Music, Movie, and Software Piracy: Explaining Downloaders' Compensation Dilemma and Exploring Factors Influencing Online Payment Behaviors from a Cognitive Dissonance Perspective

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To my wife, without whom this dissertation would not have been completed. And to my sons, without whom this dissertation would have been completed much before.

Acknowledgements (English)

"The Chinese call luck opportunity and they say it knocks every day on your door. Some people hear it; some do not. It's not enough to hear opportunity knock. You must let him in, greet him, make friends and work together."

- Bernard Gittelson

Many of life's accomplishments are reached through the good fortune of having encountered the right companions. I hereby wish to express my gratefulness to individuals who have helped me turn this thesis into reality.

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"Los Chinos llaman a la suerte oportunidad y dicen que llama a nuestras puertas todos los días. Algunas personas oyen; otras no. No es suficiente escuchar la llamada de la oportunidad. Debes dejarla entrar, saludarla, hacerte amigo de ella y trabajar junta a ella."

- Bernard Gittelson

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Introduction (English)

This dissertation examines the influence of a wide assortment of factors (demographic, psychographics, Internet-use related, etc.) on the payment behavior of those who download music, movies, and software from the Internet. The investigated data refers to Spain, a country where never paying for online content is a common practice amongst downloaders, despite numerous anti-piracy campaigns in recent years.

Framed inside a theoretical framework of cognitive consistency, this dissertation proposes three hypotheses about the determinant factors affecting different payment behaviors: a more negative attitude toward newness distinguishes downloaders who never pay, less experience in using the Internet differentiates those who always pay, and a greater variety of online activities characterizes those who occasionally pay. The empirical study confirmed all three hypotheses regarding music and movie downloaders.

An overview of the results suggests that psychographics and Internet-related factors sustain a stronger ascendency over online payment behaviors than demographics and content-related factors. Conclusions pertaining to this study may help digital content marketers to better understand the complex phenomenon of illegal downloading and to more effectively safeguard the industry from it.

The structure of this dissertation is fairly conventional and is articulated around six central chapters. The first chapter presents some background information related to

the economic importance of the copyright industry, the extent of digital piracy, and the introduction of anti-piracy initiatives. The second chapter is devoted to a literature review, which includes several disciplines' contribution to the study of digital piracy, an examination of various factors affecting illegal downloading, and a series of questions requiring further investigation. The third chapter is dedicated to the theoretical framework in which a set of hypotheses and research questions are formulated. The fourth chapter deals with the methodology and provides detailed information on participants, measures, and procedures that form the empirical study. The fifth chapter presents a thorough description of the statistical results from the research. The sixth chapter contains an extensive discussion on the new findings, theoretical and practical implications, and future lines of research.

Introduction (Spanish)

Esta tesis doctoral examina la influencia de una gran variedad de factores (demográficos, sicográficos, relacionados con el uso de Internet, etc.) en el comportamiento de pago de los que descargan música, películas y programas informáticos en Internet. Los datos analizados hacen referencia a España, un país en donde la mayoría de los que descargan estos contenidos nunca pagan por ellos, a pesar de las numerosas campañas anti-piratería promovidas en los últimos años.

Dentro del marco teórico de la consistencia cognitiva, esta tesis formula tres hipótesis sobre los factores determinantes de los diferentes comportamientos de pago: una actitud más negativa hacia la novedad distingue a los que descargan sin pagar nunca, una menor experiencia en Internet diferencia a los que descargan pagando siempre y una gran variedad de actividades online caracteriza al grupo de los que pagan de vez en cuando. En el estudio empírico fueron confirmadas estas tres hipótesis con respecto a la música y al cine.

Una visión global de los resultados sugiere que los factores sicográficos y los relacionados con el uso de Internet influyen en el comportamiento de pago más intensamente que los factores demográficos y los relacionados con los correspondientes contenidos. Las conclusiones de esta investigación pueden ayudar a que los que comercializan contenidos descargables conozcan mejor este complejo fenómeno y luchen más eficientemente contra las descargas no pagadas.

La estructura de la tesis es bastante convencional y está organizada en seis capítulos. El primer capítulo presenta algunos antecedentes relacionados con la valoración económica de los derechos de autor, la extensión de la piratería digital y el lanzamiento de campañas anti-piratería. El capítulo 2 está dedicado a la revisión de la literatura, que incluye la contribución de varias disciplinas al estudio de la piratería digital, el análisis de diferentes factores influyentes en las descargas ilegales y una recopilación de cuestiones que deberían ser investigadas. El tercer capítulo trata sobre el marco teórico dentro del cual se han formulado un conjunto de hipótesis y preguntas de investigación. El capítulo 4 se dedica a la metodología y ofrece información detallada sobre los participantes, las mediciones y los procedimientos empleados en el estudio empírico. El quinto capítulo incluye una descripción completa de los resultados obtenidos en el estudio empírico. Y el capítulo 6 contiene una extensa discusión sobre los nuevos hallazgos, las implicaciones teóricas y prácticas y las futuras líneas de investigación.

1 Background

"Every writer, producer, actor, musician, director, tech wizard, and fine artist working today needs to be aware of what this all means for our future—we will lose the ability to protect and profit from our own work. Every kid out there who aspires to be an actor or musician or artist: This is your future that's at stake. More importantly, everyone who enjoys quality entertainment: This impacts you most of all. Content excellence cannot sustain itself if it loses its capacity to reward the talent that creates it. Consider this clunky analogy: If your local car dealership started selling your favorite luxury car for $1,000, then $100, then started giving it away, what do you think would happen to the quality of that vehicle? Before long, the manufacturer would be forced to let go of the skilled laborer, the artisan, and the craftsman, and eventually cut back on everything in the production process. And before long, that fabulous, high-end car you so enjoyed will be a sheet of warped plywood on top of two rusty cans. Yep, it's cheap, and it's shit."

— Kurt Leon Sutter, *Sons of Anarchy*'s director, producer, and actor

1.1 COPYRIGHTS AND CONTENT INDUSTRIES

Innovation is a process through which new ideas are generated and successfully introduced into the marketplace. Defending intellectual property rights is vital to promote innovation and creativity and is an essential element of market-based economies. Patents, trademarks, and copyrights are the principal legal tools used to establish ownership of creative ideas in their various forms, providing the foundation to generate tangible benefits from innovation for companies, workers, and consumers (U.S. Patent and Trademark Office & Economics and Statistics Administration, 2012).

Without this legal protection, creators of intellectual property would tend to lose the economic fruits of their labor and the motivations to develop additional innovations. Imagine a software company investing time and money in creating new applications. They could hardly compete with another firm that just copies and sells the same applications without making the initial investments, such as hiring creative software developers.

The World Intellectual Property Organization (WIPO) defines "copyright" –or author's right – as a legal term used to describe the rights that creators have over their literary and artistic works. Works covered by copyright range from books, music, paintings, sculpture, and films, to computer programs, databases, advertisements, etc. Copyright industries – those industries whose primary purpose is to create, produce, distribute, or exhibit copyrighted materials – deliver significant value to the economy and society.

Based on the classification from the WIPO, the copyright sector includes industries such as the sound recording industry, the motion picture and video industry, and the software publishing industry. These industries are also strong economic drivers because they provide a large workforce with higher-paying jobs than average and outpace other sectors in terms of growth and revenues (U.S. Patent and Trademark Office & Economics and Statistics Administration, 2012).

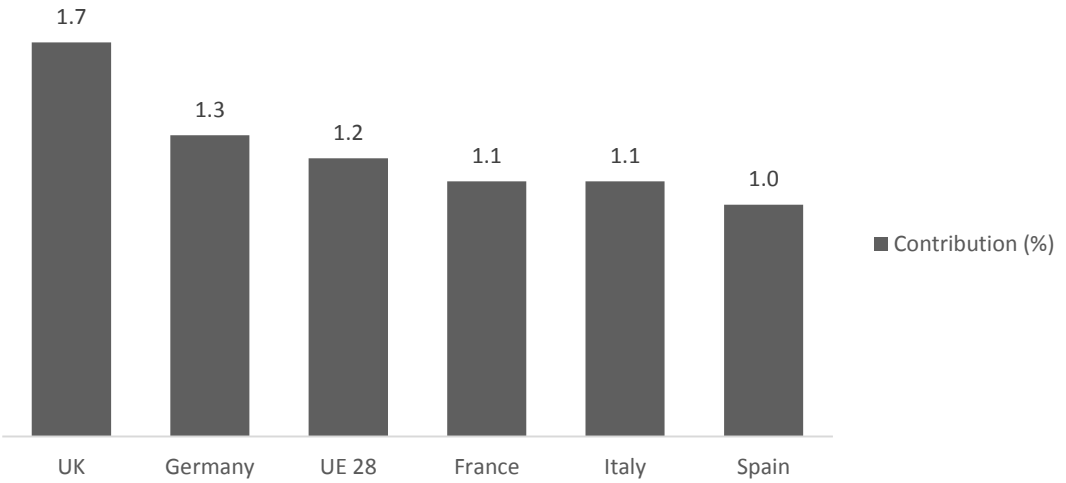
According to a recent report from the International Intellectual Property Alliance, the 2013 value added by the copyright industries to the American economy reached more than $1.1 trillion, accounting for 6.7% of the United States gross domestic

product (Siwek, 2014). They employed almost 5.5 million workers, accounting for 4.0% of the entire U.S. workforce, and nearly 4.8% of total private employment. The average annual compensation paid to copyright workers ($87,860) exceeds the average annual compensation paid to American workers ($65,723) by 34.0%. Sales of selected copyright products in overseas markets amounted to $156.3 billion, surpassing foreign sales of other major U.S. industries, such as chemicals ($147.8 billion), aerospace products ($128.3 billion), and pharmaceuticals ($51.6 billion).

Comparable measures for the Spanish market are available inside a sectorial government-sponsored annual report on information technologies, communications, and digital contents, all of which were collected and edited by the *Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Imformación* (*ONTSI* or Telecommunications and Information Society National Observatory).

According to the *ONTSI* (2014), the Spanish content sector was made of 8,712 businesses with revenues of over €13.2 billion, mainly driven by publishing activities. Digital sales represented more than half (€7.0 billion) of all content-related revenues. The content sector employed 72,569 workers and attracted €2.5 billion in investment. The gross value added by the content sector to the Spanish economy reached more than €9.2 billion accounting for 1.0% of Spain's gross domestic product (GDP). As Figure 1.1 outlines, the relative contribution of the content sector to Spain's gross domestic product is inferior to the relative contribution of the content sector in other European countries as well as the European Union average.

Figure 1.1: Content sector contribution to GDP of selected European countries



Note. Adapted from "*Informe Annual del Sector de las Tecnologías de la Información, las Comunicaciones y de los Contenidos en España 2013* [2013 Annual Report on the IT, Communications, and Content Sector in Spain], by *Observatorio Nacional de las Telecomunicaciones y de la SI* [Telecommunications and Information Society National Observatory], 2014.

Regarding product destination, most revenues from the Spanish content sector are obtained from national sales (93%). European and global exportations respectively accounts for 4% and 3% of the content sector's revenues. While most proceeds are obtained through transactions with final consumers (54%), other sources of revenues include business services (13%) and retail and distribution operations (12%).

1.1.1 Selected content industries in Spain

Three industries part of the Spanish content sector are of particular interest because they enjoy an important and growing share of their sales being realized in a digital format. Moreover, these industries are part of the Internet economy because the Internet has forever changed the way their products are developed, priced, promoted, and distributed. Those industries are the sound recording industry, the motion picture

and video industry, and the software editing and publishing industry[1]. A closer look at these three industries will allow a better understanding of their importance and contribution to the Spanish economy. Specific considerations for each industry include the number of businesses, annual revenues, and workforce size in number of employees.

As Table 1.1 outlines, the number of businesses forming the Spanish sound recording and motion picture and video industries are in steady decline since 2009. The number of businesses shrank 21.9% in the sound recording industry and 16.2% in the motion picture and video industry. Although 2009 and 2010 data are unavailable, the software industry lost 6.6% of its businesses during the two-year period spanning from 2011 to 2013. The three industries together still account for more than 3,800 businesses in Spain.

