & Peacock, 1991). Several ethics studies (Skinner & Fream, 1997; Trevino, 1986; Wahn, 1993) have found that pressures from subordinates and peers cause people to behave unethically. Most recently, notions like "everyone else does it" and "most people I know copy software" (Cheng et al., 1997; Pelfrey & Peacock, 1991) rationalize inappropriate individual piracy behaviors which are influenced by peers and associates.

Subjective norms have been posited as determinants of intention and have been empirically validated (Ajzen. 1991).

c. Perceived Behavioral Control

Ajzen took into account individual ability – i.e. perceived behavioral control (PBC) - in predicting human behavior. It refers to individuals' perceptions of their ability, and how easy or difficult it is to perform a given behavior (Ajzen, 1985, 1991).

Seale et al. (1998) pointed out that skills and expertise are required for software piracy to occur, that is, if the required abilities are beyond an individual's perceived control, software piracy is unlikely to emerge. Results showed that expertise required (i.e. computer knowledge and skills) have significant effect on piracy.

Other studies (Rahim et al., 2000; Wong, Kong, & Ngai, 1990) used the number of years of computer experience to measure individuals' tendency and ability (i.e. knowledge and literacy) to pirate software. Although results indicated that those with more years of computer use have a greater tendency to pirate software, it is doubtful whether the number of years of computer use can determine a person's computer knowledge and literacy.

It is believed that in the context of Internet piracy, even if individuals' attitude and subjective norms are in favor of performing the behavior, they may not actually think of performing or actually carry out the behavior due to a lack of personal ability (i.e. lack of control) and the difficulties involved.

d. Perceived Needs for Internet Piracy (PNIP)

There are pertinent variants in past literature on perceived needs theory. One that is closely related and is discussed at the beginning of the Chapter on "Internet use" is the "perceived need for the Internet" (PNI) in Internet use research (Zhu & He, 2002) - which is derived from uses and gratification theory emphasizing how social and psychological

needs drive audiences' use of different media to obtain gratifications (Rubin, 1994). In Zhu & He's research, PNI explicitly highlights Internet's role as a competitive new medium among alternative media outlets to drive individuals' adoption and use of the new media. Results found that PNI is significant in peoples' adoption and use of the Internet.

The justified theory of PNI will be borrowed and applied as a new component to my theoretical framework. However, since this is not a study on general adoption and use of the Internet but a more specific use of the Internet to perform piracy behavior, the PNI variable will be changed to "perceived needs for Internet piracy (PNIP)," which refers to users' perception of the relative importance of online piracy (as compared with legal means of obtaining information products) in satisfying their work-related, entertainment, relationship and personal needs.[45] It is believed that piracy behavior that is considered unacceptable/unfavorable by an individual (having negative attitude towards the behavior) or his/her close referents may be performed on the basis of perceived needs (a need or a purpose to carry out the behavior). This is similar to Simpson et al.'s (1994) "stimulus to act" variable where personal "need" will stimulate or prompt individuals' decision to pirate, increasing the overall variance of the intention to pirate.

Antecedents of Intention

Based on the discussion, a model consisting of 4 factors that influence intention is formed below:

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[45] These needs dimensions have been discussed at the beginning of this Chapter (see section 3.1.1.)

Intention = Function (Attitude, Subjective Norms, Perceived Behavioral Control, Perceived Needs for Internet Piracy)

Figure 4 depicts the relationships of the four factors in affecting intention.

Insert Figure 4 here

3.3.3 Perceived Normative Beliefs – the single determinant of Subjective Norms

According to the TPB, subjective norms are assumed to be a function of beliefs that specific individuals approve or disapprove of performing the target behavior. Beliefs that underlie subjective norms are termed perceived normative beliefs. These beliefs were elicited in this study from a representative sample under investigation, similar to cognitive beliefs (see Chapter Four for a detailed description of the elicitation study). These elicited beliefs are then used to predict subjective norms (Ajzen, 1985).

In this study, perceived normative beliefs refers to individuals' opinions about the normative expectations of others towards the performance of piracy on the Internet, and individuals' motivation to comply with these expectations of others. In reality, if an individual sees performing piracy behavior as positive when relevant others possess similar views, and if the individual is motivated to meet the expectations of relevant others, then a positive subjective norm is expected. However, if relevant others see piracy behavior as negative, and the individual wants to meet the expectations of these relevant others, then the experience is likely to be a negative subjective norm for the individual.

Here, relevant others might be a person's spouse, close friends, family members, outside organizations etc.

3.3.4 Determinants of Behavior

Online Piracy Behavior

The behavior of interest in this study is defined in terms of its Target, Action, Context, and Time (TACT) elements (Fishbein & Ajzen, 1975) – Internet Users' Private Copying or Sharing (Pirating) of Digital Copyrighted works on the Internet.

Private Copying or Sharing is clearly part of the action element. Internet users are considered the target and the Internet the context. There isn't a time element in this study.

In this study, the "*principle of compatibility*" is also achieved in which all other constructs (attitude, subjective norm, perceived behavioral control, and intention) are defined in terms of exactly the same TACT elements. Thus, the attitude compatible with this behavior is the attitude toward *Internet Users' Private Copying or Sharing (Pirating) of Digital Copyrighted works on the Internet*, the subjective norms is the perceived social pressure to do so, and perceived behavioral control refers to ability and difficulties over performing the defined behavior. Finally, this section is to look at two determinants of users' actual online piracy behavior, they are users' Intention to pirate online and their Past Offline Piracy Experience.

a. Intention to Internet piracy

The intention construct is a central factor in the TPB model. In the context of Internet piracy, it refers to an individual's intention or decision to pirate (or not to pirate)

on the Internet. If a person intends to do something then he/she will more than likely do it; if he/she do not intend to do a behavior then the action will be unlikely to take place. Intention is the indicator of the degree to which an individual is willing to try and how much effort he/she is willing to exert in order to perform a behavior, and it is usually hypothesized as an accurate predictor of actual behavior (Ajzen, 1991; Ajzen & Fishbein, 1980; Triandis, 1980).

b. Past offline piracy experience

Past offline piracy experience refers to previous piracy experience through physical means, for example, purchasing pirated software or entertainment products, or sharing/duplicating tapes/CDs/VCDs/DVDs. It is an additional component added to the TPB model that may determine and even facilitate intentions to explain Internet piracy behavior. Many studies that examined use or purchasing intention found past experience as a significant predictor (e.g. Bagozzi, Baumgartner, and Yi, 1992, found past behavior as a determinant of intention to use coupons; Verplanken et al., 1998, showed a significant interaction between intention and past behavior in predicting car use intentions).

Triandis's TIB (1977, 1980, 1994) also postulated that prior experience can replace intentions and independently influence the target behavior. The influence of prior experience will be strongest when the new situation (i.e. Internet piracy) closely parallels the prior experience (i.e. offline piracy) and when there are multiple instances of that prior experience (Ajzen, 2002b; Bambergm, Ajzen & Schmidt, 2003).

Antecedents of Online Piracy Behavior

Based on the discussion, a model consisting of 2 factors that influence piracy behavior on the Internet is formed below:

Online Piracy Behavior = Function (Intention, Past Offline Piracy Experience)

Figure 5 depicts the relationships of the 2 factors in influencing behavior.

Insert Figure 5 here

3.3.5 Control Variables

Individual characteristics - gender, age and income - will be treated as control variables in this study. These variables are controlled in order to rule out alternative explanations for the piracy findings, and to reduce error terms thus increasing statistical power of the study (Schwab, 1999). In methodological terms, it is to partial the effects of these variables from other variables included in the analysis.

The TRA and TPB also treat individual characteristics as external variables. This is because a lot of decisions and behaviors (e.g. human ethical decision making or consumption behavior) will generate unstable patterns of results in studies, especially when different tested groups are examined in different contexts (Ajzen & Fishbein, 1980). This is evident in the previous descriptive literature reviewed at the beginning of Chapter Two (see Chapter 2.1). For example, studies with a sample consisted of both sexes may

be affected by different motivators or base on different criteria in judging what is acceptable or unacceptable behavior (Loch & Conger, 1996). Mixed results are often obtained in studying the relationships between the demographic variables and the major constructs of the TRA and TPB (e.g. attitude, intention and behavior).[46] The inconsistent findings suggest the importance to attend to such sample biases that might predispose results. It is also the purpose of this study to use these variables in profiling those who illegally pirate on the Internet. Gender, age, and income will therefore be controlled in this study.

3.3.6 Research Model

Based on the discussion, a conceptual model of Internet Piracy Behavior is developed. See Figure 6.

Insert Figure 6 here

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[46] Particularly, the characteristics of gender, age, and income are found to generate mixed findings. Studies either show a no relationship between gender and piracy behavior, or indicate a relationship where males tend to pirate more than females. Similar contradictory findings are obtained for age and income, where studies either find no relationship, a positive, or a negative relationship.

Table 1 summarizes the research variables and their definitions in this study.

Insert Table 1 here

3.4 Research Hypotheses

This study is to examine the relationships between the predictor variables and the intention towards online piracy/the actual online piracy behavior in order to find out the motivators that will affect the performance of the behavior. This section will present the hypothesized relationships between the predictor and the dependent variables.

3.4.1 Cognitive Beliefs (COGBE)

Cognitive beliefs is mostly associated with attitude and is used as the antecedent of individuals' attitude towards a target behavior (Bodur, Brinberg et al., 2000). It is believed that the more positive and higher the cognitive beliefs and evaluation of the beliefs would lead to a more favorable attitude towards online piracy behavior.

H1: Individuals who are more positive towards the consequences brought by Internet piracy will have a more favorable attitude towards Internet pirating behavior.

3.4.2 Ethical Belief (ETHIC)

Ethical belief is the extent of right or wrong an individual would feel towards the performance of online piracy behavior, which is suggested here to influence attitude.

Many research indicate individuals who think that piracy is acceptable and normal, and there is nothing wrong with the act will regard the behavior as ethical and are found to pirate more (Ang et al., 2001; Hinduja, 2003; Logsdon et al., 1994; Simpson et al., 1994; Solomon & O'Brien, 1990; Wood et al., 1988); while individuals who exhibit high moral belief or feel that pirating is wrong or feel guilty towards performing piracy will regard piracy as unethical and tend more to inhibit the behavior (Higgins & Makin, 2004; Kwong et al., 2003; Loch & Conger, 1996; Thong & Yap, 1998). This suggests that:

H2: Individuals who lean towards the belief that Internet piracy is normal and acceptable will have a more favorable attitude towards Internet pirating behavior.

3.4.3 Computer Deindividuation (DEIN)

Computer deindividuation is whether people feel that what they're doing with the computer or on the Internet can go unnoticed. Since deindividuation has not yet been widely examined in piracy research, this study will try to explore such factor in determining whether people who feel they have the privacy and are being isolated will indicate a more favorable attitude toward online pirating behavior.

H3: Individuals who lean towards the belief that what they are doing online can go unnoticed will have a more favorable attitude toward Internet pirating behavior.

3.4.4 Perceived Unfairness of the Industry (UNIN)

Perceived unfairness of the industry is believed to affect attitude as it is the personal judgment of the quality and value (i.e. fairness) of the IP industry and its products that affect people's attitude towards Internet piracy. Therefore, individuals having negative perceptions toward the industry and its performance will have a more positive attitude towards Internet pirating behavior. Thus, the following hypothesis is proposed:

H4: Individuals whose beliefs lean towards the software and entertainment industry being unfair will have a more favorable attitude toward Internet pirating behavior.

3.4.5 Subjective Norms (SN)

Subjective norms in the TRA & TPB is the second main influencer of intention (Ajzen & Fishbein, 1980). Many studies showed the indirect effect of subjective norms on behavior through intention. These studies also emphasized the importance of considering subjective norms as a separate factor that influences intention of unethical behavior (Eining & Christensen, 1991; Loch & Conger, 1996; Simpson et al., 1994; Al-Jabri & Abdul-Gader, 1997). Therefore:

H5a: Individuals who perceive an unfavorable impression from those close to them of Internet piracy will have a lower intention to pirate on the Internet.

Subjective norms is also theorized to affect attitude negatively. The higher the subjective norms (i.e. important others disapprove or having unfavorable opinions towards the behavior) will correspond to less favorable attitude towards Internet piracy.

H5b: Individuals who perceive an unfavorable impression from those close to them of Internet piracy will have a less favorable attitude towards piracy behavior on the Internet.

3.4.6 Perceived Normative Beliefs (NORMB)

Normative beliefs is the antecedent of subjective norms towards a target behavior. It is the influence of social pressure that is perceived by the individual (normative beliefs) to perform or not perform a certain behavior, and is weighted by the individual's motivation to comply with those perceived expectations (motivation to comply). It is believed that the higher the normative beliefs towards rejecting online piracy and the degree of compliance with these beliefs would lead to a higher subjective norms towards disapproving online piracy behavior.

H6: Individuals with greater motivation to comply with perceived sources of social pressure (i.e. social norms) against online piracy will be more likely to perceive that those close to them disapprove of online piracy.

3.4.7 Attitude (ATT)

Literature showed a profound relationship between attitude and individuals' intention to pirate (Al-Jabri & Abdul-Gader, 1997; Kwong et al., 2003; Loch & Conger, 1996; Rahim et al., 2001), therefore:

H7: The more favorable individuals' attitude towards online piracy, the higher their intention to pirate on the Internet.

3.4.8 Perceived Behavioral Control (PBC)

Perceived behavioral control is the third main factor incorporated in the TPB to more accurately predict behavioral intention (Ajzen, 1985). An individual who perceive the target behavior to be easy and within his own ability (high perceived behavioral control) would possess a higher intention to carry out the behavior. Studies by Chang (1998), and Conner, Loach & Willetts (1999) also concluded that personal skills, knowledge and ability can successfully predict intention to perform unethical behavior, thus:

H8: Individuals with a higher level of confidence in their ability to pirate online will have a higher level of intent to pirate on the Internet.

3.4.9 Perceived Needs for Internet Piracy (PNIP)

This concept is borrowed from "*perceived need for the Internet*" theory (PNI) in Internet use research (Zhu & He, 2002) as discussed, and it emphasizes how social and psychological needs will drive individuals' performance of piracy on the Internet to satisfy those needs.

Even though Internet piracy is considered unacceptable or unfavorable by an individual or his close referents, he would still have an intention to pirate on the Internet on the basis of perceived needs (a need or a purpose to carry out the behavior), of which these needs are perceived to be harder to fulfilled by conventional channel (i.e. legal means, for example, buying original CDs/DVDs) than by the new medium.[47] It is also similar to Simpson et al.'s (1994) "stimulus to act" theory, where personal needs prompt individuals' decision to pirate, thus increasing the overall variance to explain the intention to pirate.

H9: Individuals who perceive that Internet piracy can satisfy more of their work-related, entertainment, relationship, sampling and personal needs than legal means of obtaining information products will have a higher intention to pirate online.

3.4.10 Intention to Internet Piracy (INT)

In this study, the performance of piracy on the Internet is believed to be under total volitional control of individuals, thus intention is viewed as the immediate

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[47] This argument is based on Rosengren's problem-solving theory (1974). See Chapter 3.1.1.

antecedent of the actual Internet piracy behavior - i.e. music piracy, movie piracy, software piracy, TV program piracy and computer games piracy. Therefore:

H10: Individuals' greater intention to pirate online corresponds to the higher tendency of their actual piracy behavior on the Internet.

3.4.11 Past Offline Piracy Experience (PAST)

Hinduja (2001) has pioneered a study that hypothesized a relationship between online software piracy and past CD-ROM piracy. Although result showed weak correlation between the two variables, the effect of past experience on online piracy behavior is ostensible given the ease, speed, and wider variety of digital works offered on the Internet. It is believed that those with past experience of pirating software or entertainment products through physical means will recognize the advantages or benefits associate with the behavior, and may be likely to think of displacing their practice to the networked environment. Thus:

H11: Individuals who have performed offline piracy in the past will have a higher likelihood of displacing this offline behavior to an online environment.

3.4.12 Summary of Research Hypotheses
Table 2 shows the list of hypotheses that will be tested in this study.

Insert Table 2 here

Chapter Four Research Design and Methodology

This section describes the research methodology undertaken to carry out this study. It will include information about a brief overview of the research design, instrument construction, the statistical techniques used to examine the hypothesized relationships, and the sampling methods.

4.1 Research Design

This study used both qualitative and quantitative survey approaches to collect research data. The former is an elicitation study carried out in January 2006 to obtain belief data for the indirect measures of two constructs - Cognitive Beliefs and Subjective Norms. These measures were pilot tested twice with an interval of three weeks and both tests generated pretty high reliability coefficients for the two belief constructs. The instruments and measurements are covered in detail in the next section on "*Questionnaire Design and Measurement - Elicitation Study.*"

After obtaining data for the indirect belief measures, a questionnaire was constructed for the actual survey, which is a typical method in psycho-behavioral studies, especially in determining or predicting intention and the behavior in question. The use of survey also enabled the collection of large amount of data from a representative group of people and allowed the examination of the list of variables and their relationships in this study (Wimmer & Dominick, 2000).

A pilot study was conducted in March 2006 before the actual interview in May 2006. Reliability and validity of the construct items were checked, and the questionnaire

was revised on the basis of reliability outcomes and individual feedbacks (which will be dealt with in the section on *"Pretest"*).

4.2 Questionnaire Design and Measurements

4.2.1 Part One - Elicitation Study

Ajzen and Fishbein's (1980) method was adopted to collect and obtain the cognitive and normative structure of respondents' salient beliefs. It was important to first understand that beliefs are different in the case of belief towards a behavior versus the case of beliefs towards an object. An elicitation study was conducted to develop the indirect belief-based measures for the latent constructs (i.e. cognitive beliefs and subjective norms).

A sample of 25 people was taken from the population (Godin & Kok, 1996) in which respondents were selected for the final questionnaire study. Six open-ended questions were used to assess respondent's beliefs about the outcome/consequences of performance of online piracy, and their sources of social pressure in their performance of piracy behavior. These questions are presented as shown in Box 4.1.

In this study, behavioral beliefs were elicited from Q1-3, and perceived normative beliefs from Q4-6. See Appendix A for a copy of the elicitation questionnaire.

Box 4.1 *The target behavior in question is "private copying or sharing of digital copyright works on the Internet," simplified as "online piracy." Please take a few minutes to list your thoughts about the following questions:*

Behavioral beliefs:
Q1. What do you believe are the **advantages** of your performing of piracy behavior on the Internet (i.e. private copying or sharing copyright works on the Internet)?
Q2. What do you believe are the **disadvantages** of your performing of piracy behavior on the Internet (i.e. private copying or sharing copyright works on the Internet)?
Q3. Is there anything else you associate with performing piracy behavior on the Internet?
Normative beliefs:
Q4. Are the any **individuals or groups** who would **approve** of your copying or sharing of digital copyright works on the Internet?
Q5. Are there any **individuals or groups** who would **disapprove** of your copying or sharing of digital copyright works on the Internet?
Q6. Is there anything/anyone else you associate with copying or sharing of digital copyright works on the Internet?

The elicited questionnaire was distributed in person to the 25 participants and they were given 15 minutes to list their thoughts in response to the structured questions in Box 4.1.

To increase the validity of the analysis, two researchers (a colleague and I) independently analyzed the content of the responses, labeled the responses into themes, and listed them from the most to the least frequently mentioned response for each of the following:

1. Behavioral beliefs

2. Normative beliefs (sources of social pressure i.e. what important others think a person should or should not do)

Finally, 75 percent of all agreed-upon beliefs were extracted, which were believed to give adequate coverage of the belief 'population' (Ajzen & Fishbein, 1980). They were then converted into 14 belief statements (9 for behavioral beliefs, and 5 for normative

beliefs). These statements reflect the beliefs which might affect the behavior of the target population. See Box 4.2 for the belief statements.

Note that items c, e, g, h & i of "behavioral beliefs" (in Box 4.2) are negative evaluations of online piracy, thus they are reversed scored so that high scores reflect stronger attitude in favor of online piracy behavior.

Box 4.2 *Question format, behavioral beliefs*	*Response format, behavioral beliefs*						
a. Copying or sharing of digital copyright works on the Internet can allow people to **share** files and information with others	Strongly disagree	1	2	3	4	5	Strongly agree
b. People can obtain information products for **free** by copying or sharing digital copyright works on the Internet	Strongly disagree	1	2	3	4	5	Strongly agree
c. You believe there is **a chance of getting caught** while copying or sharing digital copyright works on the Internet	Strongly disagree	**5**	**4**	**3**	**2**	**1**	Strongly agree
d. You believe that the copied or shared digital copyright works have **high quality**	Strongly disagree	1	2	3	4	5	Strongly agree
e. You believe copying or sharing digital copyright works on the Internet may result in a **fine**.	Strongly disagree	**5**	**4**	**3**	**2**	**1**	Strongly agree
f. You believe copying or sharing digital copyright works online is **convenient** to do	Strongly disagree	1	2	3	4	5	Strongly agree
g. You believe the industry will **loss profit** as a result of people's copying or sharing of digital copyright works online	Strongly disagree	**5**	**4**	**3**	**2**	**1**	Strongly agree
h. You believe copying or sharing digital copyright works online will **discourage industry intention to further create or innovate**	Strongly disagree	**5**	**4**	**3**	**2**	**1**	Strongly agree
i. You believe copying or sharing digital copyright works online will **open up the PC to be attacked**	Strongly disagree	**5**	**4**	**3**	**2**	**1**	Strongly agree
Question format, normative beliefs	*Response format, normative beliefs*						
a. Your **family members** think you should not copy or share digital copyright works on the Internet	Strongly disagree	1	2	3	4	5	Strongly agree
b. Your **friends or online peers** think you should not copy or share digital copyright works on the Internet	Strongly disagree	1	2	3	4	5	Strongly agree
(Your classmates or co-workers think you should not copy or share digital copyright works online) – **deleted in the final questionnaire**							
c. Your **teachers or superiors** think you should not copy or share digital copyright works on the Internet	Strongly disagree	1	2	3	4	5	Strongly agree
d. The **information and entertainment industry** thinks you should not copy or share digital copyright works on the Internet	Strongly disagree	1	2	3	4	5	Strongly agree

The 14 statements were then converted into the form of 14 incomplete sentences. These sentences assess the following:

1. Participants' perceived importance of the behavioral beliefs (outcome evaluations)

2. Their motivation to comply with the sources of social pressure (reference groups or individuals)

See Box 4.3 for the 14 incomplete sentences.

Box 4.3 *Question format, outcome evaluations*	*Response format, outcome evaluations*						
ai. How important is it for you to share files and information with others?	Not at all important	1	2	3	4	5	Very important
bi. How important is obtaining information products for free?	Not at all important	1	2	3	4	5	Very important
ci. How important is the fact that one may get caught?	Very important	1	2	3	4	5	Not at all important
di. How important is it that the copied or shared digital works are of high quality?	Not at all important	1	2	3	4	5	Very important
ei. How important is the fact that one may subject to a fine?	Not at all important	1	2	3	4	5	Very important
fi. How important is the fact that it is convenient to copy or share digital copyright works online?	Not at all important	1	2	3	4	5	Very important
gi. How important is it that the industry loses profit?	Very important	1	2	3	4	5	Not at all important
hi. How important is it that the industry is discouraged to further create and innovate due to online copyright or sharing?	Very important	1	2	3	4	5	Not at all important
ii. How important is it that the PC (computer) is vulnerable to be attacked?	Very important	1	2	3	4	5	Not at all important
Question format, motivation to comply	*Response format, motivation to comply*						
ai. Normally, you tend to do what family members think you should do	Strongly disagree	1	2	3	4	5	Strongly agree
bi. Normally, you tend to do what friends or online peers think you should do	Strongly disagree	1	2	3	4	5	Strongly agree
(Normally, you tend to do what classmates or co-workers think you should do) – **deleted in the final questionnaire**							
ci. Normally, you tend to do what teachers or superiors think you should do	Strongly disagree	1	2	3	4	5	Strongly agree
di. Normally, you tend to do what the industry thinks you should do	Strongly disagree	1	2	3	4	5	Strongly agree

The 28 items (in Box 4.2 & 4.3) were passed to 13 people of the university population (3 professors, 5 postgraduates, 4 undergraduate and 1 computer technician) to check whether they had difficulties answering the questions. One composite item (i.e. classmates or co-workers) in measuring normative beliefs was regarded by most as a type/group of friends, thus it was discarded from the final list of items. Some of the items were also rephrased or reworded based on the feedback. The final list contains **26 items (13 sets of composite items)**.

Final scoring

For the belief-based measures, the belief scores on the strongly disagree/strongly agree scale were multiplied by their relative evaluation scores, and motivation to comply scores accordingly. All the resulting products were summed to create an overall belief score of each construct.

Formula 1 and 2 are the calculations of the overall score for Cognitive Beliefs (behavioral beliefs*outcome evaluations) and Subjective Norms (normative beliefs*motivation to comply):

$$CB = (a \times ai) + (b \times bi) + (c \times ci) + (d \times di) + (e \times ei) +$$
$$(f \times fi) + (g \times gi) + (h \times hi) + (I \times Ii) \qquad [Formula\ 1]$$

Where   CB = total Cognitive Beliefs score

a, b, c, d, e, f, g, h and I are scores for each of the nine behavioral beliefs

ai, bi, ci, di, ei, fi, gi, hi and Ii are scores for outcome evaluations relating

to each behavioral belief

$$SN = (a \times ai) + (b \times bi) + (c \times ci) + (d \times di) \qquad [\textit{Formula 2}]$$

Where   SN = total subjective norm score

a, b, c and d are scores for each of the four normative beliefs

ai, bi, ci and di are scores for motivation to comply relating to each source

of social pressure

Because there are nine and four items for CB and SN respectively, the possible

ranges of the total scores are:

$(1 \times 1) \times 9$ to $(5 \times 5) \times 9 = 9$ to 225 for overall CB

$(1 \times 1) \times 4$ to $(5 \times 5) \times 4 = 4$ to 100 for overall SN

However, since the absolute values of the predictor variables were compared

within this study, the means of the multiplied scores as well as scores for individual sets

of items were calculated. In this case, the possible range for the means of the multiplied

scores is the overall score divided by 9 for CB, and by 4 for SN, with a range of 1 to 25;

and the range of the mean score for all items is the mean of the multiplied scores divided

by 5, with a range of 0.2 to 5.

Using this method, a mean score for CB that is higher than 9 (for multiplied score)

or 1.8 (for item score) means that, overall, the participant is in favor of online piracy

behavior; while a mean score lower than 9 (for multiplied score) or 1.8 (for item score) means that, overall, the participant is against online piracy behavior.

Similarly, if a mean score for SN is higher than 9 (for multiplied score) or 1.8 (for item score), this means overall, the participant experiences social pressure not to perform piracy online; and if a mean score is lower than 9 (for multiplied score) or 1.8 (for item score), this means overall, the participant experiences social pressure to perform piracy online.

Reliability for the indirect measures – Test-retest approach

The items were pilot tested twice (with an interval of three weeks) on 38 individuals on a registered ICQ chatroom. Such a test-retest method assesses the reliability of the indirect measures of CB and SN. Using SPSS, the test-retest reliability coefficients for CB and SN are 0.78 and 0.86 respectively. As reliability for the indirect measures are quite high, the 26 items developed from the elicitation study were all included in the final survey questionnaire. See Appendix H for the correlation of the cognitive beliefs and subjective norms score at time one and time two.

4.2.2 Part Two – Questionnaire Design & Research Instruments

This part gives a brief description of the questionnaire design and lays out the instruments (with references) used to directly measure the 10 major latent constructs in this study.

Questionnaire Design

A definition of the behavior under investigation was written based on the "TACT principle" – Internet Users' (Target) Private Copying or Sharing of Digital Copyright Works (Action) on the Internet (Context) - with "Time" not specified as it is not the concern here.

The questionnaire consists of five parts. The questions are each related to the topic of the questionnaire and are succinct and direct.

> *"To maximize the rate of response to questions, design the questions so that they are easy to answer. Participants are also more likely to respond if they feel the questions are appropriate, relevant and neutral."* (Frazer & Lawly, 2001, p.12)

In accordance with the above advice, many questions are "multi-choice" in design to allow respondents to answer quickly and easily. Two types of questions are employed:

1. Close-ended – where exact or Boolean data is required, e.g. Yes/No, close-ended questions are used. Close-ended questions are also easy to analyze, and two variants exist:

- Single close-ended question: only one answer, e.g. select age range from list

- Dichotomous close-ended question: a choice of two values, e.g. Yes/No

2. Scaled response: In order to measure opinions and views more accurately (than an open-ended question), a scaled-response question format is used, e.g. rate 1-5 for agreement/difficulty/likelihood to a statement

Due to the issue of social desirability, the wordings of the measurements are phrased in a more neutral tone. For example, instead of saying "pirating" or "piracy" directly, words like "copying" or "sharing" are used.

The questionnaire was in both English and Chinese to accommodate the different nationalities or needs of people in Hong Kong.

The questionnaire is split into five parts. As a warm-up, the first part starts by asking a few general questions about respondents' Internet use and further asks respondents questions regarding their personal abilities and opportunities in the online environment.

The second part directly asks respondents about their attitude towards online pirating behavior (by using semantic-differential statements to be covered in "Instrument constructions). Cognitive beliefs is measured in terms of outcome expectation of the behavior and belief importance of the outcomes – e.g. "People can obtain information products for free by copying or sharing of digital copyright works on the Internet." and "How important is obtaining information products for free?" Perceived privacy that one can enjoy, ethical belief and perception of fairness associated with online pirating behavior are measured. Indirect measure of subjective norms by respondents' normative belief and motivation to comply is also used – e.g. "Your family members think you should not copy or share digital copyright works on the Internet" and "Normally, you tend to do what your family members think you should do."

The third part of the survey contains questions regarding respondents' perceived needs for Internet piracy to satisfy certain needs as compared with legal means of obtaining information products.

The fourth part directly measures respondents' intention to pirate on the Internet. Respondents' past piracy experience by physical means as well as their online piracy experience and approximate frequency are also recorded. Although there are different types of pirating behavior online (music, movies, computer programs, TV programs etc.), respondents are briefed about the focus of this research, which is to study the general behavior of pirating on the Internet. They are asked to think of pirating behavior in general (not a specific, differentiated type of piracy), so individual types of piracy are not extracted to be studied here.

The final part of the survey contains standard demographic questions of gender, age, and income.

For dichotomous data, 1(Yes)/0(No) was used. For other categorical data, a five-point scale was used, so that each variable with a level of 'strongly-disagree' was transformed to an interval number '1,' 'disagree' to '2,' 'neutral' to '3,' 'agree' to '4,' and 'strongly agree' to '5' (same applied to "very difficult-very easy" and "very unlikely-very likely."

Research Instruments

This part presents all instruments used in the construction of the survey questionnaire.[48]

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[48] No validated questionnaire is available for measuring the factors of attitude towards online piracy, subjective norms, perceived behavioral control, online piracy intention, and the actual online piracy behavior. However, past surveys have been carried out to measure these TPB constructs in studies of dishonest, ethical, or even the more specific software piracy behaviors. For example, Beck and Ajzen (1991) developed items to test the TPB constructs in predicting dishonest behavior such as cheating on exams, lying, and shoplifting, and Peace et al. (2003) developed items for the TPB constructs in predicting software piracy attitude and intention in the workplace. Furthermore, based on the advice provided by Ajzen and Fishbein (Ajzen, 1991; Ajzen & Fishbein, 1977, 1982; Fishbein and Ajzen, 1975) on the development of measuring instruments, a similar set of items is developed for this study.

Attitude

Direct measure of Attitudes involves the use of bipolar adjectives (i.e. pairs of opposites) which are evaluations of the overall favorableness or unfavorableness of piracy behavior (e.g. *good – bad*).

Respondents were asked to respond to a question about individual's attitude towards the behavior in question (Fishbein & Ajzen, 1975), they are given the "stem" statement – "Overall, my attitude towards private copying or sharing of digital copyright works on the Internet is…" It is most ideal to use about four items (or at least three items) which defines the behavior under investigation (Valois & Godin, 1991).

Three semantic differential items were selected and used in this study -- they include instrumental items (whether the behavior achieves something i.e. *harmful– beneficial*) and experiential items (how it feels to perform the behavior i.e. u*nacceptable – acceptable*). This study also included the *good – bad* scale as it captures an overall evaluation.

Although a 7-option response format is most often recommended in the TPB literature, a 5-option format is used in this study due to time constraint of conducting the telephone interviews. Higher numbers then reflect a positive and stronger attitude towards online piracy behavior.

Computer deindividuation

There are three items in computer deindividuation and all relate to people's sense of privacy (see Box 4.4). This variable is rarely investigated in past literature, and its measure first appears in the pilot research done by Loch and Conger (1996). They discover the reliability (Cronbach's alpha) of measures of the sense of privacy is over 0.7. This study adopted the sense of privacy as measurement items for computer deindividuation. Respondents are asked on a 5-point strongly disagree/strongly agree scale whether they feel pirating on the Internet provide them a sense of privacy. The higher the score, the more they feel they can enjoy the privacy when pirating online.

Box 4.4 Three items to measure Computer Deindividuation							
Q1. You believe copying or sharing digital copyright works online can prevent ppl's copying or sharing activities from being known	Strongly Disagree	1	2	3	4	5	Strongly Agree
Q2. You believe copying or sharing digital copyright works online can provide ppl. the privacy to enjoy information products	Strongly Disagree	1	2	3	4	5	Strongly Agree
Q3. You believe copying or sharing digital copyright works online can make ppl. feel more secure than pirating information products offline (e.g. on the street)	Strongly Disagree	1	2	3	4	5	Strongly Agree

Ethical Belief

Ethical belief is people's belief or judgment about the degree of rightness or guilt of performing piracy online. Originally, Beck and Ajzen's (1991) items were used to measure ethical belief, i.e. "I would not feel guilty if I pirated digital material", "Digital piracy goes against my principle", and "It would be morally wrong for me to pirate digital material". However, they generated low internal consistency (i.e. a=0.498) during pilot testing due to the fact that online piracy is a sensitive issue nowadays and respondents might simply deny such behavior in public and provide false responses. To

avoid false response set, these statements were modified and rephrased, yet the main issues of the feeling of guilt and people's moral operation were kept. See Box 4.5.

Box 4.5 *Four items to measure Ethical Belief*							
Q1. You believe copying or sharing digital copyright works online will make more people accept copying or sharing activities online	Strongly Disagree	1	2	3	4	5	Strongly Agree
Q2. You believe copying or sharing digital copyright works online will make more people think copying & sharing activities online is a normal behavior	Strongly Disagree	1	2	3	4	5	Strongly Agree
Q3. You believe copying or sharing digital copyright works online will make people feel less guilty for their private copying or sharing behavior	Strongly Disagree	1	2	3	4	5	Strongly Agree
Q4. You believe copying or sharing digital copyright works online will make more people think there is nothing wrong with their online copying or sharing behavior	Strongly Disagree	1	2	3	4	5	Strongly Agree

Perceived Unfairness of the Industry

Perceived Unfairness of the Industry is the extent to which respondents feel unfavorable or unfair towards the software and entertainment industry, or the extent to which individuals would like to redress an unfair imbalance between the industry and customers. No previously existing set of items could be identified to measure individuals' perception of unfairness of the industry. However, three aspects of the "perceived unfairness" have been developed by Fukukawa (2002), namely unfairness of pricing, unfairness of business performance or practice, and retaliation. These three unfair aspects are hypothesized to mediate the relationships between the individual TPB dimensions and the dependent variable (which is a list of ethical questionable behaviors - EQB - that individuals performed). Therefore, new items were developed based on the three aspects to measure this construct. It is measured using a three-item scale as listed in Box 4.6. The

higher the score means the more respondents feel the unfair business practices of the software and entertainment industry.

Box 4.6 *Three items to measure Perceived Unfairness of the Industry*

Q1. You believe people's copying or sharing behavior online is a way to act against big business	Strongly Disagree	1	2	3	4	5	Strongly Agree
Q2. You believe people's copying or sharing behavior online is a call against the unfair practice of big business	Strongly Disagree	1	2	3	4	5	Strongly Agree
Q3. You believe people's copying or sharing behavior online means the original works produced by the industry do not worth their price	Strongly Disagree	1	2	3	4	5	Strongly Agree

Subjective Norms

Direct measurement of subjective norms involves the use of questions referring to whether important others approve or disapprove online piracy behavior (Fishbein & Ajzen, 1975).

Three items were used to measure the construct, and a 5-response scale was used ranging from strongly disagree to strongly agree (see Box 4.7). The higher the score, the greater the social pressure to reject the target behavior.