Table 1.1: Number of businesses from selected content industries in Spain

	Number of businesses				
	2009	2010	2011	2012	2013
Sound recording	485	422	413	389	379
Motion picture and video	2,650	2,618	2,482	2,280	2,221
Software editing and publishing	n.a.	n.a.	1,310	1,222	1,223

Note. Adapted from "*Informe Annual del Sector de las Tecnologías de la Información, las Comunicaciones y de los Contenidos en España 2013* [2013 Annual Report on the IT, Communications, and Content Sector in Spain], by *ONTSI* [Telecommunications and Information Society National Observatory], 2014.

[1] Activities from the Spanish content industries include sound and music recording; movie and video production, post-production, distribution, and presentation; and software development and editing. Numbers exclude activities related to the distribution of imported music, movies/TV series, and software, which figures will be addressed in the following section.

Regarding revenues of selected Spanish content industries, results are mixed. On the one hand, the sound recording and motion picture and video industries lost respectively 32.3% and 22.5% in revenues from 2009 to 2013. Spanish cinematographic productions are suffering from declining theatre attendance and propose, since 2012, aggressive price promotions to reverse this tendency. On the other hand, the software industry gained 6.7% from 2010 to 2013. In 2013, the sum of annual revenues for the three industries surpassed €9.1 billion. The yearly breakdown of revenues per industry is available in Table 1.2.

Table 1.2: Revenues of selected content industries in Spain

	Revenues (in € million) per year				
	2009	2010	2011	2012	2013
Sound recording	402	370	340	295	272
Motion picture and video	3,513	3,284	3,296	3,018	2,721
Software editing and publishing	n.a.	5,757	5,687	5,966	6,145

Note. Adapted from "*Informe Annual del Sector de las Tecnologías de la Información, las Comunicaciones y de los Contenidos en España 2013* [2013 Annual Report on the IT, Communications, and Content Sector in Spain], by *ONTSI* [Telecommunications and Information Society National Observatory], 2014.

From 2010 to 2013, employment in selected Spanish content industries is clearly on the downfall, a tendency possibly reflecting the national economic situation. Still, the sound recording industry lost 27.2% of its employees, the motion picture and video industry workforce was reduced by 28.3%, and the number of highly-qualified workers in the software industry shrunk by 13.8%. The annual number of employees per industry is available in Table 1.3.

Table 1.3: Workforce of selected content industries in Spain

	Number of employees			
	2010	2011	2012	2013
Sound recording	2,024	1,858	1,669	1,474
Motion picture and video	23,706	22,726	18,089	16,991
Software editing and publishing	31,800	29,090	26,259	27,420

Note. Adapted from "*Informe Annual del Sector de las Tecnologías de la Información, las Comunicaciones y de los Contenidos en España 2013* [2013 Annual Report on the IT, Communications, and Content Sector in Spain], by *Observatorio Nacional de las Telecomunicaciones y de la SI* [Telecommunications and Information Society National Observatory], 2014.

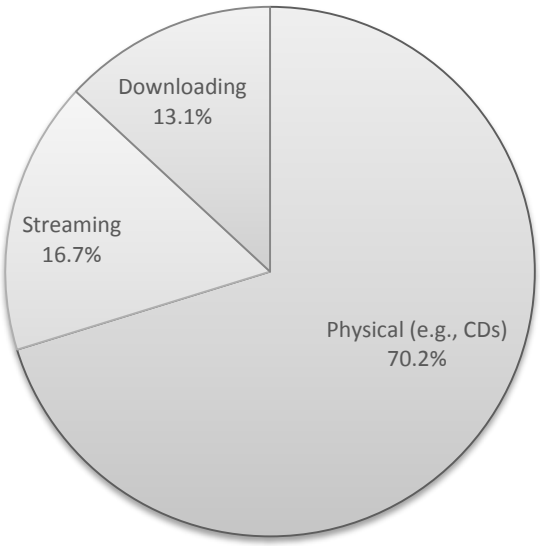
Although the above indicators depict mainly negative trends over the last years, the importance of these three industries for the Spanish economy cannot be ignored. In 2013, the Spanish sound recording, motion picture and video, and software editing and publishing industries accounted for almost 4,000 businesses, with revenues of over €9.1 billion, and employed more than 45,000 workers.

According to the *ONTSI* (2014), the content industries were strongly and negatively influenced by changing consumers' patterns and less expensive forms of entertainment consumption based on new technologies. Despite the downward spiral the Spanish content industry has found itself in, it should be emphasized that the trend towards digitalization continues. In 2013, digital sales represented 53.0% of all Spanish content-related revenues. A deeper analysis of the sales of digital content is presented in the following section.

1.1.2 Digital entertainment distribution in Spain

According to the *Asociación de Empresas de Electrónica, Tecnologías de la Información y Contenidos Digitales* (*AMETIC* or Electronics, IT, and Digital Content Business Association), online distribution is growing rapidly in the entertainment world (2013). For example, worldwide sales of online music summed up $7.2 billion and accounted for 31% of all music sold. In comparison, only five years before, online sales reached $3.2 billion and accounted for only 10% of total music sold.

Figure 1.2: Revenues from digital music distribution in Spain



Note. Adapted from "*Informe 2012 de la Industria de Contenidos Digitales"* [2012 Digital Content Industry Report], by *AMETIC* [Electronics, IT, and Digital Content Business Association], 2011, Government of Spain Report No. TSI-090100-2011-103.

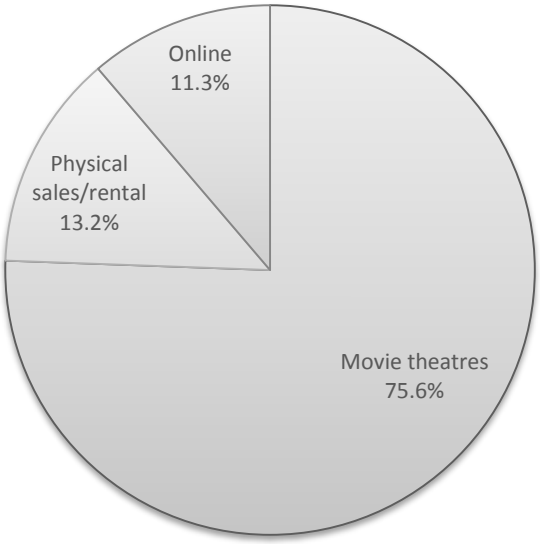
In Spain, *AMETIC* (2013) suggests that revenues from digital music distribution totaled €160 million for 2011. Most revenues from digital music sales (€110 million) were still earned over physical devices, like CDs. Having to buy the entire artist or group's album is a factor understandably contributing to the sustained value importance of CD's in digital music distribution. Focusing on legal online music distribution,

streaming amounted to €28 million and downloading summed up to €22 million in revenues. Relative weight of each medium in total digital music distribution is outlined in Figure 1.2. A more recent study (GfK, 2015) suggests that the digital music industry in Spain is now valued at €171 million, with online distribution accounting for 36.8% of total legal sales.

Similarly, revenues from the digital distribution of movies and videos totaled €880 million in 2011. The highest contributor to digital movie distribution are movie theatres (€665 million) followed by physical sales and rental of DVDs or Blue Ray discs (€116 million). Finally, legal online movie distribution, such as streaming or video-on-demand, amounted to €99 million. The relative weight of each movies and video distribution channel is outlined in Figure 1.3. A current study suggests that the Spanish digital movie industry value has decreased to €673 million, with online distribution now accounting for 5.6% of total legal sales (GfK, 2015).

Software is not technically included in the digital entertainment revenues. Moreover, software distribution results (e.g., physical or online figures) are not readily available in Spain. Still, the entire software distribution is evidently digital and it is hereby expected that an important and growing share of revenues stemming from software distribution is achieved online through the Internet. Additionally, the software industry in Spain represents a commercial value of licensed software of approximately €1.7 billion in a market characterized by many small to medium-sized enterprises, according to the BSA (Business Software Alliance, 2012).

Figure 1.3: Revenues from digital movie distribution in Spain



Note. Adapted from "*Informe 2012 de la Industria de Contenidos Digitales"* [2012 Digital Content Industry Report], by *AMETIC* [Electronics, IT, and Digital Content Business Association], 2011, Government of Spain Report No. TSI-090100-2011-103.

Most indicators portray content industries being submitted to negative alterations due to technological innovations. Moreau (2013) recently discussed the disruptive nature of digitization in the music industry and how the industry failed to adapt. Still, music, movie, and software industries remain important for the Spanish economy in terms of number of businesses, annual revenues, number of workers, and ultimately their contribution to the GNP. There is also an inevitable trend towards digitalization and online distribution. Copyright industries in general derive an important and growing share of their revenues from digital products through the Internet, but related problems such as online digital piracy inhibit the growth of these markets.

1.2 ONLINE DIGITAL PIRACY EXTENT

The importance of the copyright industries for the Spanish economy was previously discussed. The music, movie, and software industries in Spain, although under serious difficulties, are formed by numerous businesses (3,823), generate important revenues (€9.1 billion), and employ numerous qualified workers (45,885). Altogether, the content sector contributes 1% of the Spanish gross domestic product. Thanks to digitization, a significant and increasing share of its distribution is now realized online. For example, approximately 30% of music and 11% of movies and videos are nowadays enjoyed through the Internet. Still, those results only represent the legal audience and completely ignore illegal consumption.

Digital piracy is a very serious threat for two reasons. First, it does not compensate the copyright owners and creators who then lose the financial returns on their work and the incentives to develop further innovations. Second, it impedes the growth and progress of content industries and diminishes its much needed contribution to the penurious Spanish economy. This section will review the extent of digital piracy in general and illegal downloading in particular. Specific attention will be given to the magnitude of music, movies, and software piracy in Spain.

1.2.1 Worldwide

The extent of digital piracy and its effects on the economy has been largely pondered in the academic literature (Peitz & Waelbroeck, 2006; Waldfogel, 2010). The International Intellectual Property Alliance (IIPA), a coalition of seven trade

associations[2] representing U.S. companies that produce copyright-protected material, including music, films and television programs, and computer software, established the worldwide cost of digital piracy at approximately $16.9 billion (Siwek, 2014). The recorded music and motion pictures industries face losses of $2.7 and $2.9 billion per year respectively, with the lion's share being pirated in America (approximately 40%). The business software industry loses approximately $8.6 billion, with Asia and Europe hurting the most. Asia/Pacific is responsible alone for 40.7% of the losses incurred to the software industry. Table 1.4 illustrates the estimated losses due to digital piracy for selected industries and outlines the differences in digital infringement between the various regions of the world.

Table 1.4: Worldwide piracy losses for selected copyright industries

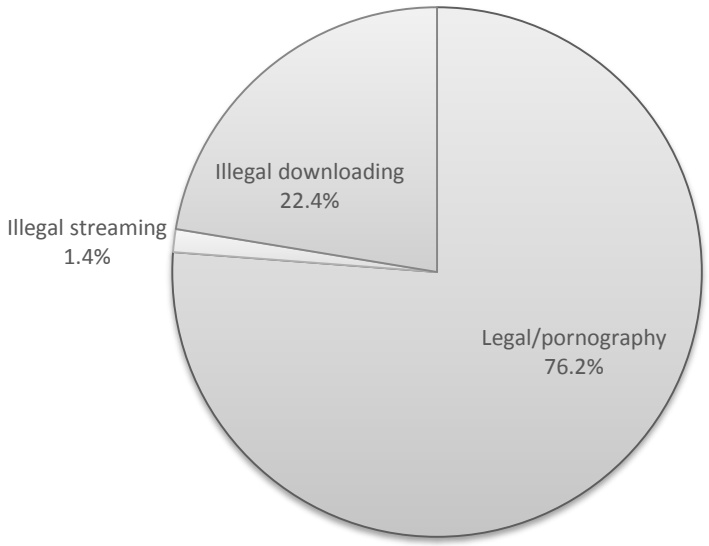
	Estimated losses (in $ million) by region			
	Asia/Pacific	Europe	America	Middle-East/Africa
Recorded music	711	774	1,133	87
Motion pictures	593	1,014	1,120	186
Business software	3,476	3,086	1,493	583
Total	4,780	4,874	3,746	856

Note. Excludes losses occurred in a number of countries. Adapted from "Special 301 Report" by the International Intellectual Property Alliance, 2007, in Siwek (2014).

[2] The Association of American Publishers (AAP), the Entertainment Software Association (ESA), the Independent Film & Television Alliance (IFTA), the Motion Picture Association of America (MPAA), and the Recording Industry Association of America (RIAA).

The cost of digital piracy is not surprising when considering that legal online access to music, movie, and software is only the tip of the iceberg. Schulze and Mochalski (2008) once suggested that peer-to-peer (P2P) file sharing interactions account for an estimated half of all internet traffic and over 95% of overnight activity. A recent study suggests that 23.8% of all Internet traffic infringes copyrights (Envisional, 2011). As Figure 1.4 proposes, most of the Internet is used for legal and/or pornographic purposes. Still, almost one quarter of the worldwide Internet traffic is dedicated to illegally downloading or streaming content.

Figure 1.4: Use of global Internet bandwidth



Note. Pornographic material is included in legal use of Internet given the difficulty to establish if it represents a copyright infringement or not. Adapted from "Technical report: An Estimate of Infringing Use of the Internet" by Envisional, 2011, p. 2. Copyright 2011 by Envisional Ltd.

The level of copyright infringement varies depending on the Internet outlet commonly used for the distribution of pirated material. For example, downloading and file sharing venues, such as BitTorrent, cyberlockers, and other peer-to-peer locations are mainly used to acquire copyrighted content illegally. Accordingly, content

identification established that torrents are copyrighted at 63.7%, pornographic at 35.8%, and unknown material at 0.5%. Only 0.01% of torrents are non-copyrighted files.

On the contrary, streaming sites (e.g., Netflix) are generally used to access copyrighted content legally (Envisional, 2011). Table 1.5 outlines different venues' (1) illegal contribution to Internet traffic and (2) share of copyright infringing traffic inside each venue. For example, BitTorrent's illegal traffic represents 11.4% of all Internet bandwidth and 63.7% of BitTorrent's traffic is illegal.

Table 1.5: Copyright infringing traffic for different venues

	Illegal traffic (%)	
	Share of Internet	Share of venue
BitTorrent	11.4	63.7
Cyberlockers	5.1	73.2
Other P2P (e.g., Usenet)	5.8	86.4
Streaming	1.4	5.3

Note. Excludes pornographic material. Adapted from "Technical report: An Estimate of Infringing Use of the Internet" by Envisional, 2011, p. 3. Copyright 2011 by Envisional Ltd.

Based on an analysis of more than 2.7 million torrents available, the estimated number of uploaders and downloaders by content type is outlined in Table 1.6. The total estimated number of peers is over 12 million Internet users (Envisional, 2011). It is convenient to specify that these estimates cover a single P2P file-sharing method and real figures are conceivably more significant. Additionally, many downloaders, also

known as "leechers", will not convert themselves in uploaders, also known as "seeders", after obtaining a file. The most blatant example being pornography: adult content accounts for twice as much downloaders than seeders. Hence, these results represent a very conservative snapshot of a possibly much greater phenomenon. For matter of consistency, pornographic and television contents are not included in the table, although they represent rather large volumes of downloads (35.6% and 13.4%, respectively).

Table 1.6: Number of BitTorrent peers by content type

	Estimated number of peers				
	Seeders	%	Leechers	%	Total
Music	482,369	3.7	110,647	1.7	593,016
Movies	9,084,608	65.1	2,404,271	37.7	11,488,879
Software	281,104	2.1	210,824	3.3	491,928

Note. Excludes pornography and television. Adapted from "Technical Report: An Estimate of Infringing Use of the Internet" by Envisional, 2011, p. 14. Copyright 2011 by Envisional Ltd.

1.2.2 Spain

In Spain, the extent of digital piracy seems to have reached gigantic proportions. The "Special 301 Report" is prepared annually for the United States Trade Representative (USTR) under Section 301 of the Trade Act of 1974. The reports identify foreign trade barriers to U.S. companies and products due to intellectual property laws, such as copyright, in other countries. The report identifies countries where protection of intellectual property rights is inadequate or ineffective. The annual

report contains (in decreasing order of prominence) a priority watch list, a watch list, and a list of countries requiring special attention. Table 1.7 summarizes Spain appearances in Special 301 reports over the last decade:

Table 1.7: A decade of Spain appearance in Special 301 reports

	Years of appearance
Priority watch list	2011
Watch list	2004, 2007-2010, 2012-2013
Special attention countries	2003, 2005-2006

Note. Adapted from "Special 301 Report", by the International Intellectual Property Alliance, 2003 to 2013, available at http://www.iipa.com/special301.html.

In 2010, the Special 301 Report suggested that Spain had one of the worst Internet piracy problems in Western Europe, where the theft of creative content endangers the country's cultural heritage and limits economic expansion opportunities. They insist that the extent of online piracy faced by the content industry in Spain is enormous and that the music market is in virtual collapse, "having dropped by over 65% in the past five years, mostly the consequence of P2P piracy". In regards of pirates' preferred method, the report notified that Spain had a very strong bias towards P2P file-sharing compared to other European markets and that P2P continues to dominate illegal downloading in the country.

The 2011 Special 301 Report indicated that Spain's highly connected population remains a market that is largely unworkable for legitimate digital content due to persistent high levels of Internet piracy, in particular through P2P platforms

unaffected by the proposed *LES* (the acronym for *Ley de Economía Sostenible*[3] or Sustainable Economy Act). They insist that digital piracy of music, audiovisual, and entertainment software products in Spain has supplanted the legitimate marketplace, making it extremely difficult for these industries to distribute authorized content. The report suggests that Spanish enforcement authorities have established a *de facto* decriminalization of illegal downloading of content distributed via P2P file-sharing.

In 2012, the Special 301 Report claimed that Spain's remarkably Internet-savvy consumers have devastated the legitimate distribution channels in favor of P2P file sharing. They suggest that piracy has damaged the ability of Spanish independent producers to raise funding in order to produce films.

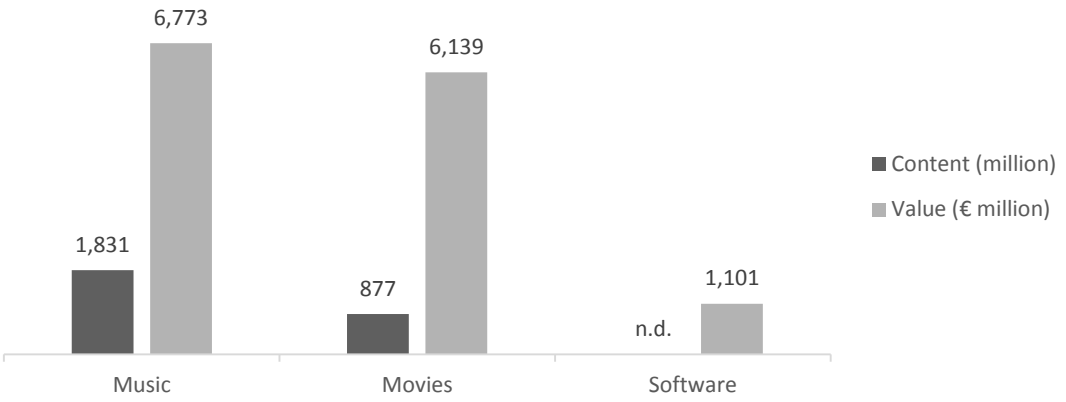
The 2013 Special 301 Report reminds the reader that Internet piracy in Spain began to skyrocket in 2007 and has continued to grow at a tremendous rate with "very little to deter the average consumer from participating in an online free-for-all for unauthorized copyrighted content". They saw now positive development surrounding the implementation of Sinde Law (or *Ley Sinde*[4] in Spanish), named after Ángeles González-Sinde, a former Spanish Minister of Culture. The report concludes that after years of difficulties and decimation of the Spanish market, copyright industries see "no hint of optimism regarding levels of piracy in Spain".

Whereas IIPA's reports may well be tainted by a hint of chauvinistic partiality, a recent study, sponsored by the Spanish *Coalición de Creadores e Industrias de*

[3] *Ley 2/2011, de 4 de marzo, de Economía Sostenible*.
[4] The Sinde Law is the commonly-given name to the 43rd disposition (*disposición final cuadragésima tercera*) of the aforementioned *LES*.

Contenidos ("*La Coalición*" or Coalition of Creators and Content Industries) and conducted by GfK, indicates that 87.9% of all content consumed in Spain in 2014 was unauthorized and that the percentage of consumers retrieving content illegally rose from 51% to 58%. Spanish digital pirates are believed to have illegally downloaded 4.3 billion contents valued to €23.3 billion on the legal market (GfK, 2015). Figure 1.5 illustrates the number of downloads and market value illicitly accessed in Spain in 2014.

Figure 1.5: Access to illicit content in Spain

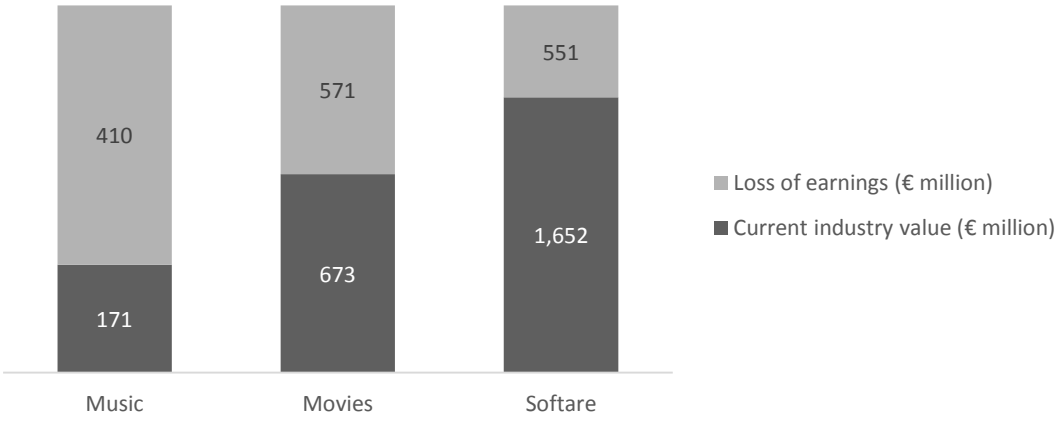


Note. Adapted from "The Software Alliance's 2012 Global Software Piracy Study", by BSA, 2012, available at http://portal.bsa.org/globalpiracy2011/index.html; and from "Piracy Observatory and Digital Contents Consumption Habits 2014", by *La Coalición de Creadores e Industrias de Contenidos* [Coalition of Creators and Content Industries] and GfK, 2015, p. 12. Copyright 2015 by GfK.

However, the value of all content illicitly accessed does not directly translate into loss of potential earnings. That is, if digital pirates were to lose access to unauthorized content, they would realistically not buy the same amounts of contents that were previously downloaded for free. Based on audits, earnings losses related to digital piracy represent 6.0% of pirated music and 9.1% of pirated movies value. As Figure 1.6 shows, the Spanish music industry could at least double its size and reach a

value of €581 million. The movie industry could increase 84.8% and be worth €1.2 billion (GfK, 2015). Finally the software industry could recoup at least half a billion euros to surpass the €2.2 billion mark (Business Software Alliance, 2012).

Figure 1.6: Loss of earnings for selected content industries in Spain



Note. Adapted from "The Software Alliance's 2012 Global Software Piracy Study", by BSA, 2012, available at http://portal.bsa.org/globalpiracy2011/index.html; and from "Piracy Observatory and Digital Contents Consumption Habits 2014", by *La Coalición de Creadores e Industrias de Contenidos* [Coalition of Creators and Content Industries] and GfK, 2015, p. 27. Copyright 2015 by GfK.

According to *La Coalición* (GfK, 2015), shrinking revenues associated with digital piracy does not exclusively hurt the content sector, but also the Spanish administrations and the general population. During difficult economic times, digital pirates are depriving the Spanish society of an estimated 29,360 direct jobs and €627.8 million in public funds (€343.7 million in sales tax, €219.3 million in social security, and €627.8 million in income tax).

While these figures are perhaps arguable, one fact remains: copyright industries are innovative and vital to the economy, but they also suffer from a rapidly-growing cancer called online digital piracy, where downloading unauthorized content such as music, movies, and software products accounts for the majority of the problem. The

negative impact of piracy is not only felt on the content industry, but also on government's treasures and society's overall well-being. Hence, it is reasonable to expect that governments and content industries' associations are fighting back illegal file sharing with strong anti-piracy initiatives, the topic of the following section.