Box 4.7 *Three items to measure Subjective Norms*

Q1. Most people who are important to you would disapprove of your copying or sharing of digital copyright works on the Internet.	Strongly Disagree	1	2	3	4	5	Strongly Agree
Q2. Most people who are important to you think you should not copy or share digital copyright works online.	Strongly Disagree	1	2	3	4	5	Strongly Agree
Q3. Most people who are important to you do not copy or share digital copyright works online.	Strongly Disagree	1	2	3	4	5	Strongly Agree

Perceived Behavioral Control (PBC)

Direct measurement items for Perceived Behavioral Control should reflect people's confidence that they are capable (i.e. their self-efficacy and control) of

performing online piracy. It is assessed by asking people to report their ability, opportunity, and how difficult it is to perform the target behavior (Ajzen, 1985, 2001). Here, the higher the score, the greater ability to perform the target behavior. (See Box 4.8)

Box 4.8 Four items to measure Perceived Behavioral Control							
Q1. You believe you have the ability to copy or/and share digital copyright works online.	Strongly Disagree	1	2	3	4	5	Strongly Agree
Q2. How difficult is it for you to copy or share digital copyright works online.	Very Difficult	1	2	3	4	5	Very Easy
Q3. If you wanted to, you could easily copy or share digital copyright works online.	Strongly Disagree	1	2	3	4	5	Strongly Agree
Q4. It is totally up to you to copy or share digital copyright works online.	Strongly Disagree	1	2	3	4	5	Strongly Agree

Perceived Needs for Internet Piracy (PNIP)

As described in Chapter Three, Perceived Needs for Internet Piracy involves five dimensions: need for work/ study/research-related knowledge, need for entertainment, need for trial, need for information collection, and need for relationship. This study adopts Zhu and He's (2002) Perceived Needs for the Internet measurements to assess respondents' perceived needs for Internet piracy. However, due to the time factor of conducting telephone surveys and with the advice offered by He, the coauthor of the 2002 study, this study combined their two questions that measure how much traditional media and the Internet can satisfy respondents' usage needs into one comparative "stem" statement –

"Compare with legal means of obtaining information products…you think private copying or sharing digital copyright works on the Internet can satisfy more of your…"

Respondents were then asked to indicate on a 5-response scale their level of agreement to the five comparative needs statements between legal and pirated means of obtaining information products.

In addition, Zhu and He's question in ranking respondents' perceived importance of different usage needs were eliminated in this study. The main purpose of this study is to find out whether obtaining information products through online piracy (as compared with legal means) can satisfy more of the needs of respondents, which may in turn increase intentions to carry out the target behavior, so the relative importance/ranking of those needs was not a concern.

Past Offline Piracy Experience

Past piracy experience through physical means, for example, purchasing pirated software or entertainment products, or sharing/duplicating tapes/CDs/VCDs/DVDs, was originally measured by three single Yes/No questions (Hinduja, 2001):

q1. Have you bought pirated CDs/VCDs/DVDs? CDs/VCDs/DVDs?

q2. Have you received/borrowed pirated CDs/VCDs/DVDs?

q3. Have you burned/recorded CDs/VCDs/DVDs?

However, because of time constraints in conducting telephone interviews, the final version only contained a single question – "Have you ever bought/borrowed/burned/recorded/pirated CDs/VCDs/DVDs/software" – which is believed to serve the purpose of measuring Past Offline Piracy.

Intention to Pirate

In the TPB literature, where most research has been about individuals' personal-related behavior (e.g. smoking, exercise, drug consumptions) by asking respondents to

report on their likelihood or intention of carrying out the target behavior is most commonly used.

As suggested by Fishbein and Ajzen (1975), three items were used to measure the intentions to pirate on the Internet. Here, the higher the score, the higher/stronger intention/likelihood to perform the target behavior. See Box 4.9 for the three items measurement.

Box 4.9 *Three items to measure Intentions to pirate*

Q1. If given the opportunity, will you recommend a friend to copy or share digital copyrighted works online for free?	Very Unlikely	1	2	3	4	5	Very Likely
Q2. If given the opportunity, will you try to share digital copyright works on the Internet for free?	Very Unlikely	1	2	3	4	5	Very Likely
Q3. If given the opportunity, will you try to copy digital copyright works on the Internet for free?	Very Unlikely	1	2	3	4	5	Very Likely

Online Piracy Behavior

This study used three questions to measure Online Piracy Behavior. The first question is a categorical Yes/No question asking respondents – "Have you ever downloaded or uploaded digital copyright works, e.g. music or movies, on the Internet?" Next, two questions are asked to generate a rough numerical estimation of respondents' online piracy behavior:

q1. On average, how many days a week do you copy or share digital copyright works on the Internet?

q2. In the course of the past month, how often have you copied or shared digital copyright works on the Internet?

The inclusion of the different formats in asking the same question is to obtain a reliable self-report measure of online piracy behavior.

Gender, Age and Income

This study carefully controlled three standard demographic variables, namely gender, age, and income through single item categorical questions eliciting respondents for their gender, age range, and income range.

To control for gender effects, this study dummy-coded gender (i.e. 0=male, 1=female) and included it in structural equation modeling. Age was measured by more than one categorical variable (i.e. age 15 to 19, 20 to 24, 25 to 29… and 60 or above), same with income (i.e. $5,000 or below, $5,001 to $10,000 … $50,001 or above).

Pretest

It was important to pretest the instruments before the actual survey, partly to examine the validity of instruments used, and partly to allow researchers to spot out weaknesses in the questionnaire (e.g. weak items with little variance) and make relevant improvements (e.g. dropping of weak items). The pretest of this study also helped to see if respondent attention is maintained, if the researcher needs to correct misinterpretations of questions or questions that are too sensitive, and to count the time of each successful completion.

A convenience sample of 95 individuals in Hong Kong who have similar characteristics with the final sample was used in the pretest.[49] A self-administered

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[49] These 95 individuals consist of those on my online chatroom list, email contact list, and those by referrals within my contact network. Converse and Presser (1986) argue a pretest size of 25 - 75 (75 or above the

questionnaire was disseminated to them by email, MSN transfer, and hard copies. The pretest was carried out in March 2006 and a week was allowed to gather the data and feedbacks. The survey instruments were modified based on statistical analysis (i.e. validity and reliability checks) and returned comments.

During the pretest, validity and reliability of the measures were also checked.

In this study, the constructs and variables were adopted from the psycho-behavioral TRA and TPB, existing literature, the elicitation study, expert advice[50], and peer discussion[51], and are constantly revised during the instrument design process to reflect the features of pirating activities online so that they are face-validated.

It was important at this stage to establish the reliability of each measure (Everitt, 1996). For the indirect measures of the belief variables, it was not appropriate to assess their reliability using an internal consistency criterion because people can hold both positive and negative beliefs about the same behavior. For example, someone may believe that pirating digital copyright works online is convenient and cheap but will have a high chance of getting caught. Hence, it did not make sense to eliminate some of these beliefs from the measures based on the low or negative correlations among them. Thus test-retest reliability was used for handling indirect measures of cognitive beliefs (CB) and subjective norms (SN).[52] The same list of 26 items was tested on the same group of

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best) respondents similar to those who will be in the final sample. Thus I've recruited 95 respondents to pretest the survey instruments.

[50] Comments and advices are obtained through email communication with Dr Icek Ajzen (founder and expert of the TRA and TPB), and discussions with scholars in the media, communication, psychology, and IS disciplines.

[51] Some ideas and common sense have been generated from discussions, casual talks and online chat within my social circle.

[52] Test-retest methods are disparaged by many researchers as a way of gauging reliability. Among the problems are that short intervals between administrations of the instrument will tend to yield estimates of reliability which are too high. There may be invalidity due to a learning/practice effect (subjects learn from the first administration and adjust their answers on the second). There may be invalidity due to a maturation

38 individuals from an online discussion forum over a 3-week interval. Using SPSS, the test-retest reliability coefficients for CB and SN were 0.778 and 0.855 respectively, which indicated acceptable and adequate reliability for the indirect measures.

For direct measures of the predictor variables in this study, an index of internal consistency (i.e. the amount of inter-correlation between survey items) was used to determine whether the items in the scale are all measuring the same construct. The index of internal consistency was a measure of how accurate or precise an instrument is. Since constructs are comprised of multiple items, homogeneity among all items was established so that the items corresponded together to measure the same construct. Cronbach's alpha (Cronbach's α) was used to assess reliability of the instruments.

Attitude. Attitude was made up of three semantic-differential items. The internal reliability coefficient (Cronbach's α) for this scale was 0.826. This value was acceptable and consistent with results in past literature. No items were removed.

Computer Deindividuation. The deindividuation scale was made up of three items. Cronbach's alpha for the scale was 0.794. This value was acceptable and consistent with previous research findings. No items were removed.

Ethical Belief. The original ethical scale consisted of four items. Cronbach's alpha for the scale was 0.932 which shows a pretty high internal consistency among the items. However, deleting the first item from the list – "You believe copying or sharing digital

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effect when the interval between administrations is long (the subjects change over time). The bother of having to take a second administration may cause some subjects to drop out of the pool, leading to nonresponse biases. However, test-retest designs are still widely used and published and there is support for this. McKelvie (1992) reports that reliability estimates under test-retest designs are not inflated due to memory effects. See McKelvie, S. J. (1992). Does memory contaminate test-retest reliability? Journal of Gen Psychology 119(1):59-72. This article reports that reliability estimates under test-retest designs are not inflated due to memory effects.

copyright works online will make more people accept copying or sharing activities online" - made no difference to the internal consistency coefficient (even made it slightly better), and can also decreased the interview time in the final telephone survey (since questionnaire length was a problem for the telephone interviews conducted in this study), thus the final scale was made up of three items with Cronbach's alpha equaling 0.933.

Perceived Unfairness of the Industry. The scale was made up of three items. Cronbach's alpha reported a value of 0.691. Though internal consistency among items was not high, it was a new variable suggested to be examined in existing ethical behavior literature (Douglas, Cronan, & Behel, 2005; Fukukawa, 2002), thus the value was considered adequate in this study for further investigation.

Subjective Norms. The scale was made up of three items. Cronbach's alpha reported an adequate value of 0.877, which was consistent with results found in existing literature. Thus no items were removed.

Perceived Behavioral Control. The original perceived control scale consisted of four items. Cronbach's alpha for the scale was 0.756 which showed an adequate internal consistency among the items. However, similar to the "ethical belief scale," deleting the last item from the list – "It is totally up to you to copy or share digital copyright works online" – did not make much difference to the internal consistency coefficient, and improved the problem of questionnaire length, thus the final scale was made up of three items with Cronbach's alpha equaling 0.748.

Perceived Needs for Internet Piracy. The scale consisted of five dimensions – i.e. needs for work/study/research, needs for entertainment, needs for sampling, needs for personal collection, and needs for personal relations. Cronbach's alpha reported a value

of 0.901, which showed a pretty high internal consistency among the items. Thus no items were removed.

Intention to pirate. The intention scale was made up of three items. Cronbach's alpha reported a value of 0.909, which showed a pretty high internal consistency among the items. Thus no items were removed.

Online Piracy Behavior. The behavior scale was made up of three items. The first was a dichotomous Yes/No direct measure of whether a person has pirated online, then the last two is a 6-point "never copied to almost every day" scale in estimating individuals' frequency of pirating online. The two-items scale measurement generated high internal consistency with Cronbach's alpha equals 0.992.

Table 1 presents a summary of the definitions, measurement scale, internal consistency coefficients, and references of all constructs and variables.

Insert Table 1 here

The final questionnaire consisted of five parts with 61 questions (2 warm-up questions, 26 indirect measurement items for cognitive and normative beliefs scale, 30 direct measurement items, and 3 demographic questions) to test the variables. Each questionnaire did not take more than 15 minutes to complete. See Appendix A for a copy of the complete questionnaire. See also "scoring key for questionnaire" in Appendix B for both the direct and indirect measures of the constructs.

4.3 Sampling

A random digital dialing method was used in which results can generalize to the population from the random sample to produce unbiased estimates. The research population in this study was the general public in Hong Kong. Since the purpose was to find out what motivates people to pirate on the new medium and the beliefs people have towards the target behavior, it made more sense to recruit a sample that has the experience of using the Internet to offer realistic and accurate answers towards the online behavior in question. Moreover, a local sample aged over 15 was chosen based on the fact that respondents who are 15 or above should have finished their compulsory secondary education (excluding repeaters) and are legal to work under the HK Labour Law. Thus, this group better represents the population in HK for the purposes of this study, which is a combination of students, and the working and non-working force.

Hong Kong was chosen as the research context based on four reasons:

Method-wise, fixed line telephone reaches over 99 percent of households in Hong Kong to a point of saturation.[53] Thus telephone interviews are the most feasible means to reach the general public in Hong Kong. Moreover, according to Nielsen/NetRatings, as of February 2005, Hong Kong ranked the ninth (68.2%) among the top 35 countries with the highest Internet penetration rate (Internet World Stats, 2007), and its broadband penetration rate is the 2nd highest in the world (Office of the Telecommunications Authority, 2004). Therefore it is believed that users will have more opportunity to come across with illicit copies of copyrighted products on the Internet.

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[6] This information is obtained from http://www.internetnews.com/bus-news/article.php/871421 - "Asian Surfers Comprise 20 Percent Of Total Internet Universe," dated August 23, 2001.

According to the National Trade Estimate (NTE) Report 2004 of the United States Trade Representative (USTR, 2004), there was a decrease in the volume of pirated discs found in retail shopping arcades in Hong Kong -- however, with an increased use of pirated software among local Internet users. This is also evidenced in the Annual Piracy Report published by the Business Software Association, in which a two percent climb in the global PC software piracy is reported from 52% in 2003 to 54% in 2005 (Business Software Alliance, 2007). It is suspected that people might have recognized the benefits of physical piracy (now coupled with the ease and the lower cost of pirating online), and migrated to the Internet to carry on their pirating behavior.

Although HK's copyright protection framework is in shape and in line with International standards, and its law enforcement is strict, it cannot overlook the fact that a lot of people are still pirating on the Internet. Such a scenario prompted my interest to explore the psychological mindset of individuals or groups of individuals towards performing of the ethically questionable behavior.

Finally, in January 2005, a 38-year-old man – Chan Nai-ming, also known as "Big Crook" (古惑天皇) – was arrested for seeding (uploading) three Hollywood movies onto the Internet for others to download. He was the first person in the world to be criminally charged with violating copyright laws through the use of BT technology. He was later charged with copyright infringement in November 2005 by a local district court and was sentenced to three months imprisonment.[54] It was believed that such a pioneer

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[54] After Chan was sentenced to 3-months in jail, he was immediately granted parole pending an appeal to the High Court and had been released on bail of HK$5,000. The magistrate also admitted the case is a difficult one in determining how Chan should be sentenced due to the lack of precedent for such a case. See http://www.iht.com/articles/2005/11/07/business/bit.php for more information.

arrestment case would likely to deter people's online pirating behavior.[55] Nevertheless, there was a rebound after the ruling, and many continue to disregard law enforcement efforts and even praise the "heroic" act of the "Big Crook." A local survey conducted in October 2005 shows 70% of those interviewed indicate their high tendency to carry on pirating online despite strict legislation and legal enforcement (Oriental Daily, October 17, 2005). Due to the seriousness of the problem, the HKSAR government conducted two phases of public reviews of the Copyright Ordinance to consider the scope of Internet infringement activities that should be subjected to civil or criminal liability and how legislative amendments might be justified for more effective protection of copyright works in the digital environment (Commerce, Industry & Technology Bureau, 2004, 2006). Therefore it will be an invaluable opportunity to study and understand why the problem persists.

4.3.1 Data Collection

During fieldwork, the survey was conducted using computer-assisted telephone interviewing (CATI) technology[56], with an average interview time of 15 minutes for each successful case. The Hong Kong University Public Opinion Project (HKUPOP) was commissioned to assist in conducting fieldwork – the telephone interviews. The major

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[55] Visit http://www.channelnewsasia.com/stories/afp_asiapacific/view/177320/1/.html for the landmark web piracy news posted on 7 November 2005 at Channel NewsAsia online; or
http://news.bbc.co.uk/1/hi/technology/4413540.stm at bbc.co.uk.
[56] CATI is an interactive front-end computer system that aids interviewers to ask questions over the telephone. The answers are then keyed into the computer system immediately by the interviewer. The advantages of CATI compared to paper and pencil include: automatically scheduling and dialing up, automatic skips, range checking, and automatic data entry, etc.

consideration here was the sensitivity of the study.[57] The HKUPOP had also tape-recorded the interviews for quality control and monitoring purposes.

The Hong Kong telephone directory was used to draw the sample, and random telephone interviews were conducted in May to collect the actual data set. An individual of 15 or above was selected from each household contacted, based on the last birthday method. A person is considered eligible for an interview based on two screening criteria mentioned – they should be Internet users aged 15 years old or above.

4.3.2 Sample Size

Since SEM is used to analyze the results, many researchers suggest using a sample size of at least 100 and preferably 200 or above (Boomsma, 1987; Gefen et al., 2000; Kline, 1998; Loehlin, 1992). Thus, the completed sample consisted of 300 individuals, which is sufficient to provide adequate statistical variance. The sampling error is ±5.8% at the 95% confidence level. A total of 5,923 phone numbers were attempted in the course of the survey, and there were altogether 511 valid cases. The response rate is 58.7% (300/511). Given the difficulties in conducting telephone surveys and the multiple conditions imposed on selecting eligible respondents, such response rate

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[57] The topic examined in this study is Internet piracy which is a highly sensitive topic especially after the final hearing of the pioneer BT arrestment case in early November 2005. With this in mind, it is highly unlikely that a randomized sample representing the HK population can be obtained by my own time and effort. So after considering other possibilities to collect the data (e.g. mailing survey, face-to-face survey and convenient survey), and knowing the importance of credibility to conduct such a sensitive research topic, I believe commissioning an authoritative and renowned research unit is the most probable and effective way to obtain a valid sample which can explain the phenomenon under investigation. As compared with individual cold calling method (which is low in credibility), commissioning the renowned HKUPOP research centre can save more time when briefing participants before the actual interview as trust has already been built among individuals toward the research unit, and they will be more willing to disclose their opinions.

is satisfactory for the purpose of this study. See Appendix C for the call status and response rate of collecting the sample.

4.4 Analysis Design and Hypotheses Testing

The final data was collected in May 2006 and translated to SPSS format. Data cleaning were conducted by computers to ensure the accuracy, consistency, and completeness of all responses. Descriptive statistics were calculated and summarized, including means and standard deviations.

4.4.1 Factor analysis

Since the cognitive and normative scales are exploratory in nature generated by the elicitation study discussed in 4.2.1., Exploratory Factor Analysis (EFA) was performed on the final data of the 13 sets of composite items for the two scales in order to uncover the latent structure of the two sets of items.

The 13 items, having been reduced to a smaller number of latent factors, were modeled by structural equation modeling similar to other latent constructs in this study (refer to section 5.4.1. for the latent structures obtained by EFA for the two scales).

4.4.2 Structural Equation Modeling (SEM)

In this study, SEM was used to test the hypotheses. Outliers and records with missing values were dealt with before the data was used for SEM.

SEM is a technique used to analyze the hybrid model with both multiple indicators (i.e. items) for each latent variable as well as paths specified connecting the latent variables. SEM in this study allows the analysis of more than one layer of links between the independent and dependent variables (e.g. attitude and intention are considered both a dependent and an independent variable predicting intention and the actual behavior respectively) (Gefen, Straub, & Boudreau, 2000). Therefore, it provides a structural analysis of the model by testing the relationships for statistical significance between variables, as well as an evaluation of the measurement model in which loadings of items on their latent variable are examined simultaneously.

A two-steps SEM process was followed in this study (Anderson and Gerbing, 1988) – 1) Validating the measurement model, and 2) fitting the structural model.

Since the purpose of the measurement model is to describe how well the observed indicators serve as the measurement instrument for the latent variables, thus the measurement model is a useful tool to assess construct validity of the data, which deals with whether the items used to measure the constructs are consistent with a prior hypothesis regarding the relationship between these items and constructs. This was accomplished through the use of Confirmatory Factor Analysis (CFA).

The purpose of CFA is to analyze the error terms of the indicator variables, and is used here to establish that indicators are measuring their corresponding latent variables (i.e. to determine if the number of latent variables and the loadings of indicator variables on them conform to what is expected a priori) (Kim & Mueller, 1978).

Kline (1998) suggests to the use of CFA to test the pure measurement model underlying a full structural model first to see if the measurement model is acceptable (i.e.

whether item loadings on the constructs are significant and the fit of the measurement model is acceptable), before proceeding to test the structural model. Thus the measurement model in this study was tested for unidimensionality, reliability, as well as convergent and discriminant validity by means of CFA.

This was done in SEM by removing from the model all straight arrows (i.e. causal paths) connecting the latent variables, adding curved arrows to represent covariance between every pair of latent variables, and connecting straight arrows from each latent variable to its indicator variables as well as leaving in the straight arrows from error and disturbance terms to their respective variables. This measurement model was then evaluated like any other SEM models using goodness of fit measures.

As mentioned, the CFA model took into account the correlations among the error terms of the indicator variables. Such measurement error terms represent causes of variance due to unmeasured variables as well as random measurement error. To check whether the measurement model has good fit, the fit of the model specifying uncorrelated error terms was compared with a model with correlated error specified. Including the correlated measurement errors in the model can test the possibility that indicator variables correlate not just because of being caused by a common factor, but also due to common or correlated unmeasured variables. This possibility would be discarded if the fit of the model specifying uncorrelated error terms is significantly better than the model with correlated error specified. Such a CFA test is a desirable validation stage preliminary to the main use of SEM to model the causal relations among latent variables. Only when the measurement model is validated would the later part of the analysis proceeded.

As for testing the relationships between the model components, the SEM analysis provides two means for analyzing the research model. The first is an indication of the overall fit of the model (how well does the model fit the data). The ratio of chi-square normalized to degree of freedom ($\chi 2/df$), root mean square error of approximation (RMSEA), the non-normed fit index (NNFI), the comparative fit index (CFI), and the standardized root mean square residual (SRMR) were compared to the standard ratio to check whether the model has good fit. It is important to note that the goodness of fit tests are to determine if the model being tested should be accepted or rejected, and they do not show whether the paths within the model are significant. However, it would be meaningless to find "significant" path coefficients in a poor fit model. Thus it is necessary first to look at the overall fit of the model.

Then, the second indicator is by assessing the strength of paths in the model (i.e. the relationships between the different factors) after the overall fit was confirmed. Each relationship was tested by examining the beta coefficients (or structural coefficients) between factors and testing them for statistical significance.

Chapter Five Results

5.1 Introduction

This chapter reports the findings of this study as outlined in the previous chapters. The hypotheses presented in Chapter Three are tested using SEM techniques outlined in the previous chapter. Section 5.2 gives the descriptive information about the subjects participated in this study. Section 5.4 details the construct validity tests performed on the collected data. Construct validity deals with whether the items used to measure the constructs are consistent with a prior hypothesis regarding the relationship between these items and constructs. Confirmatory Factor Analysis (CFA) is used here to validate the initial measurement model. It seeks to determine if the number of latent variables and the loadings of indicator variables on them conform to what is expected in established theories. Here, the error terms of the indicator variables are analyzed as well. Once the measurement model is confirmed, a thorough examination of the research model and the individual hypotheses is conducted in section 5.5 using SEM techniques.

5.2 Descriptive Statistics

The final field interview was conducted throughout a two week period in the beginning of May 2006. There are a total of 300 successful returned cases. This section presents a detailed account of the subjects' demographics.

Almost 90 percent of the respondents indicated they have been using the Internet for a year or more, with more than 60 percent respondents reported using the Internet for six

years or more, and eight percent even reported using it for more than ten years. Figures indicated a high percentage of these users log on the Internet in the private home (88%), followed by the workplace (11%).

There were 48 percent male and 52 percent female making up the sample, showing a relatively average distribution of the two sexes. Slightly more than 50 percent of the respondents were in the youngest age group (i.e. 15-24), followed by 20 and 19 percent in the 25-34 and 35-44 age group respectively. Finally, the highest percentage of income group is "$5,000 or below" (35.7%). The next two highest percentages of income groups are "$5,001-$10,000" (19.7%) and "$10,001-$20,000" (19.3%) respectively.

Finally, over half of the respondents (i.e. 164, 54.7%) admitted that they have performed piracy on the Internet, among them, 20 percent (i.e. 32) reported that they have not pirated online for a period of time.

For the remaining group of current piraters (i.e. 132, 44%), 85 (28.3%) of them pirated one to three times per week, and two percent (i.e. 6) indicate they pirate most days to almost every day throughout the month.

Table 3 summarizes the descriptive statistics of the studied sample (with mean and standard deviation).

Insert Table 3 here

5.3 Missing Values

A total of 300 successful cases were returned for this study. No questionnaire was discarded. Among them, 26 interview questionnaires consisted of missing data. At least

one item was missing in these questionnaires but no more than six missing items were detected for each questionnaire. There are a few approaches one can adopt when dealing with missing data, such as by casewise (or listwise) deletion, pairwise deletion, mean substitution, and the more advanced imputation method (Burke, 2001). As the number of missing data was not particularly high for each questionnaire (from one to six missing items) and there was no missing data found for the single dependent variable *online piracy behavior,* this study had adopted mean substitution as suggested by Schwab (1999) to estimate the missing scores[58].

After dealing with the missing data, the measurement instruments in the questionnaire were then checked for construct validity.

5.4 Construct Validation

Before testing the Internet piracy model and individual hypotheses, the construct validity of the measuring instruments will first be examined in this section. Three things will be looked at in order to test for construct validity, they are unidimensionality, reliability, and validity (convergent and discriminant).

5.4.1 Test for Unidimensionality

Most of the constructs in this study are measured by multiple indicators, it is thus important to demonstrate that these items are actually measuring the same thing. To test this assumption, Factor Analysis (Principal Component Analysis, PCA) was performed

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[58] The four missing items for the demographic variable Income and three for Age were handled by listwise deletion.

on all the indicators for all the constructs in this study, and the factor structure of each construct was examined.

Attitude. The attitude scale was made up of three items (see Chapter Four). PCA extracted one component accounting for 67.3% of the variance.

Cognitive Beliefs. Cognitive beliefs scale was made up of nine items derived from the elicitation study (see Chapter Four). Since this scale is exploratory in nature, exploratory factor analysis (EFA) was used to uncover the underlying structure of the items. PCA extracted three components accounting for 66.1% of the variance. The first factor extracted loaded on the first four items (perceived personal advantages), the second factor extracted loaded on the next three items (perceived personal disadvantages), and the third factor extracted loaded on the last two items (perceived industry disadvantages).

Computer Deindividuation. The deindividuation scale was made up of three items (see Chapter Four). PCA extracted one component accounting for 63.1% of the variance.

Ethical Belief. The ethical belief scale was made up of three items (see Chapter Four). PCA extracted one component accounting for 62.5% of the variance.

Perceived Unfairness of the Industry. Perceived Unfairness of the Industry scale was made up of three items (see Chapter Four). PCA extracted one component accounting for 64.1% of the variance.

Subjective Norms. The subjective norms scale was made up of three items (see Chapter Four). PCA extracted one component accounting for 74.1% of the variance.

Perceived Normative Beliefs. Perceived Normative beliefs scale was made up of four items derived from the elicitation study (see Chapter Four). Since this scale is exploratory in nature, exploratory factor analysis (EFA) was used to uncover the

underlying structure of the items. PCA extracted one component accounting for 55.3% of the variance.

Perceived Behavioral Control (PBC). The perceived behavioral control scale was made up of three items (see Chapter Four). PCA extracted one component accounting for 72.5% of the variance.

Perceived Needs for Internet Piracy (PNIP). The PNIP scale was made up of five items (see Chapter Four). PCA extracted one component accounting for 57.9% of the variance.

Intention. The intention scale was made up of three items (see Chapter Four). PCA extracted one component accounting for 67.8% of the variance.

Online Piracy Behavior. The behavior scale was made up of three items (see Chapter Four). PCA extracted one component accounting for 85.8% of the variance.

Overall Unidimensionality

Results suggested that unidimensionality of the constructs was established in this study. See Appendix D for the actual factor analysis output of the 11 constructs.

5.4.2 Reliability

Reliability is the "consistency" or "repeatability" of the measuring instruments. It is to ensure the items posited to measure a construct are sufficiently related to be reliable as a set of items (i.e. low on measurement error) (Cronbach, 1951). Reliability analysis using Cronbach's alpha was performed to measure the intercorrelation (or internal consistency) of items in this study.

Attitude. The attitude scale was made up of three items (see Chapter Four). Cronbach's alpha for this scale was 0.753. This value is acceptable. No items were removed.

Cognitive Beliefs. The Cognitive Beliefs scale was made up of nine items (see Chapter Four). The first four items were associated with the perceived personal advantages of Internet piracy, the next three items with perceived personal disadvantages associated with the behavior, and the last two items were related to perceived industry disadvantages. Cronbach's alpha for the first four items was 0.801, 0.693 for the next three items, and 0.607 for the last two items. Meanwhile, although the reliability for the three items of the "personal disadvantages" scale was acceptable, the item-total correlation for the third item in the scale was extremely low as compared with the first two items. This suggested the third item has less correlation with the overall scale. Moreover, when this item was checked in the elicitation response, it was found that its occurrence frequency among respondents was at the borderline for inclusion into the measurement. Thus a final decision was made to drop this item from the scale. The final "personal disadvantages" scale consisted of two items with a Cronbach's alpha of 0.961 indicating a good scale.

Although the reliability for the last two items measuring industry disadvantages was not high, they were retained in this study for further analysis as these items were exploratory in nature generated from the elicitation study covered in Chapter Three.

Computer Deindividuation. The deindividuation scale was made up of three items (see Chapter Four). Cronbach's alpha for this scale was 0.707. This value is acceptable. No items were removed.

Ethical Belief. The ethical belief scale was made up of three items (see Chapter Four). Cronbach's alpha for this scale was 0.700. This value is acceptable. No items were removed.

Perceived Unfairness of the Industry. Perceived Unfairness of the Industry scale was made up of three items (see Chapter Four). Cronbach's alpha for this scale was 0.719. This value is acceptable. No items were removed.

Subjective Norms. The subjective norms scale was made up of three items (see Chapter Four). Cronbach's alpha for this scale was 0.825. This value indicates a good scale, therefore no items were removed.

Perceived Normative Beliefs. Perceived Normative beliefs scale was made up of four items (see Chapter Four). Cronbach's alpha for this scale was 0.729. This value is acceptable. No items were removed.

Perceived Behavioral Control (PBC). The perceived behavioral control scale was made up of three items (see Chapter Four). Cronbach's alpha for this scale was 0.802, which indicates a good scale. No items were removed.

Perceived Needs for Internet Piracy (PNIP). The PNIP scale was made up of five items (see Chapter Four). Cronbach's alpha for this scale was 0.815. This value is good. No items were removed.

Intention. The intention scale was made up of three items (see Chapter Four). Cronbach's alpha for this scale was 0.763. This value is acceptable. No items were removed.

Online Piracy Behavior. The behavior scale was made up of three items (see Chapter Four). Cronbach's alpha for this scale was 0.882. This value is good. No items were removed.

Overall Reliability

Based on the test results, the scales used in this study were found to be reliable.[59] See Appendix E for the reliability estimates for all the scales. See also "scoring key for questionnaire" in Appendix B for both the direct and indirect measures of the constructs.

5.4.3 Convergent and Discriminant Validity

Convergent and Discriminant Validity together form the construct validity of the instrument in this study. If the items do not converge or run together as they should, it is called a convergent validity problem. If they do not segregate or differ from each other as they should, then it is called a discriminant validity problem. Various indexes of the Structural Equation Modeling (SEM) and confirmatory factor analysis (CFA) will be performed to check convergent and discriminant validity of the constructs.

Test for convergent validity

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[59] Reliability test for the two scales -- perceived personal disadvantages and perceived industry disadvantages -- might not be too accurate as only two items were developed as the measurement of each scale. However, since items of these two scales were derived from the elicitation study and exploratory factor analysis, these items were still kept for the final SEM modeling.

Convergent validity refers to the high correlation of all the indicator variables for a given construct (Campbell and Fiske, 1959). It can be assessed from the CFA measurement model by determining whether each indicator's estimated pattern coefficient on its posited underlying construct factor is significant, before combining the individual models into a full CFA measurement model for an overall analysis (Anderson and Gerbing, 1988). In the following CFA test, the factor loadings on each given construct were checked. It is expected to see that the items would load together on their respective construct (and not cross-loading on another construct at the same time).

Attitude. The attitude scale was made up of three items (see Chapter Four). CFA indicated the three items loaded significantly on the construct ($p<0.01$).

Cognitive Beliefs. The new Cognitive Beliefs scale was made up of eight items (see Chapter Four and previous reliability test). The first four items were associated with the perceived personal advantages of Internet piracy, the next two items were related to the perceived personal disadvantages towards online piracy behavior, and the last two items were related to perceived industry disadvantages. Of all the three CFAs, all item loadings on their respective construct were found to be significant, with all p-values smaller than 0.01 for personal advantages, personal disadvantages and industry disadvantages respectively.

Computer Deindividuation. The deindividuation scale was made up of three items (see Chapter Four). CFA indicated the three items loaded significantly on the construct ($p<0.01$).

Ethical Belief. The ethical belief scale was made up of three items (see Chapter Four). CFA indicated the three items loaded significantly on the construct ($p<0.01$).

Perceived Unfairness of the Industry. Perceived Unfairness of the Industry scale was made up of three items (see Chapter Four). CFA indicated the three items loaded significantly on the construct ($p < 0.01$).

Subjective Norms. The subjective norms scale was made up of three items (see Chapter Four). CFA indicated the three items loaded significantly on the construct ($p < 0.01$).

Perceived Normative Beliefs. The perceived normative beliefs scale was made up of four items (see Chapter Four). CFA indicated the four items loaded significantly on the construct ($p < 0.01$).

Perceived Behavioral Control (PBC). The perceived behavioral control scale was made up of three items (see Chapter Four). CFA indicated the three items loaded significantly on the construct ($p < 0.01$).

Perceived Needs for Internet Piracy (PNIP). The PNIP scale was made up of five items (see Chapter Four). CFA indicated the five items loaded significantly on the construct ($p < 0.01$).

Intention. The intention scale was made up of three items (see Chapter Four). CFA indicated the three items loaded significantly on the construct ($p < 0.01$).

Online Piracy Behavior. The behavior scale was made up of three items (see Chapter Four). CFA indicated the three items loaded significantly on the construct ($p < 0.01$).

Overall measurement model

Combining the independent models into one CFA measurement model yielded significant factor loadings of all 42 items on the 14 constructs, with p-value smaller than 0.00. No unreasonable parameters were found. Table 4 summarizes the loadings of the measures to their respective constructs. See also Appendix F for the CFA syntax of all the scales and the CFA measurement model.

Insert Table 4 here

For all constructs with multiple measures, most items loaded reasonably on their constructs, therefore demonstrating convergent validity. Although some of them are below 0.7, since this study is partly exploratory in nature, these items were still kept for the final modeling.

Then the CFA model was tested for good fit. The fit indices of the CFA model reported a χ^2 with 731 *df* equals to 1085.74 (N=300, P < 0.00). Since chi-square is sensitive to sample size, other fit statistics were also reported. RMSEA[60] reported 0.037, which indicates good fit; NNFI[61] reported 0.955; CFI[62] reported 0.962; and SRMR[63] reported 0.053. All these fit indices indicated an adequate fit of the CFA model.

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[60] RMSEA is one of the measures least affected by sample size (Fan, Thompson, & Wang, 1999). Browne and Cudeck (1993) argue the p-value for testing the null hypothesis that the population RMSEA should be no greater than 0.05 (i.e. no significant difference between the fitted model and the data). Thus by convention, there is good model fit if RMSEA is less than or equal to 0.05; and there is adequate fit if RMSEA is less than or equal to 0.08. More recently, Hu and Bentler (1999) have suggested RMSEA <= .06 as the cutoff for a good model fit.

[61] NNFI close to 1 indicates a good fit. By convention, NNFI values below 0.90 indicate a need to re-specify the model. More recently, Hu and Bentler (1999) suggested NNFI => 0.95 as the cutoff for a good model fit.

[62] CFI is one of the measures least affected by sample size (Fan, Thompson, & Wang, 1999). By convention, CFI should be equal to or greater than 0.90 to accept the model, indicating that 90% of the

Based on the analysis, convergent validity was demonstrated for the 14 constructs used in this study.

Test for discriminant validity

After establishing convergent validity, discriminant validity of the major variables measuring attitude, intention, and the actual behavior was further checked in this study. It refers to the low correlation between two sets of observed items loaded on two different constructs (Campbell & Fiske, 1959). A CFA approach with a two-model comparison was used.

The fit (based on the difference in chi-square) of two factor models was compared: (1) a model with two constructs whose correlation was estimated freely (i.e. the pair-up/two- factor CFA model); and (2) a model in which the correlation was fixed to 1.0 (i.e. the nested/constrained model). If the second model fits as well as the first model, this infers that there is no unshared variance and the two constructs are actually measuring the same thing (i.e. high correlation thus violating discriminant validity).

Insert Table 5 here

Table 5 presents the associated model fit indices and the relevant comparison between the two-factor (pair-up) CFA models and their nested models using the chi-square difference test. As the constrained models were nested under the two-factor CFA

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covariation in the data can be reproduced by the given model. More recently, Hu and Bentler (1999) suggested CFI => 0.95 as the cutoff for a good model fit.
[63] The smaller the standardized RMR, the better the model fit. SRMR is 0 when model fit is perfect.

models, the difference in chi-square values from both models was used as a test of significant change in model fit.