1.3 COUNTER-PIRACY INITIATIVES

In order to protect the copyright industries and fight back digital piracy, several preventives and deterrents have been put in place. More often than not, originators of anti-piracy initiatives are copyright industries, corporate associations, and governments. Using a rather humorous feline analogy, Jackman and Lorde (2014) advances that strategies developed to deter the practice of digital piracy are divided into four distinct lines of attack. They are (1) "dead kitty", (2) "closed cat flat", (3) "play with kitty", and (4) "tame the cat" approaches.

The dead kitty approach entails waging lawsuits and other legal means against unauthorized websites, P2P venues, or even file sharers in order to lawfully eradicate the various actors of digital piracy. To support the dead kitty approach, the Spanish modern regulatory environment regarding intellectual property is made of three distinct bodies of legislation: International, European, and National. Table 1.8 presents significant passages of legal documents related to the protection of intellectual property from three distinct legislative levels.

Table 1.8: Intellectual property regulatory environment in Spain

Regulation	Excerpt
International	
U.N. Universal Declaration of Human Rights, Article 27	"Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author."
WIPO Copyright Treaty, Article 6 (Right of Distribution)	"Authors of literary and artistic works shall enjoy the exclusive right of authorizing the making available to the public of the original and copies of their works through sale or other transfer of ownership."
Berne Convention for the Protection of Literary and Artistic Works , Article 9 (Right of Reproduction)	"Authors of literary and artistic works protected by this Convention shall have the exclusive right of authorizing the reproduction of these works, in any manner or form."
European	
Directive 2004/48/EC of the European Parliament on the Enforcement of Intellectual Property Rights	"The protection of intellectual property should allow the inventor or creator to derive a legitimate profit from his invention or creation. It should also allow the widest possible dissemination of works, ideas and new know-how." "However, without effective means of enforcing intellectual property rights, innovation and creativity are discouraged and investment diminished. It is therefore necessary to ensure that the substantive law

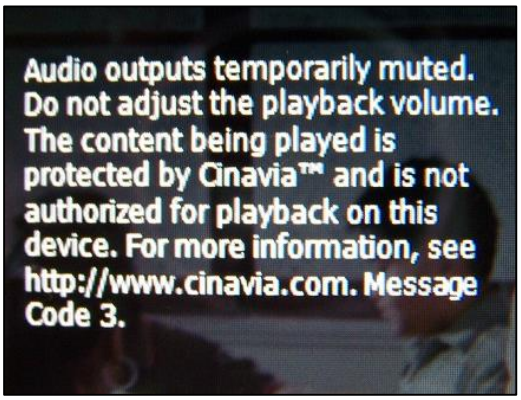
Regulation	Excerpt
	on intellectual property, which is nowadays largely part of the *acquis communautaire*, is applied effectively in the Community."
National	
Spanish Penal Code, Articles 270, 271, and 272	"Shall be punished with imprisonment from six months to two years and a fine of 12 to 24 months who, for profit and to the detriment of a third, reproduce, plagiarize, distribute or communicate publicly, in whole or in part, a literary, artistic or scientific work, or its transformation, interpretation or performance, in any type of medium or communicated through any means, without permission of the copyright holders of intellectual property or its assignees."
Sustainable Economy Act, 43rd Final Disposition	"The Ministry of Culture, within the scope of its powers, ensure intellectual property protection against violations from providers of information society services […]"
	"The competent bodies for the adoption of [intellectual property right protection] measures, in order to identify the [alleged infringement] responsible may require the service provider […] to transfer the data […]"

Note. Compiled and translated (if applicable) by author.

The closed cat flap method involves technologically turning digital piracy into a hard-to-accomplish activity in order to erode illegal downloaders' patience and commitment until frustration or discouragement forces users to act legally. For

example, Cinavia is a digital right management technology for Blu-ray disc players that reads codes from the video file and may limit the use of certain unauthorized copies. Figure 1.7 displays a typical Cinavia on-screen message.

Figure 1.7: Digital right management technology on-screen message



Note. Compiled by author.

The play with kittens approach consists in providing not only legal, but also superior alternatives to digital piracy. Authorized replacements are typically fee-based digital services such as iTunes and Netflix or ad-supported content like Spotify Free and YouTube. Rather than to wait for pirated releases, users can legitimately access digital products from home. Acquisition forms include downloading and streaming, as characterized in Table 1.9. Both options are also considered legal alternatives to more traditional forms of acquisition such as purchasing a CD or a DVD.

Table 1.9: Characteristics of legal online content access forms

	Legal online options	
	Downloading	Streaming
Property form	Ownership	Access
Offline access	Yes	No
Business model	Individual transactions	Paid membership, freemium
Venue examples	iTunes (USA), Nubeox (Spain), Yomvi (Spain), 7digital (UK)	Deezer (France), Netflix (USA), Spotify (Sweden)

Note. Compiled by author.

Finally, the tame the cat approach consists in discouraging illegal file sharing through marketing campaigns. Communication are being directed at consumers to alter their attitude and intentions towards digital piracy. This approach fits in the social marketing classification because it "involves the use of marketing principles and techniques to influence a target audience to voluntarily accept, reject, modify, or abandon a behavior for the benefit of individuals, groups, or society as a whole" as defined by Kotler and colleagues (2002).

According to Chaudhry and Zimmerman (2008), anti-piracy advertisements are generally based on techniques of peer pressure, fear of prosecutions, negative association with pirates, whistle-blowing, and reward. As exposed in Figure 1.8, anti-piracy communication campaigns in Spain have focused on negative association with

the 2004 spot "Piracy is a crime" (in Spanish "*La pirtería es un delito*") and the 2008 campaign "If you are legit, you are legit" (in Spanish "*Si eres legal, eres legal*"). Both would unescapably run as a trailer before the featured presentation in movie theatres or as television advertisements. In 2007, Filmax launched a campaign exposing the functional risks related to digital piracy, where the main characters of the movie Donkey Xote (2007), Rucio and Rocinante, would suddenly drop in image quality and start speaking with a strong foreign accent.

Figure 1.8: Examples of anti-piracy campaigns in Spain

Note. Compiled by author.

In summary, copyrights are a form of intellectual property where the author or right holder is the owner of an original creation, such as a song, a movie, or even a software. This privilege conveys the abilities to use, copy, or distribute such content accordingly. Legal protection is required given the importance of intellectual property as a right and therefore as a source of wealth. The respect of copyrights is beneficial in two ways. First, it secures a justified compensation to the creator that also serves as a source of motivation to keep innovating. Moreover, it protects essential industries that significantly contribute to the state and employees' well-being through taxes, social security, and wages.

Still, new technologies, including content digitization and the Internet, have fueled the expansion of piracy and put copyright industries at risk. The value of infringing content being accessed by an ever-growing number of downloaders surpasses the industries' revenues, endangering Spanish cultural heritage and limiting economic expansion, not only of the sector but also of society. To reverse this trend, governments and content industries' associations understandably engage in anti-piracy activities.

Anti-piracy initiatives are based on many different strategies: legal means to incapacitate the leading piracy actors, technological innovations to discourage file sharers, superior alternatives to attract consumers into legal content acquisition, and social marketing campaigns to convince downloaders to act rightfully. All these strategies share one thing in common: they are overall ineffective at stopping the growth of online digital piracy.

This is essentially the piracy paradox, as presented by Chaudhry and Zimmerman (2008), where piracy keeps on growing continuously despite a great deal of attention paid to fighting piracy by scholars, governments, and associations. This paradox is reminiscent of the prevalent use of tobacco after countless communication campaigns informing smokers of the harmful and possibly lethal consequences of cigarette usage. Similarly, how can illegal downloading be so rampant after numerous anti-piracy campaigns? A promising and natural avenue is to understand the individual characteristics differentiating groups of downloaders according to their online payment behaviors, which is the topic of the present thesis.

2 Literature review

"To know the road ahead, ask those coming back."

— Chinese proverb

"If I have seen further it is by standing on the shoulders of giants."

— Sir Isaac Newton

Digital piracy is not a new phenomenon, and research on the topic has been present in the academic literature for many years. The first studies on digital piracy focused on the illegal copying of software (Christensen & Eining, 1991), well before the advent of P2P music sharing (Bhattacharjee, Gopal, & Sanders, 2003) and the market introduction of technological innovations required to download movies (Rob & Waldfogel, 2007). Accordingly, there are less studies on movie piracy than music and software piracy because downloading movies illegally (1) has only been made available with affordable storage and larger bandwidth and (2) is a more recent phenomenon. Nevertheless, the body of knowledge related to digital piracy in general has nowadays reached colossal proportions, therefore delimiting the scope of the present literature is not only useful, but necessary.

This literature review emphases the individual factors influencing music, movies, and software downloader's online payment behaviors. Understandably, it mainly includes research about digital piracy (Wang & McClung, 2012; Yoon, 2011b)

and closely related phenomena such as illegal sharing (Kwong & Park, 2008), illegal downloading (Cox & Collins, 2014), or downloaders' willingness-to-pay (Chiang & Assane, 2009). There is no intent in reviewing the impacts of digital piracy on the related industries' bottom line (Hill, 2007; Jain, 2008) nor in summarizing cross-cultural differences about digital piracy (Christie, Kwon, Stoeberl, & Baumhart, 2003; Husted, 2000), but rather to concentrate on the individual factors influencing downloaders' decision when facing the paying or not online dilemma.

A more limited and manageable number of publications constitute the relevant body of information coming from the extensive literature about digital piracy available today. These studies are chronologically presented in Table 2.1, including details on the content type, the sample, the methodology, and the investigated phenomenon. Journal articles were located using keywords associated with digital piracy in academic search engines, such as Thomson Reuters' Web of Science, and Google Scholar, and consulting lists of related articles (i.e., "cited in" sections). Publications were then filtered based on their relevance with the scope of this research and their impact within the research area. The initial selection of publications occurred from October to December of 2011, at the beginning of this dissertation project. A final round was conducted during the authoring phase (from September 2014 to January 2015) in order to include late publications and avoid omitting new developments.

This scientific corpus includes studies about three content types (music, movies, and software) and covers a publication period comprised between 2003 and 2014. The body of literature, while undoubtedly dominated by American samples, also consist of samples from Canada (d'Astous, Colbert, & Montpetit, 2005), Finland (Cox & Collins,

2014), Germany (Walsh, Mitchell, Frenzel, & Wiedmann, 2003), the Netherlands (Jacobs, Heuvelman, Tan, & Peters, 2012), Spain (Cuadrado, Miquel, & Montoro, 2009), China (Yoon, 2011b), South Korea (Moon, McCluskey, & McCluskey, 2010; Yoon, 2011a), and Taiwan (Chiou, Huang, & Lee, 2005; Liao, Lin, & Liu, 2010).

It should be pointed out that the vast majority of samples are made of college or university students. Exceptions are researches using high-school students (Chiou *et al.*, 2005; Moon *et al.*, 2010; Navarro, Marcum, Higgins, & Ricketts, 2014) or Internet users (Cox & Collins, 2014; Gupta, Gould, & Pola, 2004; Liao *et al.*, 2010; Walsh *et al.*, 2003). Only Cuadrado and colleagues (2009) have not relied on a convenience sample, with the added benefit of a superior generalizability of their findings.