For the intention model, the difference in chi-square values between the six pair-up CFA models and their constrained models were all significant (with all p-values smaller than 0.01), and there was a significant reduction in fit of all the constrained models.

Similar outcomes were obtained for the attitude model and the behavior model, with significant differences in chi-square values found between the pair-up models and the constrained models, and considerable reduction in fit of all the constrained models.

These results demonstrated discriminant validity for the measures in this study.

5.4.4 Conclusion

Based on the previous discussion, construct validation for all the measures in this study was established. Table 6 summarizes the findings of the reliability and validity analysis of the study instruments.

Insert Table 6 here

After validating the 14 instrument scales used in this study, they were used for full model and hypotheses testing in the following section.

5.5 Structural Equations Modeling (SEM) & Hypotheses Testing

Before testing the overall fit of the theoretical framework of Internet piracy behavior and checking the significance of individual predictor variables, the research model is revisited and is shown in Figure 7.

Insert Figure 7 here

As discussed in Chapter Three, to partial out the effects of individual characteristics on people's ethical decision making and consequently their behavior, I have controlled the influence of the demographic variables - age, gender and income – when testing the hypothesized relationships between the latent constructs.

Note also that a three-component structure was established for the cognitive beliefs construct based on results obtained from factor analysis and reliability testing (refer to section 5.4). The three components to be studied in relation to attitude are: perceived personal advantages, perceived personal disadvantages, and perceived industry disadvantages.

Finally, the 14 constructs path model and the 42 items measurement model were collated for the final structural modeling and hypotheses testing.

5.5.1 SEM – estimating goodness-of fit

SEM technique was used to examine the model of Internet piracy behavior. Using LISREL 8.70, a test of the overall model fit was performed. Model fit is usually

evaluated by comparing the observed fit indices with arbitrary but generally accepted fit indices cutoff values. Many fit indices addressing different aspects of model fit have been proposed, and it is advised to use them in combination rather than singly (Cheung & Rensvold, 2001; Hu & Bentler, 1998).

Therefore in this study, several indicators were examined to test for overall model fit, they are: the ratio of chi-square normalized to degree of freedom ($\chi2/df$)[64], root mean square error of approximation (RMSEA)[65], the non-normed fit index (NNFI)[66], the comparative fit index (CFI)[67], and the standardized root mean square residual (SRMR)[68].

The structural (full) model was run to check for its fit. From the path diagram of the model, no unreasonable parameters were found. All the estimated error terms (error variance) were positive and above zero. All the variance of the latent variables and residuals are positive, and all correlation of the variables are between -1 to 1.

Then the fit indices reported a X^2 with 892 *df* equals to 1555.82 (P < 0.00). Since Chi-Square is sensitive to sample size[69], other fit statistics were also reported. RMSEA

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[64] 2 to 1 or 3 to 1 obtained for this ratio ($\chi2/df$) are indicative of an acceptable fit (Carmines & Mclver, 1981, p.80). However, chi-square, amongst all other fit indicators, is the most sensitive to sample size so other fit indices are as well examined.

[65] RMSEA is one of the measures least affected by sample size (Fan, Thompson, & Wang, 1999). Browne and Cudeck (1993) argue the p-value for testing the null hypothesis that the population RMSEA should be no greater than 0.05 (i.e. no significant difference between the fitted model and the data). Thus by convention, there is good model fit if RMSEA is less than or equal to 0.05; and there is adequate fit if RMSEA is less than or equal to 0.08. More recently, Hu and Bentler (1999) have suggested RMSEA <= .06 as the cutoff for a good model fit.

[66] NNFI close to 1 indicates a good fit. By convention, NNFI values below 0.90 indicate a need to re-specify the model. More recently, Hu and Bentler (1999) suggested NNFI => 0.95 as the cutoff for a good model fit.

[67] CFI is one of the measures least affected by sample size (Fan, Thompson, and Wang, 1999). By convention, CFI should be equal to or greater than 0.90 to accept the model, indicating that 90% of the covariation in the data can be reproduced by the given model. More recently, Hu and Bentler (1999) suggested CFI => 0.95 as the cutoff for a good model fit.

[68] The smaller the standardized RMR, the better the model fit. SRMR is 0 when model fit is perfect.

[69] Theoretically, we want to obtain a smaller Chi Square value because we want to reject our hypothesized model. However in reality, if we have large sample size, which we mostly prefer as to stabilize the estimated parameters, we'll likely obtain a pretty large Chi-value, leading us to reject our model. Therefore other fit indices which are less affected by sample size are reported.

reported 0.052, which indicates adequate fit; CFI reported 0.930; NNFI reported 0.922; and SRMR reported 0.113. All these fit indices indicated the model fits the data adequately. See Appendix G for the syntax of the (unconstrained) structural full model.

5.5.2 Model interpretation – estimating parameters & testing hypotheses

After the overall fit of the model was confirmed, the strength of paths in the model (i.e. the relationships between the different factors and their significance) was individually assessed to confirm the theoretical relationships among the model variables.

Table 7 lists all the hypothesized relationships to be tested. The relationship between the three components of cognitive beliefs and attitude were individually considered.

Insert Table 7 here

Each of the hypothesized relationship was tested by examining the beta coefficients (or path coefficients) between the latent constructs and testing them for statistical significance. The influence of the controlled variables on the latent constructs were also reported and checked for significance. Figure 8 provides the results of testing the research model using SEM. The estimated path effects (standardized) were reported, and all significant paths were indicated with one asterisk for the 0.05 significance level, two asterisks for the 0.01 significance level, and three asterisks for the 0.001 significance level.

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Insert Figure 8 here

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The following section lists the results of each individual hypothesis.

Perceived Personal Advantages

This construct was hypothesized to affect attitude towards online piracy. The relationship was theorized to be positive:

H1a: Individuals who perceive more personal advantages associated with Internet pirating behavior will have a more favorable attitude towards the behavior

Results showed that perceived personal advantages was a significant predictor of attitude with a standardized path coefficient of 0.32, and the relationship was positive as expected. Hypothesis 1a was supported. Therefore, individuals who think pirating online can bring them more personal advantages will have a more positive attitude towards performing piracy online.

Perceived Personal Disadvantages

This construct was hypothesized to affect attitude towards online piracy negatively:

H1b: Individuals who perceive less personal disadvantages associated with Internet pirating behavior will have a more favorable attitude towards the behavior

Results showed that perceived personal disadvantages was not a significant predictor of attitude with a coefficient of -0.01. There was not a substantial relationship found between perceived personal disadvantages and attitude. Hypothesis 1b was rejected, which means the relationship was trivial and could not be generalized to the population.

Perceived Industry Disadvantages

This construct was hypothesized to affect attitude towards online piracy negatively:

H1c: Individuals who perceive less disadvantages brought to the industry by Internet pirating behavior will have a more favorable attitude towards the behavior

Results indicated an insignificant relationship between perceived industry disadvantages and attitude towards online piracy with a coefficient of -0.00. Thus hypothesis 1c was rejected. The relationship was trivial and could not be generalized to the population.

Ethical belief

This construct was hypothesized to influence attitude towards online piracy. The relationship was theorized to be a positive one:

H2: Individuals who lean towards the believe that Internet piracy is normal and acceptable will have a more favorable attitude towards Internet pirating behavior

Results showed that ethical belief was not a significant predictor of attitude with a coefficient of -0.00. Therefore hypothesis 2 was rejected. The relationship was trivial and could not be generalized to the population.

Computer Deindividuation

This construct was hypothesized to influence attitude positively:

H3: Individuals who lean towards the belief that what they are doing online can go unnoticed will have a more favorable attitude toward Internet pirating behavior

Results indicated an insignificant relationship between computer deindividuation and attitude towards online piracy with a coefficient of 0.08. Thus hypothesis 3 was rejected. The relationship was trivial and could not be generalized to the population.

Perceived Unfairness of the Industry

This construct was hypothesized to influence attitude towards online piracy and the relationship was assumed to be a positive one:

H4: Individuals whose beliefs lean towards the software and entertainment industry being unfair will have a more favorable attitude toward Internet pirating behavior

Results reported an insignificant relationship between perceived unfairness of the industry and attitude with a coefficient of -0.00. Thus hypothesis 4 was rejected. The relationship was trivial and could not be generalized to the population.

Subjective Norms

This construct was hypothesized to affect attitude towards online piracy and the relationship was hypothesized to be negative:

H5b: Individuals who perceive an unfavorable impression from those close to them of Internet piracy will have a less favorable attitude towards piracy behavior on the Internet

Results showed that subjective norms was a significant predictor of attitude with a standardized path coefficient of -0.22, and the relationship was negative as expected. Hypothesis 5b was supported, which means the more important others disapprove piracy behavior online, the more individuals will be influenced by their important others and feel less favorable towards the behavior.

This construct was further hypothesized to influence intention to pirate online. The relationship was expected to be negative:

H5a: Individuals who perceive an unfavorable impression from those close to them of Internet piracy will have a lower intention to pirate on the Internet

Results indicated a significant relationship between subjective norms and intention to pirate online, with a path coefficient of -0.23. The relationship was negative as expected. Hypothesis 5a was accepted, that is, the more important others disapprove piracy behavior online, the less likely individuals will think of carrying out the behavior.

Perceived Normative Beliefs

This construct was hypothesized to affect subjective norms positively:

H6: Individuals with greater motivation to comply with perceived sources of social pressure (i.e. social norms) against online piracy will be more likely to perceive that those close to them disapprove of online piracy

Results reported a significant relationship between perceived normative beliefs and subjective norms with a path coefficient of 0.60. As expected, the relationship was positive. Hypothesis 6 was accepted.

Attitude

Attitude was hypothesized to affect intention towards online piracy. The relationship was hypothesized to be positive as follows:

H7: The more favorable individuals' attitude towards online piracy, the higher their intention to pirate on the Internet

Attitude was found to be a significant variable affecting intention, with a standardized path coefficient of 0.24. As expected, there was a positive relationship between attitude and intention, and hypothesis 7 was supported. The more favorable and positive the attitude of individuals towards piracy behavior online, the more they intend to carry out the actual behavior.

Perceived Behavioral Control (PBC)

PBC was hypothesized to positively affect intention to pirate online:

H8: Individuals with a higher level of confidence in their ability to pirate online will have a higher level of intent to pirate on the Internet

PBC was a significant variable affecting individuals' intention to pirate, with a coefficient of 0.20. The relationship between PBC and intention was a positive one. Therefore, hypothesis 8 was supported and it is concluded that individuals having the ability to pirate on the Internet will have a higher intention to carry out online piracy.

Perceived Needs for Internet Piracy (PNIP)

PNIP was hypothesized to affect intention towards piracy positively:

H9: Individuals who perceive that Internet piracy can satisfy more of their work-related, entertainment, relationship, sampling and personal needs than legal means of obtaining information products will have a higher intention to pirate online

A relatively high significant (and positive) relationship was found between PNIP and intention, with a path coefficient of 0.42. Thus hypothesis 9 was accepted, and it is concluded that individuals who think Internet piracy can satisfy more of their work, entertainment, relationship, sampling and personal needs than legal means of obtaining information products will tend to have a higher intention to pirate on the Internet.

Intention

Intention was hypothesized to influence the actual piracy behavior positively:

H10: Individuals' greater intention to pirate online corresponds to the higher tendency of their actual piracy behavior on the Internet

Results showed a significant relationship between intention and behavior, with a path coefficient of 0.36. As expected, the relationship was positive. Thus hypothesis 10 was supported. This inferred that the more individuals intend to pirate online, the more they will actually carry out the behavior.

Past Offline Piracy Behavior

This construct was hypothesized to affect the actual piracy behavior. The relationship was hypothesized to be positive as follows:

H11: Individuals who have performed offline piracy in the past will have a higher likelihood of displacing this offline behavior to an online environment

Results showed a significant relationship between past behavior and the actual behavior, with a path coefficient of 0.19. As expected, the relationship was positive. Thus hypothesis 11 was supported. This inferred that individuals who have the experience of carrying out offline piracy in the past will be more likely to carry out the actual behavior.

Summary - The Overall Model

For the seven hypotheses connecting the predictor variables to attitude, only hypotheses 1a and 5b were verified with coefficients 0.32 and -0.22 respectively (p<0.01). The path coefficients between perceived personal disadvantages, perceived industry

disadvantages, computer deindividuation, ethical belief, perceived unfairness of the industry and attitude were not significant. This implied that perceived personal advantages and subjective norms exerted a statistically significant influence on attitude if a significance level of 1% is used, and the two antecedent constructs explained only 19 percent of the variance in the attitude construct.

Meanwhile, the relationship found between perceived normative beliefs and subjective norms was significant at 1% significance level (coefficient = 0.60, p<0.01), and perceived normative beliefs explained 36 percent of the variance in subjective norms.

The four hypotheses connecting attitude (H7), subjective norms (H5a), perceived behavioral control (H8) and perceived needs for Internet piracy (H9) to intention were all verified. Perceived needs for Internet piracy had a substantial effect on intention with a path coefficient of 0.42 at 1% significance level. The three major constructs adopted from the Theory of Planned Behavior had significant but moderate effects on intention at 0.24 for attitude, -0.23 for subjective norms, and 0.20 for PBC (with a significance level of 1%). The antecedent constructs only explained a rather moderate part of the variance in users' intentions to pirate online (38%).

Finally, in explaining the actual piracy behavior, both intention and past offline piracy behavior had a significant effect with path coefficients of 0.36 and 0.19 respectively at 1% significance level. Hypotheses 10 and 11 were verified. Furthermore, 22 percent of the variance in the actual online piracy behavior was explained by the model. See Figure 8 for the results of the estimates (i.e. path coefficients and R^2).

Insert Figure 8 here

Table 8 lists a summary output of the structural coefficients (standardized) between the latent variables. Both significant and non-significant paths are included.

Insert Table 8 here

Influence of Demographics

To examine the influence of the demographic variables (i.e. age, sex and income) on the 14 latent constructs, their path coefficients (standardized) were also recorded in Table 9.

Insert Table 9 here

Results indicated there were differences among the groups. *Age* had a significant positive effect on intention with a coefficient of 0.20 at 0.01 significance level. *Age* was also found to affect perceived personal advantages negatively (coefficient = -0.16, $p<0.05$), followed by perceived normative beliefs (coefficient = 0.16, $p<0.05$), and the actual online piracy behavior (coefficient = -0.12, $p<0.05$). This means older individuals tend to perceive less personal advantages of online piracy. They also have greater motivation to comply with perceived sources of social pressure disapproving the behavior,

and have a lower chance to commit the actual online piracy behavior despite the high intention found among them.

Next, *sex* had a significant effect on both perceived behavioral control and past offline piracy behavior, with path coefficients equal -0.17 and -0.15 respectively at the 0.01 significance level. It also affected computer deindividuation (coefficient = -0.14, $p<0.05$) and the actual online piracy behavior (coefficient = -0.11, $p<0.05$). This demonstrated that males have a higher confidence of their ability to perform piracy online, and feel more private and secure when they are performing the behavior. They also performed more offline physical piracy in the past, which subsequently leads to a higher chance of them performing the actual behavior online.

Although Internet users who are more mature have higher intention to pirate, users who are male and younger have a higher tendency to actually perform online piracy behavior.

Finally, *income* was found to have no significant relationships with any of the 14 latent constructs in this study.

5.5.3 Test for Parsimony

Last, a chi-square difference test was conducted to obtain a more parsimonious model of Internet pirating behavior. The online piracy model was constrained by fixing all the paths (gamma) between the controlled variables (age, sex and income) and the 14 latent constructs to zero to test whether there were significant influences of the former on the hypothesized relationships.

If the delta chi-square (i.e. the difference between the constrained and unconstrained model) is not significant (p>0.05), this means the two models are similar and controlling the influence of the demographic variables will make no difference even when they are not controlled. Then, the controls can be ruled out as a potential explanation of the findings.

Whereas if the delta chi-square is significant (p<0.05), this indicates the two models are significantly different from each other, meaning that there is substantial influence of the demographic variables on the latent constructs. Then the unconstrained model will be chosen as the final online piracy model of the study, and further study of the role of the controls in the phenomenon of online piracy behavior is warranted.

See Table 10 for the results of the chi-square difference test

Insert Table 10 here

The unconstrained model (Model 1) reported a chi-square of 1555.82 with *df* equals 892 (n=300), and the constrained model (Model 2) had a chi-square of 1643.94 with *df* equals 934. $\Delta\chi^2$ (n=300) reported 88.12 (Δdf =42), resulted in a p-value smaller than 0.0000. The fit indices (i.e. RMSEA, NNFI, CFI and SRMR) also showed a slightly poorer fit for Model 2. It was concluded that Model 1 and 2 were significantly different from each other. The demographics of the sample had substantial influences on the latent constructs hence the hypothesized relationships. Therefore, Model 1, with the demographic variables controlled, was chosen as the final model in explaining Internet piracy behavior. See Appendix G for the syntax of the unconstrained and constrained

structural full model. Figure 9 presented the final model of Internet Piracy Behavior (only

significant hypothesized relationships of the model were shown).

Insert Figure 9 here

Table 11 summarized the results of the hypothesized relationships assessed in this

section.

Insert Table 11 here

Chapter Six Discussions

After the research instruments of this study were validated, and the theoretical model of Internet piracy behavior has confirmed to fit the data adequately by structural equations modeling technique, the findings will be discussed in this chapter.

6.1 Beliefs Underlying Online Piracy

In chapter three, and based on Ajzen and Fishbein's (1980) recommendation, I have mentioned that it is best to look at the determinants of the attitudinal and normative components that lead to the actual performance of piracy behavior. These determinants are treated here as the beliefs underlying a person's attitudes and subjective norms, and will ultimately determine individual intentions and their actual behavior. The two belief structures will be examined below in detail.

6.1.1 Cognitive beliefs

Of the three dimensions that measure cognitive beliefs, which subsequently hypothesize to influence attitude, only perceived personal advantages is found to have a positive, significant effect (at the 0.01 significance level) on individuals' attitude towards online piracy. This confirms the relationship (H1a) that the more individuals believe that Internet piracy can bring them personal advantages, the more favorable their attitude will be towards online piracy.

Taking a closer look, this construct is made up of four behavioral beliefs, they are: sharing with others, information for free, convenience, and high quality of information products. Table 12 shows the mean score of individuals' evaluation of the four beliefs

(computed by multiplying the probability of the belief occurrence times its importance then divided by five, with minimum score of 0.2, and maximum score of 5).[70]

Insert Table 12 here

The averages of all the four personal advantageous beliefs indicate an overall favorableness towards online piracy behavior. In particular, individuals believe that Internet piracy allows them the opportunity to share information products with others, and they regard this as the most important advantage of online piracy. The next two perceived personal advantages of Internet piracy are obtaining information products for free and the convenience of acquiring the products. Slightly lower among the four items but still contribute to individuals' favorableness towards the behavior is the high quality of information products.

The root of Asian culture and Confucian beliefs supports the concept and behavior of sharing (Ho, 1995; Rahim et al., 2000). This utilitarian concept in which decisions are made based on examining the social, relational consequences (outcomes or benefits) of human behavior is deeply rooted in our culture. It is simply difficult to convince people that pirating information is equivalent to stealing and the activity should receive similar legal treatment. This is because information can be duplicated without limits, and one's use of it will not deprive the use of others. Thus when individuals

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[70] Means of the four individual sets of items are calculated since the absolute values of the predictor variables are compared within this study. In this case, the range of the mean score for all items is the mean of the multiplied scores divided by 5, with a range of 0.2 to 5. Using this method, a mean item score for perceived personal advantages that is higher than 1.8 means that, overall, the participant is in favor of online piracy behavior; while a mean item score lower than 1.8 means that, overall, the participant is not in favor of online piracy behavior. See chapter 4.2.1.1. for the final scoring of the composite belief-based measures.

realize that they and their community can receive beneficial outcomes from pirating on the Internet, they may be more inclined to perform the questionable behavior in return for information which can be shared among their families and acquaintances (Swinyard et al., 1990).

The next two reasons that affect respondents' attitude towards piracy are the low or no cost of piracy as well as the ease of pirating on the Internet. A lot of studies that report the "overpriced information products" or "people can't afford the products" actually complement and support our findings - "information products for free." This is evidenced from the data in which significant correlation is found between "copying or sharing for free" and people's "perceived unfairness of the price of information products" ($r = 0.146$ at 0.05 significance level). When users think that information products are overpriced, the free cost of information is an attractive drive for them to pirate, especially when it is difficult to calculate the harm (or loss) caused by piracy as information products are non-exhaustive, and every unauthorized copy translates to revenue loss may not be an accurate estimate.

The ease (named "convenience" in this study) of Internet piracy is argued to be the root of the piracy problem or to aggravate the existing problem (Cheng et al., 1997). Internet is a one-stop-shop and users only require a high-speed, networked computer to gain access to and retrieve a variety of information simultaneously, at the same time and place. In particular, Hong Kong is a fast-pace society and "time is money." People prefer faster ways to obtain information which can save them time and money. Although piracy exists for a long time, people in those days could only physically purchase pirated software, music, movies or computer games (CDs or DVDs) in small-scale shopping

malls or street stores, in which they had to locate the mobilized shops in different areas, searched for the products they need and at the same time took care of police raids, then returned to pick up their goods or changed them when they failed to function. With the Internet, these steps can be accomplished all at once. The experience is further enhanced with the "varieties" of "free" products available, and the perceived privacy one can presumably enjoy more than on the public streets.

Quality is always a top criterion for consumers to make their buying decisions. Despite it is not the top priority in affecting individuals' attitude towards piracy behavior (since people normally would not give a high expectation on free products than when they have to pay for them), it is clear that the high (or at least similar) quality of unauthorized copyrighted works perceived by respondents will influence their perceptions toward piracy practice. People may feel they can obtain and enjoy the products with almost the same quality as the originals, yet for free, thus they may hold a more favorable attitude towards the performance of the behavior.

From these findings, it appears that respondents base their perceptions of piracy behavior most on the cultural parameter of the problem, and behave slightly less as "rational" and "economical" as a lot would believe. Future research is warranted to understand individuals' Internet piracy decision-making process, especially when this complex process involves variables such as the cultural dimension of sharing.

6.1.2 Perceived personal & industry disadvantages – insignificant predictors

Perceived personal disadvantages, on the other hand, is not found to be a significant predictor of attitude (H1b rejected). This means the relationship between

individuals' perception about the negative personal consequences associated with Internet piracy (i.e. the likelihood of being caught and paying a fine) and their attitude towards the behavior is trivial.

Past research on piracy also show that when people think about piracy behavior, their knowledge of the law and punishments as well as law enforcement do little to discourage personal engagement in online piracy, and conformance to law or policies has little impact on individuals' piracy decisions (Cheng et al., 1997; Swinyard et al., 1990). Rather, people tend to weigh the benefits of piracy more than legal concerns or consequences when making a moral decision to pirate or not to pirate. Nevertheless, future research on the effect of this construct on individuals' decision making process is needed as the enforcement level of the copyright law to individuals continues to increase and gets more severe.

Last, perceived industry disadvantages is also not a significant predictor of attitude (H1c rejected). Again, the relationship between individuals' perception about the negative consequences associated with Internet piracy on the industry and their attitude towards the behavior is trivial.

Even though the difference in attitude found between those who perceived a high level of industry disadvantages brought by Internet piracy and those who perceived a low level is insignificant, a closer look at the data of perceived industry disadvantages reveals a generally callous feeling of individuals towards the negative consequences borne on the software and entertainment industry as a result of piracy. Only 24% of the respondents indicated that they are concerned about the loss of the industry as a result of Internet

piracy; and less than half of them worried about the negative effects of online piracy on future creations and innovations.

To conclude, statistical tests have failed to establish significant relationships between the perceived disadvantages of Internet piracy (on individuals and the industry) and individuals' attitude towards online piracy behavior. In other words, no significant difference is observed in individuals' attitude between those who perceived more disadvantages of Internet piracy (on individuals and the industry) than those who perceived less. Perhaps individuals are more influenced by the personal benefits brought by Internet piracy than by the negative personal outcomes (i.e. the legality of piracy) of the behavior. It is not surprising to see that they are unsympathetic towards the negative consequences borne on the industry as a result of piracy, as they may think these consequences should be the business of the industry but not theirs.

6.1.3 Perceived normative beliefs

Perceived normative beliefs is a highly significant predictor of subjective norms (with a beta of 0.60, $p<0.01$), itself alone explains a moderate 36% of the variance in subjective norms. Results have therefore confirmed the relationship that the more individuals comply with their agreed sources of social pressure, the higher level individuals perceived that important others will disapprove Internet piracy (H6).

This construct is made up of four sources of pressure individuals will likely experience: friends or online peers, family members, teachers or superiors, and the information industry. Table 13 shows the item means for individuals' normative beliefs (computed by multiplying the probability of the sources disapproving Internet piracy,

times the motivation to comply with these sources, then divided by five, with minimum score of 0.2, and maximum score of 5).[71]

Insert Table 13 here

Results have been anticipated, with the highest mean score of 2.5 obtained for the information industry, which means individuals believe that they experience the most pressure from the information industry not to perform piracy online. With the Government's firm commitment to combating Internet piracy, it is obvious the software and entertainment industry highly supports and reiterates such commitment to fight piracy activities, which they argue as the major drain on their business and operations, and will bring significant long-term impacts on the global economy.

The second source of pressure comes from teachers or superiors. The topic of copyright protection and infringement has been incorporated into the education curriculum. The Education and Manpower Bureau has advised local schools to teach students what is right or wrong behavior, and what is against the law. On the issue of copyright, teachers have materials prepared by the Hong Kong Intellectual Property Department (IPD) to teach students the proper way to handle copyrighted works on the Internet. Universities also have their code of practice which can be downloaded from official websites for students and staff to follow. Finally, public or private institutions,

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[71] Means of the four individual sets of items are calculated since the absolute values of the predictor variables are compared within this study. In this case, the range of the mean score for all items is the mean of the multiplied scores divided by 5, with a range of 0.2 to 5. If a mean item score for perceived normative beliefs is higher than 1.8, this means overall, the participant experiences social pressure not to perform piracy online; and if a mean item score is lower than 1.8, this means overall, the participant experiences social pressure to perform piracy online. See chapter 4.2.1.1. for the final scoring of the composite belief-based measures.

under the surveillance of the industry and the Government, are advised or even forced to adhere to the code of practice in their workplace and in the use of institutional resources. Their behavior and use of company resources are closely monitored.

Meanwhile, as family members are the ones that individuals interact with most in the private homes, they may not exert as much pressure on individuals' personal use of the computer (Internet in specific) as the industry, individuals' superiors or their belonged institutions. This can be explained by the amount of time family members interact with one another face-to-face as well as the privacy one can enjoy in the private home. Most of us spend approximately 9-12 hours a day at work, 1-2 hours on travel, 6-8 hours in bed, and the remaining 2-8 hours for leisure. Sometimes, one hardly has time to communicate with other members in the family, less say in caring about what they are doing online. Even if one cares, using the computer to log online is a relatively personal activity that does not require others' involvement. Thus family members would generally exert less pressure on individuals in the issue of online piracy. Nevertheless, we should not overlook their influence, as the public is frequently reminded by the Government that unlawful activities on the Internet can easily be tracked and hunted down, thus family members have started to be more responsible for each other's use of the Internet.

In particular, home monitoring exists especially among the younger age groups ever since the first man, Chan Nai-ming - calling himself "Big Crook" - was sentenced to 3 months imprisonment in Hong Kong in November 2005 due to copyright infringement. This is followed by the IFPIHK's request for ISPs to disclose customers' profile in early 2006 (those who are suspects of copyright infringement), as well as the escalating government campaigns in combating piracy (i.e. industry- or government-produced

commercials by using celebs and popular faces to advertise the negative consequences of the "evil" piracy behavior). These cases and rounds of lawsuits, and Government commercials continually pitching at consumers to protect copyright have brought to the attention of family members, who may start to worry more about the safety of their family members and become more aware of members' activities online.

Interestingly, contrasting result is obtained from individuals' peer groups. The lowest mean score (1.7) indicates individuals do not agree that their friends and online peers have given them pressure not to perform piracy behavior online. Linking this to the results obtained for the highest perceived personal advantages brought by online piracy, individuals give a high priority to the opportunity to share information products with each other by pirating online. The importance that they place on sharing information with others makes it obvious that these "others" are their friends or online peers, so they appear more encouraging when it comes to online information sharing, and will not be in a position to discourage others to perform piracy behavior. A correlation between the composite items of "sharing with other" and "friends and online peers" also indicates a significant relationship between them ($r = -.116$, $p<0.05$).

6.2 Determinants of Attitude

In this study, seven antecedents of attitude are identified from the literature, but only two are found to be significant – i.e. perceived personal advantages and subjective norms. This means the individuals who tested higher in those antecedents perceive that Internet piracy can bring them personal advantages and agree that important others are supportive of online piracy, the more favorable their attitude towards online piracy

behavior. The former determinant is covered in the previous section (6.1.1.) and the latter will be discussed here.

6.2.1 Subjective norms

Analogous with past literature that confirm the effect of subjective norms on individuals' attitude towards ethical behavior *(e.g. Al-Jabri & Abdul-Gader, 1997; Chang, 1998; Higgins & Makin, 2004; Shepherd & O'Keefe, 1984; Shimp & Kavas, 1984; Vallerand et al., 1992)*, subjective norms is found to influence attitude towards Internet piracy in this study (H5b). There is a significant difference in attitude found between those who believe important others would disapprove and those who believe important others would approve piracy behavior on the Internet. This would imply that individuals will tend to adopt important others' opinions during ethical decision making, or when the issue of right or wrong is involved in the performance of certain behaviors.

Results report an average of 3.0 for individual's subjective norms score (on a 5-point agreement scale, with 5 representing high agreement that important others would disapprove their online piracy behavior), indicating that individuals generally view their important others as partly supportive and partly disapproving (taking a neutral position) of their online piracy behavior. This finding is interesting as it prompts us to further examine in what ways do important others support (or disapprove) Internet piracy? Does the neutral position means something else that is hidden in our culture due to the sensitivity of the topic at hand?

As discussed earlier, individuals will develop an evaluative set of positive and negative beliefs (i.e. cognitive beliefs) associated with the performance of an ethical

behavior. Individuals will also think their important others would develop and impose sets of positive and negative beliefs or principles regarding the performance of the same behavior. For that reason, respondents in this study generally opt for a more neutral position on behalf of their important others, indicating that they partly approve and partly disapprove Internet piracy due to their different beliefs.

The "neutral" result can also be looked at from a cultural angle. The core category and dominant spirit of traditional Chinese culture is one of harmony and neutrality. When it comes to deciding what important others' opinions are toward the act of piracy online, respondents might either downplay extreme responses or even conceal important others' opinions that are considered "immoral" due to social desirability of the piracy issue. They might want to achieve a more harmonious dialogue between different voices when Internet piracy is heavily condemned by the government and the industry in recent times. Whatever intentions individuals have when filling out their responses, it is clear that subjective norms and its relationship with attitude require further examinations.

Last, compared with perceived personal advantages, subjective norms is a less strong variable affecting attitude (.32 with perceived personal advantages versus -.22 with subjective norms). This suggests that individuals' ethical decision making process will be influenced most by the positive personal consequences as a result of online piracy, followed by the opinions of important others. Nevertheless, both constructs only explain 19 percent of the variance in individual's attitude towards online piracy. What's more, although results indicate an overall higher perceived personal advantages associated with Internet piracy and a perceived neutral position important others hold towards the behavior, the overall attitude towards online piracy skews toward a less favorable one.

Future research is therefore warranted to explore more influential predictors of attitude, and to closely monitor attitude formation and change in different time and contexts.

6.2.2 Other insignificant determinants

Contrary to existing literature (*e.g. Kwong et al., 2003; Seale et al., 1998 - which found that individuals tend to view piracy favorably and may likely engage in piracy behavior when they feel an inherent unfairness in the price of information products or practices of the industry, seeing piracy as a way of attacking big business*), the newly tested construct **- perceived unfairness of the industry** – is not a significant predictor of attitude (H4 rejected). Individuals' perception of unfair practices of the industry and their attempt to retaliate or not has little to do with their attitude towards online piracy behavior.

It is interesting to see that, however, 63.4% (190) of the respondents think original works do not worth their price (i.e. they are overpriced). Although prices of original information products have fallen in recent years, especially the price of entertainment information, those who pirate may still think that the products are overpriced when the cost of originals is far greater than the cost of pirating (negative consequence). The thought of the unfair practice and pricing of the industry may further be enhanced by the fact that the economic cost of piracy is typically very low for individuals (as only a networked, high speed computer is needed).

Moreover, most people who pirate are not for profit-making purposes, therefore, when information is pirated, people believe that no one is actually harmed. They may consider that the industry responsible for developing information products is making

huge profits by ripping money off consumers so that the proportion of those who pirate will not hurt their business.

Accordingly, even the attitude between those who think original works are overpriced and those who do not is indifferent, it is imprudent to entirely omit the notion of fairness when judging what is right or wrong behavior among individuals in the conflicting situation. Therefore, the precise role of this new construct needs further investigation and clarification as advised by Fukukawa (2002).

A contradicting result is also found in the **ethical belief** construct, as it is confirmed to be an insignificant predictor of attitude (H2 rejected). This is a little surprising as past literature confirmed that customers who believe that there is nothing wrong with piracy and do not feel guilty towards performing the behavior will hold a more favorable attitude towards it (Kwong et al., 2003, p.231). However, in this study, individuals' attitude towards online piracy behavior will have nothing to do with whether they consider the behavior as ethical or unethical. This means the relationship between individuals' perceived wrongfulness of Internet piracy and their attitude towards the behavior is trivial.

Similar insignificant relationship is found between moral judgment and attitude in Al-Rafee and Cronan's (2006) research, and they argued that the insignificant result could be an artifact of the homogeneity of their student sample. Although the sample used in this study consists of individuals from different age groups (aged from 15 or above), the highest proportion of respondents come from the two lowest age groups (15-19 and 20-24), which might not contribute much variation to the findings, thus causing ethical belief to be insignificant.

Finally, **computer deindividuation** is not a significant predictor of attitude (H3 rejected). The privacy or security individuals believed will achieve through Internet piracy has little to do with their attitude towards the behavior. As pointed out by Loch and Conger (1996), this variable - which highlights the feeling of anonymity, privacy and distance - will only appear to be important for some people who intend to perform some types of computing behaviors. Thus additional work in refining this construct and determining when it is important is warranted.

6.3 Motivators of Piracy Intention

6.3.1 Perceived Needs for Internet Piracy (PNIP)

Borrowing the concepts from uses and gratifications theory, the new construct - PNIP - has proven to be an important and strongest motivator of individuals' intention to perform piracy on the Internet (H9). This means individuals who think performing piracy online can satisfy more of their needs than legal means of obtaining information products will have a higher intention to pirate on the Internet. These needs include work/study/research, entertainment, trialability, personal collection, and social relations. PNIP is also found to be the strongest among the four predictors of intention to pirate online (with a beta of 0.42, $p < 0.01$).

From the result, the average score of individuals' perceived needs for Internet piracy is 3.2 on a five-point scale. This implies that individuals think Internet piracy, by and large, can satisfy slightly more of their "needs" than legal means of obtaining information products, for example, purchasing copyrighted VCDs/DVDs etc. Breaking up the five different needs, individuals seem to agree that Internet piracy can fulfill more

of their needs for entertainment and product sampling, followed by their need for work/study/research. They only partly agree that Internet piracy can satisfy their needs for personal collection and social relations. Table 14 lists the mean score for the five separate needs items.

Insert Table 14 here

These results are a little disturbing to the industry and policy makers as it can be inferred that there is a wide use of pirated information for personal entertainment, in which entertainment is the main source of income of the information industry. People think that information obtained from piracy can satisfy their entertainment needs more than legal means of obtaining them. This can be explained by two reasons. First, Internet is considered a one-stop-shop. One can obtain and enjoy a variety of information choices by just a few clicks on the mouse without time and geographic constraints. The Internet – with a wide variety of search engines now available - can further help users customize their entertainment profile for present or future consumption.

Besides, individuals' entertainment needs are often short term needs. Thus entertainment information are considered short-term (temporarily) products (Cheng et al., 1997), as the pleasure and needs of using the entertainment may diminish dramatically after a short time. An example is computer games. One may initially play the game very frequently, but the intense usage lasts only a short while once users get bored with playing it and when a newer version arrives in the market. Thus, the short life span of

entertainment needs makes people think that it is more sensible and economical to pirate even though the price of originals have lowered considerably in recent years.

Similarly, and as expected, respondents think that their needs to try out information products can be satisfied more by online piracy. Many original software nowadays allow consumers to try out for a set period of time before making their purchasing decision, and there are websites that provide a platform for users to listen to songs and customize their favorites. If users are interested to purchase the originals, it will link them to legal downloading sites for making their purchase. Nonetheless, the trialability of information products is not wide spread or widely publicized, and the trial or sampling opportunity does not cover all information products (e.g. movies, books, and certain songs or software). Therefore, users find it more favorable and convenient to sample products online by simply copying or sharing with others.