Table 2.1: General literature on digital piracy

Study	Content	Sample (country)	Method	Investigated phenomenon
Bhattacharjee *et al.* (2003)	Music	200+ mostly students (USA)	Self-admin questionnaire	Characteristics of online music sharing
Gopal *et al.* (2004)	Music	133 college students (USA)	Self-admin questionnaire	Deterrence and ethical predispositions on piracy club size
Hinduja (2003)	Software	433 university students (USA)	Self-admin questionnaire	Trends and patterns affecting online pirating behavior
Peace *et al.* (2003)	Software	201 p/t MBA students (USA)	Self-admin questionnaire	Piracy intentions in the workplace

Study	Content	Sample (country)	Method	Investigated phenomenon
Walsh *et al.* (2003)	Music	4,016 Internet users (Germany)	Online questionnaire	Internet-related consumer procurement behaviors
Gupta *et al.* (2004)	Software	689 USENET users (USA)	Online questionnaire	Determinants of past acquisition modes
Gopal *et al.* (2004)	Music	133 college students (USA)	Self-admin questionnaire	Deterrence and ethical predispositions on piracy club size
Chiou *et al.* (2005)	Music	207 high-school students (Taiwan)	Self-admin questionnaire	Antecedents of consumer attitude and intention toward piracy behavior
d'Astous *et al.* (2005)	Music	139 college students (Canada)	Self-admin questionnaire	Intention to engage in piracy
Al-Rafee & Cronan (2006)	Software	285 college students (USA)	Self-admin questionnaire	Attitude towards digital piracy
Woolley & Eining (2006)	Software	174 college students (USA)	Self-admin questionnaire	Longitudinal evolution of piracy behavior
LaRose & Kim (2007)	Music	134 college students (USA)	Mail survey questionnaire	Intention to continue downloading
Hinduja (2007)	Software	433 university students (USA)	Self-admin questionnaire	Neutralization theory and online piracy
Cronan & Al-Rafee (2008)	Software	280 college students (USA)	Self-admin questionnaire	Intention to pirate

Study	Content	Sample (country)	Method	Investigated phenomenon
Goles *et al.* (2008)	Software	455 college students (USA)	Paper & online questionnaire	Attitude towards piracy in different settings
Kwong & Park (2008)	Music	217 college students (USA)	Self-admin questionnaire	Intention to download/ share digital music
Lysonski & Durvasula (2008)	Music	364 college students (USA)	Self-admin questionnaire	Consumer and ethical predispositions towards piracy
Morton & Koufteros (2008)	Music	216 college students (USA)	Self-admin questionnaire	Deterrence effect on attitude towards piracy
Coyle *et al.* (2009)	Music	204 college students (USA)	Self-admin questionnaire	Consumer considerations of acquisition-mode decision
Cuadrado *et al.* (2009)	Music	1,282 participants (Spain)	Self-admin questionnaire	Consumer attitudes towards music piracy
Malin & Fowers (2009)	Music, movies	200 high-school students (USA)	Self-admin questionnaire	Adolescent self-control and peer-association affecting piracy
Taylor *et al.* (2009)	Music, movies	857 (music), 874 (movies) mostly students (USA)	Online questionnaire	Motivations/intentions to engage/refrain from piracy

Study	Content	Sample (country)	Method	Investigated phenomenon
Liao *et al.* (2010)	Software	305 forums' participants (Taiwan)	Online questionnaire	Perceived risk influencing attitude and intention toward using pirated software
Moon *et al.* (2010)	Software	2,751 high-school (South Korea)	Self-admin questionnaire	Adolescent self-control and opportunity affecting piracy
Morris & Higgins (2010)	General	585 college students (USA)	Self-admin questionnaire	Social learning factors influencing digital piracy
Dilmperi *et al.* (2011)	Music	214 college students (UK)	Email questionnaire	Demographic and consumption-related antecedents of piracy
Yoon (2011a)	General	111 college students (South Korean)	Self-admin questionnaire	Ethical decision making in the Internet context
Yoon (2011b)	General	270 college students (China)	Self-admin questionnaire	Ethics on attitude/ intention to commit digital piracy
Jacobs *et al.* (2012)	Movie	348 students/ downloaders (Netherlands)	Online questionnaire	Estimated number of monthly downloads
Nandedkar & Midha (2012)	Music	219 college students (USA)	Online questionnaire	Intention to download unauthorized files
Wang & McClung (2012)	General	547 college students (USA)	Self-admin questionnaire	Guilt and emotions on file downloading recency

Study	Content	Sample (country)	Method	Investigated phenomenon
Cox & Collins (2014)	Music, movies	6,103 Internet users (Finland)	Online questionnaire	Impact of consumer attitudes and characteristic on illegal downloading
Navarro *et al.* (2014)	Music, movies, software	1617 high-school students (USA)	Self-admin questionnaire	Effect of Internet addiction and deviant peer association on digital piracy
Udo *et al.* (2014)	Software	331 (India), 231 (USA) college students	Self-admin questionnaire	Cross-cultural differences in factors affecting digital piracy

Note. Compiled by author.

Digital piracy in general and downloading in particular have transformed the way content is acquired, shared, and consumed. When such a new phenomenon arises, scholars must decide which theories provide acceptable interpretations. In doing so, the singularities of digital piracy is examined from many theoretical perspectives and under several theoretical frameworks. For example, piracy is viewed as an individual decision in social psychology, as an immoral or illegal behavior in ethics and criminology, as a form of distribution and consumption in marketing, etc.

Hence, this chapter is composed of four sections. The first section discuss various disciplines' contributions to the study of digital piracy. Learnings were assembled by discipline: (1) social psychology, (2) ethics and criminology, (3) consumerism, and (4) exploratory research. This method allows delivering theory-related insights to facilitate readers' progress while providing unique perspectives of

the same phenomenon. Still, no discipline is comprehensive and can pretend to cover all significant factors related to a given phenomenon. The following section regroups individual influences under four thematic groups of considerations related to digital piracy: (1) demographic characteristics, (2) psychographic characteristics, (3) technological and behavioral influences, and (4) content-related influences. The third section consists of a summary of accumulated empirical evidence, where key findings are organized by content type (music, movies, and software). The last section will discuss some questions apparently needing further investigation.

2.1 DISCIPLINES' CONTRIBUTIONS TO THE STUDY OF DIGITAL PIRACY

The selected literature is first organized by the broad disciplines to which they contributed: social psychology, ethics and criminology, consumerism, and exploratory research. This *modus operandi* has two benefits. First, authors from a given discipline tend to rely on similar theoretical models with homogenous sets of variable, thus providing related insights and facilitating readers' progress. Furthermore, each discipline provides a unique perspective of the same phenomenon, therefore providing the readers with different standpoints on the same issue.

Understandably, classifying published articles by research discipline is a subjective task when one of the following situation arises: researchers integrated various theorical frameworks from different disciplines into a single research or the theorical framework was not specified. In those circumstances, publications were classified according to the prevailing model (Morton & Koufteros, 2008; Yoon, 2011b) or the publishing journal (Dilmperi, King, & Dennis, 2011). Finally, some articles do not test a specific model: they are predominantly exploratory and/or from grounded-

theory (Lysonski & Durvasula, 2008). Approaches and variables used in the study of digital piracy are summarized in Table 2.2 at the end of this segment.

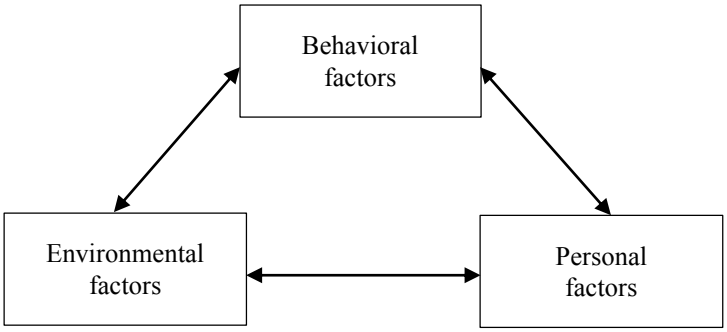
2.1.1 Learnings from social psychology

Behavioral change theories attempt to explain why behavioral intentions or actual behaviors change over time. Research on digital piracy informed by social psychology and behavioral theories mainly focus on the antecedents of piracy. That is, personal, social, and behavioral considerations leading to the intention to engage in digital piracy or digital piracy itself. Most noticeable behavioral models used are Bandura's social cognitive theory (1986), Ajzen and Fishbein's theory of reasoned action (1980), and Ajzen's theory of planned behavior (1991).

2.1.1.1 Social cognitive theory

According to Bandura's (1986) social cognitive views, human behavior is learnt through the mutual interaction of causal influences originating from three different sources: behavioral (e.g., skills, practice, and efficacy), personal (i.e., cognitive and affective), and environmental factors (e.g., influences and social norms). Since various factors are often needed to produce a given effect, Bandura (1986) suggests that factors are probable rather than inevitable. The influence of a single factor will vary according to the person, the activity, and the circumstances. For example, weak situational constraints call for heavier weight of personal factors. The tripartite influence of the social cognitive theory is illustrated in Figure 2.1.

Figure 2.1: Social cognitive theory



Note. Adapted from Bandura (1986).

Social cognitive theory as a learning process, is affected by people's nature, which is defined by a set of five basic personal abilities: symbolizing, forethought, vicarious, self-regulatory, and self-reflective capabilities (Bandura, 1986). The implications are various. First, the learning process can be achieved by perceiving behaviors and their resulting consequences of others (vicarious learning and modeling) or of oneself (enactive learning from past behaviors). Thus, outcome expectations reflect individuals' beliefs about what consequences are most likely to ensue if certain behaviors are performed (forethoughts). Outcome expectations own a valence and shape the decisions people make about what actions to take or not to take. Positive expected outcomes become incentives that can be primal, sensorial, social, monetary, experiential, etc.

Goals are prerequisite for self-regulation since they provide (1) objectives to achieve (performance dimensions) and (2) benchmarks against which to judge one's progress. The judgmental process of self-regulation involves evaluating one's behavior

against (1) personal standards or (2) referential performances, like norms[5] and social comparisons. Finally, self-efficacy is viewed as people's judgments of their own capabilities to accomplish a given task. Information is weighed and filtered through cognitive appraisal (e.g., a prior failure may not be detrimental to self-efficacy).

Regarding digital piracy and file sharing, and consistent with an earlier study extending the social cognitive theory to general Internet usage (LaRose & Eastin, 2004), LaRose and Kim (2007) found that descriptive norms (e.g., "I download less than the typical college student") and moral justifications (e.g., "There is nothing wrong with file sharing") preceded deficient self-regulation (e.g., "My downloading is out of control") as a predictor of intentions to continue illegal downloading. Social, economic, and novelty-seeking motivators also encouraged participants' intention to keep on downloading. Normative influences (descriptive, subjective, and moral norms) were not found to have a direct effect on downloading intentions, suggesting that downloaders' deficient self-regulation impedes the development of normative control (LaRose & Kim, 2007).

Building on LaRose and Kim's (2007), Jacobs, Heuvelman, Tan, and Peters (2012) found that deficient self-regulation (i.e., degree to which downloading is part of someone's daily routine), descriptive norms (i.e., perceived attitude towards the behavior), and five categories of expected outcomes affected participants' number of downloads. Expected outcomes categories motivating downloads are novelty

[5] Interestingly related to digital piracy, Bandura (1986) notes that selective engagement and disengagement of internal controls can occur for behaviors that prejudice others through moral justification, euphemistic labeling, advantageous comparison, displacement/diffusion of responsibility, disregard/distortion of consequences, and attribution of blame to others, amongst others.

compulsion (i.e., the drive to see new and different movies), completionism (i.e., the drive to simply see a large number of films), economic, legal knowledge (i.e., knowing that you will not get prosecuted for downloading) and social environment (e.g., "I often talk to my friends about the movie we download"). Changes in moral justification or self-efficacy did not significantly affects participants number of downloads.

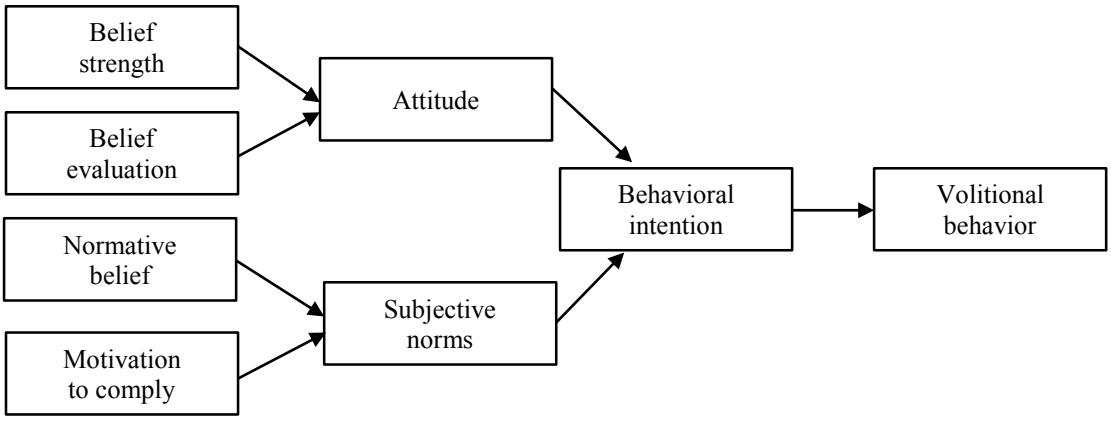
Conclusions regarding the role played by moral justification and self-efficacy are not consensual. Jacobs *et al.* (2012) suggest that the lack of significance of these two factors, existent in LaRose and Kim's (2007) model, is the result of social changes. They argue that the Internet has become deeply embedded in every day's life that downloaders have stopped worrying about the morality of their behavior or their ability to perform. This last supposition regarding self-efficacy is however inconsistent with the inherent complexity of file sharing as opposed to streaming, for example (Johnson, McGuire, & Willey, 2008). These findings could be biased by the high response rate of (1) knowledgeable users recruited from a technological forum (Jacobs *et al.*, 2012) and (2) students, particularly uninhibited in admitting piracy (Woolley & Eining, 2006).