Furthermore, this study indicates users' work, study or research needs can be satisfied more by online piracy. A significant reason is the high cost of legal original copies. The high price of original software, for example, coupled with the zero cost of pirated copies prompted many small to medium-scale enterprises to resort to using pirated software. In the Annual Piracy Report published by the Business Software Association, there is a two percent climb in Hong Kong's PC software piracy from 52% in 2003 to 54% in 2005 (Business Software Alliance, 2007). This is also evident by the high correlation between "work/study/research needs" and "obtain information products for free" ($r = 0.208$, $p<0.01$), where the opportunity and importance to obtain free products prompted people to pirate online to satisfy their work/study/research needs.

High price of information and inadequate resources at institutions also drive individuals to perform piracy on the Internet. More than 15 years ago, studies already report that Hong Kong students considered a lack of readily available software as a reason to rely on the use of pirated copies (Wong et al., 1990). Even now, students from specific departments who require advanced software to do their work (e.g. students studying creative, digital media) report a lack of computer resources and expensive licenses to be the motivator of Internet piracy. Software such as AutoCAD, 3-DMax etc. in producing professional media graphics and animations cost more than HK$30,000. With no student version available and the limited license procured by relative departments, it is difficult for students not to complete their work by using pirated copies especially during submission period.

There also appears to be an increasing use of pirated software for advanced research works as researchers generally require special purpose software for their projects, and local institutions might not have procured licenses for academic use of the software either due to limited budget or the seemingly fewer uses by academics. An example here is the LISREL software for structural equations modeling. Although the student version is readily available on the official website, time constraint has been imposed and research students who need to use the software at work can only seek help from departments for procurement, if not, they would have to reside on pirated copies obtained online.

The process of acquiring special purpose software for research projects also takes a long time. This results in long delays between an academic's request for new software and their actual delivery to the institutions. It is not surprised to see that students or academic staff may become impatient, which prompts them to seek pirated software from

alternative sources. It is also argued that as new software appears in the market at a fast and frequent pace, educational institutions would find it difficult to provide the latest software versions to the academics at the right time (Rahim et al., 2000). Therefore, they would rather seek pirated copies for work or research purposes.

Nevertheless, people's needs for personal collection and social relations building might not be as readily satisfied by online piracy as by legal means. It seems that individuals' needs for personal collection of information products or to build a personal information library can both be achieved by illegal and legal means. Some people obtain compressed, soft copies of a wide variety of digital information products to build their online entertainment library, while at the same time, purchase hard, original copies for self collection. For those who enjoy collecting the add-on information complementing the original products (e.g. manuals, lyrics and pictures inside music CDs, and CD/DVD covers or posters), they might regard information obtained online as merely bits of data transmitted through the wired or wireless network which can hardly be treated as physical collections with values.

Similar to the need to enhance personal relations, despite a lot of individuals who may have plenty of opportunities to interact with friends or online peers through online information or ideas exchange, many still regard the Internet as just a platform for them to initiate and ease communications, but not a place where relationships can be maintained or enhanced without real, physical interactions. Internet "supports" social networks (Boase et al., 2006), people do not only socialize online, but are required to incorporate the Internet into their daily life to further strengthen social bonding and relations.

On the other hand, there are good reasons to believe that legal means of obtaining information products can assist people in achieving better social relationships. In contrast to downloading illegal works online, people can talk and discuss about original copyrighted works openly in the public, without the need to bother about the illegality or immorality involved in pirated works or pirated behaviors, or the problem of face-saving. The latter is argued to be a cultural reflection of the characteristic of Hong Kong consumers, who are believed to be more concerned about how they project themselves to others within their social circle (Prendergast et al., 2002).

Indisputably, legal original works are also nice gifts for the receivers and save face (again) for the givers. If receivers find out that gifts given to them are pirated or copied, the giving of such gifts may have detrimental effect on the reputation of the presenters (Yau, 1998). The purchase of legal information products are also good discussion topics among friends who share similar taste and interests in music, movies, and books etc., and can be an activity for friends to enhance existing relationships.

6.3.2 The TPB Model

Once again, the TPB has proven to be a successful model in predicting intention and the actual online piracy behavior in this study. The hypothesized relationships, where attitude, subjective norms, and perceived behavioral control are theorized to predict intention, which further predict the actual behavior, are all significant and are discussed below.

Attitude

It is important to note that in this study, attitude is the best predictor of intention among the three antecedents of intention proposed by the TPB (i.e. .24 for attitude, -.23 for subjective norms, and .20 for perceived behavioral control), although the difference is not a substantial one. This confirms that attitude is a critical predictor of intention (H7) analogous with previous studies of piracy (*e.g. Kenneth et al., 2003; Lin et al., 1999; Peace, Galleta, & Thong, 2003; Rahim et al., 2001; Solomon & O'Brien, 1991*).

Overall, the mean attitude (2.77 on a five-point scale) of respondents towards Internet piracy is slightly less than the neutral value. This suggests that individuals are attitudinally oriented to a slightly less favorable attitude towards pirating digital information on the Internet. Almost half of the total 300 respondents (145) believe that online piracy is harmful (48.3%), and over one-third (34.4%) believe that it is bad. Only 39 (13%) believe that it is beneficial, and 55 (18.3%) believe it is good. Moreover, the mean value (2.27) of the dependent variable (online piracy intention) is also found to be consistent with individuals' attitudes. This indicates that individuals are less inclined to engage in the actual online piracy behavior. This finding contradicts with previous research that reported the existence of a prevailing attitude and a subsequent strong tendency to pirate original works (e.g. Rahim et al., 2001; Reid et al., 1992; Swinyard et al., 1990), probably due to their use of homogeneous student samples which do not well represent the population.

However, when individuals are asked whether they think Internet piracy is acceptable or not, there are slightly more (86 vs. 79) who think Internet piracy is an acceptable behavior. Going back to the concept of sharing as one of the most important advantages brought to individuals by Internet piracy, although individuals know that they

are behaving illegally, to conclude that they are behaving immorally is not particularly appropriate. As Swinyard et al. (1990) argue with regard to the cultural differences of individuals, "Asians' moral value… are simply very different from Westerners… copyright runs afoul of deeply rooted…Asian-cultural beliefs" (p.662)." This is quite true that our culture provides less support for copyright legislation (though police-action enforcements of copyright laws are used), but more support for the hidden public benefits that come from piracy (despite the high proportion of those who agree that piracy is generally harmful to the society).

Subjective Norms

As hypothesized, and similar to past research on software piracy (*e.g. Al-Jabri & Abdul-Gader, 1997; Limayem et al., 1999; Seale et al., 1998*), subjective norms has a significant (and negative) relationship with the intention to pirate at the 0.01 significance level (H5a). This means the higher the level individuals agree that important others are unsupportive of online piracy, the lower their intention to pirate on the Internet.

Overall, the average individual score for subjective norms is 3.02 (on a 5-point agreement scale, with 5 representing high agreement that important others would disapprove their online piracy behavior), indicating that individuals generally view their important others will take a neutral position (partly support and partly disapprove) towards their performance of online piracy. The neutral value has been interpreted and discussed in chapter 6.1.2.

One interesting observation has emerged from this result though. With the belief that important others will generally hold a neutral position (neither agree nor disagree)

towards individuals' piracy behavior, respondents' intention to pirate or not would tend to be driven more by their own attitude and beliefs toward piracy behavior than by the opinions of important others. This is also evidenced in the slightly higher loadings between attitude and intention than subjective norms and intention.

Perceived Behavioral Control (PBC)

PBC is found to be a significant predictor of intention (H8), although it is the weakest predictor among the three antecedents of intention in TPB (i.e. .24 for attitude, -.23 for subjective norms, and .20 for PBC). This means individuals who believe that they have the ability to pirate and find it easy to perform the behavior will have a higher intention to pirate digital information online.

Overall, the mean PBC (3.51 on a five-point scale) of respondents towards Internet piracy is greater than the neutral value. This indicates that individuals in general find it easy and have a moderate ability to pirate online. In particular, 175 respondents (58.4%) report that they have the ability to pirate digital information, and 186 (62%) of them indicate that it is quite easy or very easy to perform such behavior. Only 47 (15.7%) of them report that it is quite difficult or very difficult to pirate on the Internet.

However, the mean value (2.27) of individuals' intention to pirate online is not found to be consistent with their perceived personal ability. Such observation prompts us to look at other factors that might impose a stronger influence on individuals' intention to pirate. As discussed, attitude is the strongest predictor among the three antecedents of intention, thus even if individuals perceive that they have the ability (and probably the necessary conditions) to pirate on the Internet, with a less favorable attitude towards the

behavior and an overall neutral position of important others toward the behavior, individuals finally take a more ethical stance and have a lower intention to pirate on the Internet.

This finding can also be understood from theoretical terms, in which PBC is argued to have the strongest effect imposed in situations where individuals have less than complete control over the target behavior (Ajzen, 1985; Taylor & Todd, 1995). Since it is one's free will to choose to perform piracy or not on the Internet, the effect of PBC on intention will therefore be less than the effects of attitude and subjective norms in explaining people's intention to pirate.

Finally, we should not overlook the fact that PNIP and the three TPB constructs only explain a moderate 38 percent of the variance in individuals' intention to pirate on the Internet. Moreover, although PNIP is the strongest predictor of intention, and the data reveals that respondents tend to agree their overall needs can better be accomplished by online piracy than legal means, individuals still report an overall lower intention to pirate on the Internet. Future research is therefore warranted to test for more influential predictors of intention. Similar to the attitude construct, the formation and change of intention need to be closely monitored especially when the topic under investigation is controversial.

6.4 The Actual Internet Piracy Behavior

Although results report an overall unfavorable attitude and relatively lower intention towards the performance of Internet piracy, we still find a sizable proportion of respondents who report incidents and frequencies of piracy, which support and extend

those of previous studies. Slightly more than half of the respondents (i.e. 164, 54.7%) admit that they have performed piracy on the Internet, among them, 20 percent (i.e. 32) report that they have not pirated online for a period of time.

For the remaining group of current piraters (i.e. 132, 44%), 28.3% (i.e. 85) pirated one to three times per week, and two percent (i.e. 6) indicate they pirate most days to almost every day throughout the month. These incidents of self-reported piracy occurred despite 84% and 82% of the respondents believe (and think of such consequences as important) that there is a chance of getting caught as well as being fined because of online piracy.

In terms of the predictors of online piracy, both "intention to pirate" (H10) and "past offline piracy experience" (H11) are significant motivators of individuals' actual online piracy practice, with intention having a stronger effect than past piracy experience (0.36 with intention and 0.19 with past offline piracy behavior). In this study, although there is an overall lower intention (mean value of 2.27) for individuals to perform piracy online, it is still confirmed that those who have a stronger intention to perform piracy behavior on the Internet will be more likely to lead to its actual performance. This strengthens the argument that individuals' behavioral intention is the most immediate and strongest factor influencing behavior (Ajzen and Fishbein, 1980).

Meanwhile, although the results show that respondents' intentions are skewed slightly toward an ethical stance, an important issue to consider is the difficulty of research in getting the real intended action from respondents, especially when the research topic here is sensitive and illegal. In view of the series of prosecution activities

carried out by the HK Government since 2005, it is easy for respondents to disguise their genuine beliefs and behavior.

A further examination of the additional construct of the behavior model finds that individuals' past offline piracy experience also assists in predicting the actual performance of online piracy behavior. Over half of the respondents (i.e.163, 54.3%) admit that they have pirated before (i.e. bought/borrowed/burned/recorded/pirated CDs/VCDs/DVDs/software). This is consistent with studies which find that customers with a strong intention to buy (or who actually buy) pirated CDs or other information products are likely to be those who have past purchase experience (e.g. Tan, 2002); and studies showing that prior experience with the creation of pirated software (i.e. CD-ROMs) is significantly correlated with Internet piracy (e.g. Hinduja, 2001).

As mentioned in Chapter Three, individuals with previous experience in physical piracy will be familiar with the attendant rewards. They may likely displace their practice to the networked environment where there are increased varieties of information which are almost free of charge, and ample opportunities for them to meet interested participants or members for information exchange. Moreover, duplication and distribution of information is made easier online by removing the need for physical exchange, so that information can now be transferred for use among the networked individuals in a simple and efficient manner.

6.5 Demographics

By studying the effect of the demographic variables on the model, it is found that age has a positive significant effect on intention, followed by a negative significant effect

on perceived personal advantages and a positive significant effect on perceived normative beliefs. Analogous with past literature (Ranjan et al., 2000; Wickham et al., 1992), it is statistically verified in this study that younger individuals are more likely to pirate (with individuals aged 15 to 24 who make up three-quarter of those who pirate), thus they will be the crowd that perceived the most advantages associated with pirating on the Internet.

Moreover, according to ethics literature, it is argued that older individuals have higher ethical standards than younger individuals (Al-Rafee & Cronan, 2006; Auerbach & Welsh, 1994; Ford & Richardson, 1994). Younger individuals tend to have less concern over the ethical consideration they have to encounter (Coombe & Newman,1997), thus it is expected that they will perceive the beneficial and bright side of online piracy more than older individuals.

Based on the same argument, the higher ethical standards older individuals have means that in general, they would be more sensitive and attentive to important others' opinions toward the performance of Internet piracy. They may be more inclined to incorporate others' opinions into their ethical decision making.

However, contrary to previous studies (e.g. Cronan et al., 2005; Kwong et al., 2003; Tom et al., 1998), a positive relationship is found between age and intention. This means that older individuals will have a higher intention to pirate. However, the opposite is true when it comes to the actual performance of online piracy, in which younger individuals are found to pirate more on the Internet. One possible explanation would be the different level of computer skills between generations in which the older generation would have a comparatively lower computer skill than the younger generation thus might

find it difficult to turn their intention to action. Thus, the relationship between older age and intention requires further study.

Gender also affects computer deindividuation, PBC, and past offline piracy behavior negatively. In this study, males pirate more than females both offline (54.6% vs. 45.4%) and on the Internet (54.3% vs. 45.7%). The relatively higher proportion of male pirating online indicates that they may feel more secure and private when they are on the Internet, and may feel that what they are doing might easily go unnoticed. The more deindividuated male feels when they are online implies that they are less sensitive towards ethical behavior. The lower sensitivity males have towards their surroundings is also evidenced in studies which prove that females have greater ethical sensitivity and concerns about piracy behavior than males (Kreie & Cronan, 1998; Lending & Slaughter, 1999; Sims et al., 1996).

The higher percentage of male pirates also implies that males are more technically skilful and possess greater ability to pirate on the Internet than their female counterparts. This is reinforced in our finding in which males have a higher ability to pirate digital works online than females, and feel more at ease in performing piracy behavior in general.

Results also show that both gender and age affect actual piracy behavior, with male and younger individuals more likely to pirate online than female and older individuals. These findings confirm those of previous studies, with results showing that male and young people are more likely to be consumers of pirated products (e.g. Ang et al., 2001; Peace, 1997; Sims et al., 1996; Tom et al., 1998; Wood & Glass, 1996).

Surprisingly, results show that income does not exert influence on any of the constructs. This can help clarify the misconception that information users who perform

piracy tend to come from the lower income groups. Pirating on the Internet does not appear to be a result of users' inability to pay the full price of the originals, as it is indicated in the findings that the higher income groups also perform online piracy behavior.

6.6 Summary

Results of this study suggest that people have a relatively less favorable attitude towards the performance of piracy behavior on the Internet, and only two variables – perceived personal advantages and subjective norms – are found to affect individuals' attitude, and the former is shown to affect attitude more than the latter. This means people's attitude is affected more by the perceived advantages – that is, the opportunity to share, the low cost and convenience of piracy, and the high quality of pirated products - brought by Internet piracy than by the opinions of important others which are somewhat neutral towards the performance of Internet piracy. Individuals' attitude is also found to be unrelated with the legal and economical consequences of pirating online, and their ethical and contextual consideration towards the behavior. However, with the small sample size used in this study, more investigations into the influence of these motivators on attitude are warranted.

On top of that, a somewhat lower intention is found among individuals towards the practice, despite more people agree that Internet piracy can satisfy more of their needs – including entertainment, research/work/study, and sampling needs – than legal means of obtaining information products, and despite most of them agree that they have the ability and think it is pretty easy to perform the behavior in question. For these

reasons, the lower intent of individuals can be attributed to their less favorable attitude towards Internet piracy as well as the perceived neutral position important others hold towards carrying out online piracy behavior.

The last part of the findings is interesting though. More than half of the individuals report having pirated in the past and most of them are still practicing piracy online although they generally have a lower intention to pirate. Part of this can be explained by people's previous offline piracy experience, for example, purchasing, sharing and copying VCDs, DVDs etc. Nevertheless, one question left to be answered is why do people still pirate online when they have an overall less favorable attitude and lower intention toward the performance of the behavior? Knowing that "combating and fighting against digital piracy" is on the latest political agenda, the sensitivity involved in discussing the illegal behavior should be taken into account, and further investigation is needed in future studies of the piracy issue.

Chapter Seven Conclusion & Implications

This chapter focuses on the theoretical contributions of this research and how we can apply the study results to increase understanding of the problem of piracy in order to assist better policy planning and implementation for the government, regulators, the information and entertainment industry, as well as public or private institutions.

7.1 Theoretical Contributions

This study contributes to existing literature on piracy, especially piracy on the fast-growing digital medium. First, it has confirmed the credibility of the theory of planned behavior (TPB) model in broadening our understanding of human behavior. According to the TPB, the actual performance of a behavior is determined by behavioral intention, which in turn is determined by individuals' attitude towards the behavior, subjective norms, and perceived behavioral control, where the three constructs are measured by a contradictory belief system.

Second, this study has added to our knowledge the composition of individuals' attitudinal and normative beliefs. As mentioned, the contradictory belief system is constantly changing and hypothesized to influence individuals' attitude and perceived subjective norms, which ultimately affect intention and actual performance. Thus, it is suggested that changing one's behavior requires one to change these fundamental beliefs individuals hold towards a specific behavior. Understanding the attitudinal and normative beliefs of individuals who pirate on the Internet may point us towards those areas holding the greatest promise for solutions and offer insights to the behavior in the local context.

Third, this study has expanded the TPB model by integrating the theory of uses and gratifications, which is popular in media use studies, in the explanation of people's intention to perform piracy on the Internet. This is done by comparing the different behavior alternatives (i.e. Internet piracy and legal purchase of information products) in their degree of gratifying the individual needs structure, which is subsequently shown to have a strong effect on individuals' behavioral intentions to pirate.

At the same time, individuals' past experience in performing a certain behavior has also proven to have an influence on later (comparable) behavior. Findings in this study confirm that the experience of pirating offline has a high chance of being displaced to pirating online.

As a result, future studies of human behavior – especially in media use - should consider incorporating both variables – i.e. perceived needs and past experience - in their analysis. In addition, the theory of uses and gratifications should also be considered in periodic studies of the same phenomenon in order to trace the changes in individuals' needs through time after prolonged usage.

In sum, to change people's behavior in order to lessen the piracy problem, the practical approach is to look at the sources that trigger one to undertake piracy behavior. This study adds to our knowledge the composition of individuals' attitudinal and normative beliefs, and offers us insight to the ethically questionable behavior in the local context, particularly in understanding how Hong Kong people perceive Internet piracy, the factors influence their perception and attitude toward online piracy, their considerations in choosing to perform or not to perform piracy online, and their intention and actual behavior to pirate.

7.2 Alter the Cognitive and Normative Belief Structure

Despite findings of this study revealing an overall unfavorable attitude towards Internet piracy behavior and relatively lower intention of individuals to perform such acts, we should not neglect the fact that almost half of the respondents have pirated and/or are pirating on the Internet. The following sections propose practical ways (based on the findings) as reference for the entertainment and software industry, the Government, regulatory bodies and public institutions to devise proper policies or strategies in an attempt to deal with Internet piracy.

A practical implication of this study is that ethical behavior can be changed if intention is changed by altering the belief structure of the target population. Behavior change could be achieved by sending messages that are directed to alter either the individual cognitive beliefs or the peer beliefs (normative beliefs).

Findings show that people who perceive high personal advantages as a result of pirating on the Internet will have a more favorable attitude towards the performance of the behavior. In particular and above everything else, piraters particularly enjoy the sharing opportunity by pirating on the Internet, followed by the ease and convenience of the download (or upload) process and the free cost of obtaining the information they want.

As mentioned in Chapter Six, the idea and act of sharing (especially information or intellectual property) is deeply rooted in our culture, and individuals who think that Internet piracy can be eradicated all at once by using the most advanced technologies and enacting the most stringent policies are irrational. There are ample routes for people to pirate on the Internet. They can easily locate other sites to download the information they

want when one shouts down, and they can use other methods to continue sharing information with others (e.g. FTP/file sharing networks, pirate servers/ websites, personal blogs, newsgroups, chatrooms and hacked computers). The record or film production companies have been working hard for years to combat the piraters. Every time they come up with a solution, the hackers jump on it and have a key to break it within months.

People fight back if they feel what the government and the industry are doing is unfair. Findings suggested that a high percentage of respondents are callous towards the loss of the industry, and many regard the industry, which accuses those who pirate online, as the culprit who rips money off from information consumers by charging high price on their products.

Following this, the software and entertainment industry is establishing copyright standards and guidelines for the public to follow, and they also join hands with international associations, for example the Business Software Alliance (BSA), International Federation of Phonographic Industry HK (IFPIHK), Composers and Authors Society of Hong Kong (CASH), and the Motion Picture Association (MPA) to combat digital piracy. In April 2005, a US trade delegation was also sent to pat Hong Kong on the back for its fight against piracy and for copyright protection.[72] This media organization mouthpiece made efforts to educate the public the right and wrong, pain and suffering and so on with regard to the piracy issue. Interestingly, results suggest that part of this effort may be misguided. Educating people the moral standards by telling them their behavior will lead to a long term loss of the industry and discourage industry creation do little to raise their moral bar and change their attitude (less say behavior)

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[72] Visit http://seoul.usembassy.gov/11_april_05.html for "US Officials Visiting Asia to Promote Anti-Piracy Initiative."

towards Internet piracy. They will continue to take the lost or sufferings of the industry impersonally.

Results also show that people's attitude towards Internet piracy has no significant relationship with legal enforcement or punishment. This means that whether individuals concur that there is a high chance of getting caught or being fined, or not, due to Internet piracy will not have any effects on their attitude towards piracy behavior. They know it is illegal and risky to pirate, but they accept and practice it anyway.

Possible practices

"Closed" system & barriers to target small communities

Since perceived personal advantages is found to be the best predictor of attitude in this study, one way to change people's attitude towards Internet piracy is by making people feel what they are doing will not guarantee beneficial returns.

The top reward for individuals who pirate online is the opportunity to share. It is obvious we can not stop people from sharing, but we can emphasize the complications and the technical drawbacks of sharing.

The internal computer network of local universities' student residence is doing a successful job in controlling on-campus digital piracy. Since the university community, especially the residence community, makes up a considerable part of our society, and this community constitutes mostly of students who, according to surveys, have lower financial status, are more easily influenced by peers, and have more free time to spend on (online) entertainment, thus combating piracy is made easier by concentrating and targeting this group of individuals. For example, downloading sites and programmes have

been unearthed and entirely blocked by the university network. Blocking ports have been set up to slow down sharing activities online (e.g. in chatrooms or newsgroups). Even if days or weeks later, a new site with a different I.P. address pops up, the network would track these sites and block them. In addition, the network is a somewhat "closed" community, this means residents who try to abuse the system and wish to get away from the law will have to think twice as their profile and online histories have been tracked and recorded. Due to the "closed" network and the barriers set up to slow the sharing experiences, student residents often find it cumbersome and are discouraged to share information (especially large music or movie files) when using the school network.

Based on this example, it is highly recommended that fighting against piracy practice should start by targeting and educating small social groups or communities, and should also emphasize that information sharing can be a burdensome and less enjoyable process.

Invest in quality productions & publicize technical drawbacks of sharing

Furthermore, individuals indicate that quality is also a prior consideration to pirate digital products on the Internet. Thus, the industry and the government can address the quality issue by downplaying the quality of pirated products, and investing more money to produce quality works.

The public should understand that there is no free lunch, and the government should publicize the fact that the quality of pirated information is not necessarily guaranteed. They should emphasize that information the public obtain online could be of lower quality than what they get from the store, as these information are shrunk so that

they can be transmitted faster. Sound also suffers, as does video. Often times, they are something shot in the cinema so the quality fluctuates. Some malicious people spam "adware" and viruses as well, so one could be downloading something that will mess up their own computer. People also rename files so that one would be listening or watching something else entirely.

What's more, the continual downloading and uploading will chew up one's hard disk. When people are using the computer, they usually do not put much wear and tear, but if people BitTorrent a lot, then they are always using their hard disk so it will crash more often. If individuals have an open port for upload or download, others are invited to hack into their computer and access information on the computer, such as the I.P. address, etc.

Some people can even take over other's computer and disrupt their network to launch ping attacks[73]. Basically, by downloading, people are also making their computer open to uploading as well. In doing so, their computer is less secure, and when their computer is not secure, a lot of things can happen. Therefore, the Government, apart from publicizing the legal consequence of piracy, should also direct public attention to the technical drawbacks of sharing pirated information on the Internet.

Meanwhile, the opinion of important others (i.e. subjective norms) is also found to affect individuals' attitude towards Internet piracy. In this study, individuals in general believe that important others would hold a neutral position when it comes to Internet piracy. Thus the industry or regulatory bodies should target those important others who are found to have the greatest influence on individuals' behavior.

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[73] Visit http://en.wikipedia.org/wiki/Ping_of_death for the explanation of ping, ping flood and ping of death.

Cultivate social participants to respect copyright

Several remedies are available. First, institutional or social bodies (e.g. universities, private or non-profit companies/organizations) should be encouraged to develop their own norms or policies in cultivating a group of social participants (including students, staff or employees) who would support the protection of intellectual property rights (IPR). The BSA pioneered the "leads reward campaign" in 2004, which rewarded individuals who report piracy cases inside companies. The Government, Intellectual Property Department (IPD) and Custom and Excise Department (C&ED), in collaboration with the creative industries and a number of youth organizations, also join force and launch "the Youth Ambassador Against Internet Piracy Scheme" in July 2006. Under the Scheme, over 200,000 youngsters from 11 local youth uniformed organizations participate as youth ambassadors, and C&ED has set up a purpose-built website (http://www.iprpa.org/eng/anti_campaign.php) for them to report suspected copyright infringement activities and forward the information to the appropriate participating IPR body for follow-up actions. It is not the purpose here to discuss or comment on the practicality of these campaigns, and their effects are yet to be seen. What is important about these campaigns is that they offer an excellent environment to unite social individuals to support and promote the protection of IPR, and they provide the platform to nurture a new generation that will pay more respect on how information should be treated and used.

In sum, campaigns should target individuals' family members and friends in particular, who are shown to be more tolerable to individuals' pirating practices. Spreading of words in social institutions or organizations about the regulations and

importance of IPR protection is important since peers influenced each other and exert the least pressure in discouraging individuals to pirate, as is illustrated in the findings. Teachers and superiors should continue to act as role models in encouraging individuals to use original works.

Rectify the negative industrial image

Next, based on individuals' unsympathetic attitude towards the industry, it is critical for the latter to change their public image. The industry carries the largest voice disapproving piracy behavior. They have been actively engaged in digging out and criminalizing those who infringe upon their copyright and affect their profit-making businesses, yet they have never tried to raise public awareness towards the negative influences of piracy by means of PR campaigns. These campaigns should not merely emphasize the lost of the industry because of individuals' harmful practice, rather, they should underscore the advantages individuals can gain by using legal products (e.g. guaranteed quality and services, support creativity, save downloads/uploads, maintain relations, face-saving, etc.), and promise to work out a comprehensive plan to produce quality works. As cost and convenience also take major roles (though secondary) in influencing attitude, the industry is also recommended to re-examine their pricing system to provide better value for money.

Target younger male groups

Last, government campaigns should also educate younger males as they are found to pirate most. They should also be able to heighten male's ethical concerns toward the

performance of ethical questionnaire behavior. In doing so, more talks or seminars on IPR protection can be arranged in boy schools or male youth organizations. Since male is found to be more capable of taking and handling risks, talks or seminars should downsize the benefits brought by piracy activities. They should emphasize more on the legal consequences and the negative effects of Internet piracy apart from its explicit benefits in bringing young people free and high-quality products, the opportunity to share information with others, as well as the convenience to acquire information.

7.3 Address Individual Needs for Information Products

Meanwhile, intention is the immediate antecedent of the actual piracy behavior, so it is also important to look at what factors predict individuals' intention to pirate.

Internet as a "pull" media has various characteristics that are not found in other media. When people pirate online, i.e. they use the Internet to copy or share information products online, such as music, movies, books/academic materials, software, computer games etc., the Internet allows them to get access to these information all at once without the necessity to bother about time and geography, making it the best medium for users to obtain gratifications within the shortest time and least effort. It is empirically tested in this study that people's overall needs are better satisfied by Internet piracy than by legal means. As a result, the industry is advised to face their weaknesses and devise proper strategies to secure their position in the information market. Results of this study thus offer new insights for the industry to look at online communication strategies and marketing alternatives to more effectively and efficiently promote and distribute their products, which can minimize the effect of piracy on industry performance.

"Rent" and "Buy" services

First, pirating on the Internet can satisfy people's entertainment and trialability needs more than by purchasing the originals. It is obvious that with the free cost and wide variety of information products one can obtain through piracy, individuals are able to enjoy a larger amount of entertainment goods than when they are required to pay for those goods. When people need to pay to enjoy information, they become more calculative and will limit their entertainment choices to a few favorite ones.

Therefore it is important that information providers should offer consumers free and longer trial of their goods. Some of them are offering pay download service on the Internet, ranging from HK$5-$15 per song download, and HK$10-$25 for a mobile phone ring tone download, but some of these sites do not operate properly.[74] Even though all of them provide free trial of their music, they only run a 30 seconds trial version, thus consumers are not able to enjoy the complete version of the sample before making their purchasing decision.

It is advised that entertainment or information providers should not impose too many constraints on their trial products. As findings suggest that money is not the prime reason leading people to pirate online, it is important for information providers or distributors to consider other motivators of piracy behavior.

People are willing to spend. In a recent report by the International Federation of the Phonographic Industry, while compact disc sales have declined 19 percent since 2001,

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[74] SONYBMG - http://www.sonybmg.com.hk/download_f.html is one of the biggest entertainment providers in the territory, but their download corner does not operate properly and the download page cannot be loaded. Another site is EOLAsia - www.eolasia.com, which has a better online service. However, their trial version only lasts 20-30 seconds.

online music sales have started to boom. Revenues from digital music sales almost tripled in 2004, to $1.1 billion in 2005. Legal downloads in the US now account for about 6% of record companies' revenues, up from practically zero two years ago.[75]

Thus, providers can research and develop a legal online downloading platform for local citizens by focusing more on convenience, varieties, and reasonable pricing. A marketing strategy can be adopted which is similar to product promotions, such as food tasting at the supermarket, and free cosmetics samples that are given out for trial.

For example, there are currently two types of legal downloading services which are widely in use in the US – "Rent" and "Buy." "Rent" sites are subscription based, all-you-can-eat services where people can listen to all music in the catalog as long as they continue to pay a monthly fee. "Buy" sites are pay-per-download services, like iTunes, where people can also burn the song to a CD, and then rip the CD back to a computer and strip out any digital rights management (DRM) restrictions. Some popular services are AllofMP3 , BuyMusic , iTunes, MSN Music , Napster Light , Real Rhapsody , Walmart.com and Yahoo Music Unlimited.

There are also sites like 'Pandora', which provides an unlimited music streaming service to assist consumers to explore their favorite music and artists and build their online music library. Thus, when people want to keep the music in their hard-drive, these services will link them to legal downloading sites (as those listed above) that allow them to place orders.

Therefore, providers can offer customized services to follow the taste and trends of local consumers. If the information produced is of high quality, local providers would

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[75] Visit http://www.ifpi.org/content/library/digital-music-report-2007.pdf - ifpi digital music report.

not have to worry too much about not being able to attract consumers to actually pay for their products and services.

Concessions granted to academia

Second, when people have a higher intention to pirate online because they think the activity can satisfy their work, research and study needs, the industry should consider loosening their constraints in the academia, and assist in academic and business research and development.

Many indicate that the high price of software and the limited resources available at their institutions drive them to pirate. Thus the industry should loosen their restrictions by lowering the price of their products, revising their tight license policies, and extending the trial periods of their products. More people in the academia, especially students, should be benefited. The trial period of products, e.g. academic software programs, for students should be extended to cover at least a full semester. More concessions should be granted to institutions (e.g. schools, universities or small to medium sized enterprise), for example, by lowering the cost of license procurement, and expanding license coverage.

It is important to know that students and the younger generations are the backbone of our society, lowering the price and extending the reach of information products to meet their needs can encourage them to use original products, which will ultimately encourage the invention and distribution of intellectual information and benefit our society in the long run.

Devise a proper business campaign

Third, in order to compete with pirated products that are alleged to have comparable qualities as the originals, the industry should continue looking for ways to strengthen their competitiveness in the area of business operation, production, promotion, and distribution. As respondents point out that both piracy and legal means of obtaining information products can satisfy their needs for personal collection, the industry should aim at improving their products and offering personalized services to better fulfill such needs.

The first step is to improve their product quality. They should be more far-sighted by investing in creative production of higher quality music and movies. Then, they should work on packaging, and work out better promotion strategies or distribution methods. As mentioned, the legal online information distribution channel is worth investigating, thus more research should be done in the area. Last, the industry can raise the perceived value of the public towards their products by means of marketing campaigns, and it is most important to make consumers feel valuable for what they purchase.

Legal purchase enhances social relations

Last, although respondents point out that legal means of obtaining information products can help them enhance social relations more than by pirating online, the industry should not neglect the need to further maintain such an advantage by further improving their products in a way that can help people foster better social relations.

For example, gifts or coupons can be given out for free upon the purchase of original products sold in the market, and these accompaniments should be more practical

which can benefit friends or family members of the purchasers. The originals can also be packaged in a more appealing way that can be presented as gifts.

Finally, the industry should make good use of their niche in the market (with an established system and work force), and discover new ways to market information products to their consumers. Once again, the best way is to expand their business to the online environment and invest more in reaching potential customers by making the best use of the efficient distribution system the Internet provides.

Nevertheless, in order to succeed in changing people's beliefs and subsequently their actions, it is necessary for the industry and institutions (public or private) not to expect too much voluntary compliance from consumers at the early stage of the marketing campaign until our cultural norm change. Culture changes slowly, and patience is always needed to achieve a congruence of thought among the public.

Chapter Eight Research Limitations & Further Research

The theoretical and methodological limitations of this study will be discussed in this chapter. Future research opportunities and directions based on the results obtained will also be proposed.

8.1 Theoretical Limitations

For this study, Internet piracy was decomposed into five different types – music, movies, computer software, TV programmes, and computer games – and each was explored separately. Later, because of the complications involved (time and money) in obtaining more than a thousand questionnaires for measurement, and the impossibility of asking respondents to spend an hour filling out the questionnaire, Internet piracy was analyzed as general behavior. As people may have different attitudes and intentions towards pirating different media or information products, future research can compare the different types of content that will likely be pirated, and examine how different factors of piracy affect individual performance of piracy in different content areas.

Some argue that "passive" piracy (i.e., those who obtain copyrighted works from the active piraters) is as serious as active piracy and should be taken into consideration. "Active" piracy, as defined in Chapter One as the "copying or sharing" of copyrighted works on the Internet (those who give, take, or both), is the main focus of this paper because the objective is to find out what motivates the actual behavior, not what motivates someone to get their friend/important other(s) to pirate for them. Nevertheless, the act of "passive" piracy is also interesting, and should be examined in future research.

Some have questioned whether the hypothesized theoretical relationships can be applied to study similar behavior in different contexts. It is recommended that the model of Internet piracy should be tested in different cultural contexts, and in particular, special attention should be placed on the belief system of individuals towards the behavior. Even though it is true that the belief factors uncovered in research to explain similar behaviors can be the same, but these factors might be valued differently by individuals, which could alter policy decision-making based on the priorities given to the factors. Moores and Dhaliwal (in a two-year period, 2003-2004) tried to study software piracy in Singapore and the United States. Similar motivators of piracy were obtained, except that they were given different weightings by the two cultural groups. Hence, this study concludes that individuals in different contexts have different expectations and needs that motivate them to pirate. Even if the resulting motivators are found to be the same, different priorities will likely be given to the motivating factors so different approaches are required for those who are dealing with the piracy problem.

For instance, the results in this study indicate that of all the perceived advantages of performing piracy online, the variable "sharing with others" is found to be the most important advantage that affect individuals' attitude towards online piracy, followed by "convenience" and "price." This result departs from those obtained in past literature, which indicate that the low or no cost of obtaining information is the strongest motivator of piracy. This prompts us to further examine and compare the cultural compositions of different social groups that subsequently influence their attitudinal and behavioral structure toward Internet piracy.