2.1.1.2 Theory of reasoned action

The aim of the theory of reasoned action (Ajzen & Fishbein, 1980) is to explain one's intentional behavior, as opposed to non-voluntary actions like impulses, habits, or cravings (Hale, Householder, & Greene, 2002). As Figure 2.2 illustrates, the theory of reasoned action posits that the strongest predictor of volitional behavior is behavioral intention. Such intention is causally influenced in two ways: (1) personally, by one's attitude toward the behavior and (2) normatively, by one's subjective norms (Ajzen & Fishbein, 1980). One's attitude toward a volunteer behavior is a function of the

attributes one links to a particular behavior and their associated evaluation and salience. Similarly, subjective norms are defined by one's normative beliefs (i.e., self-perceived expectations of "important others" regarding the behavior) and motivation to comply (i.e., pressure one feels to match his/her behavior to others' expectations). The theory of reasoned action is said to be intuitively appealing since all components proceeding one's actual behavior represent target points for persuasive appeal (Hale *et al.*, 2002).

Figure 2.2: Theory of reasoned action



Note. Adapted from Ajzen & Fishbein (1980).

Framed after the theory of reasoned action, Woolley and Eining's (2006) findings corroborated the effects of attitudes and subjective norms on software piracy behavior. They argued that peer-related, rather than authority-related, subjective norms are more influential. For example, friends or family should be more influential than school or company colleagues in affecting one's intention to pirate software. The authors longitudinally compared their results to a previous research (Christensen & Eining, 1991) to conclude that although knowledge of copyright laws has increased over the years, this greater awareness has not translated into a lesser piracy rate. These

results provide confirmatory evidence that education about copyright laws does not influence students' attitude toward piracy (Woolley & Eining, 2006).

Logically, as perceived risk increases, people do refrain from pirating (Chiou *et al.*, 2005). However, Nandedkar and Midha's (2012) used the attitudinal half of the theory of reasoned action to approach the apparent paradox between enduring piracy and the high risks associated with illegal downloading. They found optimism bias to be a significant moderator of the relationship between perceived risks, such as performance, prosecution, and social risks, and attitude towards music piracy. Nandedkar and Midha (2012) also found past piracy behavior, labelled "habit", to be a significant predictor of attitude towards digital piracy, although habits are generally considered non-voluntary actions (Hale *et al.*, 2002).

Nandedkar and Midha (2012) claim that facilitating conditions, partly constructed by self-efficacy items, such as "I know how to access unauthorized music products that can be downloaded", were not significantly related to downloaders' attitude towards piracy. This particular finding supports the authors' choice of theorical framework given that, unlike social cognitive theory's self-efficacy (Jacobs *et al.*, 2012; LaRose & Kim, 2007), the theory of reasoned action excludes behaviors that require special skills (Hale *et al.*, 2002).

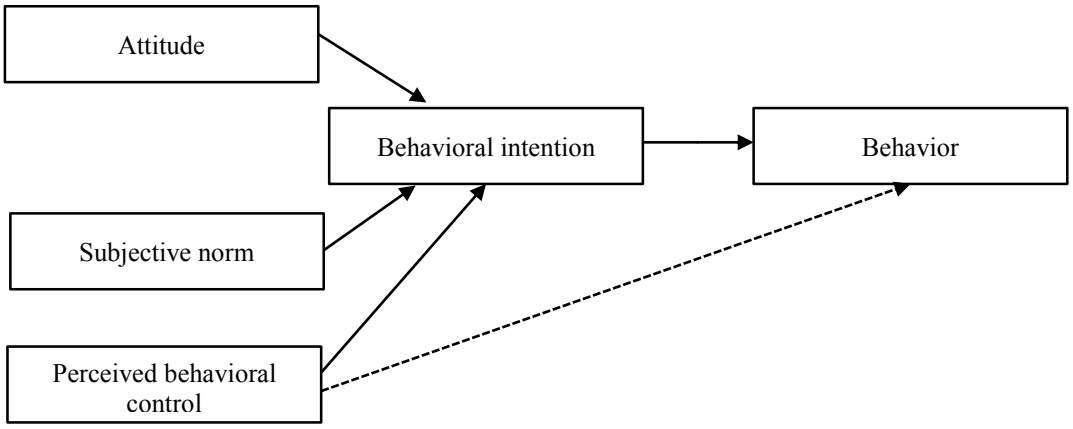
Owning the technical familiarity necessary to access and download illegal content online is nonetheless reasonably justified by the complexity of the task (Johnson *et al.*, 2008). Downloading illegal media files is not under full volitional control because particular resources, knowledge, and abilities are needed to perform the

behavior successfully (Liao *et al.*, 2010). Lacking ability-related components and ignoring non-volitional behaviors converts the theory of reasoned action in a weak framework to study digital piracy. Scarce literature on digital piracy framed after Ajzen and Fishbein's (1980) theory of reasoned action tends to support to this conclusion.

2.1.1.3 Theory of planned behavior

Ajzen's (1991) theory of planned behavior is an extension of the theory of reasoned action (Ajzen & Fishbein, 1980) in an effort to include behaviors over which people have incomplete control, as it seems to be for digital piracy and illegal file sharing. The sole difference from the former model is the inclusion of perceived behavioral control. Perceived behavioral control is one's self-perception of ease or difficulty in performing a given behavior, a concept similar to Bandura's (1986) self-efficacy judgment. As illustrated by Figure 2.3, intentions to perform a behavior can be predicted from (1) attitudes toward the behavior, (2) subjective norms, and (3) perceived behavioral control. The intention, together with perception of behavioral control, account for considerable variance in actual behavior (Ajzen, 1991).

Figure 2.3: Theory of planned behavior



Note. Adapted from Ajzen (1991).

Consistent with the theory of planned behavior, d'Astous, Colbert, and Montpetit (2005) found that the intention to engage in music piracy is affected by attitude towards piracy, subjective norms, and perceived behavioral control. Additionally, past piracy behavior also appears to motivate individuals to do it again. Validating previous research (Bhattacharjee *et al.*, 2003), age was moderately and negatively related with intention to engage in piracy.

Al-Rafee and Cronan (2006) first worked on the antecedents of attitude towards piracy. Their results suggest that relevant influences include cognitive outcome beliefs, affective beliefs such as happiness and excitement, age, perceived importance of the issue, subjective norms, and degree of Machiavellianism. However, the authors did not extend these antecedents to behavioral intention.

In a subsequent publication (Cronan & Al-Rafee, 2008), attitude, perceived behavioral control, past piracy behaviors, and moral obligations were shown to have a significant effect on one's intention to pirate. The authors' dual study (Al-Rafee & Cronan, 2006; Cronan & Al-Rafee, 2008) verified the theory of planned behavior as a satisfactory model, suggested the exclusion of subjective norms, as opposed to d'Astous *et al.* (2005), and proposed to generally enhance the model in order to include broader predictors of piracy (e.g., moral obligation, degree of Machiavellianism).

Wang and McClung (2012) studied the role of anticipated guilt and general emotions associated with illegal downloading. In accordance with the theory of planned behavior, they found that students are more likely to download when they own favorable attitudes, perceive social approval, and perceive control over illegal

downloading. More importantly, they suggest college students feel little anticipated guilt toward illegal downloading, unless they recently performed the behavior (i.e., in the past six months). Anticipated emotions, such as happiness, predicted intentions to download among the whole sample.

Within the context of service marketing, Taylor and colleagues (2009) proposed a modified version of Perugini and Bagozzi (2001) model of goal-directed behavior. The authors' model built on three areas typically neglected by the theory of planned behavior: affects, motivation, and habit. They argued that anticipated emotions (positive and negative), along with multidimensional conceptualizations of attitude towards piracy (hedonic and utilitarian) and perceived behavioral control (difficulty and control) significantly combine with past-piracy frequency to provide a more complete examination of the motivations leading to piracy intentions.

Concentrating on perceived usefulness and ease-of-use, Kwong and Park (2008) used an extension to the theory of planned behavior labeled the technology acceptance model (Davis, 1989; Taylor & Todd, 1995) to predict music file sharing attitude and intention. Their findings lend support to both paths, indicating that attitude, subjective norms, and perceive behavioral control positively affect behavioral intention, while perceived usefulness and ease of use have a positive effect on attitude. Reasonably, perceive ease-of-use and behavioral control are strongly correlated, but their corresponding effect on attitude and intention is not significant, suggesting students already possess the sufficient computer literacy required to easily share files online (Kwong & Park, 2008).

More recently, Udo and colleagues (2014) explored the role of national culture on factors affecting digital piracy combining the norm activation model and unified theory of acceptance and use of technology (Venkatesh, Morris, Davis, & Davis, 2003), an extension of the technology acceptance model, to confirm the role of perceived usefulness, effort expectancy, past behavior, and self-efficacy on participants' intention to download software. Their findings also suggest that being aware of the consequences and taking responsibility for our actions affects one's personal norms, but those effects are strongly moderated by participants' culture (Udo *et al.*, 2014).

Peace *et al.* (2003) augmented the theory of planned behavior with components from the expected utility (Bernoulli, 1954) and economic deterrence (Ehrlich, 1973; Tittle, 1980) theories. The results indicate that individual attitude, subjective norms, and perceived behavioral control are significant predictors of software piracy intentions. In addition, punishment severity, punishment certainty, and software cost have direct effects on one's attitude toward piracy. Supplementary research about the theory of planned behavior and deterrence factors (Morton & Koufteros, 2008) also provides support for the effect of punishment severity, but only on female music downloaders.

Liao *et al.* (2010) considered perceived risks as salient beliefs influencing attitude and intention towards piracy. Their findings suggest that both perceived psychological risks (i.e., possibility that an individual suffers mental stress because of his or her use of pirated software) and perceived prosecution risks respectively impact participants' attitude and intention towards using pirated software. Additionally, attitude and perceived behavior control contribute to the intended use of pirated

software. However, subjective norms did not influence pirated programs usage intentions.

Goles *et al.*(2008) focused on the moral components affecting attitude towards "softlifting", the illegal duplication of copyrighted software for personal use, in different settings (work, school, and home). Moral obligation and perceived usefulness were found to be significantly related to attitude towards softlifting across all settings. Past behavior at home and law awareness at school influenced one's attitude formation, but only for those specific settings. Together, attitude and past behavior lead to intention. Neither age nor gender significantly influence attitude towards softlifting.

Yoon (2011b) proposed an integrated model combining the theory of planned behavior with concepts of deontology (Hunt & Vitell, 1986) and teleology (Limayem, Khalifa, & Chin, 2004). On the one hand, the author suggests that subjective norms can be viewed as a deontological evaluation affected by normative components, such as moral, obligations, and justice. On the other hand, attitude is also regarded as a teleological evaluation of the expected outcome (i.e., perceived benefit/risk and habit). This ethical dual-perspective on decision-making had received earlier attention from Thong and Yap (1998), whose findings were similar in the context of softlifting. Both moral obligation and perceived benefit directly impact one's intention to commit digital piracy (Yoon, 2011b).

2.1.2 Learnings from ethics and criminology

Digital piracy is sometimes viewed as an unethical and/or criminal behavior. Learnings from ethics and criminology are hereby grouped because unethical and

illegal behaviors are both outside the social norm, although the former is also punishable by law. While some unethical behaviors are illegal, most illegal behaviors are also unethical or immoral. Therefore, studies on digital piracy informed by the fields of ethics and criminology include research based on ethical theories (Reidenbach & Robin, 1988), the general theory of crime (Gottfredson & Hirschi, 1990), and the social learning approach to deviant behaviors (Akers, 1977; 2011).

2.1.2.1 Moral and ethical theories

The field of ethics is generally formed after moral philosophies. Reidenbach and Robin (1988) proposed to classify several moral philosophies into five ethical theories relevant to decision-making: theories of justice, relativism, egoism, utilitarianism, and deontology. Yoon (2011a) defined the five ethical theories as follow:

1. Justice is a theory based on fairness and equality conveying the general idea to treat people according to fair rules.