The comprehensiveness of the present framework in explaining people's rationale of pirating online is also an issue worth looking at. The current framework is not exhaustive, as it would exceed this study's research capacity to put together a list of exclusive factors to explain individuals' piracy practice because individual thoughts and beliefs are different and are constantly changing. By eliciting a range of personal beliefs towards the performance of piracy on the Internet, and by pilot testing and modifying them based on respondents' feedback, the existing framework should be sufficient to offer a clear and relevant picture of the online pirating scene from the perspective of local users.

8.2 Methodological Limitations

With regards to the findings, five out of the seven antecedents of attitude in this study were found insignificant, and the two variables – perceived personal advantages and subjective norms – only explain 19 percent variance in individuals' attitude towards Internet piracy. Although the current sample size (n=300) was supported theoretically, it would be less than ideal to be tested on the relatively long list of variables and with structural equations modeling. The insignificant relationships should further be tested by incorporating a larger sample in future research, as the increase in sample size should carry more variations in explaining the phenomenon.

Moreover, only two items were used as measuring instruments for the perceived personal disadvantages and perceived industry disadvantages scale. The instruments were generated by the elicitation study and were later validated by both exploratory factor analysis (using PCA) and confirmatory factor analysis (by SEM). Analysis results

indicated that measurements of the two scales, after fitting them into the full measurement model, loaded significantly on their relative constructs. Since examining individuals' belief structure in this study is partly exploratory in nature, these measurements were still kept for the final modeling.

Another interesting observation that requires further investigation is that whereas this study finds significant relationships between the two variables - perceived personal advantages and subjective norms - and attitude, with an overall score in favor of piracy behavior online, yet individuals' overall attitude is skewed towards an ethical stance. Similar to individuals' overall lower intention to perform online piracy, except for the attitude construct, the three other constructs in predicting intention (i.e. PNIP, PBC and subjective norms) indicate an overall favorableness towards online piracy. This outcome may be a problem of the limited items used to measure the attitude and intention construct, as only three items are used despite the multiple meanings involved in the formation of individuals' attitudes.

Future studies should try to use more measurement items as this would increase the accuracy in measuring individuals' overall attitude. The issue of social desirability should also be taken into account as the sensitivity of the research topic could possibly lead people to disguise their true feelings. This might be the case since results showed that almost half of the respondents have pirated and are pirating on the Internet although they indicated an overall unfavorable attitude and relatively low intention towards the performance of Internet piracy. Research can also incorporate other methods to collect the same data, namely online surveys and posted questionnaires. Periodic studies are

strongly recommended, especially after the heat of the ferocious dialogues of digital piracy in our society fades.

8.3 Research Opportunities

Apart from comparing the different types of media products pirated by examining how different factors of piracy affect individual performances of piracy in different content areas, and adopting a larger sample to study similar behavior, future research should look at the following areas:

The Internet piracy model can be applied to investigate the cultural compositions of different social groups towards digital piracy or comparable social behavior. Some thoughts should also be given on the counter argument of the present rational piracy framework by constantly questioning and testing whether performance of the actual behavior will subsequently influence individuals' attitude and intention.

Research should also incorporate the perceived needs and past experience variable. The theory of uses and gratifications should be considered in periodic studies to trace the changes in individuals' needs through time after prolonged usage; whereas past experience, which is theorized in this study as a stand alone variable, should be further tested as a condition of the actual behavior.

The effect of age on intention should also be looked into in future research. Results indicate that older individuals have a higher intention to pirate. However, they are found to pirate less than younger individuals on the Internet. This fascinating contradiction should prompt a study to examine what discourages older individuals'

actual performance of Internet piracy in spite of their higher intention to carry out the behavior.

As mentioned in Chapter Seven, the information services industry should consider investing in research and development for new forms of distributions -- online downloading services. Research on the use of digital information can be expanded to this new area by adopting similar behavioral framework to verify the practicality and validity of the model in explaining the latest forms of media use (i.e. legal downloading behavior).

Finally, this research has only studied the problem of Internet piracy in Hong Kong. As Internet piracy is a global concern, future research should examine it from a broader perspective on a cross-cultural level by comparing the variations of values and opinions of information users towards online piracy in different contexts. One example of this would be to conduct a comparative study of the difference in cultural tolerance between the East and the West towards copying and sharing of copyrighted works on the Internet.

References

Agence France-Presse. (2004 , January 15). *Hong Kong a world leader in illegal downloading*. Retrieved June 19, 2004, from mywire Website: http://www.mywire.com/pubs/AFP/2004/01/15/352059

Ajzen, I. (1980). *Understanding attitudes and predicting social behavior*. Prentice Hall.

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl and J. Bechmann (Eds.), *Action-Control: From Cognition to Behavior,* 11-39. Springer, Heidelberg.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50,* 1, 179-211.

Ajzen, I. (2001). Nature and operation of attitudes. *Annual Review of Psychology, 52,* 27-28.

Ajzen, I. (2002a). Perceived behavioral control, self efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology, 32,* 1-20.

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

Ajzen, I., & Fishbein, M. (1977, February). Attitude-behavior relation: A theoretical analysis and review of empirical research. *Psychological Bulletin*, 888-918.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior.* Prentice-Hall, Englewood Cliffs, N.J.

Ajzen, I., & Fishbein, M. (1982). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.

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

Al-Raffee, S., & Cronan, T. P. (2005). *Digital piracy: Factors that influence attitude toward behavior* (Working Paper). Fayetteville, AR: University of Arkansas.

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

Ang, S. H., Cheng, P. S., Lim, E., & Tambyah, S. K. (2001). Spot the difference: Consumer responses towards counterfeits. *Journal of Consumer Marketing, 18*, 3, 219-235.

Athey, S. (1990). A comparison of the Fortune 500 and AACSB- Accredited Universities' Software Copying Policies. *CIS Educator Forum, 2, 4*, 2-11.

Athey, S. (1992). *A study of the ethical attitudes of Computer Science and Computer Information Systems majors in computer-related situations.* Unpublished manuscript, submitted to *1992 Decision Sciences Institute National*.

Auerbach, J. A., & Welsh, J. C. (1994). *Aging and competition: Rebuilding the U.S. workforce.* National Council on the Aging-National Planning Association Symposium. Washington DC, ISBN: 0890681287.

Bagozzi, R. P., Baumgartner, H., & Yi, Y. (1992, March). State versus action orientation and the theory of reasoned action: An application to coupon usage. *Journal of Consumer Research, 18,* 505-518.

Bambergm, S., Ajzen, I., & Schmidt, P. (2003). Choice of travel mode in the theory of planned behavior: the roles of past behavior, habit, and reasoned action. *Basic and Applied Social Psychology, 25,* 3, 175-187.

Banerjee, D., Cronan, T. P., & Jones, T. W. (1998). Modeling IT ethics: A study in situational ethics. *MIS Quarterly, 22,* 1, 31-60.

Barlow, J. P. (1994, March). The economy of ideas: A framework for rethinking patents and copyright in the digital age. *Wired, 2.03.*

Beck, L., & Ajzen, I. (1991). Predicting dishonest actions using the theory of planned behavior. *Journal of Research in Personality, 25,* 285-301.

Bentham, J. (1961). *An introduction to the principles of morals and legislation.* Garden City, NJ: Doubleday.

Bhattacharjee, S., Gopal, R. D., & Sanders, G. L. (2003, July). Digital music and online sharing: Software piracy 2.0? *Communication of the ACM, 46,* 7, 107-111.

Blumler, J., & Katz, E. (1974). *The uses of mass communication.* Thousand Oaks, CA: Sage.

Boase, J., Horrigan, J.B., Wellman, B., & Rainie, L. (2006, January). *The strength of Internet Ties.* Washington, DC: Pew Internet & American Life Project.

Bodur, H., Brinberg, O. D., & Coupey, E. (2000). Belief, affect, and attitude: Alternative models of the determinants of attitude. *Journal of Consumer Psychology, 9*, 1, 17-28.

Bohner, G. (2002). *Attitudes and Attitude Change (Social Psychology: A Modular Course).* Psychology Press.

Boliek, B. (2004, November 17). *Movie studios launch lawsuits against P2P pirates.* Retrieved June 20, 2005, from the Hollywood Reporter Website: http://www.hollywoodreporter.com/thr/article_display.jsp?vnu_content_id=10007202 29

Boomsma, A. (1987). *Structural equation modeling by example: Applications in educational, sociological, and behavioral research.* Cambridge University Press: Cambridge, England.

Burke, S. (2001). Missing values, outliers, robust statistics & non-parametric methods. Statistics and data analysis. Statistics and Data Analysis. LC.GC. *Europe Online Supplement, 59*, 19–24.

Business Software Alliance. (2002, May 29). *New study uncovers alarming attitudes about online piracy.* Retrieved February 22, 2004, from Business Software Alliance Website: http://www.bsa.org/usa/press/newsreleases/New-Study-Uncovers-Alarming-Attitudes-About-Online-Piracy.cfm

Business Software Alliance. (2004, July). *2004 global software piracy study.* Retrieved May 29, 2005, from Business Software Alliance Website: http://www.bsa.org/customcf/popuphitbox.cfm?doc_url=http://www.bsa.org/globalst udy/upload/Global-Software-Piracy-Study-English.pdf

Business Software Alliance. (2007). *Fourth annual BSA and IDC global software piracy study.* Retrieved March 29, 2007, from Business Software Alliance Website: http://www.bsa.org/customcf/popuphitbox.cfm?doc_url=http://www.bsa.org/globalst udy/upload/2007-Global-Piracy-Study-EN.pdf

Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin, 56*, 2, 81-105.

Chang, M. K. (1998). Predicting unethical behavior: a comparison of the theory of reasoned action and the theory of planned behavior. *Journal of Business Ethics, 17*, 1825-1834.

Charney, T., & Greenberg, B. (2001). Uses and gratifications of the Internet, in C. Lin and D. Atkin (eds), *Communication Technology and Society: New Media Adoption and Uses.* United Kingdom. Hampton Press.

Cassavoy, L. (2003, September 8). *Music labels declare war on file swappers.* Retrieved January 25, 2005, from PC World Website: http://www.pcworld.com/article/id,112364/article.html

Cheng, H.K. (1995). Hacking, computer viruses, and software piracy: the implications of modern computer fraud for corporations. In M.P. Spencer, and, R.R. Sims (eds), *Corporate misconduct: The legal societal and management issues.* Greenwood Publishing Group, Westport, CT.

Cheng, H. K., Sims, R. R., & Teegen, H. (1997, Spring). To purchase or to pirate software: An empirical study. *Journal of Management Information Systems, 13,* 4, 49-60.

Cheung, G. W., & Rensvold, R. B. (2001). The effects of model parsimony and sampling error on the fit of structural equation models. *Organizational Research Methods, 4,* 236-264.

Christensen, A., & Eining, M. (1991). Factors influencing software piracy: Implications for accountants. *Journal of Information Systems*, 67-50.

Commerce, Industry & Technology Bureau. (2004, December 9). *Consultation document on review of Copyright Ordinance*. Retrieved January 14, 2005, from CITB Government Website: http://www.citb.gov.hk/cib/ehtml/pdf/p_releases/press_e_2004_12_09.PDF

Commerce, Industry & Technology Bureau. (2006, December 19). *Government seeks public views on strengthening copyright protection in digital environment*. Retrieved December 29, 2006, from CITB Government Website: www.citb.gov.hk/cib/ehtml/pdf/consultation/Consultation_document.pdf

Conner, M., Loach, J., & Willetts, D. (1999). Different perceptions of control: Applying an extended theory of planned behavior to legal and illegal drug use. *Basic and Applied Social Psychology, 21*, 4, 301-316.

Coombe, K., & Newman, L. (1997). Ethics in early childhood field experiences. *Journal of Australian Research in Early Childhood Education, 1*, 1-9.

Cooper-Dreyfuss, R. (1988). Information products: A challenge to intellectual property theory. *20, Journal of International Law & Policy,* 897.

Cooper, J., & Harrison, D. M. (2001). The social organization of audio piracy on the Internet. *Media, Culture and Society, 23,* 1, 71-89.

Cronbach, L. J. (1951, September). Coefficient Alpha and the internal structure of tests. *Psychometrika, 16,* 297-334.

Cronan, T. P., Leonard, L. N. K., & Kreie, J. (2005). An empirical validation of perceived importance and behavior intention in IT ethics. *Journal of Business Ethics, 56*, 231-238.

Darden, L., & Thorpe, C. (2003, summer). *Forming contracts over the Internet: Click-wrap and Browse-wrap Agreements.* Retrieved January 3, 2005, from Georgia State University, College of Law, Law and the Internet Website: http://gsulaw.gsu.edu/lawand/papers/su03/darden_thorpe/#II

Davis, J. R., & Welton, R. E. (1991). Professional ethics: Business students' perceptions. *Journal of Business Ethics, 8,* 39-50.

Douglas, D. E., Cronan, T. P., & Behel, J. D. (2005). *Equity perceptions as a deterrent to software piracy behavior* (Working Paper). Fayetteville, AR: University of Arkansas.

Dubinsky, A.J. and Loken, B. (1989). Analyzing ethical decision making in marketing. *Journal of Business Research, 19*, 2, 83-107.

Economist Intelligence Unit. (2004, October 1). *Hong Kong: Telecoms and technology background.* Retrieved November 11, 2004, from eiu.com: http://portal.eiu.com/executivebriefing/login.asp?returnTo=percent2Findexpercent2Easppercent3Flayoutpercent3Dshowpercent5Farticlepercent26searchpercent5Ftextpercent3Dbroadbandpercent2Bpenetrationpercent2Bratepercent26articlepercent5Fidpercent3D1697672369

Eining, M. M., & Christensen, A. L. (1991). A psycho-social model of software piracy: the developement and test of a model. In R. Dejoie, G. Fowler, and D. Paradice (eds.), *Ethical issues in information systems* (p.134-140). Boston, MA: Boyd and Fraser.

Everitt, B. S. (1996). *Making sense of statistics in psychology: A second-level course.* NewYork: Oxford University Press.

Fallon, B. (2005, July). A review of the empirical ethical decision-making literature: 1996–2003. *Journal of Business Ethics, 59*, 4, 375-413.

Fan, X., Thompson, B., & Wang, L. (1999). Effects of sample size, estimation method, and model specification on structural equation modeling fit indexes. *Structural Equation Modeling, 6*, 56-83.

Federal Communications Commission. (2003, November 4). *FCC adopts anti-piracy protection for digital TV.* Retrieved December 11, 2004, from http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-240759A1.pdf

First annual Business Software Alliance and IDC global software piracy study. (n.d.) (2004, July). Retrieved October 28, 2005, from the Business Software Alliance Website:

www.bsa.org/globalstudy/loader.cfm?url=/commonspot/security/getfile.cfm&pageid=16947&hitboxdone=yes

Fishbein, M., & Ajzen, I. (1975). *Attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Fishbein, M., & Middlestadt, S. (1995). Noncognitive effects on attitude formation and change: Fact or artifact? *Journal of Consumer Psychology, 4,* 2, 181-202.

Flannery, B. L., & May, D. R. (2000). Environmental ethical decision making in the U.S. metal-finishing industry. *Academy of Management Journal, 43,* 642-662.

Ford, R., & Richardson, W. (1994, March). Ethical decision making: A review of the empirical literature. *Journal of Business Ethics, 13*, 205.

Forrester. (2002, August 13). *Downloads did not cause the music slump, but they can cure it, reports Forrester Research.* Retrieved March 21, 2004, from Forrester Website: http://www.forrester.com/ER/Press/Release/0,1769,741,FF.html

Fourth annual Business Software Alliance and IDC global software piracy study. (n.d.) (2007). Retrieved March 28, 2007, from the Business Software Alliance Website: www.bsa.org/globalstudy/upload/2007-Global-Piracy-Study-EN.pdf

Frazer, L., & Lawly, M. (2001). *Questionnaire design & administration: A practical guide.* Australia, John Wiley & Sons Australia Ltd.

Fukukawa, K. (2002). Developing a framework for ethically questionable behavior in consumption. *Journal of Business Ethics, 41,* 1-2, 99-119.

Fullerton, S., Kerch, K. B., Dodge, H. R. (1996). Consumer ethics: An assessment of individual behaviour in the market place. *Journal of Business Ethics, 15*, 805-814.

Gefen, D., Straub, D. W., & Boudreau, M. C. (2000, August). Structural equation modeling and regression: Guidelines for research practice. *Communication of AIS, 4,* 7, 1-80.

Glass, R., & Wood, W. (1996). Situational determinants of software piracy: An equity theory perspective. *Journal of Business Ethics, 15*, 1189-1198.

Godin, G., & Kok, G. (1996). The theory of planned behavior: A review of its applications to health-related behaviors. *American Journal of Health Promotion, 11*, 2, 87-98.

Goldstein, P. (1991). *Selected statues and international agreements on unfair competition, trademark, copyright and patent 1991*. Westbury, N.Y.: Foundation Press.

Goldstein, P. (1994). *Copyright's highway: From Gutenberg to the celestial jukebox.* Standford, California: Stanford Law School.

Goodman, S. E. (1991). Computing in a less-developed country. *Communications of the ACM, December, 34,* 12, 25-29.

Gopal, R., & Sanders, L. (1997). Preventive and deterrent controls for software piracy. *Journal of Management Information Systems, 4*, 29-47.

Gopal, R. D., & Sanders, G. L. (2000). Global software piracy: You can't get blood out of a turnip. *Communications of the ACM, September, 43,* 9, 83-89.

Gopal, R. D., Sanders, G. L., Bhattacharjee, S., Agrawal, M., & Wagner, S. C. (2004). A behavioral model of digital music piracy. *Journal of Organizational Computing and Electronic Commerce, 14,* 2, 89.

Green, M. (2002a). Napster opens Pandora's box: Examining how file-sharing services threaten the enforcement of copyright on the Internet. *Ohio State Law Journal, 63*, 799-832.

Green, S. P. (2002b). Plagiarism and the limits of theft law: Some preliminary thoughts on norms and the criminalization of intellectual property law. *Hastings Law Journal, 54*, 167-241.

Gross, G. (2004a, April 23). *Feds sweep out Internet pirates.* Retrieved January 25, 2005, from PC World Website: http://www.pcworld.com/article/id,115824/article.html

Gross, G. (2004b, October 1). *RIAA sues another 762 over file-sharing.* Retrieved January 25, 2005, from PC World Website: http://www.pcworld.com/article/id,118028-page,1/article.html

Harder, J. W. (1991). Equity theory versus expectancy theory: The case of major leaguebaseball free agents. *Journal of Applied Psychology, 76,* 458-464.

Hardy, D. R. (2003). Assignment of corporate opportunities – The migration of intangibles. *100 Tax Notes,* 527, 527.

Harrington, S. J.(1989). Why people copy software and create computer viruses: Individual characteristics or situational factors. *Information Resource Management Journal, 2,* 3, 28-37.

Harrington, S. J. (2000). Software piracy: Are Robin Hood and responsibility denial at work? In M. Khosrowpour (ed.), *Challenges of Information Technology Management in the 21st Century,* 83-87. Ideas Group Publishing, Hershey, PA.

Harrison, D., Mykytyn, P., Riemenschneider, C. (1997). Executive decisions about adoption of information technology insmall business: Theory and empirical tests. *Information Systems Research, 8*, 2, 171-195.

Haruvy, E., Mahajan, V., & Prasad, A. (2004, April). The effect of piracy on the market penetration of subscription software. *The Journal of Business, 77, 2,* 81-108.

Healey, J. (2001, February 20). New technologies target swapping of bootlegged files. *Los Angeles Times*, C1.

Hettinger, E. C. (1989, Winter). Justifying intellectual property. *Philosophy and Public Affairs, 18,* 1, 31-52.

Higgins, G. E., & Makin, D. A. (2004, Spring). Does social learning theory condition the effects of low self-control on college students' software piracy? *Journal of Economic Crime Management, 2*, 2, 1-22.

Hinduja, S. (2001, November). Correlates of Internet software piracy. *Journal of Contemporary Criminal Justice. 17*, 4, 369-382.

Hinduja, S. (2003). Trends and patterns among online software pirates. *Ethics and Information Technology*, *5*, 49-61.

Ho, K. (1995). A study into the problem of software piracy in Hong Kong and China. Retrieved October 29, 2004, from the Hong Kong Intellectual Property Department Website:
http://www.ipd.gov.hk/eng/intellectual_property/study_aids/piracy_hk_china.htm

Hofstede, G. (1993). Cultural constraints in management theories. *Academy of Management Executive, 7*, 1, 81-94.

Homans, G. C. (1961). *Social behavior: Its elementary forms.* Harcourt, New York.

Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods*, *3,* 4, 424-453.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling* 6, 1, 1-55.

Hui, K. L., & Png, I. (2003, September 18). Piracy and the legitimate demand for recorded music. *Contributions to Economic Analysis & Policy, 2,* 1, 1160.

IFPI. (2004, January). *IFPI online music report.* Retrieved January 5, 2005, from International Federation of the Phonographic (IFPI) Website: Industryhttp://www.ifpi.org/content/library/digital-music-report-2004.pdf

IFPI. (2004, June 8). *Recording industry shows first results of international campaign against illegal file-sharing.* Retrieved January 5, 2005, from International Federation of the Phonographic (IFPI) Website: http://www.ifpi.org/content/section_news/20040608.html

IFPI. (2004, July). *The recording industry commercial piracy report 2004.* Retrieved January 5, 2005, from International Federation of the Phonographic (IFPI) Website: http://www.ifpi.org/content/library/piracy2004.pdf

Internet World Stats. (2007, January 11). *Top 35 countries with the highest Internet penetration rate.* Retrieved April 13, 2007, from Internet World Stats Website: http://www.internetworldstats.com/top25.htm

Itakura, Y., Yokozawa, M. & Shinohara, T. (2004). Model analysis of digital copyright piracy on P2P networks. *Symposium on Applications and the Internet-Workshops (SAINT 2004 Workshops), saint-w,* 84-89. Retrieved April 13, 2005, from IEEE Xplore Website: http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=1268570

James, M. (2001, February 19). Music fans have Napster options rivals: With such file-sharing programs as Gnutella and iMesh, the practice of providing free music online is far from over. *Baltimore Sun*, p.1C.

Jensen, C. (2003). The more things change, the more they stay the same: Copyright, digital technology, and social norms. *Standford Law Review, 56*, 531-570.

Jones, T. (1991). Ethical decision making by individuals in organizations: an issue-contingent model. *Academy of Management Review, 16*, 366-395.

Joshi, K. (1989). The measurement of fairness or equity perception of management information systems users, *MIS Quarterly, 13*, 3, 343-358.

Kwong, T. C. H., & Lee, M. K. O. (2004). Understanding the behavioral intention to digital piracy in virtual communities - A propose model. *IEEE International Conference on e-Technology, e-Commerce and e-Service (EEE'04)*, *eee*, 223-226.

Kabanoff, B. (1991). Equity, equality, power and conflict, *Academy of Management Review, 16*, 2, 416-441.

Kim, J., & Mueller, C. W. (1978). *Factor analysis: Statistical methods and practical issues.* Sage Publications: Beverly Hills, California.

Kline, R. B. (1998). Principles and practice of structural equation modeling. New York: Guilford Press.

Krebs, B. (2003, June 26). *Online piracy spurs high-tech arms race.* Retrieved January 25, 2004, from Washington Post Website: http://www.washingtonpost.com/ac2/wp-dyn/A34439-2003Jun26

Kreie, J., & Cronan, T. P. (1998). How men and women view ethics. *Communications of the ACM, 41,* 9, 70-76.

Kwong, K. K., Yau, O. H. M., Lee, J. S. Y., Sin, L. Y. M., & Tse, A. C. B. (2003, October). The effects of attitudinal and demographic factors on intention to buy pirated CDs: The case of Chinese consumers. *Journal of Business Ethics, 47,* 3 223-235.

Kyoon, S. S., Gopal, R. D., Sanders, G. L., & Whinston, A. B. (2004). Global software piracy revisited. *Communications of the ACM,* 47, 1, 103-107.

LaRose, R., Mastro, D., & Eastin, M. S. (2001, Winter). Understanding Internet usage: A social-cognitive approach to uses and gratifications. *Social Science Computer Review, 19,* 4, 395-413.

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

Lea, M., & Spears, R. (1991). Computer-mediated communication, de-individuation and group decision-making. *International Journal of Man-Machine Studies, 34,* 283-301.

Lending, D., & Slaughter, S. A. (1999). Understanding differences in ethical beliefs and behaviors toward software copying: the effects of organization culture. *Proceedings of the 1999 ACM SIGCPR Conference,* 253-260, April 8-10, 1999, New Orleans, Louisiana, USA, J. Prasad, ed., ACM Press, NY.

Lending, D., & Slaughter, S. A. (2001). Research in progress: the effects of ethical climate on attitudes and behaviors toward software piracy. *Proceedings of the ACM SIGCPR Conference,* 198-200, April 19-21, 2001, San Diego, California, USA, Mark Serva, Editor.

Leonard, L. N. K., Cronan, T. P., & Kreie, J. (2004, December). What influences IT ethical behavior intentions: planned behavior, reasoned action, perceived importance, or individual characteristics? *Information and Management, 42,* 1, 143–158.

Lessig, L. (1999). *Code, and other laws of cyberspace.* New York: Basic Books.

Lessig, L. (2001). *The future of ideas: The fate of the commons in a connected world.* NewYork: Random House.

Leventhal, L. M., Instone, K. E., & Chilson, D. W. (1992). Another view of computer science ethics: Patterns of responses among computer scientists. *Journal of System Software, 17*, 49–60.

Limayem, M., Hirt, S. G., & Chin, W. W. (2001, June). Intention does not always matter: The contingent role of habit on IT usage behavior. *Global Co-operation in the New Millennium,* 27-29, The 9th European Conference on Information Systems, Bled, Slovenia.

Limayem, M., Khalifa, M., & Chin, W. W. (1999). Factors motivating software piracy: a longitudinal study. *Proceedings of the 20th International Conference on Information Systems 1999,* Charlotte, North Carolina, United States.

Lin, T. C., Hsu, M. H., Kuo, F. Y., & Sun, P. C. (1999). An intention model-based study of software piracy. *System Sciences, 1999, HICSS-32, Proceedings of the 32nd Annual Hawaii International Conference*, 5.

Litman, J. (1994). Mickey Mouse emeritus: Character protection and the public domain. *University of Miami Entertainment & Sports Law Review, 11*, 429-435.

Litman, J. (1996). Revising copyright law for the information age. *Oregon Law Review, 75,* 19-46.

Litman, J. (2003, November 23). *Sharing and stealing.* Retrieved December 21, 2004, from Social Science Research Network Website: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=472141

Loch, K. D., & Conger, S. (1996). Evaluating ethical decision making and computer use. *Communications of the ACM, 39*, 7, 74-83.

Loehlin, J. (1992). *Latent variable models: An introduction to factor, path, and structural analysis (2nd Ed).* Hillsdale, N.J.: Lawrence Erlbaum.

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

Madden, T. J., Ellen, P. S., & Ajzen, I. (1992). A comparison of the theory of planned behavior and the theory of reasoned action. *Society for Personality and Social Psychology, 18*, 1, 3-9.

Marshall, L. (2004, March). The effects of piracy upon the music industry: A case study of bootlegging. *Media, Culture & Society, 26*, 2, 163.

Mathieson, K. (1991). Predicting user intentions: Comparing the technology acceptance model with the theory of planned behavior. *Information System Research, 2*, 3, 173-191.

McKelvie, S. J. (1992). Does memory contaminate test-retest reliability? *Journal of Gen Psychology 119*, 1, 59-72.

Michie, S., & Abraham, C. (2004, February). Interventions to change health behaviors: evidence-based or evidence-inspired? *Psychology and Health, 19,* 1, 29-49.

Moohr, G. S. (2003). *The crime of copyright infringement: An inquiry based on morality, harm, and criminal theory.* Retrieved November 11, 2004, from University of Houston Law Center Website: http://www.law.uh.edu/faculty/gmoohr/Criminal.pdf

Moores, T. T., & Dhaliwal, J. (2004, March 6). A reversed context analysis of software piracy issues in Singapore. *Information and Management, 41,* 1037-1042

Moores, T., & Dhillon, G. (2000). Software piracy: A view from Hong Kong. *Communications of the ACM, December, 43,* 12, 88-93.

MPAA. (2003, December). *2003 full ten country piracy fact sheet.* Retrieved October 12, 2004, from Motion Picture Association of America Website: http://www.mpaa.org /PiracyFactSheets/PiracyFactSheetTenCountries.pdf

Napster use in Canada to suffer dramatically. (n.d.). (2001, May 2). Retrieved September 1, 2004, from Ipsos News Center Website: http://www.ipsos-na.com/news/pressrelease.cfm?id=1219

Nunes, J. C., Hsee, C. K., & Weber, E. U. (2004, Spring). Why are people so prone to steal software? The effect of cost structure on consumer purchase and payment intentions. *Journal of Public Policy & Marketing, 23,* 1, 43.

Office of Technology Policy. (2002, September 23). *Understanding broadband demand: A review of critical issues.* Retrieved August 29, 2004, from Techonology Administration Website: http://www.technology.gov/OTPolicy/default.htm

Office of the Telecommunications Authority. (2004). *Trading Fund Report 2003/2004.* Retrieved May 9, 2005, from the Office of Telecommunications Authority Website: http://www.ofta.gov.hk/en/trade-fund-report/0304/OFTA/0304.htm

Oriental Daily. (2005, October 17). *54%青少年曾用BT*. Retrieved November 3, 2005, from Oriental Daily Website: http://orientaldaily.on.cc/cgi-bin/nsrch.cgi?seq=511659

Osorio, C.A. (2002, June). *Working paper: A contribution to the understanding of illegal copying of software: Empirical and analytical evidence against conventional wisdom.* Retrieved on January 25, 2005, from http://opensource.mit.edu/papers/osorio.pdf

Oz, E. (1990, August). The attitude of managers-to-be toward software piracy. *OR/MS Today, 17,* 4, 24–26.

Palmgreen, P., & Rayburm, J. D., II. (1985). An expectancy-value approach to media gratifications. In K. E. Rosengren, P. Palmgreen, & L. Wenner (Eds.), *Media Gratification Research,* 61-73. Beverly Hill and London: Sage.

Pastore, M. (2002, March 28). *Computer-music connection stronger than ever.* Retrieved November 12, 2004, from ClickZ Website: http://www.clickz.com/showPage.html?page=1000071

Paul Budde Communication. (2004, August 3). *North Asian broadband and Internet market.* Retrieved October 03, 2004, from MarketResearch.com: http://www.marketresearch.com/vendors/viewvendor.asp?vendorid=1533&SID=3022 3708-302510186-332062006&partnerid=885830502

Peace, A. G. (1997, Fall). Software piracy and computer-using professionals: A survey. *Journal of Computer Information Systems, 38,* 1, 94-99.

Peace, A. G., Galleta, 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.

Pelfrey, S., & Peacock, E. (1991). Ethical codes of conduct are improving. *Business Forum, 16,* 2, 14-17.

Pereira, L. B., & Kanekar, S. (1984). Perceptions of initiatory and retaliatory cheating behaviour. *Indian Psychologist, 3,* 1, 17-20.

Pierce, M. A., & Henry, J. W. (1996). Computer ethics: the role of personal, informal, and formal codes. *Journal of Business Ethics, 15,* 4, 425-437.

Piron, R., & Fernandez, L. (1995). Are fairness constraints on profit-seeking important? *Journal of Economic Psychology, 16,* 73-96.

Prendergast, G., Leung, H. C., & Phau, I. (2002). Understanding consumer demand for non-deceptive pirated brands. *Marketing Intelligence & Planning, 20,* 7, 405-416.

Rahim, M. M., Rahman, M. N. A., & Seyal, A. H. (2000). Software piracy among academics: an empirical study in Brunei Darussalam. *Information Management & Computer Security, 8,* 1, 14-26.

Rahim, M. M., Seyal, A. H., & Rahman, M. N. A. (2001). Factors affecting softlifting intention of computing students: An empirical study. *Journal of Educational Computing Research, 24,* 385-405.

Randall, D. M., & Gibson, A. M. (1991). Ethical decision making in the medical profession: An application of the theory of planned behavior. *Journal of Business Ethics, 10,* 2, 111-122.

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

Reid, R. A., Thompson, J. K., & Logsdon, J. M. (1992). Knowledge and attitudes of management students towards software piracy. *Journal of Computer Information Systems, Fall*, 46-51.

Reuters. (2002, May 30). *Blockbusters boost movie pirates' bounty.* Retrieved May 12, 2004, from ZDNet Website: http://news.zdnet.com/2100-1009_22-928436.html

Robinson, P. H., & Darley, J. M. (1995). *Justice, liability, and blame: Community views and the criminal law.* Boulder, CO: Westview Press.

Rosengren, K. E. (1974). Uses and gratifications: A paradigm outlined. In J. G. Blumler & E. Katz (Eds.), *The Uses of Mass Communications: Current Perspectives on Gratifications Research,* 269286. Beverly Hills, CA: Sage.

Rubin, A. M. (1994). Media uses and effects: A uses-and-gratifications perspective. In J. Bryant & D. Zillmann (Eds.), *Media effects: Advances in theory and research* (417-436). Hillsdale, NJ: Lawrence Erlbaum.

Samuels, E. (2003, February 10). *Can our current conception of copyright law survive the Internet age?* Retrieved May 11, 2004, from New York Law School Law Review: http://www.nyls.edu/pdfs/v46n1-2p221-230.pdf

Schwab, D. P. (1999). *Research methods for organizational studies.* Mahwah, N.J.: Lawrence.

Schwartz, S. H., & Tessler, R. C. (1972). A test of a model for reducing measured attitude-behavior discrepancies. *Journal of Personality and Social Psychology, 24,* 2, 225-236.

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

Severin, W. J., & Tankard, J. W. (2001). *Communication theories: Origins, methods, and uses in the mass media.* New York: Addison Wesley Longman, Inc.

Shepherd, G. J., & O'Keefe, D. J. (1984). Separability of attitudinal and normative influences on behavioral intentions in the Fishbein-Ajzen model. *The Journal of Social Psychology, 122,* 287-288.

Shimp, T. A., & Kavas, A. (1984). The theory of reasoned action applied to coupon usage. *Journal of consumer research, 11*, 102-104.

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

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

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

Slater, D. (1991). New crop of IS pros on shaky ground. *Computerworld, 25,* 41, 90.

Solomon, S. L., & O'Brien, J. A. (1991). The effect of demographic factors on attitudes toward software piracy. *Journal of Computer Information Systems, 30,* 3, 40-46.

SPA. (1997). *Software piracy and global competitiveness*. Software Publishers' Association (Technology Report), Washington D.C.

Spears, R., Postmes, T., Lea, M., & Wolbert, A. (2002). When are net effects gross products? The power of influence and the influence of power in computer-mediated communication. *Journal of Social Issues, 58*, 1, 91–107.

Sproull, L., & Kiesler, S. (1985). Reducing social context cues: electronic mail in organizational communication. *Management Science, 11*, 1492–1512.

Stereophile Staff. (2000, July 23). Jupiter communications study refutes RIAA's claims. Retrieved May 9, 2004, from Stereophile Website: http://www.stereophile.com/news/10802/

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.

Tan, B. (2002). Understanding consumer ethical decision making with respect to purchase of pirated software. *Journal of Consumer Marketing, 19,* 2, 96-111.

Taylor, G. S., & Shim, J. P. (1993). A comparative examination of attitudes toward software piracy among business professors and executives. *Human Relations, 46,* 419-433.

Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research, 6,* 2, 144-176.

Tempo. (2004, April 20). *Downloaders expanding to motion pictures and music videos.* Retrieved September 16, 2004, from Ipsos Insight Website: http://www.ipsosinsight.com/pressrelease.aspx?id=2137

Tempo. (2005, February 10). *Popularity of fee-based music downloading takes off.* Retrieved May 18, 2005, from Ipsos Insight Website: http://www.ipsosinsight.com/pressrelease.aspx?id=2550

The Vanderbilt Curb Center. (2004, February 6). *Interview with Steven Hetcher.* Retrieved July 16, 2004, from the Vanderbilt University, the Curb Center, for Art, Enterprise, and Public Policy Website: http://sitemason.vanderbilt.edu/files/e/eLZtNC/Interviewpercent20withpercent20Prof essorpercent20Stevenpercent20Hetcher.pdf

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

Tom, G., Garibaldi, B., Zeng, Y., & Pilcher, J. (1998). Consumer demand for counterfeit goods. *Psychology and Marketing, 15,* 5, 405-421.

Trafimow, D., & Finlay, K. (1996). The importance of subjective norms for a minority of people. *Personality and Social Psychology Bulletin, 22,* 820–828.

Trevino, L. K. (1986). Ethical decision making in organizations: A person-situation interactionist model. *Academy of Management Review, 11,* 601-617.

Triandis, H. C. (1977). *Interpersonal behavior.* Montery, CA: Brooks/Cole.

Triandis, H. C. (1980). *Attitude and attitude change.* New York: John Wiley.

Triandis, H. C. (1994). *Culture and social behavior.* New York: McGraw-Hill, Inc.

United States Trade Representative (USTR). (2004). *2004 National Trade Estimate (NTE) report on foreign trade barriers.* Retrieved November 15, 2004, from Office of the United States Trade Representative Website: http://www.ustr.gov/Document_Library/Reports_Publications/2004/2004_National_T rade_Estimate/2004_NTE_Report/Section_Index.html

Vallerand, R. J., Deshaies, J.C., Pelletier, L. G., & Mongeau, C. (1992). Ajzen and Fishbein's theory of reasoned action as applied to moral behavior: A confirmatory analysis. *Journal of Personality and Social Psychology, 62,* 98-109.

Valois, P., & Godin, G. (1991). The importance of selecting appropriate adjective pairs for measuring attitude based on the semantic differential method. *Quality and Quantity, 25,* 57-68.

Verplanken, B., Aarts, H., van Knippenberg, A., & Moonen, A. (1998). Habit versus planned behavior: A field experiment. *Br Journal of Social Psychology, 37,* 111-128.

Vitell, S. J., & Muncy, J. (1992). Consumer ethics: An empirical investigation of factors influencing ethical judgments of the final consumer. *Journal of Business Ethics, 11,* 585-597.

Wahn, J. (1993). Organizational dependence and the likelihood of complying with organizational pressures to behave unethically. *Journal of Business Ethics, 12,* 245-251.

Wickham, M., Plotnicki, J., & Athey, S. (1992, Summer). A survey of faculty attitudes toward personal computer software copying. *The Journal of Computer Information Systems,* 47-52.

Wilson, D. T., Matthews, H. L., & Harvey, J. W. (1975). An empirical test of the Fishbein Behavioral Intention Model. *Journal of Consumer Research, 5,* 3, 365-371.

Wimmer, R. D., & Dominick, J. R. (2000). *Mass media research: An introduction (6th edition).* Belmont, CA: Wadsworth.

Wong, E. Y. H. (1995, December). How should we teach computer ethics? A short study done in Hong Kong. *Computers and Education, 25,* 4, 179–191.

Wong, G., Kong, A., & Ngai, S. (1990). A study of unauthorized software copying among post-secondary students in Hong Kong. *The Australian Computer Journal, 22, 4,* 114-122.

Wood, J. A., Longenecker, J. G., McKinney, J. A., & Moore, C.W. (1988, April). Ethical attitudes of students and business professionals: A study of moral reasoning. *Journal of Business Ethics, 7,* 4, 249.

Wood, W., & Glass, R. (1996). Sex as a determinant of software piracy. *Journal of Computer Information Systems, 36,* 2, 37-40.

Worldwide Internet piracy study: A Motion Picture Association of America survey in consultation with OTX. (n.d.) (2004, July). Retrieved November 12, 2004, from the Motion Picture Association of America Website: *http://www.mpaa.org/MPAAPress/index.htm*

Yau, O. H. M. (1988). Chinese cultural values: their dimensions and marketing implications. *European Journal of Marketing, 22,* 5, 44-57.

Yu, P. K. (2004). The escalating copyright wars. *32 Hofstra Law Review*, 907, preprinted in Michigan State University-DCL College of Law Occasional Papers in Intellectual Property and Communications Law No. 1, 2003.

Zhu, J. J. H., & He, Z. (2002). Perceived characteristics, perceived needs, and perceived popularity: adoption and use of the Internet in China. *Communication Research, 29*, 4, 466-495.

Zimbardo, P. G. (1969). The human choice: Individuation, reason, and order versus deindividuation, impulse, and chaos. *Nebraska Symposium on Motivation, 17*, 237-307.

盧希鵬、蔡宗霖, (2001). 探討消費者採用網路購物意願之影響因素. *台灣網際網路研討會論文:* http://www.ccu.edu.tw/TANET2001/scheduel/paper_abs/R112.html

Table 1 Definitions, Measurement Scale, Internal Consistency Coefficients, and

References of All the Measured Variables

Variables	Definitions	Items & Scale	Cronbach's alpha	Sources
Online Piracy behavior (BEH)	Copy/share digital copyrighted works (e.g. music, movies, software, TV programs, & computer games) on the Internet	Item 1. With/without pirate: Dichotomous (Yes/No) Item 2. Days pirated per week: Categorical Item 3. Approx. frequency per month: Categorical	0.992	TRA & TPB (Ajzen, 1991; Ajzen & Fishbein, 1977, 1982; Fishbein and Ajzen, 1975)
Intention (INT)	Individuals' intention or decision to pirate (or not to pirate) on the Internet	3 items: Categorical (5-point likeliness scale)	0.909	TRA & TPB (Ajzen, 1991; Ajzen & Fishbein, 1977, 1982; Fishbein and Ajzen, 1975)
Past Offline Piracy Experience (PAST)	Past piracy experience through physical means (e.g. purchasing pirated software/entertainment products, sharing/duplicating tapes/CDs/VCDs/DVDs)	1 item: Dichotomous (Yes/No)		Hinduja, 2001
Gender (SEX)	Sex of Internet user	Categorical: Male/Female (dummy coded as 0/1)		
Age (AGE)	No. of years since birth	Categorical: 10 categories "15-19" "20-24" "25-29" "30-34" "35-39" "40-44" "45-49" "50-54" "55-59" "60 or above"		
Income (INC)	The monthly personal income of Internet users (including salary, bonuses, investment income, rents, commission, part-time jobs etc.). It is measured in HK dollars	Categorical: 7 categories "$5000 or below" "$5001-$10000" "$10001-$20000" "$20001-$30000" "$30001-$40000" "$40001-$50000" "$50001 or above"		
Cognitive Beliefs (COGBE)	Individuals' opinions about the likely consequences of performing piracy on the	9 sets of composite items for indirect measure (behavioral		Composite items derived from

	Internet, and the evaluation they give on these consequences	beliefs * outcome evaluation) (5-point agreement scale)	elicitation study as suggested by Fishbein & Ajzen (1975)
Perceived Normative Beliefs (NORMB)	Individuals' perceived sources of social pressure (i.e. what important others think the individual should or should not do), and their motivation to comply with the sources of social pressure	4 sets of composite items for indirect measure (normative beliefs * motivation to comply) (5-point agreement scale)	Composite items derived from elicitation study as suggested by Fishbein & Ajzen (1975)
Ethical belief (ETHIC)	Individuals' ethical judgment or evaluation about the degree of rightness of performing online piracy behavior	3 items: Categorical (5-point agreement scale) 0.933	Beck and Ajzen, 1991
Computer Deindividuation (DEIN)	Individuals' feeling of being alienated or separated from others, and whether they feel what they're doing with the computer or on the Internet can go unnoticed	3 items: Categorical (5-point agreement scale) 0.794	Loch and Conger, 1996
Perceived Unfairness of the Industry (UNIN)	Individuals' perceived favorability, just or fairness of the entertainment and information industry	3 items: Categorical (5-point agreement scale) 0.691	New developed items – based on Fukukawa's (2002) 3 perceived unfair aspects of EQB
Attitude (ATT)	Individuals' overall evaluation or judgment of Internet piracy behavior	3 items: 5-point semantic-differential scale 0.826	TRA & TPB (Ajzen, 1991; Ajzen & Fishbein, 1977, 1982; Fishbein and Ajzen, 1975)
Subjective Norms (SN)	Users' perception of whether most people important to him/her think Internet piracy should be performed or not	3 items for direct measure: Categorical (5-point agreement scale) 4 sets of composite items for indirect measure (normative beliefs * motivation to comply) (5-point agreement scale) 0.877	Direct measurement items from TRA & TPB (Ajzen, 1991; Ajzen & Fishbein, 1977, 1982; Fishbein and Ajzen, 1975) Composite items

				derived from elicitation study as suggested by Fishbein & Ajzen (1975)
Perceived Behavioral Control (PBC)	Individuals' perceptions of their ability, and how easy or difficult it is to perform piracy behavior on the Internet	3 items: Categorical (two 5-point agreement scale & one 5-point difficulty scale)	0.748	TPB (Ajzen, 1985, 1991, 2001)
Perceived Needs for Internet Piracy (PNIP)	Users' needs to pirate on the Internet (as compared with legal means of obtaining information products) for work-, research-, entertainment-, study-, or information-related purposes	5 items: Online piracy as compared with legal method in satisfying 5 different needs (5-point agreement scale)	0.901	Zhu and He, 2002

Table 2 List of Hypotheses and the Direction of the Relationships

	Hypotheses	Direction of the relationship
1	Individuals who are more positive towards the consequences brought by Internet piracy will have a more favorable attitude towards Internet pirating behavior	Positive
2	Individuals who lean towards the belief that Internet piracy is normal and acceptable will have a more favorable attitude towards Internet pirating behavior	Positive
3	Individuals who lean towards the belief that what they are doing online can go unnoticed will have a more favorable attitude toward Internet pirating behavior	Positive
4	Individuals whose beliefs lean towards the software and entertainment industry being unfair will have a more favorable attitude toward Internet pirating behavior	Positive
5a	Individuals who perceive an unfavorable impression from those close to them of Internet piracy will have a lower intention to pirate on the Internet	Negative
5b	Individuals who perceive an unfavorable impression from those close to them of Internet piracy will have a less favorable attitude towards piracy behavior on the Internet	Negative
6	Individuals with greater motivation to comply with perceived sources of social pressure (i.e. social norms) against online piracy will be more likely to perceive that those close to them disapprove of online piracy	Positive
7	The more favorable individuals' attitude towards online piracy, the higher their intention to pirate on the Internet	Positive
8	Individuals with a higher level of confidence in their ability to pirate online will have a higher level of intent to pirate on the Internet	Positive
9	Individuals who perceive that Internet piracy can satisfy more of their work-related, entertainment, relationship, sampling and personal needs than legal means of obtaining information products will have a higher intention to pirate online	Positive
10	Individuals' greater intention to pirate online corresponds to the higher tendency of their actual piracy behavior on the Internet	Positive
11	Individuals who have performed offline piracy in the past will have a higher likelihood of displacing this offline behavior to an online environment	Positive

Table 3 Descriptive Statistics of the Sample

		Percentage	Mean	s.d.
Year of Use	1-2 years	4.3%		
	3-5 years	23.7%		
	6-10 years	53%	7.04	3.27
	More than 10 years	8.3%		
	Total	**100%**		
Online Place	Home	87.7%		
	Work	11.3%		
	School	0.7%		
	Internet Café, Coffee Shop, Game Centre	0.3%	----	----
	Total	**100%**		
Gender	Male	47.7%		
	Female	52.3%	----	----
	Total	**100%**		
Age	15-19	32%		
	20-24	20%		
	25-29	10.3%		
	30-34	9.7%		
	35-39	6%	27.25	10.61
	40-44	13%		
	45-49	4%		
	50-54	3.7%		
	55-59	0.3%		
	Total	**99%**		
Income	$5,000 or below	35.7%		
	$5,001-$10,000	19.7%		
	$10,001-$20,000	19.3%		
	$20,001-$30,000	8.7%		
	$30,001-$40,000	3.0%	13433.28	12617.83
	$40,001-$50,000	1.3%		
	$50,001-$60,000	4.3%		
	Total	**100%**		
Dependent variable – Actual Online Piracy Behavior	Have online piracy (Yes)	54.7%		
	Never pirate online (No)	45.3%	----	----
	Total	**100%**		
	Never copied/Haven't copied for a period of time	56%	----	----
	Less frequent than once a week	13.7%		
	1 day per week	16.3%		

2-3 days per week	12.0%		
4-5 days per week	0.3%		
6-7 days per week	1.7%		
Total	**100%**		
Never copied/Haven't copied for a period of time	56%		
A few times	13.7%		
A no. of times, but less than half	25.0%	----	----
On about half of the days	3.3%		
Most days	0.3%		
Almost every day	1.7%		
Total	**100%**		

Table 4 Construct Loadings of the Measurement Model

Construct	Variable	Loading (standardized)	Std. error
Personal Advantages	PERAD1	.69	----
	PERAD2	.68	.094
	PERAD3	.68	.086
	PERAD4	.77	.101
Personal Disadvantages	PERDIS1	.96	
	PERDIS2	.96	.025
Industry Disadvantages	INDDIS1	.63	----
	INDDIS2	.67	.157
Computer Deindividuation	DEIN1	.76	
	DEIN2	.68	.105
	DEIN3	.56	.096
Ethical Belief	ETHICAL1	.62	----
	ETHICAL2	.63	.135
	ETHICAL3	.74	.157
Perceived Unfairness of the Industry	UNIND1	.63	
	UNDIN2	.86	.176
	UNDIN3	.57	.118
Attitude	ATT1	.60	----
	ATT2	.78	.134
	ATT3	.77	.132
Subjective Norms	NORM1	.76	----
	NORM2	.89	.085
	NORM3	.71	.072
Perceived Normative Beliefs	NORMBE1	.63	----
	NORMBE2	.59	.108
	NORMBE3	.67	.121
	NORMBE4	.66	.116
Perceived Behavioral Beliefs	PBC1	.79	----
	PBC2	.64	.080
	PBC3	.88	.076
Perceived Needs for Internet Piracy	PNIP1	.67	----
	PNIP2	.78	.098
	PNIP3	.75	.096
	PNIP4	.64	.101
	PNIP5	.60	.103
Intention	INT1	.73	----
	INT2	.68	.094
	INT3	.75	.097
Past Offline Piracy Behavior	PASTBE	1.00	----
Online Piracy Behavior	BEHAV1	.98	----
	BEHAV2	.70	.018
	BEHAV3	.99	.015

Table 5 Comparison of Fit Indices of Pair-up CFA Models and Their Nested Constrained Models (N=300)

CFA Models	χ^2	df	$\Delta\chi^{2\ a}$	Δdf	RMSEA	NNFI	CFI	SRMR
4 constructs measuring intention								
ATT_NORM	12.74	8			0.043	0.987	0.993	0.035
ATT_NORM (CON)	321.36	9	308.62[**]	1	0.277	0.207	0.524	0.352
ATT_PBC	17.15	8			0.061	0.971	0.984	0.038
ATT_PBC (CON)	140.31	9	123.16[**]	1	0.178	0.625	0.775	0.391
ATT_PNIP	48.55	19			0.071	0.955	0.969	0.038
ATT_PNIP (CON)	172.07	20	123.52[**]	1	0.130	0.778	0.842	0.357
NORM_PBC	3.71	8			0.0	1.012	1.000	0.017
NORM_PBC (CON)	193.14	9	189.43[**]	1	0.187	0.553	0.732	0.441
NORM_PNIP	39.05	19			0.061	0.971	0.981	0.051
NORM_PNIP (CON)	206.28	20	167.23[**]	1	0.139	0.748	0.820	0.386
PBC_PNIP	43.68	19			0.067	0.964	0.976	0.039
PBC_PNIP (CON)	158.20	20	114.52[**]	1	0.128	0.810	0.864	0.343
4 main constructs measuring attitude								
NORM_DEIN	11.36	8			0.037	0.988	0.994	0.031
NORM_DEIN (CON)	169.02	9	157.66[**]	1	0.184	0.509	0.706	0.374
NORM_EB	14.31	8			0.051	0.979	0.989	0.041
NORM_EB (CON)	212.98	9	198.67[**]	1	0.201	0.393	0.636	0.429
NORM_UNFAIR	19.41	8			0.068	0.961	0.979	0.051
NORM_UNFAIR (CON)	137.54	9	118.13[**]	1	0.184	0.610	0.766	0.348
DEIN_EB	15.23	8			0.051	0.967	0.982	0.042
DEIN_EB (CON)	94.99	9	79.76[**]	1	0.152	0.651	0.791	0.273
DEIN_UNFAIR	5.11	8			0.0	1.013	1.000	0.025
DEIN_UNFAIR (CON)	102.13	9	97.02[**]	1	0.145	0.615	0.769	0.309
EB_UNFAIR	15.72	8			0.057	0.964	0.981	0.047
EB_UNFAI	137.38	9	121.66[**]	1	0.177	0.472	0.683	0.344

R (CON)								
3 components of cognitive beliefs								
PERAD_DIS	24.70	8			0.084	0.958	0.977	0.038
PERAD_DIS (CON)	190.62	9	165.92**	1	0.204	0.589	0.754	0.417
PERAD_IND	15.12	8			0.055	0.974	0.986	0.027
PERAD_IND (CON)	144.73	9	129.61**	1	0.177	0.565	0.739	0.312
DIS_IND	1.15	1			0.022	0.997	0.9996	0.008
DIS_IND (CON)	107.97	2	106.82**	1	0.321	0.048	0.683	0.406
2 constructs measuring actual behavior								
INT_PASTB	9.80	2			0.116	0.922	0.974	0.036
INT_PASTB (CON)	155.87	3	146.07**	1	0.292	-0.017#	0.491	0.498

Notes:

[a] The difference in χ^2 is obtained by comparing the chi-square values of the constrained (i.e. perfect correlation between the 2 constructs) and the unconstrained model (i.e. free estimation of the correlation between the 2 constructs) to examine whether the two constructs are highly correlated thus violating discriminant validity.

*p<.05; **p<.01; ***p<.001

[#] The negative value indicates the constrained model has very few degrees of freedom and correlations are low.

Table 6 Summary of Reliability and Construct Validity of Constructs in the Model

Instruments / Scales	Unidimensionality	Reliability (Cronbach's alpha)	Convergent Validity	Discriminant Validity
Attitude (3 items)	1 Factor	0.753	All items loaded significantly on the construct	$\Delta\chi^2$ (N = 300) between all the 2 factors pair-up CFA models and their constrained models are significant (p<0.01); significant reduction in fit of all the constrained models
Cognitive Beliefs (8 items)	3 Factors: i. Personal Advantages (4 items) ii. Personal Disadvantages (2 items) iii. Industry Disadvantages (2 items)	i. Personal Advantages – 0.801 ii. Personal Disadvantages – 0.961* iii. Industry Disadvantages – 0.607*	All items loaded significantly on the constructs	
Deindividuation (3 items)	1 Factor	0.707	All items loaded significantly on the construct	
Ethical Belief (3 items)	1 Factor	0.700	All items loaded significantly on the construct	
Perceived Unfairness of the Industry (3 items)	1 Factor	0.719	All items loaded significantly on the construct	
Subjective Norms (3 items)	1 Factor	0.825	All items loaded significantly on the construct	
Perceived Normative Beliefs (4 items)	1 Factor	0.729	All items loaded significantly on the construct	
Perceived Behavioral Control (PBC) (3 items)	1 Factor	0.802	All items loaded significantly on the construct	

Perceived Needs for Internet Piracy (PNIP) (5 items)	1 Factor	0.815	All items loaded significantly on the construct
Intention (3 items)	1 Factor	0.763	All items loaded significantly on the construct
Past Offline Piracy Behavior (Single-item measure)	1 Factor	----	----
Online Piracy Behavior (3 items)	1 Factor	0.882	All items loaded significantly on the construct

Note:

* Reliability test for the two scales -- perceived personal disadvantages and perceived industry disadvantages -- might not be too accurate as only two items were developed as the measurement of each scale. However, since items of these two scales were derived from the elicitation study and exploratory factor analysis, these items were still kept for the final SEM modeling.

Table 7 The 14 Hypothesized Relationships (with the relationship between the three

components of cognitive beliefs and attitude to be individually considered)

	Hypotheses	Direction of the relationship
1a	Individuals who perceive more personal advantages associated with Internet pirating behavior will have a more favorable attitude towards the behavior	Positive
1b	Individuals who perceive less about the personal disadvantages associated with Internet pirating behavior will have a more favorable attitude towards the behavior	Negative
1c	Individuals who perceive less about the disadvantages brought to the industry by Internet pirating behavior will have a more favorable attitude towards the behavior	Negative
2	Individuals who believe Internet piracy is normal and acceptable will have a more favorable attitude towards Internet pirating behavior	Positive
3	Individuals who believe Internet piracy can help him/her achieves deindividuation will have a more favorable attitude toward Internet pirating behavior	Positive
4	Individuals who perceive a higher degree of unfairness of industry performance will have more favorable attitude toward Internet pirating behavior	Positive
5a	A higher level of subjective norms unsupportive of online piracy will lead to lower intention of individuals to pirate on the Internet	Negative
5b	A higher level of subjective norms unsupportive of online piracy will lead to a less favorable attitude of individuals towards piracy behavior on the Internet	Negative
6	Individuals who have higher perceived normative beliefs will have a higher level of subjective norms disapproving Internet pirating behavior.	Positive
7	The more favorable individuals' attitude towards online piracy, the higher their	Positive

	intention to pirate on the Internet	
8	Individuals with a higher level of perceived behavioral control will have a higher intention to pirate on the Internet	Positive
9	Individuals who perceive that Internet piracy can satisfy more of their work-related, entertainment, relationship, sampling and personal needs than legal means of obtaining information products will have a higher intention to pirate online	Positive
10	Individuals' higher intention to pirate online corresponds to the higher performance of the actual piracy behavior on the Internet	Positive
11	Individuals who have the experience in performing offline piracy in the past will have a higher likelihood to displace it to an online environment and perform the actual behavior	Positive

Table 8 Standardized Structural Coefficients

	Attitude as Endogenous
Personal Advantages	. 32**
Personal Disadvantages	-.01
Industry Disadvantages	-.00
Computer Deindividuation	.08
Ethical Belief	-.00
Perceived Unfairness of the Industry	-.00
Subjective Norms	-.22**
	Intention as Endogeneous
Attitude	.24**
Subjective Norms	-.23**
PBC	.20**
PNIP	.42**
	Subjective norms as Endogeneous
Perceived Normative beliefs	.60**
	Actual online pirating behavior as Endogeneous
Intention	.36**
Past Offline Piracy Behavior	.19**

*p<.05; **p<.01; ***p<.001

Table 9 Path Coefficients between the Demographic Age, Sex, Income and the 14 Latent

Constructs

Relationship between Age & the 14 constructs	**Structural Coefficients** (Gamma)
Perceived Personal Advantages	-0.16*
Perceived Personal Disadvantages	0.08
Perceived Industry Disadvantages	-0.01
Computer Deindividuation	-0.04
Ethical Belief	-0.02
Perceived Unfairness of the Industry	0.01
Attitude	-0.05
Subjective Norms	0.02
PBC	-0.05
PNIP	-0.06
Perceived Normative Beliefs	0.16*
Intention	0.20**
Past Offline Piracy Behavior	-0.04
Online Piracy Behavior	-0.12*
Relationship between Sex & the 14 constructs	
Perceived Personal Advantages	-0.00
Perceived Personal Disadvantages	-0.09
Perceived Industry Disadvantages	0.08
Computer Deindividuation	-0.14*
Ethical Belief	-0.00
Perceived Unfairness of the Industry	-0.07
Attitude	-0.01
Subjective Norms	-0.04
PBC	-0.17**
PNIP	-0.04
Perceived Normative Beliefs	0.06
Intention	-0.03
Past Offline Piracy Behavior	-0.15**
Online Piracy Behavior	-0.11*
Relationship between Income & the 14 constructs	
Perceived Personal Advantages	-0.08
Perceived Personal Disadvantages	0.08
Perceived Industry Disadvantages	-0.04
Computer Deindividuation	-0.11
Ethical Belief	-0.13
Perceived Unfairness of the Industry	-0.12
Attitude	-0.11
Subjective Norms	-0.03
PBC	-0.06
PNIP	-0.05
Perceived Normative Beliefs	0.11
Intention	-0.06
Past Offline Piracy Behavior	-0.08
Online Piracy Behavior	-0.08

*p<.05; **p<.01; ***p<.001

Table 10 Chi-square Difference Test between the Constrained and Unconstrained Model

of Internet Pirating Behavior (N=300)

Model	χ^2	df	$\Delta\chi^2$	Δdf	RMSEA	NNFI	CFI	SRMR
Model 1[a]	1555.82	892	----	----	0.0516	0.922	0.930	0.113
Model 2[b]	1643.94	934	88.12[***]	42	0.0545	0.920	0.925	0.122

Notes:
a. Model 1 is an unconstrained model which freely estimates the paths among the endogenous variables and between the exogenous and endogenous variables.
b. Model 2 is a constrained model which constrain the paths (gamma) between the controlled variables (age, sex and income) and the 14 latent constructs, and is nested in Model 1.
*p<.05; **p<.01; ***p<.001

Table 11 Results of the Hypothesized Relationships

Hypotheses	Results
H1a: Individuals who perceive more personal advantages associated with Internet pirating behavior will have a more favorable attitude towards the behavior	Accepted
H1b: Individuals who perceive less personal disadvantages associated with Internet pirating behavior will have a more favorable attitude towards the behavior	Rejected
H1c: Individuals who perceive less disadvantages brought to the industry by Internet pirating behavior will have a more favorable attitude towards the behavior	Rejected
H2: Individuals who lean towards the believe that Internet piracy is normal and acceptable will have a more favorable attitude towards Internet pirating behavior	Rejected
H3: Individuals who lean towards the belief that what they are doing online can go unnoticed will have a more favorable attitude toward Internet pirating behavior	Rejected
H4: Individuals whose beliefs lean towards the software and entertainment industry being unfair will have a more favorable attitude toward Internet pirating behavior	Rejected
H5a: Individuals who perceive an unfavorable impression from those close to them of Internet piracy will have a lower intention to pirate on the Internet	Accepted
H5b: Individuals who perceive an unfavorable impression from those close to them of Internet piracy will have a less favorable attitude towards piracy behavior on the Internet	Accepted
H6: Individuals with greater motivation to comply with perceived sources of social pressure (i.e. social norms) against online piracy will be more likely to perceive that those close to them disapprove of online piracy	Accepted
H7: The more favorable individuals' attitude towards online piracy, the higher their intention to pirate on the Internet	Accepted
H8: Individuals with a higher level of confidence in their ability to pirate online will have a higher level of intent to pirate on the Internet	Accepted
H9: Individuals who perceive that Internet piracy can satisfy more of their work-related, entertainment, relationship, sampling and personal needs than legal means of obtaining information products will have a higher intention to pirate online	Accepted
H10: Individuals' greater intention to pirate online corresponds to the higher tendency of their actual piracy behavior on the Internet	Accepted
H11: Individuals who have performed offline piracy in the past will have a higher likelihood of displacing this offline behavior to an online environment	Accepted

Table 12 Mean Score of Individual Perceived Personal Advantages

Belief (Perceived Personal Advantages)	Mean[*]
Sharing with others	2.9
Free	2.7
Convenience	2.7
High quality of information products	2.5

Note:
[*] The higher the mean value, the more important the advantage to respondents

Table 13 Mean Score of Individual Perceived Normative Beliefs

Belief (Perceived Normative Beliefs)	Mean*
Friends and online peers	1.7
Family members	2.3
Teachers or superiors	2.4
Information industry	2.5

Note:
*The higher the mean value, the higher the pressure disapproving online piracy

Table 14 Mean Score for the Five Items of Perceived Needs for Internet Piracy

Perceived Needs for Internet Piracy (compared with legal means)	Mean[*]
Entertainment needs	3.5
Trialability needs	3.5
Work/study/research needs	3.2
Personal collection needs	3.0
Social relations needs	2.9

Note:
[*] The higher the mean value, the more one will think online piracy can satisfy more of their needs

Figure 1 Theory of Reasoned Action (TRA) Model
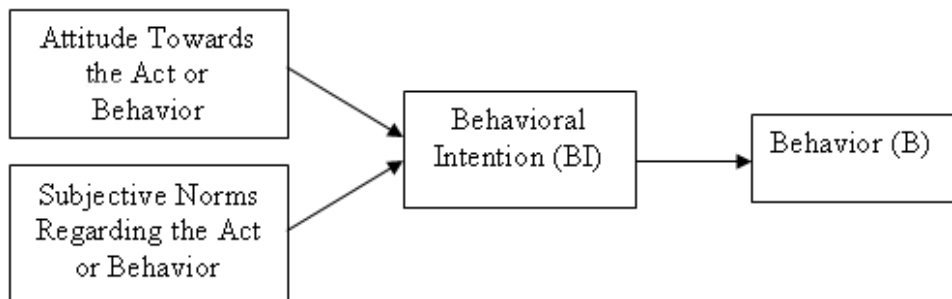
Figure 2 Theory of Planned Behavior (TPB) Model
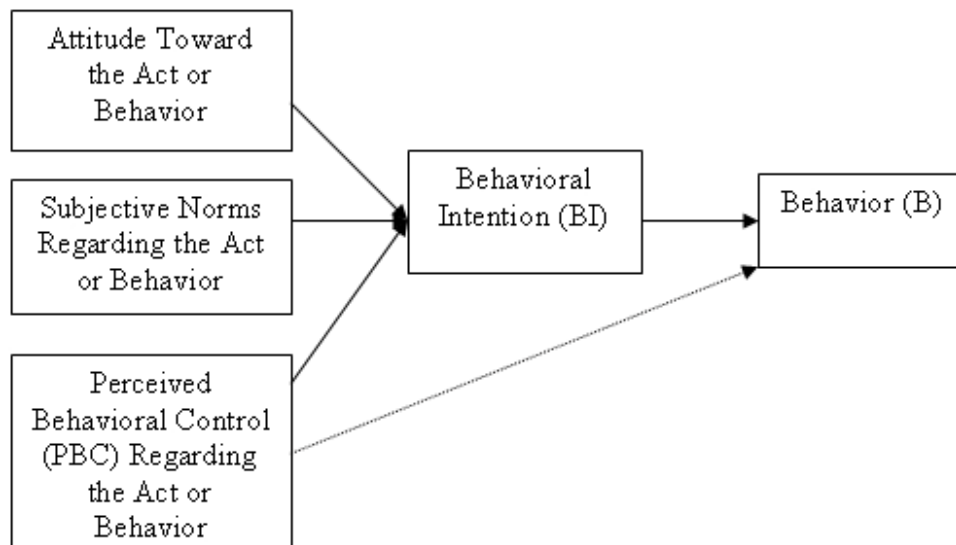
Figure 3 Five Determinants of Attitude
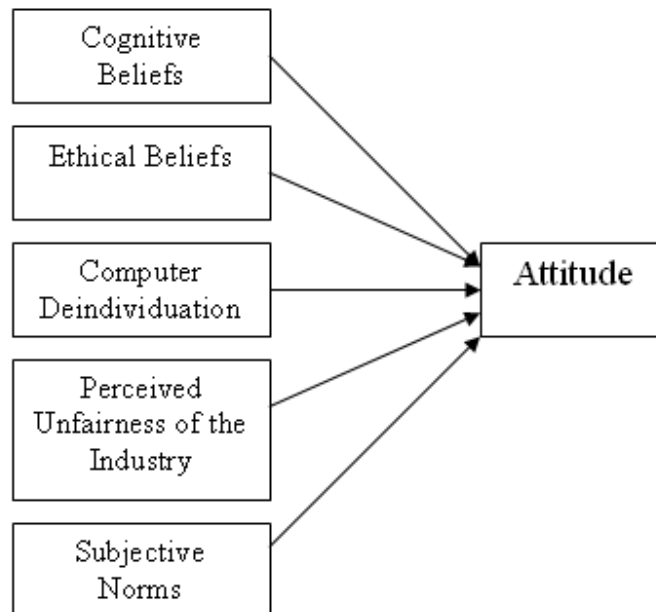
Figure 4 Four Determinants of Intention
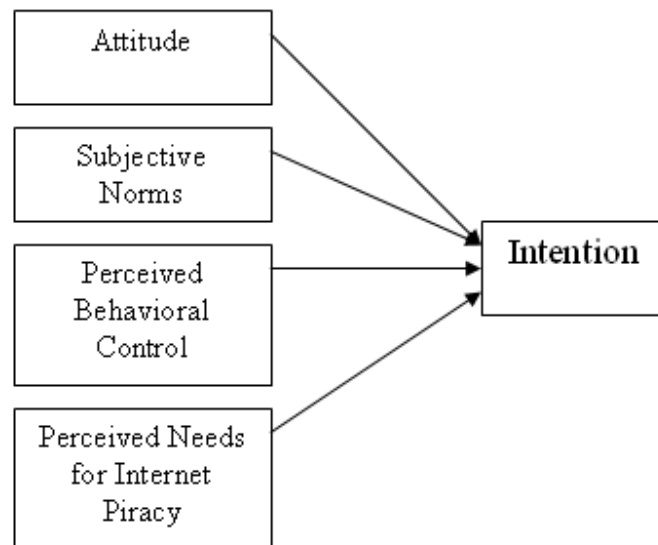
Figure 5 Two Determinants of the Actual Online Piracy Behavior
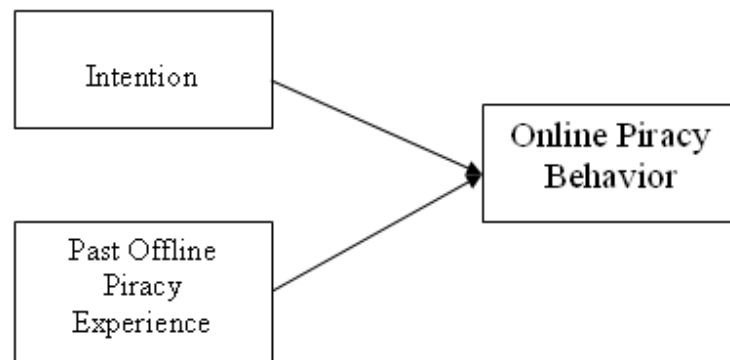
Figure 6 A Conceptual Model of Internet Piracy Behavior
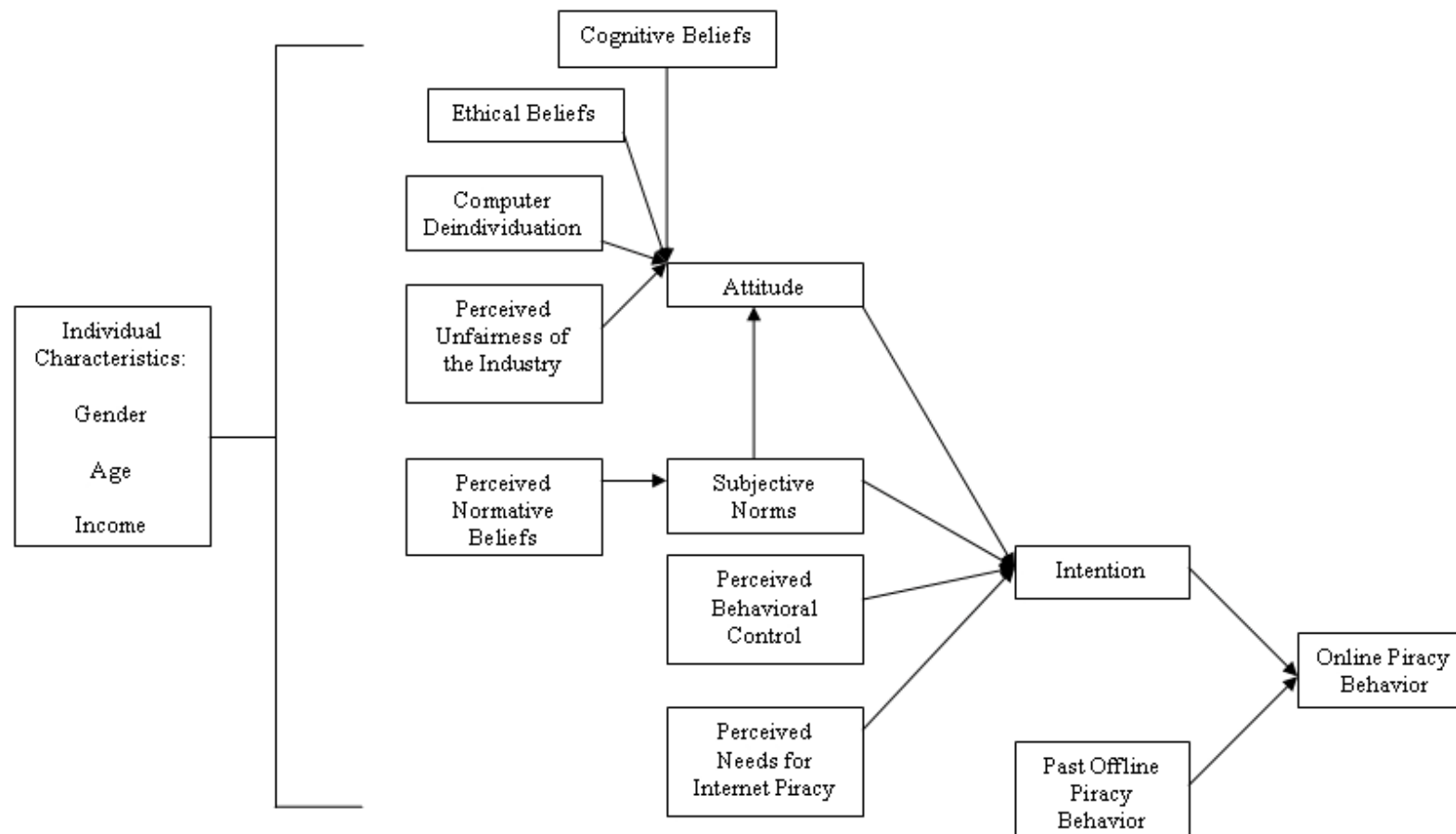
Figure 7 A Conceptual Model of Internet Piracy Behavior (with a three-component structure established for cognitive beliefs)
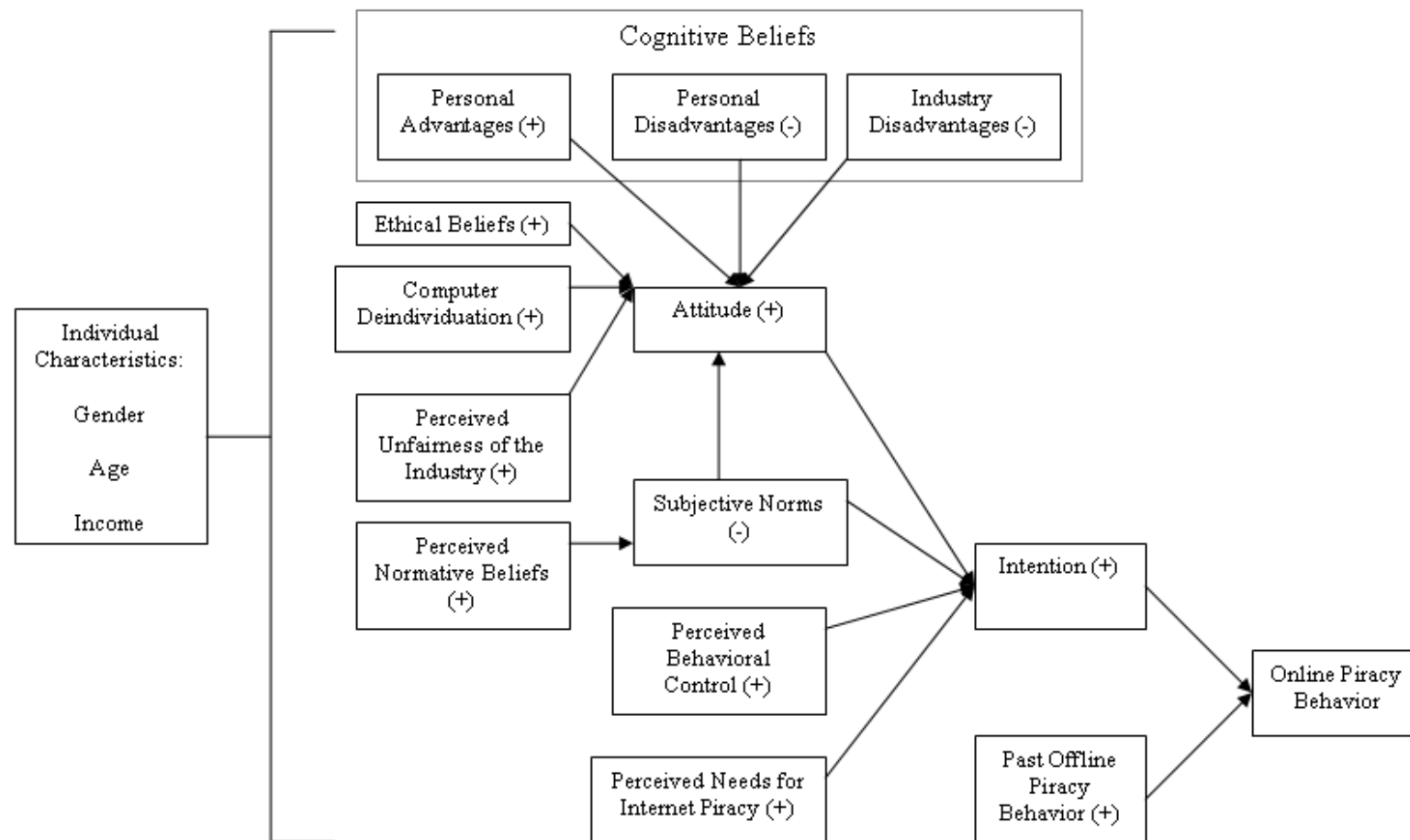
Figure 8 Results: Standardized Path Coefficients and Squared Multiple Correlations for