2. Relativism is the theory sustaining that morality is not universal, but rather relative to culture and individual. Therefore, moral judgments are determined either by societal or individual standards.

3. Egoism is the teleological theory supporting that one's self is the main motivation for one's own action.

4. Utilitarianism, also a teleological theory, is the idea that an action is solely determined by its contribution to the greatest number of parties involved.

5. Deontology is the theory holding that behaviors are inherently right or wrong, irrespective of the consequences of the act.

Based on those five ethical principles, Yoon (2011a) proposed an ethical decision-making model for the Internet context and tested it across various scenarios, including one about software piracy. Her finding suggest that one's ethical judgment, ultimately affecting behavioral intention, is preceded by moral philosophy factors of justice, relativism, utilitarianism, and deontology. Egoism does not significantly influence ethical judgment about software piracy.

Using a similar approach, Gopal and colleagues (2004) had previously advocated that deontological/ethical predispositions (Hunt & Vitell, 1986; Reidenbach & Robin, 1988) and expected monetary gains do affect participants' involvement in music piracy clubs. Their findings also propound that deterrent policies, possible jail time, for example, have no effect on illegal music sharing, a conclusion contrasting from previous research on software piracy (Gopal & Sanders, 1997; Higgins, Wilson, & Fell, 2005) and potentially related to a generational value or cultural credence that "music should be free". As premised, women and older individuals were found to pirate less digital audio files. Finally, the authors (Gopal *et al.*, 2004) evoke that music genre preference, such as hip-hop/rap or electronic, could be an indicator of one's propensity to pirate online digital music. However, an alternative explanation is that respondents from certain demographic groups, where piracy is more widely accepted/practiced, also happen to prefer hip-hop or electronic music (Gopal *et al.*, 2004).

2.1.2.2 General theory of crime

Gottfredson and Hirschi (1990) suggested a general theory of crime in which they posit that delinquents possess a number personal traits (e.g., impulsiveness and insensitiveness). These traits are closely related to the very nature of crime, such as the search for immediate gratification and the absence of compassion. Consequently, individuals characterized by low self-control, and in the presence of specific social factors, such as poverty and delinquency, would be more inclined to participate in potentially criminal or unethical wrongdoings.

Malin and Fowers (2009) used elements from Gottfredson and Hirschi's (1990) general theory of crime to confirm their effect on high school students' intention to pirate music and movies. Apart from expected significant factors stemming from the general theory of crime (low self-control, deviant peer association, etc.), authors' findings suggest that students with greater Internet experience and male students were also more likely to have a more favorable attitude towards music and movie piracy.

Also using the general theory of crime, Moon and colleagues' (2010) research on South Korean adolescents empirically validated the theory about low self-control, but in a software piracy context. Evidence also suggest that the more the opportunities (i.e., daily computer usage and cyber club membership) the greater the intention to illegally download software. Regarding demographic factors, both males and more academically competent students were more likely to engage in illegal software downloading.

2.1.2.3 Social learning approach to deviant behaviors

A social learning approach to deviant behaviors (Akers, 1977; 2011) suggests that the probability of a person engaging in criminal behaviors is increased when he/she (1) associates with others who commit the behavior, (2) is exposed to salient criminal models, (3) defines the behavior as desirable or justified, and (4) has been/expects to be rewarded from said behavior.

Following earlier research on digital piracy based on self-control and social learning theories (Higgins, Fell, & Wilson, 2006; Higgins, Wolfe, & Ricketts, 2008), Morris and Higgins (2010) applied factors from the social learning approach to digital piracy with modest results. They suggest the absence (presence) of a direct effect between individual (grouped) social learning predictors on participants' likeliness to engage in digital piracy. As such, deviant peer association, piracy definition, and neutralization explained some of the variance in digital piracy intention, but only when grouped together under "social learning factors". Demographic factors (e.g., region, gender, and age) were also found to have a direct effect on both social learning and intention to commit piracy (Morris & Higgins, 2010).

Recently, Navarro *et al.* (2014) explored whether Internet addiction[6] and deviant peer association were correlated with digital piracy. A closer look at the data indicates that high-school students with Internet-addiction problems are more likely to commit software piracy. Further evidence suggest that music, movies, and software

[6] As for other substances' use, Internet addiction captured concepts of tolerance, withdrawal, craving, and negative life consequences.

pirates are more likely to associate with deviant peers and that males are more likely to commit software and movie piracy.

2.1.3 Learnings from consumerism

Chiou *et al.* (2005) distinguished between unauthorized duplication (generally from the Internet) versus the purchase of digital pirated products (generally from a CD). They developed a conceptual framework based on Bagozzi's (1992) self-regulation process of cognitive appraisal, emotional reactions, and coping responses. Their results showed that attributive satisfaction of legally purchased music (e.g., easy listening, price, and sound quality), as well as the risk of prosecution and moral factors, are important in influencing consumers' attitude and behavioral intention towards music piracy behavior. Additionally, idolization of a singer or a band (e.g., "I like to have a talk with those who also like my favorite singer/band") affects attitude and intention, but only in the case pirated CD purchase (Chiou *et al.*, 2005).

Coyle *et al.* (2009) embedded various attitudinal, demographic, and consumption-related factors contributing to music piracy into a marketing version of the exchange philosophy (Houston & Gassenheimer, 1987). Evidence suggest that participants intending to pirate were less likely to consider such activity criminal or unethical, less likely to consider themselves at risk of getting caught, and more likely to subjectively distinguish between various forms of music piracy. Regarding demographics, participants intending to pirate are more likely to be male, younger, and have a lower household income. Consumption-related data reveals that people intending to pirate are more likely (1) to show an increase (decrease) in legally

downloaded music (total purchase music), and (2) to consider music piracy a benefit for the musicians, the industry, and consumers due to network effects (Coyle *et al.*, 2009).

Walsh *et al.* (2003) explored Internet-related consumer factors affecting music procurement behaviors and their effect on traditional music consumption. They advocate that assortment, independence, trend consciousness, and topicality (e.g., "Through the Internet, I am informed earlier of new music and music-related news") have positive effects on downloaders' willingness-to-pay for online music. Findings also suggest that music downloading, paying or not, affects traditional music consumption. This so-called displacement effect from legal/traditional consumption to illegal sharing has also been studied in a movie-related context by Rob and Waldfogel (2007) who concluded that displacement, although growing rapidly, was still small compared to music, partly due to movies' large file size and consumers' limited available attention time. More recently, other authors have discussed the role and factors affecting downloaders' willingness-to-pay for digital music (Chiang & Assane, 2009), movies (Jackman & Lorde, 2014), and software (Hsu & Shiue, 2008).

Dilmperi and colleagues (2011) investigated music consumers' demographics and consumption preferences to understand the antecedents of paid and unpaid downloading, as well as live concert attendance. Their findings, somehow in line with Gopal *et al.* (2004), suggest that downloaders are younger, prefer certain music genres (pop, electronic, and classical), and enjoy imaginal response (i.e., the images the songs create for the audience). Taking a middle-ground position, they claim that the minority paying for at least some of their music downloads tend to be younger than the illegal

downloaders. They conclude that youth and low income are predictors of music downloading in general, not of illegal behavior (Dilmperi *et al.*, 2011).

2.1.4 Learnings from exploratory research

Hinduja (2003) examined trends and patterns affecting software piracy behavior. Data provided confirmatory evidence that participants' Internet proficiency and Internet-use variety were positively correlated with one's level of software piracy. Descriptive statistics also suggest that a greater proportion of male admit to software piracy.

Bhattacharjee *et al.* (2003) compared music freeloading to software piracy. They proposed that online music sharing decisions are made under the influence of demographic, economic, and technological factors. In terms of demographics, they suggests that females and older individuals have a lower tendency to freeload music than men and younger individuals. About economics, price of music and income are alleged to have a significant effect on piracy. Concerning technological factors, music piracy increases dramatically as bandwidth improves, while quality of music alone is not a factor leading to legal music purchase.

Gupta *et al.* (2004) also researched a vast number of possible determinants of software acquisition mode. Their findings suggest that attitude (legal and ethical), age (younger are more likely to pirate), money spent on software (those spending more also pirate more) and social factors all play a significant role in determining piracy behavior.

Lysonski and Durvasula (2008) studied consumer and ethical predispositions towards piracy. They explored how ethical orientation and various attitudes towards piracy (i.e., social cost of piracy, anti-corporation attitude, benefit of dissemination, ethical belief, and legal consequences) impact illegal P2P music file sharing. Their findings suggest a correlation between past behavior and intention to illegally download music. Illegal downloading is not seen as harmful to the music industry, evidencing the belief that there are benefits, but no social costs, to downloading. It was also proposed that downloading is not perceived as ethically wrong and the fear of legal consequences is very low.

Cuadrado and colleagues (2009) segmented the Spanish market into three groups of music consumers (aware, unaware, and semi-aware) according to their level of legal awareness and financial considerations regarding piracy. The unaware group, mainly downloading music illegally from the Internet, confer no importance to ethical issues but recognize the financial benefits attached to piracy. The group is comprised of a majority of males with great access to new technologies (computer, Internet connection, broadband access, and CD burner). Their vehicles of choice for listening music are MP3 players and computers. Understandably, a majority of them possesses a downloading software, such as eMule, Kazaa, or Bittorrent, and owns large music collections. Authors claim that one's ethical proclivity is the main factor in determining attitude towards piracy, although consumers broadly recognize the financial benefits of illegally downloading music.

Cox and Collins (2014) explored a wide array of factors differentiating prolific music and movie pirates. Their findings sustain that high-volume illegal movie and

music downloaders significantly differ on demographic characteristics as well as financial, social, and legal piracy-related attitudes. First, movie downloaders are more likely to have a higher monthly income and to be male than music downloaders. Second, movie pirates are less likely to reduce their paid consumption as a result of piracy compared to music pirates. Third, being aware of the harm caused by piracy to the entertainment industry proves to be more effective in reducing illegal downloading of movies than music. Finally, movie pirates are less likely to believe in deterrent consequences resulting from their illegal behavior, like being fired from work, than music pirates. Findings pertaining to both music and movie downloaders show that financial savings and piracy potential benefits (e.g., network effect and disintermediation) serve as incentives to download. On the contrary, the most effective constraint on piracy is the belief that P2P content is of lower quality relative to paid material.

To summarize, each discipline has focused on similar variables affecting digital piracy although using different perspectives (attitudinal, social, normative, technological, behavioral, ethical, legal, etc.). The various approaches and variables used to date in the study of digital piracy are summarized in Table 2.2. The most dominants finding from previous studies include the contributory roles of a variety of factors: demographics, psychographics (e.g., attitude, beliefs, and affects), factors related to Internet use, and factors related to digital content. In spite of the number of factors already discovered, it seems other predictors potentially explaining downloaders' online payment behaviors are yet to be explored.