Structural Equations (R^2)
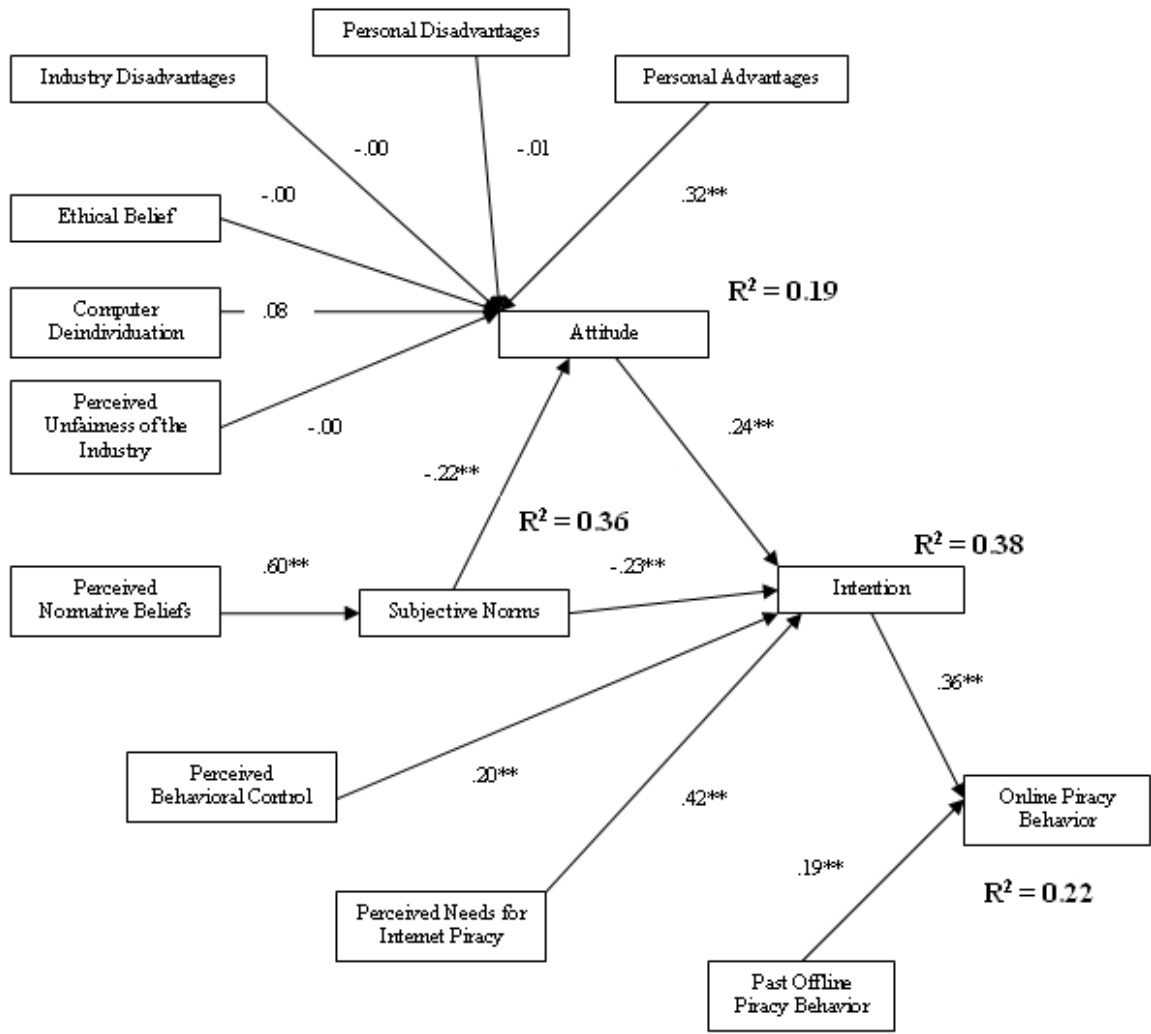
*p<.05; **p<.01; ***p<.001

Figure 9 Final Model of Internet Piracy Behavior (only significant hypothesized relationships were shown)
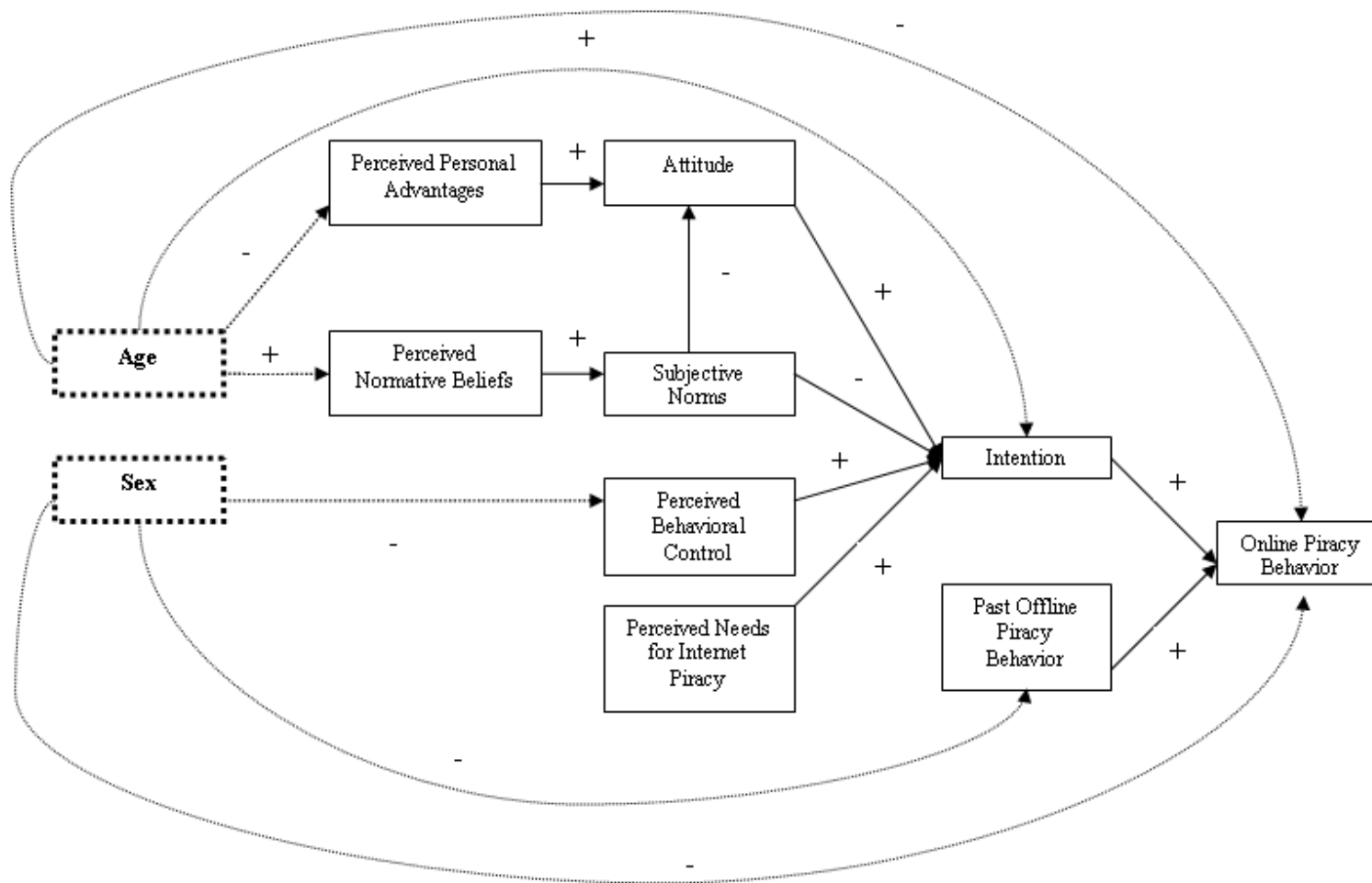
Appendix A: Survey Questionnaire

Target respondents: Internet users, over 15 years old

Private Copying Or Sharing Of Digital Copyright Works Survey
關於網上版權作品侵權問題的調查

PART I

1. When (which year) did you start using the Internet?
你邊一年 開始上網？
Yr _____ (年份)
☐Don't know/Hard to say 唔知道/難講**[不要讀出]**

2. Where do you often log on the Internet? (Open question, choose one only)
請問你經常响咩嘢地方上網?【**自行回答,**只能選一】
☐Home (include relatives' and friends') 屋企（包括親戚、朋友家）
☐Work 公司（包括教師喺學校上網；如喺屋企開私人公司，需選"1"而不選"2"）
☐School 學校（專指學生）
☐Internet Café, Coffee shop, or Game Centre 網吧、咖啡廳或電子遊戲機中心
☐Library 圖書館
☐Wireless Internet, No fixed location 移動上網、無固定地方
☐Others 其他（請注明：_____）

3. You believe you have the ability to copy or/and share digital copyright works online.
你相信你有能力响網上上載或下載版權作品 (例如: 歌曲, 影片, 圖片等)
☐Strongly Disagree 非常唔同意
☐Disagree 唔同意
☐Partly Agree/Partly Disagree 一半半
☐Agree 同意
☐Strongly Agree 非常同意
☐Don't know/Hard to say 唔知道/難講**[不要讀出]**

4. How difficult is it for you to copy or share digital copyright works online?
對你黎講, 响網上上載或下載版權作品有幾困難?
☐Very Difficult 非常困難
☐Quite Difficult 比較困難
☐Neither Difficult Nor Easy 一半半
☐Quite Easy 比較容易
☐Very Easy 非常容易
☐Don't know/Hard to say 唔知道/難講**[不要讀出]**

5. If you wanted to, you could easily copy or share digital copyright works online.
如果你想嘅話, 你可以好容易咁响網上复制或者共享版權作品.
☐Strongly Disagree 非常唔同意
☐Disagree 唔同意
☐Partly Agree/Partly Disagree 部份同意/部份唔同意

☐Agree 同意
☐Strongly Agree 非常同意
☐Don't know/Hard to say 唔知道/難讲**[不要读出]**

PART II

6. Overall, your attitude towards private copying or sharing of digital copyright works on the Internet is…
整體黎講,你認爲(你的態度)响網上上載或下載版權作品係...

a. Bad	1	2	3	4	5	**Good**
(壞)	very bad	bad	neither	good	very good	(好)
	非常壞	壞	一半半	好	非常好	

咁你認爲呢 d 行爲係…

b. Harmful	1	2	3	4	5	**Beneficial**
(對社會有害)	very harmful 非常有害	Harmful 有害	neither 一半半	beneficial 有利	very beneficial 非常有利	(有利)

咁你認爲呢 d 行爲係…

c. Unacceptable	1	2	3	4	5	**Acceptable**
(唔能夠接受)	Strongly unacceptable 非常唔能夠接受	Un-acceptable 唔能夠接受	neither 一半半	Acceptable 能夠接受	Strongly Acceptable 非常能夠接受	(能夠接受)

7. The following statements are some of the beliefs regarding copying or sharing digital copyright works online. How much do you <u>agree or disagree</u> with them? And <u>how important </u>are they to you? Please indicate whether you agree or disagree to the statements.
以下句子係對版權作品响網上被上載或下載嘅一啲睇法。 請選出你喺幾大程度上同意或者唔同意呢啲睇法。

a. You believe original works are overpriced. 你認爲(正版) (原作)嘅產品價格太高				
☐ Strongly disagree 非常唔同意	☐ disagree 唔同意	☐ Partly Agree/ Partly Disagree 一半半	☐ Agree 同意	☐ Strongly agree 非常同意
ai. How important is the fact that original works are overpriced? 正版嘅產品價格過高對你嚟講有幾重要?				
☐ Not at all important 完全唔重要	☐ Slightly unimportant 幾唔重要	☐ Partly important / partly unimportant 一半半	☐ Slightly important 幾重要	☐ Very important 非常重要
b. Copying or sharing of digital copyright works on the Internet can allow people to share files and information with others. 响網上上載或下載版權作品可以令人分享到各種檔案和資訊				
☐ Strongly disagree 非常唔同意	☐ disagree 唔同意	☐ Partly Agree/ Partly Disagree 一半半	☐ Agree 同意	☐ Strongly agree 非常同意
bi. How important is it for you to share files and information with others? 能夠與其他人分享到各種檔案和資訊對你嚟講有幾重要?				

☐ Not at all important 完全唔重要	☐ Slightly unimportant 幾唔重要	☐ Partly important / partly unimportant 一半半	☐ Slightly important 幾重要	☐ Very important 非常重要

c. People can obtain information products for free by copying or sharing of digital copyright works on the Internet. 通過上載或下載版權作品，大家可以响網上免費得到資訊產品

☐ Strongly disagree 非常唔同意	☐ disagree 唔同意	☐ Partly Agree/ Partly Disagree 一半半	☐ Agree 同意	☐ Strongly agree 非常同意

ci. How important is obtaining information products for free? 可以响網上免費得到資訊產品對你嚟講有幾重要？

☐ Not at all important 完全唔重要	☐ Slightly unimportant 幾唔重要	☐ Partly important / partly unimportant 一半半	☐ Slightly important 幾重要	☐ Very important 非常重要

d. You believe there is a chance of getting caught while copying or sharing digital copyright works on the Internet. 你認爲响網上進行私下上載或下載版權作品有機會被警方逮捕

☐ Strongly disagree 非常唔同意	☐ disagree 唔同意	☐ Partly Agree/ Partly Disagree 一半半	☐ Agree 同意	☐ Strongly agree 非常同意

di. How important is the fact that one may get caught? 有機會被警方逮捕對你嚟講有幾重要？

☐ Not at all important 完全唔重要	☐ Slightly unimportant 幾唔重要	☐ Partly important / partly unimportant 一半半	☐ Slightly important 幾重要	☐ Very important 非常重要

e. You believe that the copied or shared digital copyright works have more or less the same quality as the original work 你認爲响網上上載或下載到嘅版權作品同(原作)(正版)產品嘅質素差唔多

☐ Strongly disagree 非常唔同意	☐ disagree 唔同意	☐ Partly Agree/ Partly Disagree 一半半	☐ Agree 同意	☐ Strongly agree 非常同意

ei. How important is it that the copied or shared digital work has the same quality as the originals? 响網上上載或下載到嘅電子作品同(原作)(正版)產品嘅質素差唔多對你嚟講有幾重要?

☐ Not at all important 完全唔重要	☐ Slightly unimportant 幾唔重要	☐ Partly important / partly unimportant 一半半	☐ Slightly important 幾重要	☐ Very important 非常重要

f. You believe copying or sharing digital copyright works online is convenient to do. 你認爲响網上上載或下載版權作品很方便

☐ Strongly disagree 非常唔同意	☐ disagree 唔同意	☐ Partly Agree/ Partly Disagree 一半半	☐ Agree 同意	☐ Strongly agree 非常同意

fi. How important is the fact that it is convenient to copy or share digital copyright works online? 能夠好方便地响網上上載或下載版權作品對你嚟講有幾重要？

☐ Not at all important 完全唔重要	☐ Slightly unimportant 幾唔重要	☐ Partly important / partly unimportant 一半半	☐ Slightly important 幾重要	☐ Very important 非常重要

g. You believe the industry will loss profit as a result of people's copying or sharing of digital copyright works online. 你認為响網上上載或下載版權作品嘅行為會為業界(軟件，娛樂或資訊產業)帶來虧損

☐ Strongly disagree 非常唔同意	☐ disagree 唔同意	☐ Partly Agree/ Partly Disagree 一半半	☐ Agree 同意	☐ Strongly agree 非常同意

gi. How important is it that the industry loses profit? 業界(軟件，娛樂或資訊產業)嘅虧損對你嚟講有幾重要？

☐ Not at all important 完全唔重要	☐ Slightly unimportant 幾唔重要	☐ Partly important / partly unimportant 一半半	☐ Slightly important 幾重要	☐ Very important 非常重要

h. You believe copying or sharing digital copyright works online will discourage industry intention to further create and innovate
你認為响網上上載或下載版權作品嘅行為會阻礙業界(軟件，娛樂或資訊產業) 發展同創作

☐ Strongly disagree 非常唔同意	☐ disagree 唔同意	☐ Partly Agree/ Partly Disagree 一半半	☐ Agree 同意	☐ Strongly agree 非常同意

hi. How important is it that the industry is discouraged to further create and innovate due to online copying and sharing?
因為响網上上載或下載嘅行為而阻礙業界(軟件，娛樂或資訊產業)發展同創作對你嚟講有幾重要？

☐ Not at all important 完全唔重要	☐ Slightly unimportant 幾唔重要	☐ Partly important / partly unimportant 一半半	☐ Slightly important 幾重要	☐ Very important 非常重要

I. You believe copying or sharing digital copyright works online will open up the PC (computer) to be attacked (e.g. by virus, hackers, spams, spyware etc).
你認為响網上上載或下載版權作品會令電腦更容易受入侵(比如病毒，駭客入侵，垃圾郵件，監視軟件等)

☐ Strongly disagree 非常唔同意	☐ disagree 唔同意	☐ Partly Agree/ Partly Disagree 一半半	☐ Agree 同意	☐ Strongly agree 非常同意

Ii. How important is it that the PC (computer) is vulnerable to be attacked (by virus, hackers, spams, or spyware)? 電腦容易被入侵(比如病毒，駭客入侵，垃圾郵件，監視軟件等) 對你嚟講有幾重要？

☐ Not at all important 完全唔重要	☐ Slightly unimportant 幾唔重要	☐ Partly important / partly unimportant 一半半	☐ Slightly important 幾重要	☐ Very important 非常重要

8. Computer Deindividuation 保護個人隱私	Strongly disagree 非常唔	disagree 唔同意	Partly Agree/ Partly Disagree	Agree 同意	Strongly agree 非常同	Don't know/ Hard to say

	同意		一半半		意	唔知道/很難
a. You believe copying or sharing digital copyright works online can prevent ppl's copying or sharing activities from being known 你認爲响網上上載或下載版權作品可以唔俾人知道	☐	☐	☐	☐	☐	☐
b. You believe copying or sharing digital copyright works online can provide ppl. the privacy to enjoy information products 你認爲响網上上載或下載版權作品可以喺個人私隱得到保障下進行	☐	☐	☐	☐	☐	☐
c. You believe copying or sharing digital copyright works online can make ppl. feel more secure than pirating information products offline (e.g. on the street) 相比响網外盜版, 例如在街上買盜版產品, 網上上載或下載嘅行爲可以令人更加有安全感	☐	☐	☐	☐	☐	☐
9. **Ethical Belief** 觀念、看法						
a. You believe copying or sharing digital copyright works online will make more people think copying & sharing activities online is a normal behavior 你認爲响網上上載或下載版權作品會令更多人認爲網上上載或下載係正常行爲	☐	☐	☐	☐	☐	☐
b. You believe copying or sharing digital copyright works online will make people feel less guilty for their private copying or sharing behavior 你認爲响網上上載或下載版權作品會令人對呢啲行爲減少罪惡感	☐	☐	☐	☐	☐	☐
c. You believe copying or sharing digital copyright works online will make more people think there is nothing wrong with their online copying or sharing behavior 你認爲响網上上載或下載版權作品會令更多人認爲呢啲行爲係無錯	☐	☐	☐	☐	☐	☐
10. **Perceived Unfairness of the Industry** 認爲該產業的不合理性						
a. You believe people's copying or sharing behavior online is a way to act against big business 你認爲人們响網上上載或下載嘅行爲係挑戰大企業/大資訊產業既一種表現	☐	☐	☐	☐	☐	☐
b. You believe people's copying or sharing behavior online is a call against the unfair practice of big business 你認爲人們响網上上載或下載嘅行爲係反對大企業/大資訊產業不合理經營既	☐	☐	☐	☐	☐	☐

一種表現						
c. You believe people's copying or sharing behavior online means the original works produced by the industry do not worth their price 你認爲人們响網上上載或下載嘅行爲係意味佢哋覺得業界推出嘅正版唔值他們所定嘅價格	☐	☐	☐	☐	☐	☐

11.	Strongly Disagree 非常唔同意	Dis-agree 唔同意	Partly Agree/ Partly Dis-agree 一半半	Agree 同意	Strong-ly Agree 非常同意	Don't Know / Hard to Say 唔知道/很難說
a. Most people who are important to you would disapprove of your copying or sharing of digital copyright works on the Internet. 大多數你重視嘅人會反對你响網上上載或下載版權作品	☐	☐	☐	☐	☐	☐
b. Most people who are important to you think you should not copy or share digital copyright works online 大多數你重視嘅人認爲你唔應該响網上上載或下載版權作品	☐	☐	☐	☐	☐	☐
c. Most people who are important to you do not copy or share digital copyright works online. 大多數你重視嘅人唔會响網上上載或下載版權作品	☐	☐	☐	☐	☐	☐

12.	Strongly Disagree 非常唔同意	Dis-agree 唔同意	Partly Agree/ Partly Disagree 一半半	Agree 同意	Strong-ly Agree 非常同意
a. Your **family members** think you should not copy or share digital copyright works on the Internet. 你嘅家庭成員認爲你唔應該响網上上載或下載版權作品	☐	☐	☐	☐	☐
ai. Normally, you tend to do what they think you should do. 通常你都會傾向於做他們認爲你應該做嘅事。	☐	☐	☐	☐	☐
b. Your **friends or online peers** (friends who you know and talk to online) think you should not copy or share digital copyright works on the Internet. 你嘅朋友或網友(在網上認識並且在網上聊天嘅人)認爲你唔應該响網上上載或下載版權作品	☐	☐	☐	☐	☐
bi. Normally, you tend to do what they think you should do. 通常你都會傾向於做他們認爲你應該做嘅事。	☐	☐	☐	☐	☐
c. Your **teachers or superiors** think you should not copy or share digital copyright works on the Internet. 你嘅老師或上司認爲你唔應該响網上上載或下載版權作品	☐	☐	☐	☐	☐

	Strongly Disagree 非常唔同意	Dis-agree 唔同意	Partly Agree/ Partly Disagree 一半半	Agree 同意	Strong-ly Agree 非常同意	Don't Know/ Hard to Say 唔知道/很難說
ci. Normally, you tend to do what they think you should do. 通常你都會傾向於做他們認為你應該做嘅事。	☐	☐	☐	☐	☐	
d. The **information and entertainment industry (including artists and developers)** thinks you should not copy or share digital copyright works on the Internet. 資訊和娛樂產業(包括藝人/開發商)認為你唔應該响網上上載或下載版權作品	☐	☐	☐	☐	☐	
di. Normally, you tend to do what the industry thinks you should do. 通常你都會傾向做資訊和娛樂產業認為你應該做嘅事。	☐	☐	☐	☐	☐	

PART III

13. Compare with legal means of obtaining information products (e.g. purchasing copyrighted VCDs/DVDs), you think private copying or sharing digital copyright works on the Internet can satisfy more of your… 同**合法嘅方式**去獲得資訊產品相比(例如購買**正版** VCDs/DVDs)，你覺得响**網上**上載或下載版權作品嘅行為可以**更加**滿足到你嘅。。。	Strongly Disagree 非常唔同意	Dis-agree 唔同意	Partly Agree/ Partly Disagree 一半半	Agree 同意	Strong-ly Agree 非常同意	Don't Know/ Hard to Say 唔知道/很難說
a. work/study/research needs (i.e. improving works/study/research-related knowledge, efficiency etc.) 工作/學習/研究嘅需要（增加和工作/學習/研究相關嘅知識、效率等）	☐	☐	☐	☐	☐	☐
b. entertainment needs (e.g. watch movies, TV-shows, listen to music, play games etc.) 休閑娛樂嘅需要（比如看電影、電視節目、聽音樂、玩遊戲）	☐	☐	☐	☐	☐	☐
c. needs to sample or try out new products 試用最新產品嘅需要（測試或者嘗試新產品）	☐	☐	☐	☐	☐	☐
d. needs to collect information products and to build a personal information library 個人收藏嘅需要（收集資訊產品，建立個人資訊資料庫等）	☐	☐	☐	☐	☐	☐
e. needs to enhance personal relations (i.e. more networking opportunity, maintaining existing relationship) 增進人際關係嘅需要（更多網上交流嘅機會，維持而家嘅人際關係等）	☐	☐	☐	☐	☐	☐

PART IV

14. If given the opportunity, will you recommend a friend to copy or share digital copyrighted works online for free?
如果有咁嘅機會, 你會唔會推薦朋友响網上免費上載或下載版權作品?
☐Very unlikely　絕對唔會
☐Unlikely　應該唔會
☐Partly likely/Partly unlikely 一半半

☐Likely　應該會
☐Very likely　絕對會
☐Don't know/Hard to say　唔知道/難說

15. If given the opportunity, will you try to share digital copyright works on the Internet for free?
如果有咁嘅機會,你會唔會嘗試响網上免費分享版權作品?
☐Very unlikely　絕對唔會
☐Unlikely　應該唔會
☐Partly likely/Partly unlikely 一半半
☐Likely　應該會
☐Very likely　絕對會
☐Don't know/Hard to say　唔知道/難說

16. If given the opportunity, will you try to copy digital copyright works on the Internet for free?
如果有咁嘅機會,你會唔會嘗試在網上免費複製版權作品?
☐Very unlikely　絕對唔會
☐Unlikely　應該唔會
☐Partly likely/Partly unlikely 一半半
☐Likely　應該會
☐Very likely　絕對會
☐Don't know/Hard to say　唔知道/難說

17. **Do you have the experience in the following activities?** 你喺現實生活中有過以下嘅經歷嗎？	Yes 有	No 無	**Don't know/Hard to say** 唔知道/難講[不要讀出]
a. Have you ever bought/borrowed/burned/recorded pirated CDs/VCDs/DVDs/software? 您有無購買/借用/燒過或錄過**盜版**嘅 **CDs/VCDs/DVDs/電腦軟件?** [任何一樣都可以]	☐	☐	☐
b. **Have you ever** downloaded or uploaded **digital copyright works, e.g. music or movies, on the Internet?** 你以前有無試過喺網上上載或下載版權作品, (例如. 音樂或電影)？ **(If no, skip question i & ii)** 如果無，請跳過問題 **i & ii**	☐	☐	☐
i. **On average,** how many days a week **do you copy or share digital copyright works on the Internet? (Tick** one **only)** 平均黎講，你每星期有多少日會喺網上上載或下載版權作品 ☐1 day per week 每週 1 日 ☐2 to 3 days per week 每週 2 至 3 日 ☐4 to 5 days per week 每週 4 至 5 日 ☐6 to 7 days per week 每週 6 至 7 日 ☐Less frequent than once a week 每週少於一次 ☐Haven't copied or shared copyright works for a period of time ☐Refuse to answer			

ii. **In the course of** the past month**, how often have you copied or shared digital copyright works on the Internet? (Tick** one **only)**
在過去一個月, 你喺網上上載或下載版權作品有幾頻繁?

☐A number of times, but less than half 一定次數, 但少過一半
☐On about half the days 大約一半嘅日子
☐Most days 大多數嘅日子
☐Almost every day 幾乎每一日
☐A few times 有幾次
☐Haven't copied or shared last month
☐Refuse to answer

PART V

18. What is your sex?
您嘅性別 [如能直接判斷,不必問]
☐Male 男
☐Female 女

19. **What is your age? (Please tick** one **only):**
請問您而家嘅年齡系幾多歲？
_____歲
[如唔肯講,問下列年齡段:]
☐15-19
☐20-24
☐25-29
☐30-34
☐35-39
☐40-44
☐45-49
☐50-54
☐55-59
☐60 or above

20. **What is your total monthly personal income? (Include income from** salary, part-time job income, bonuses, rents, commission, etc**., please tick** 1 **only)**
你每月嘅總收入係幾多？（包括工資、兼職收入、獎金、租金、傭金等，只選一項）
☐ $5,000 & below 5000 元或以下
☐ $5,001 - $10,000 5001 元～10000 元
☐ $10,001 - $20,000 10001～20000 元
☐ $20,001 - $30,000 20001 元～30000 元
☐ $30,001 - $40,000 30001 元～40000 元
☐ $40,001 - $50,000 40001 元～50000 元
☐ $50,001 or above 50001 元以上
☐ No fixed income/hard to say/don't know 無固定收入/難講/唔知道

Appendix B: Scoring Key for Questionnaire

After constructing the questionnaire, a scoring key for both the direct and indirect measures of the constructs is created to guide various stages of data analysis.

Question Numbers	No. of Missing cases	Response Format	Items requiring reverse scoring	Items requiring internal consistency (reliability) analysis	Items requiring multiplication	Construct measured
Indirect measurements:						
7a-7i (9 items) (Final list - 8 items)	7a(0) 7b(3) 7c(3) 7d(2) 7e(21) 7f(4) 7g(1) 7h(1) 7I(6)	1 to 5 (the higher the score, the stronger the attitude)			7a x 7ai; 7bx 7bi; 7c x 7ci; 7dx 7di; 7e x 7ei; 7fx 7fi; 7g x 7gi; 7hx 7hi; 7I x 7Ii	Behavioral Beliefs
7ai-7Ii (9 items) (Final list - 8 items)	7ai(2) 7bi(1) 7ci(0) 7di(2) 7ei(9) 7fi(3) 7gi(1) 7hi(1) 7Ii(0)		7di, 7gi, 7hi, 7Ii			Outcome Evaluations
12a, 12b, 12c, 12d (4 items)	12a(11) 12b(10) 12c(18) 12d(3)	1 to 5 (the higher the score, the more the social pressure)			12a x 12ai; 12b x 12bi; 12c x 12ci; 12dx 12di	Normative Beliefs
12ai, 12bi, 12ci, 12di (4 items)	12ai(4) 12bi(5) 12ci(13) 12di(6)					Motivation to Comply
Direct measurements:						
3 to 5 (3 items)	3 (5) 4(7) 5 (3)	1 to 5		3, 4, 5 (0.748- pretest) (0.802 - actual)		**Perceived Behavioral Control (PBC)** (Ajzen, 1985, 2001)
6a to 6c	6a(3)	1 to 5		6a, 6b, 6c		**Attitude**

(3 items)	6b(5) 6c(4)			(0.826- pretest) (0.753 - actual)		(Fishbein and Ajzen, 1975)
(8 items)		1 to 5		Actual Survey: Perad (4 items) 0.801 Perdis (2 items) 0.961 Inddis (2 items) 0.607		**Cognitive beliefs**
8a to 8c (3 items)	8a(7) 8b(7) 8c(7)	1 to 5		8a, 8b, 8c (0.794 - pretest) (0.707 - actual)		**Computer Deindividu ation** (Loch and Conger, 1996)
9a to 9c (3 items)	9a(9) 9b(7) 9c(5)	1 to 5		9a, 9b, 9c (0.933 - pretest) (0.700 - actual)		**Ethical Belief** (Beck and Ajzen, 1991)
10a to 10c (3 items)	10a(6) 10b(5) 10c(2)	1 to 5		10a, 10b, 10c (0.691- pretest) (0.719 - actual)		**Perceived Unfairness of the Industry**
11a to 11c (3 items)	11a(10) 11b(7) 11c(9)	1 to 5		11a, 11b, 11c (0.877- pretest) (0.825 - actual)		**Subjective Norms** (Fishbein and Ajzen, 1975)
(4 items)		1 to 5		0.729 - actual		**Normative beliefs**
13a to 13e (5 items – composite index)	13a(4) 13b(4) 13c(5) 13d(6) 13e(4)	1 to 5		13a, 13b, 13c, 13d, 13e (0.901- pretest) (0.815 - actual)		**Perceived Needs for Internet Piracy** (Zhu and He, 2002)
17a (1 item)	(0)	Yes/No				**Past Offline Piracy Experience** (Hinduja, 2001)
14 to 16	14(4)	1 to 5		16, 17, 18		**Generalize**

(3 items)	15(3) 16(3)			(0.909- pretest) (0.763 - actual)		**d Intention** (Fishbein and Ajzen, 1975)
17b, 17i, 17ii	(0)	19b (Yes/No) 19i (0 to 6 i.e. Never copied to almost every day) 19ii (0 to 6 i.e. Never copied to Almost every day)		19i, 19ii (0.992 - pretest) 19b, 19i, 19ii (0.882)		**Online Piracy Behavior** (Fishbein and Ajzen, 1975)
Age	(3)	10 categories (From 15 to 60 above)				
Sex	(0)	Dummy (male-0; female-1)				
Income	(4)	7 categories (From 5,000 / below to 60,000)				

Appendix C: Call Status & Response Rate of Sample

Response rate: 58.7%
Sampling error: 5.8% (300/511)
Sample size: 300
Data: 2-16/5/2006 (two weeks)

Status	Frequency	Percent
(1.1) Complete Interview	300	5.1%
(1.2) Partial Interview	8	0.1%
(2.111) Household-level Refusal	6	0.1%
(2.112) Known Respondent Refusal	3	0.1%
(2.12) Break Off	19	0.3%
(2.21) Respondent Never Available	0	0.0%
(2.31) Dead	0	0.0%
(2.32) Physically or Metally Unable	0	0.0%
(2.35) Misc. - Appointment	1567	26.5%
(2.35) Miscellaneous	22	0.4%
(3.12) Always Busy	67	1.1%
(3.13) No Answer	909	15.3%
(3.14) Answering Device	27	0.5%
(3.15) Call-blocking	68	1.1%
(3.21) No Screener Completed	175	3.0%
(3.90) Language Problem	85	1.4%
(3.90) Others	7	0.1%
(4.20) Fax/Data Line	285	4.8%
(4.30) Invalid	1507	25.4%
(4.40) Special Technological Circumstances	53	0.9%
(4.43) Call-forwarding/Mobile/Pager	36	0.6%
(4.50) Non-residence	280	4.7%
(4.70) No Eligible Respondent	499	8.4%
Total	5923	100.0%

Appendix D: Test for Unidimensionality

Factor Analysis for Attitude scale:

Communalities

	Initial	Extraction
q22_1	1.000	.590
q23_1	1.000	.747
q24_1	1.000	.681

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.019	67.285	67.285	2.019	67.285	67.285
2	.593	19.769	87.054			
3	.388	12.946	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
q22_1	.768
q23_1	.865
q24_1	.825

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Component Score Coefficient Matrix

	Component 1
q22_1	.381
q23_1	.428
q24_1	.409

Extraction Method: Principal Component Analysis.

Component Score Covariance Matrix

Component	1
1	1.000

Extraction Method: Principal Component Analysis.

Factor Analysis for Cognitive Beliefs scale:

Communalities

	Initial	Extraction
SHARE	1.000	.645
FREE	1.000	.603
HIGH_QUALITY	1.000	.616
CONVENIENT	1.000	.663
GET_CAUGHT	1.000	.959
FINE	1.000	.947
ATTACK	1.000	.134
LOSE_PROFIT	1.000	.709
DIS_CREATION	1.000	.678

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.768	30.755	30.755	2.768	30.755	30.755
2	1.878	20.870	51.624	1.878	20.870	51.624
3	1.307	14.519	66.144	1.307	14.519	66.144
4	.950	10.553	76.696			
5	.622	6.914	83.611			
6	.547	6.077	89.688			
7	.478	5.306	94.994			
8	.379	4.211	99.205			
9	.072	.795	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component		
	1	2	3
SHARE	.669	.445	.016
FREE	.692	.351	.003
HIGH_QUALITY	.685	.378	.063
CONVENIENT	.770	.261	.036
GET_CAUGHT	-.520	.752	-.350
FINE	-.546	.726	-.350
ATTACK	-.119	.282	.200
LOSE_PROFIT	-.242	.300	.749
DIS_CREATION	-.373	.289	.675

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Component Score Coefficient Matrix

	Component		
	1	2	3
SHARE	.242	.237	.012
FREE	.250	.187	.002
HIGH_QUALITY	.247	.201	.048
CONVENIENT	.278	.139	.028
GET_CAUGHT	-.188	.400	-.268
FINE	-.197	.386	-.268
ATTACK	-.043	.150	.153
LOSE_PROFIT	-.087	.160	.573
DIS_CREATION	-.135	.154	.516

Extraction Method: Principal Component Analysis.
Component Scores.

Component Score Covariance Matrix

Component	1	2	3
1	1.000	.000	.000
2	.000	1.000	.000
3	.000	.000	1.000

Extraction Method: Principal Component Analysis.
Component Scores.

Factor Analysis for Computer Deindividuation scale:

Communalities

	Initial	Extraction
q43_new_1	1.000	.671
q44_new_1	1.000	.654
q45_new_1	1.000	.569

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.894	63.142	63.142	1.894	63.142	63.142
2	.617	20.563	83.705			
3	.489	16.295	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
q43_new_1	.819
q44_new_1	.809
q45_new_1	.755

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Component Score Coefficient Matrix

	Component
	1
q43_new_1	.432
q44_new_1	.427
q45_new_1	.398

Extraction Method: Principal Component Analysis.

Component Score Covariance Matrix

Component	1
1	1.000

Extraction Method: Principal Component Analysis.

Factor Analysis for Ethical Belief scale:

Communalities

	Initial	Extraction
q46_1	1.000	.555
q47_1	1.000	.624
q48_1	1.000	.697

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.875	62.506	62.506	1.875	62.506	62.506
2	.649	21.643	84.150			
3	.476	15.850	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
q46_1	.745
q47_1	.790
q48_1	.835

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Factor Analysis for Perceived Unfairness of the Industry scale:

Communalities

	Initial	Extraction
q51_new_1	1.000	.621
q52_new_1	1.000	.746
q53_new_1	1.000	.556

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.923	64.108	64.108	1.923	64.108	64.108
2	.665	22.181	86.289			
3	.411	13.711	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
q51_new_1	.788
q52_new_1	.864
q53_new_1	.746

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Factor Analysis for Subjective Norms scale:

Communalities

	Initial	Extraction
q54_1	1.000	.729
q55_1	1.000	.818
q56_1	1.000	.677

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.223	74.098	74.098	2.223	74.098	74.098
2	.493	16.442	90.540			
3	.284	9.460	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
q54_1	.854
q55_1	.904
q56_1	.823

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Factor Analysis for Normative Beliefs scale:

Communalities

	Initial	Extraction
FAMILYMEM	1.000	.532
FRPEERS	1.000	.447
TEACH	1.000	.620
INFOIND	1.000	.614

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.213	55.316	55.316	2.213	55.316	55.316
2	.734	18.348	73.664			
3	.579	14.471	88.136			
4	.475	11.864	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
FAMILYMEM	.729
FRPEERS	.668
TEACH	.787
INFOIND	.784

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Factor Analysis for Perceived Behavioral Control scale:

Communalities

	Initial	Extraction
q5_1	1.000	.734
q6_1	1.000	.631
q6i_1	1.000	.811

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.176	72.539	72.539	2.176	72.539	72.539
2	.538	17.919	90.458			
3	.286	9.542	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
q5_1	.856
q6_1	.795
q6i_1	.901

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Factor Analysis for Perceived Needs for Internet Piracy scale:

Communalities

	Initial	Extraction
q65_1	1.000	.549
q66_1	1.000	.653
q67_1	1.000	.647
q68_1	1.000	.548
q69_1	1.000	.498

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.895	57.904	57.904	2.895	57.904	57.904
2	.755	15.096	73.000			
3	.515	10.304	83.304			
4	.442	8.849	92.153			
5	.392	7.847	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
q65_1	.741
q66_1	.808
q67_1	.805
q68_1	.740
q69_1	.706

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Factor Analysis for Intention scale:

Communalities

	Initial	Extraction
q70_1	1.000	.679
q71_1	1.000	.691
q72_1	1.000	.665

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.035	67.836	67.836	2.035	67.836	67.836
2	.500	16.664	84.500			
3	.465	15.500	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
q70_1	.824
q71_1	.831
q72_1	.815

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Factor Analysis for Internet Piracy Behavior scale:

Communalities

	Initial	Extraction
q75_NEW	1.000	.932
Q74_NEW	1.000	.709
q75i_NEW	1.000	.934

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.575	85.826	85.826	2.575	85.826	85.826
2	.401	13.374	99.200			
3	.024	.800	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
q75_NEW	.965
Q74_NEW	.842
q75i_NEW	.966

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Appendix E: Reliability Estimates of Scales

Reliability for Attitude scale:

Case Processing Summary

		N	%
Cases	Valid	300	100.0
	Excluded a	0	.0
	Total	300	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.753	.756	3

Item Statistics

	Mean	Std. Deviation	N
q22_1	2.7811	1.00629	300
q23_1	2.5525	.92699	300
q24_1	2.9662	.91743	300

Inter-Item Correlation Matrix

	q22_1	q23_1	q24_1
q22_1	1.000	.503	.421
q23_1	.503	1.000	.598
q24_1	.421	.598	1.000

The covariance matrix is calculated and used in the analysis.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q22_1	5.5188	2.719	.517	.276	.749
q23_1	5.7474	2.631	.651	.435	.591
q24_1	5.3337	2.811	.583	.377	.668

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
8.2999	5.448	2.33400	3

Reliability for Cognitive Beliefs scale - Personal Advantages:

Case Processing Summary

		N	%
Cases	Valid	300	100.0
	Excluded[a]	0	.0
	Total	300	100.0

a. Listwise deletion based on all
variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.801	.801	4

Item Statistics

	Mean	Std. Deviation	N
SHARE	2.8521	1.20635	300
FREE	2.6536	1.15769	300
HIGH_QUALITY	2.4866	1.06115	300
CONVENIENT	2.7377	1.20668	300

Inter-Item Correlation Matrix

	SHARE	FREE	HIGH_ QUALITY	CONVENIENT
SHARE	1.000	.540	.448	.521
FREE	.540	1.000	.463	.465
HIGH_QUALITY	.448	.463	1.000	.576
CONVENIENT	.521	.465	.576	1.000

The covariance matrix is calculated and used in the analysis.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
SHARE	7.8779	7.832	.618	.394	.749
FREE	8.0764	8.176	.596	.366	.759
HIGH_QUALITY	8.2435	8.575	.605	.389	.756
CONVENIENT	7.9923	7.715	.640	.430	.738

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
10.7300	13.460	3.66879	4

Reliability for Cognitive Beliefs scale - Personal Disadvantages:

Case Processing Summary

		N	%
Cases	Valid	300	100.0
	Excluded^a	0	.0
	Total	300	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.693	.657	3

Item Statistics

	Mean	Std. Deviation	N
GET_CAUGHT	1.3136	.90437	300
FINE	1.4514	.89121	300
ATTACK	1.1675	.68664	300

Inter-Item Correlation Matrix

	GET_CAUGHT	FINE	ATTACK
GET_CAUGHT	1.000	.925	.147
FINE	.925	1.000	.097
ATTACK	.147	.097	1.000

The covariance matrix is calculated and used in the analysis.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
GET_CAUGHT	2.6188	1.384	.786	.859	.171
FINE	2.4810	1.472	.744	.857	.248
ATTACK	2.7650	3.103	.124	.032	.961

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
3.9324	3.875	1.96858	3

Reliability for Cognitive Beliefs scale - Personal Disadvantages (revised):

Case Processing Summary

		N	%
Cases	Valid	300	100.0
	Excluded[a]	0	.0
	Total	300	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.961	.961	2

Item Statistics

	Mean	Std. Deviation	N
GET_CAUGHT	1.3136	.90437	300
FINE	1.4514	.89121	300

Inter-Item Correlation Matrix

	GET_CAUGHT	FINE
GET_CAUGHT	1.000	.925
FINE	.925	1.000

The covariance matrix is calculated and used in the analysis.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
GET_CAUGHT	1.4514	.794	.925	.855	.[a]
FINE	1.3136	.818	.925	.855	.[a]

a. The value is negative due to a negative average covariance among items. This violates reliability model assumptions. You may want to check item codings.

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
2.7650	3.103	1.76154	2

Reliability for Cognitive Beliefs scale - Industry Disadvantages:

Case Processing Summary

		N	%
Cases	Valid	300	100.0
	Excluded[a]	0	.0
	Total	300	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.607	.607	2

Item Statistics

	Mean	Std. Deviation	N
LOSE_PROFIT	2.6509	1.03599	300
DIS_CREATION	2.1521	1.02030	300

Inter-Item Correlation Matrix

	LOSE_PROFIT	DIS_CREATION
LOSE_PROFIT	1.000	.436
DIS_CREATION	.436	1.000

The covariance matrix is calculated and used in the analysis.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
LOSE_PROFIT	2.1521	1.041	.436	.190	.[a]
DIS_CREATION	2.6509	1.073	.436	.190	.[a]

a. The value is negative due to a negative average covariance among items. This violates reliability model assumptions. You may want to check item codings.

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
4.8030	3.035	1.74224	2

Reliability for Computer Deindividuation scale:

Case Processing Summary

		N	%
Cases	Valid	300	100.0
	Excluded^a	0	.0
	Total	300	100.0

a. Listwise deletion based on all
   variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.707	.707	3

Item Statistics

	Mean	Std. Deviation	N
q43_new_1	2.761	1.1381	300
q44_new_1	2.990	1.1078	300
q45_new_1	2.689	1.1255	300

Inter-Item Correlation Matrix

	q43_new_1	q44_new_1	q45_new_1
q43_new_1	1.000	.510	.424
q44_new_1	.510	1.000	.405
q45_new_1	.424	.405	1.000

The covariance matrix is calculated and used in the analysis.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q43_new_1	5.679	3.503	.557	.317	.576
q44_new_1	5.451	3.649	.542	.303	.596
q45_new_1	5.751	3.809	.477	.228	.675

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
8.440	7.171	2.6779	3

Reliability for Ethical Belief scale:

Case Processing Summary

		N	%
Cases	Valid	300	100.0
	Excluded^a	0	.0
	Total	300	100.0

a. Listwise deletion based on all
variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.700	.699	3

Item Statistics

	Mean	Std. Deviation	N
q46_1	3.1753	1.09126	300
q47_1	3.0205	1.12121	300
q48_1	3.0237	1.14914	300

Inter-Item Correlation Matrix

	q46_1	q47_1	q48_1
q46_1	1.000	.358	.442
q47_1	.358	1.000	.508
q48_1	.442	.508	1.000

The covariance matrix is calculated and used in the analysis.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q46_1	6.0442	3.888	.461	.219	.674
q47_1	6.1990	3.619	.513	.281	.612
q48_1	6.1957	3.325	.577	.336	.528

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
9.2195	7.063	2.65771	3

Reliability for Perceived Unfairness of the Industry scale:

Case Processing Summary

		N	%
Cases	Valid	300	100.0
	Excluded^a	0	.0
	Total	300	100.0

a. Listwise deletion based on all
   variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.719	.718	3

Item Statistics

	Mean	Std. Deviation	N
q51_new_1	2.949	1.0120	300
q52_new_1	3.027	1.0597	300
q53_new_1	3.564	1.0334	300

Inter-Item Correlation Matrix

	q51_new_1	q52_new_1	q53_new_1
q51_new_1	1.000	.550	.339
q52_new_1	.550	1.000	.488
q53_new_1	.339	.488	1.000

The covariance matrix is calculated and used in the analysis.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q51_new_1	6.591	3.261	.516	.309	.656
q52_new_1	6.513	2.800	.634	.405	.506
q53_new_1	5.976	3.326	.472	.246	.709

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
9.540	6.172	2.4844	3

Reliability for Subjective Norms scale:

Case Processing Summary

		N	%
Cases	Valid	300	100.0
	Excluded^a	0	.0
	Total	300	100.0

a. Listwise deletion based on all
variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.825	.824	3

Item Statistics

	Mean	Std. Deviation	N
q54_1	2.955	1.1339	300
q55_1	3.058	1.1154	300
q56_1	3.038	1.0451	300

Inter-Item Correlation Matrix

	q54_1	q55_1	q56_1
q54_1	1.000	.689	.512
q55_1	.689	1.000	.630
q56_1	.512	.630	1.000

The covariance matrix is calculated and used in the analysis.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q54_1	6.096	3.804	.668	.485	.772
q55_1	5.993	3.591	.759	.578	.676
q56_1	6.013	4.272	.620	.408	.816

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
9.051	8.045	2.8364	3

Reliability for Normative Beliefs scale:

Case Processing Summary

		N	%
Cases	Valid	300	100.0
	Excluded^a	0	.0
	Total	300	100.0

a. Listwise deletion based on all
variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.729	.729	4

Item Statistics

	Mean	Std. Deviation	N
FAMILYMEM	2.2641	1.09752	300
FRPEERS	1.6857	.99527	300
TEACH	2.3937	1.07245	300
INFOIND	2.4747	1.03691	300

Inter-Item Correlation Matrix

	FAMILYMEM	FRPEERS	TEACH	INFOIND
FAMILYMEM	1.000	.307	.395	.470
FRPEERS	.307	1.000	.419	.328
TEACH	.395	.419	1.000	.493
INFOIND	.470	.328	.493	1.000

The covariance matrix is calculated and used in the analysis.

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	2.205	1.686	2.475	.789	1.468	.127	4

The covariance matrix is calculated and used in the analysis.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
FAMILYMEM	6.5542	5.884	.501	.268	.680
FRPEERS	7.1325	6.527	.441	.208	.712
TEACH	6.4245	5.687	.571	.336	.637
INFOIND	6.3435	5.840	.567	.340	.641

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
8.8182	9.759	3.12388	4

Reliability for Perceived Behavioral Control scale:

Case Processing Summary

		N	%
Cases	Valid	300	100.0
	Excluded^a	0	.0
	Total	300	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.802	.809	3

Item Statistics

	Mean	Std. Deviation	N
q5_1	3.478	1.0371	300
q6_1	3.635	1.1153	300
q6i_1	3.406	.9229	300

Inter-Item Correlation Matrix

	q5_1	q6_1	q6i_1
q5_1	1.000	.478	.696
q6_1	.478	1.000	.583
q6i_1	.696	.583	1.000

The covariance matrix is calculated and used in the analysis.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q5_1	7.041	3.295	.648	.493	.728
q6_1	6.884	3.261	.573	.350	.818
q6i_1	7.113	3.426	.741	.566	.646

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
10.519	6.810	2.6097	3

Reliability for Perceived Needs for Internet Piracy scale:

Case Processing Summary

		N	%
Cases	Valid	300	100.0
	Excluded^a	0	.0
	Total	300	100.0

a. Listwise deletion based on all
  variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.815	.817	5

Item Statistics

	Mean	Std. Deviation	N
q65_1	3.2264	1.11216	300
q66_1	3.4899	1.03123	300
q67_1	3.4644	1.02376	300
q68_1	3.0408	1.10866	300
q69_1	2.9291	1.13843	300

Inter-Item Correlation Matrix

	q65_1	q66_1	q67_1	q68_1	q69_1
q65_1	1.000	.520	.551	.372	.375
q66_1	.520	1.000	.603	.486	.426
q67_1	.551	.603	1.000	.458	.411
q68_1	.372	.486	.458	1.000	.519
q69_1	.375	.426	.411	.519	1.000

The covariance matrix is calculated and used in the analysis.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q65_1	12.9241	11.330	.577	.372	.788
q66_1	12.6606	11.240	.662	.462	.763
q67_1	12.6861	11.309	.657	.467	.764
q68_1	13.1097	11.276	.588	.374	.784
q69_1	13.2214	11.369	.550	.330	.796

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
16.1505	16.883	4.10893	5

Reliability for Intention scale:

Case Processing Summary

		N	%
Cases	Valid	300	100.0
	Excluded[a]	0	.0
	Total	300	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.763	.763	3

Item Statistics

	Mean	Std. Deviation	N
q70_1	2.4392	1.24962	300
q71_1	2.1650	1.25498	300
q72_1	2.2054	1.25172	300

Inter-Item Correlation Matrix

	q70_1	q71_1	q72_1
q70_1	1.000	.533	.503
q71_1	.533	1.000	.517
q72_1	.503	.517	1.000

The covariance matrix is calculated and used in the analysis.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q70_1	4.3704	4.766	.594	.354	.682
q71_1	4.6446	4.701	.606	.367	.669
q72_1	4.6042	4.808	.582	.339	.695

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
6.8096	9.571	3.09375	3

Reliability for Online Piracy Behavior scale:

Case Processing Summary

		N	%
Cases	Valid	299	99.7
	Excluded[a]	1	.3
	Total	300	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.882	.915	3

Item Statistics

	Mean	Std. Deviation	N
q75_NEW	.92	1.225	299
Q74_NEW	.55	.498	299
q75i_NEW	.84	1.104	299

Inter-Item Correlation Matrix

	q75_NEW	Q74_NEW	q75i_NEW
q75_NEW	1.000	.685	.976
Q74_NEW	.685	1.000	.689
q75i_NEW	.976	.689	1.000

The covariance matrix is calculated and used in the analysis.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q75_NEW	1.38	2.224	.951	.953	.681
Q74_NEW	1.76	5.358	.691	.478	.985
q75i_NEW	1.47	2.586	.957	.953	.647

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
2.31	7.200	2.683	3

Appendix F: Test for Convergent Validity – Confirmatory Factor Analysis (CFA)

CFA - ATTITUDE SCALE
DA NO=300 NI=3
LA
ATT1 ATT2 ATT3
RA FI=CFA_ATT.psf

MO NX=3 NK=1 LX=FI PH=FI
VA 1 LX 1 1
FR LX 2 1 LX 3 1
FR PH 1 1

LK
ATT
PD
OU AD=OFF ND=4 EF MI

CFA - PERSONAL ADVANTAGE SCALE
DA NO=300 NI=4
LA
SHARE FREE HIGHQU CONVEN
RA FI=CFA_PERSONAD.psf

MO NX=4 NK=1 LX=FI PH=FI

VA 1 LX 1 1
FR LX 2 1 LX 3 1 LX 4 1

FR PH 1 1

LK
PER_AD
PD
OU AD=OFF ND=4

CFA - PERSONAL DISADVANTAGE SCALE
DA NO=300 NI=2
LA
CAUGHT FINE
RA FI=CFA_PERSONDISAD.psf

MO NX=2 NK=1 LX=FI PH=FI TD=FI

VA 1 LX 1 1
FR LX 2 1

VA 0.0574 TD 1 1
FR TD 2 2
FR PH 1 1

LK
PER_AD
PD
OU AD=OFF ND=4

CFA - INDUSTRY DISADVANTAGES SCALE
DA NO=300 NI=2
LA
PROFIT DISCREAT
RA FI=CFA_INDUSDISAD.psf

MO NX=2 NK=1 LX=FI PH=FI TD=FI

VA 1 LX 1 1
FR LX 2 1

VA 0.6056 TD 1 1
FR TD 2 2

FR PH 1 1

LK
PER_AD
PD
OU AD=OFF ND=4

CFA - DEINDIVIDUATION SCALE
DA NI=3 NO=300
LA
DEIN1 DEIN2 DEIN3
RA FI=CFA_DEIND.psf

MO NX=3 NK=1 LX=FI PH=FI
VA 1 LX 1 1
FR LX 2 1 LX 3 1
FR PH 1 1

LK

DEIND
PD
OU AD=OFF ND=4 EF MI

CFA - ETHICAL BELIEF SCALE
DA NI=3 NO=300
LA
ETHIC1 ETHIC2 ETHIC3
RA FI=CFA_ETHIC.psf

MO NX=3 NK=1 LX=FI PH=FI
VA 1 LX 1 1
FR LX 2 1 LX 3 1
FR PH 1 1

LK
ETHIC
PD
OU AD=OFF ND=4 EF MI

CFA - PERCIEVED UNFAIRNESS OF THE INDUSTRY SCALE
DA NI=3 NO=300
LA
FAIRIND1 FAIRIND2 FAIRIND3
RA FI=CFA_FAIRIND(NEW).psf

MO NX=3 NK=1 LX=FI PH=FI
VA 1 LX 1 1
FR LX 2 1 LX 3 1
FR PH 1 1

LK
FAIRIND
PD
OU ND=4 EF AD=OFF MI

CFA - SUBJECTIVE NORMS SCALE
DA NI=3 NO=300
LA
NORM1 NORM2 NORM3
RA FI=CFA_NORM(new).psf

MO NX=3 NK=1 LX=FI PH=FI
VA 1 LX 1 1
FR LX 2 1 LX 3 1
FR PH 1 1

LK
NORM
PD
OU AD=OFF ND=4 EF MI

CFA - NORMATIVE BELIEF SCALE
DA NI=4 NO=300
LA
NORMBE1 NORMBE2 NORMBE3 NORMBE4
RA FI=CFA_NORMBE.psf

MO NX=4 NK=1 LX=FI PH=FI

VA 1 LX 1 1
FR LX 2 1 LX 3 1 LX 4 1
FR PH 1 1

LK
NORMBE
PD
OU AD=OFF ND=4 EF MI

CFA - PERCEIVED BEHAVIORAL CONTROL SCALE
DA NI=3 NO=300
LA
PBC1 PBC2 PBC3
RA FI=CFA_PBC(NEW).psf

MO NX=3 NK=1 LX=FI PH=FI

VA 1 LX 1 1
FR LX 2 1 LX 3 1
FR PH 1 1

LK
PBC
PD
OU AD=OFF ND=4 EF MI

CFA - PERCEIVED NEEDS FOR INTERNET PIRACY SCALE
DA NI=5 NO=300
LA
NEED1 NEED2 NEED3 NEED4 NEED5
RA FI=CFA_NEED.psf

MO NX=5 NK=1 LX=FI PH=FI

VA 1 LX 1 1
FR LX 2 1 LX 3 1 LX 4 1 LX 5 1
FR PH 1 1

LK
NEEDS
PD
OU AD=OFF ND=4 EF MI

CFA - INTENTION SCALE
DA NI=3 NO=300
LA
INTENT1 INTENT2 INTENT3
RA FI=CFA_INTENT.psf

MO NX=3 NK=1 LX=FI PH=FI
VA 1 LX 1 1
FR LX 2 1 LX 3 1
FR PH 1 1

LK
INTENT
PD
OU AD=OFF ND=4 EF MI

CFA - ONLINE PIRACY BEHAVIOR SCALE
DA NI=3 NO=300
LA
BEHAVE1 BEHAVE2 BEHAVE3
RA FI=CFA_BEHAVE(3ITEMS).psf

MO NX=3 NK=1 LX=FI PH=FI
VA 1 LX 1 1
FR LX 2 1 LX 3 1

FR PH 1 1

LK
BEHAVIOR
PD
OU AD=OFF ND=4 EF MI

CFA - ALL 14 LATENT VARIABLES & 42 OBSERVED VARIABLES (*PAST BEHAVIOR IS A SINGLE ITEM MEASURE)
DA NO=300 NI=42
LA
ATT1 ATT2 ATT3 PERSONAD1 PERSONAD2 PERSONAD3 PERSONAD4
PERDISAD1 PERDISAD2 INDIS1 INDIS2 DEIN1 DEIN2 DEIN3 ETHIC1 ETHIC2
ETHIC3 FAIRIND1 FAIRIND2 FAIRIND3 NORM1 NORM2 NORM3 NORMBE1
NORMBE2 NORMBE3 NORMBE4 PBC1 PBC2 PBC3 PNIP1 PNIP2 PNIP3 PNIP4
PNIP5 INTENT1 INTENT2 INTENT3 PASTB BEHAV1 BEHAV2 BEHAV3
RA FI=CFA_ALL(42ITEMS).psf

MO NX=42 NK=14 LX=FI TD=FI
VA 1 LX 1 1 LX 4 2 LX 8 3 LX 10 4 LX 12 5 LX 15 6 LX 18 7 LX 21 8 LX 24 9 LX 28
10 LX 31 11 LX 36 12 LX 39 13 LX 40 14
FR LX 2 1 LX 3 1
FR LX 5 2 LX 6 2 LX 7 2
FR LX 9 3
FR LX 11 4
FR LX 13 5 LX 14 5
FR LX 16 6 LX 17 6
FR LX 19 7 LX 20 7
FR LX 22 8 LX 23 8
FR LX 25 9 LX 26 9 LX 27 9
FR LX 29 10 LX 30 10
FR LX 32 11 LX 33 11 LX 34 11 LX 35 11
FR LX 37 12 LX 38 12
FR LX 41 14 LX 42 14

VA 0.0635 TD 9 9
VA 0.5874 TD 11 11
VA 0 TD 39 39
FR TD 1 1 TD 2 2 TD 3 3 TD 4 4 TD 5 5 TD 6 6 TD 7 7 TD 8 8 TD 10 10 TD 12 12 TD
13 13 TD 14 14 TD 15 15 TD 16 16 TD 17 17 TD 18 18 TD 19 19 TD 20 20 TD 21 21
TD 22 22 TD 23 23 TD 24 24 TD 25 25 TD 26 26 TD 27 27 TD 28 28 TD 29 29 TD 30
30 TD 31 31 TD 32 32 TD 33 33 TD 34 34 TD 35 35 TD 36 36 TD 37 37 TD 38 38 TD
40 40 TD 41 41 TD 42 42

LK
ATT PERSONAD PERSONDIS INDUSDIS DEIND ETHIC FAIRIND NORM
NORMBE PBC PNIP INTENT PAST BEHAVIOR
PD
OU AD=OFF ND=4 EF SC

Appendix G: Syntax of the Structural Full Model

(UNCONSTRAINED) FULL MODEL - 45 OBSERVED VARIABLES & 17 LATENT
CONSTRUCTS_WITH "AGE" & "SEX" & "INCOME"
DA NI=45 NO=300
LA
PERAD1 PERAD2 PERAD3 PERAD4 PERDIS1 PERDIS2 INDDIS1 INDDIS2 DEIN1 DEIN2
DEIN3 EB1 EB2 EB3 UNIND1 UNIND2 UNIND3 NORMB1 NORM2 NORM3 NORM4 PBC1
PBC2 PBC3 PNIP1 PNIP2 PNIP3 PNIP4 PNIP5 PASTB ATT1 ATT2 ATT3 SNORM1
SNORM2 SNORM3 INT1 INT2 INT3 BEH1 BEH2 BEH3 AGE SEX INCOME
RA FI=FULL_1(Age_SEX_INC).psf

MO NY=42 NX=3 NE=14 NK=3 GA=FI BE=FI LX=FI LY=FI

LE
PERADV PERDISAD INDDISAD DEIND ETHICAL UNFAIR_IN NORMBE PBC PNIP
PASTB ATT S_NORM INTENT BEHAVE
LK
AGE SEX INCOME

VA 1 LX 1 1 LX 2 2 LX 3 3
VA 1 LY 1 1 LY 5 2 LY 7 3 LY 9 4 LY 12 5 LY 15 6 LY 18 7 LY 22 8 LY 25 9 LY 30 10 LY
31 11 LY 34 12 LY 37 13 LY 40 14

FR LY 2 1 LY 3 1 LY 4 1 LY 6 2 LY 8 3 LY 10 4 LY 11 4 LY 13 5 LY 14 5 LY 16 6 LY 17 6
LY 19 7 LY 20 7 LY 21 7 LY 23 8 LY 24 8 LY 26 9 LY 27 9 LY 28 9 LY 29 9 LY 32 11 LY 33
11 LY 35 12 LY 36 12 LY 38 13 LY 39 13 LY 41 14 LY 42 14

FR BE 11 1 BE 11 2 BE 11 3 BE 11 4 BE 11 5 BE 11 6 BE 11 12 BE 12 7 BE 13 8 BE 13 9 BE
13 11 BE 13 12 BE 14 10 BE 14 13

FR GA 1 1 GA 2 1 GA 3 1 GA 4 1 GA 5 1 GA 6 1 GA 7 1 GA 8 1 GA 9 1 GA 10 1 GA 11 1 GA
12 1 GA 13 1 GA 14 1 GA 1 2 GA 2 2 GA 3 2 GA 4 2 GA 5 2 GA 6 2 GA 7 2 GA 8 2 GA 9 2
GA 10 2 GA 11 2 GA 12 2 GA 13 2 GA 14 2 GA 1 3 GA 2 3 GA 3 3 GA 4 3 GA 5 3 GA 6 3 GA
7 3 GA 8 3 GA 9 3 GA 10 3 GA 11 3 GA 12 3 GA 13 3 GA 14 3

FI TE 30
VA 0 TE 30
FI TE 6
VA 0.0635 TE 6
FI TE 8
VA 0.5874 TE 8
FI TD 1 TD 2 TD 3
VA 0 TD 1 TD 2 TD 3

PD
OU EF SS SC ND=4 AD=OFF

(CONSTRAINED) FULL MODEL - 45 OBSERVED VARIABLES & 17 LATENT CONSTRUCTS_WITH "AGE" & "SEX" & "INCOME"
DA NI=45 NO=300
LA
PERAD1 PERAD2 PERAD3 PERAD4 PERDIS1 PERDIS2 INDDIS1 INDDIS2 DEIN1 DEIN2
DEIN3 EB1 EB2 EB3 UNIND1 UNIND2 UNIND3 NORMB1 NORM2 NORM3 NORM4 PBC1
PBC2 PBC3 PNIP1 PNIP2 PNIP3 PNIP4 PNIP5 PASTB ATT1 ATT2 ATT3 SNORM1
SNORM2 SNORM3 INT1 INT2 INT3 BEH1 BEH2 BEH3 AGE SEX INCOME
RA FI=FULL_1(Age_SEX_INC).psf

MO NY=42 NX=3 NE=14 NK=3 GA=FI BE=FI LX=FI LY=FI

LE
PERADV PERDISAD INDDISAD DEIND ETHICAL UNFAIR_IN NORMBE PBC PNIP
PASTB ATT S_NORM INTENT BEHAVE
LK
AGE SEX INCOME

VA 1 LX 1 1 LX 2 2 LX 3 3
VA 1 LY 1 1 LY 5 2 LY 7 3 LY 9 4 LY 12 5 LY 15 6 LY 18 7 LY 22 8 LY 25 9 LY 30 10 LY
31 11 LY 34 12 LY 37 13 LY 40 14

FR LY 2 1 LY 3 1 LY 4 1 LY 6 2 LY 8 3 LY 10 4 LY 11 4 LY 13 5 LY 14 5 LY 16 6 LY 17 6
LY 19 7 LY 20 7 LY 21 7 LY 23 8 LY 24 8 LY 26 9 LY 27 9 LY 28 9 LY 29 9 LY 32 11 LY 33
11 LY 35 12 LY 36 12 LY 38 13 LY 39 13 LY 41 14 LY 42 14

FR BE 11 1 BE 11 2 BE 11 3 BE 11 4 BE 11 5 BE 11 6 BE 11 12 BE 12 7 BE 13 8 BE 13 9 BE
13 11 BE 13 12 BE 14 10 BE 14 13

VA 0 GA 1 1 GA 2 1 GA 3 1 GA 4 1 GA 5 1 GA 6 1 GA 7 1 GA 8 1 GA 9 1 GA 10 1 GA 11 1
GA 12 1 GA 13 1 GA 14 1 GA 1 2 GA 2 2 GA 3 2 GA 4 2 GA 5 2 GA 6 2 GA 7 2 GA 8 2 GA 9
2 GA 10 2 GA 11 2 GA 12 2 GA 13 2 GA 14 2 GA 1 3 GA 2 3 GA 3 3 GA 4 3 GA 5 3 GA 6 3
GA 7 3 GA 8 3 GA 9 3 GA 10 3 GA 11 3 GA 12 3 GA 13 3 GA 14 3 **!(FIXING ALL GAMMA
TO ZERO)**

FI TE 30
VA 0 TE 30
FI TE 6
VA 0.0635 TE 6
FI TE 8
VA 0.5874 TE 8
FI TD 1 TD 2 TD 3
VA 0 TD 1 TD 2 TD 3

PD
OU EF SS SC ND=4 AD=OFF

Appendix H: Test-Retest Reliability

Correlations of Cognitive Beliefs Scores at Time 1 & Time 2

Correlations

		Total Cognitive Belief Scores	Total Cognitive Belief Scores - Time 2
Total Cognitive Belief Scores	Pearson Correlation	1	.778**
	Sig. (2-tailed)		.000
	N	38	38
Total Cognitive Belief Scores - Time 2	Pearson Correlation	.778**	1
	Sig. (2-tailed)	.000	
	N	38	38

. Correlation is significant at the 0.01 level (2-tailed).

Correlations of Subjective Norms Scores at Time 1 & Time 2

Correlations

		Total Subjective Norms Score	Total Subjective Norms Score - Time 2
Total Subjective Norms Score	Pearson Correlation	1	.855**
	Sig. (2-tailed)		.000
	N	38	38
Total Subjective Norms Score - Time 2	Pearson Correlation	.855**	1
	Sig. (2-tailed)	.000	
	N	38	38

**. Correlation is significant at the 0.01 level (2-tailed).

Appendix I: Elicitation Questionnaire

Digital Piracy Study

Thank you for participating in this study. This study should take about 10-15 minutes. Please indicate the answer in the provided tables. Please try to provide at least 3 items for each question (if you need more space, please use the back of this sheet). When done, transfer this paper to me via MSN. Anonymity is guaranteed for all who participate in this study.

The *behavior* in question *is the act of illegally copying and/or downloading digital copyright works/materials on the Internet (e.g. download/upload software/music/video/ MP3s, and digital audio books among others)*

1. Age: _____   Gender: _____ **Male** _____ **Female**

2. What do you believe are the **advantages** of your performing of piracy behavior on the Internet (i.e. private copying or sharing copyright works on the Internet)?

#	Advantage
1	
2	
3	
4	
5	
6	

3. What do you believe are the **disadvantages** of your performing of piracy behavior on the Internet?

#	Disadvantage
1	
2	
3	
4	
5	
6	

4. Is there anything else you associate with performing piracy behavior on the Internet?

1	
2	
3	
4	
5	
6	

5. Are the any **individuals or groups** who would **approve** of your copying or sharing of digital copyright works on the Internet?

#	Advantage
1	
2	
3	
4	
5	
6	

6. Are there any **individuals or groups** who would **disapprove** of your copying or sharing of digital copyright works on the Internet?

#	Disadvantage
1	
2	
3	
4	
5	
6	

7. Is there anything/anyone else you associate with copying or sharing of digital copyright works on the Internet?

1	
2	
3	
4	
5	
6	