Table 2.2: Approaches and variables used in digital piracy studies

Theoretical framework	Variables
Social psychology	
Social cognitive theory	
LaRose & Kim (2007) Jacobs *et al.* (2012)	**Psychographic:** Descriptive norms, moral justifications, expected outcomes **Internet-Related:** Perceived self-efficacy, deficient self-regulation
Theory of reasoned action	
Woolley & Eining (2006) Nandedkar & Midha (2012)	**Demographic:** Age **Psychographic:** Attitude, subjective norms, perceived risks **Internet-Related:** Habit
Theory of planned behavior	
d'Astous *et al.* (2005) Al-Rafee & Cronan (2006) LaRose & Kim (2007) Wang & McClung (2012)	**Demographic:** Age **Psychographic:** Attitude, subjective norms, cognitive/affective beliefs, expected outcomes, level of Machiavellianism, anticipated guilt **Internet-related:** Perceived behavioral control, past behavior, deficient self-regulation
Theory of planned behavior – Model of goal-directed behavior	
Taylor *et al.* (2009)	**Psychographic:** Attitude, emotions, motivations **Internet-related:** Perceived behavioral control, past behavior

Theoretical framework	Variables
Theory of planned behavior – Technology acceptance and use models	
Kwong & Park (2008) Udo *et al.* (2014)	**Psychographic:** Attitude, subjective norms, consequences, responsibility **Internet-related:** Perceived behavioral control, past behavior, ease-of-use, effort expectancy **Content-related:** Perceived usefulness
Theory of planned behavior – Deterrence	
Peace *et al.* (2003) Morton & Koufteros (2008) Liao *et al.*, (2010)	**Psychographic:** Attitude, subjective norms, punishment certainty/severity, perceived risks **Internet-related:** Perceived behavioral control **Content-related:** Software cost
Theory of planned behavior – Morality	
Cronan & Al-Rafee (2008) Goles *et al.* (2008) Yoon (2011b)	**Psychographic:** Attitude, moral obligation, legal knowledge **Internet-related:** Perceived behavioral control, past behavior **Content-related:** Perceived usefulness
Ethics and criminology	
Moral and ethical theories	
Gopal *et al.* (2004) Yoon (2011a)	**Demographic:** Gender, age **Psychographic:** Ethical predisposition, expected monetary gains, ethical judgment **Content-related:** Music genre

Theoretical framework	Variables
General crime theory	
Malin & Fowers (2009) Moon *et al.* (2010)	**Demographic:** Gender, grade level, academic rank **Psychographic:** Deviant peers association, piracy definition, piracy justification **Internet-related:** Internet experience, computer usage, self-control, cyberclub membership
Social learning approach to deviant behaviors	
Morris & Higgins (2010) Navarro *et al.* (2014)	**Demographic:** Gender, age, race, region **Psychographic:** Deviant peers association, piracy definition, piracy justification **Internet-related:** Internet addiction
Consumerism	
Self-regulation process	
Chiou *et al.* (2005)	**Psychographic:** Perceived risks, moral factors **Content-related:** Attributive satisfaction of legally purchased music, band/singer idolization
Exchange theory	
Coyle *et al.* (2009)	**Demographic:** Gender, age, income **Psychographic:** Legal and ethical predispositions, perceived risks, form of piracy **Content-related:** Legal music purchases, illegal music downloads, perceived network effects

Theoretical framework	Variables
Consumers' preferences	
Walsh *et al.* (2003)	**Demographic:** Gender, age, income
Dilmperi *et al.* (2011)	**Content-related:** Assortment, independence, trend consciousness, topicality, music genre, imaginal response
Exploratory research	
Hinduja (2003)	**Demographic:** Gender, age, income
Bhattacharjee *et al.* (2003)	**Psychographic:** Social norms, social cost, ethical beliefs, expected monetary gains, perceived legal consequences, punishment, anti-corporation attitude
Gupta *et al.* (2004)	
Lysonski & Durvasula (2008)	
Cuadrado *et al.* (2009)	**Internet-related:** Past behavior, Internet use-proficiency/variety, bandwidth, access to IT/downloading software, monetary savings
	Content-related: Music cost, quality, listening medium, collection size, perceived network effects

Note. Compiled by author.

2.2 INDIVIDUAL INFLUENCES AFFECTING DIGITAL PIRACY

The study of digital piracy is a complex issue that should not be limited to a single aspect but rather submitted to a larger array of constituents (Gupta *et al.*, 2004). Therefore, many studies intend to distinguish personal factors that could explain the behavior or characterize the actors most likely to illegally share music, movies or software. Studies try to interpret the phenomenon by using diverse theoretical models from different research disciplines. Apart from attention the attention paid to

demographics, individual characteristics influencing digital piracy are commonly categorized depending on the theoretical framework the investigators have put through the test.

A major concern was to coherently integrate the various influencing factors affecting digital piracy discussed in the previous section. Four groups of individual factors influencing piracy are proposed: (1) demographic characteristics, (2) psychographic characteristics, (3) technological and behavioral considerations, and (4) content-related considerations. Previous studies, organized by groups of factors affecting digital piracy, can be found within Figure 2.4 at the end of this section.

2.2.1 Demographic characteristics

The demographic composition of samples from the digital piracy literature can be analyzed to determine whether a given individual characteristic is more or less prominent amongst illegal music, movies, and software pirates. While demographic factors are generally not variables integrated into theoretical models per se, these factors are commonly explored within inductive (Bhattacharjee *et al.*, 2003), legal and ethical (Morris & Higgins, 2010), and consumer-related (Coyle *et al.*, 2009) research. Findings related to demographic considerations are hereby divided into three subcategories: gender, age, and income.

2.2.1.1 Gender

Regarding gender and music piracy, females display a lower tendency to freeload music (Bhattacharjee *et al.*, 2003) and tend to pirate less digital audio files (Gopal *et al.*, 2004), while participants intending to pirate music are more likely to be

male (Coyle *et al.*, 2009). Male students were also found to have a more favorable attitude towards movie piracy (Malin & Fowers, 2009) and to be more prolific movie downloaders (Cox & Collins, 2014). While some authors suggest that software pirates are also more likely to be males (Moon *et al.*, 2010; Navarro *et al.*, 2014) or that males simply admit more openly of doing software piracy (Hinduja, 2003), there is also evidence that gender does not influence one's attitude towards softlifting (Goles *et al.*, 2008).

2.2.1.2 Age

About age, the consensual view is that older people pirate less music (Bhattacharjee *et al.*, 2003) or illegally download less digital audio files (Gopal *et al.*, 2004). Similarly, individuals intending to pirate music are more likely to be younger (Coyle *et al.*, 2009; d'Astous *et al.*, 2005), although the effect of age is alleged to be small and moderated (Bhattacharjee *et al.*, 2003; d'Astous *et al.*, 2005). More recently, it was proposed that amongst all downloaders, the minority that pays for at least some songs tend to be younger than never-paying downloaders (Dilmperi *et al.*, 2011). Age was seldom studied in relation to movie piracy and there has been an inconclusive debate about the role of age on one's attitude towards softlifting (Al-Rafee & Cronan, 2006; Goles *et al.*, 2008).

2.2.1.3 Income

Income is perhaps the most obvious demographic consideration, since digital piracy is about obtaining a "free" good that would have justifiably required a disbursement or compensation. Thus, income has a negative effect on music piracy

(Bhattacharjee *et al.*, 2003) meaning that participants intending to download music illegally are more likely to have a lower household income (Coyle *et al.*, 2009). Same as for age, Dilmperi *et al.* (2011) have put forward the idea that low income is a predictor of music downloading in general, not of illegal behavior. Comparing contents, movie downloaders are more likely to have a higher monthly income than music downloaders (Cox & Collins, 2014).

Although demographics typically serve at categorizing participants (gender, age, social class), additional factors were also found to influence intention to commit digital piracy over time, like students' academic grades (Moon *et al.*, 2010), grade level (Malin & Fowers, 2009), or race and region (Morris & Higgins, 2010).

2.2.2 Psychographic characteristics

Apart from demographic characteristics identifying groups of people inclined to participate in music, movie, and software piracy, some dominant contributions in the area of digital piracy come from psychographic considerations. Psychographic considerations include different attitudes, perceptions and beliefs related to digital piracy. Considerations were subjectively grouped under: (1) financial apprehensions and expected outcomes, (2) perceived risks and other deterrence factors, (3) normative and social influences, (4) moral and legal predispositions, and (5) other attitudes and beliefs towards digital piracy.

2.2.2.1 Financial apprehensions and expected outcomes

There is overwhelming evidence corroborating that the expected monetary gains affect participants' involvement in music piracy (Gopal *et al.*, 2004). Economic

motivators encourage participants to keep on pirating, since consumers broadly recognize the financial benefits of illegally downloading music (Cuadrado *et al.*, 2009). Findings pertaining to movie downloaders also show that financial savings serve as an incentive to download movies (Cox & Collins, 2014; Jacobs *et al.*, 2012). Monetary savings are partly attributable to a displacement effect, meaning that illegal downloading replace legal and paid consumption of music (Walsh *et al.*, 2003) and movies (Rob & Waldfogel, 2007), although movie pirates are less likely to reduce their paid consumption as a result of piracy compared to music pirates (Cox & Collins, 2014). Software costs also have a direct effects on one's attitude toward piracy (Peace *et al.*, 2003) although Gupta *et al.* (2004) suggested that those spending more on software also pirate more. Finally, multiple authors have discussed the role and factors affecting downloaders' willingness-to-pay for digital music (Chiang & Assane, 2009; Walsh *et al.*, 2003), movies (Jackman & Lorde, 2014), and software (Hsu & Shiue, 2008).

Other influencing considerations are one's expectations regarding the outcome of digital piracy. Reasonably, the perceived benefits directly impact one's intention to commit digital piracy (Yoon, 2011b). Digital files and programs are also expected to be worthy and helpful to users. Thus, perceived usefulness has a positive effect on music (Kwong & Park, 2008), movie (Jacobs *et al.*, 2012), and software downloading (Udo *et al.*, 2014). Anticipated emotions and affects (e.g., happiness and excitement) resulting from digital piracy are also sources of motivation leading to music, movie, and software piracy (Al-Rafee & Cronan, 2006; Taylor *et al.*, 2009). About negative

emotions, students generally feel low levels of anticipated guilt related to piracy (Wang & McClung, 2012).

2.2.2.2 Perceived risks and other deterrence factors

Logically, as the risk of getting caught increases, people refrain from pirating (Chiou *et al.*, 2005). Accordingly, prosecution risk negatively influences customers' attitude and behavioral intention towards music piracy behavior (Chiou *et al.*, 2005). Optimism bias is a moderator of the relationship between perceived risks and attitude towards music piracy (Nandedkar & Midha, 2012), meaning pirates are less likely to consider themselves at risk of getting caught (Coyle *et al.*, 2009). Other risk factors suggested are performance and social risks in freeloading (Nandedkar & Midha, 2012) and psychological risks in softlifting (Liao *et al.*, 2010).

As for deterrence factors, punishment severity and punishment certainty have direct effects on attitude toward software piracy (Higgins *et al.*, 2005; Peace *et al.*, 2003). In contrast, fear of legal consequences to music downloading is very low (Gopal *et al.*, 2004; Lysonski & Durvasula, 2008) and punishment severity seems to mainly affect female music downloaders (Morton & Koufteros, 2008). Furthermore, movie pirates are even less likely to believe in deterrent consequences (e.g., being fired from work) resulting from their illegal behavior than music pirates (Cox & Collins, 2014).

2.2.2.3 Normative and social influences

There is no agreement regarding the role of normative influences over digital piracy. On the one hand, descriptive norms (i.e., perceived attitude towards the behavior) were not found to have a direct effect on music downloaders' intentions

(LaRose & Kim, 2007), but would actually affect movie downloaders (Jacobs *et al.*, 2012). Regarding software, findings suggest that being aware of the consequences and taking responsibility for our actions affects one's personal norms and ultimately piracy intention, but those effects are strongly moderated by participants' own culture (Udo *et al.*, 2014).

On the other hand, the role of perceived social norms seems to be shifting over time. Initially, subjective norms were found to positively affect intentions to engage in music piracy (d'Astous *et al.*, 2005) or to share audio files online (Kwong & Park, 2008). Correspondingly, subjective norms were significant predictors of software piracy intentions (Peace *et al.*, 2003) and behavior (Gupta *et al.*, 2004). Then, Woolley and Eining (2006) proposed that peer-related, rather than authority-related, subjective norms were more influential. More recently, research on digital piracy dismissed the importance of significant others in the use of pirated music (LaRose & Kim, 2007), movies (Jacobs *et al.*, 2012), and software (Cronan & Al-Rafee, 2008; Liao *et al.*, 2010). Practically, it appears that the ever-decreasing influence of subjective norms over digital piracy indicate an increasingly growing social acceptation of the phenomenon.

A person social circle can also serve as a source of motivation to engage in piracy and encourage participants' intention to keep on downloading (Jacobs *et al.*, 2012; LaRose & Kim, 2007). High school students' are more likely to engage in music, movie (Malin & Fowers, 2009), and software (Navarro *et al.*, 2014) piracy when they associate with deviant peers. Morris and Higgins (2010) suggested that deviant peer association alone could not explain significant variation in college students' piracy.

Normative influences (descriptive, subjective, and moral norms) were not found to have a direct effect on downloading intentions, suggesting that downloaders' deficient self-regulation impedes the development of normative control (LaRose & Kim, 2007). Deficient self-regulation (i.e., degree to which downloading is part of someone's daily routine), descriptive norms (i.e., perceived attitude towards the behavior), and five categories of expected outcomes affected participants' number of downloads (Jacobs *et al.*, 2012).

2.2.2.4 Moral and legal predispositions

Morality and legality contain elements of fairness and justice. Digital piracy is frequently associated with the unethical/illegal use of digital files, justifiably raising both ethical and legal concerns (Gupta *et al.*, 2004; Lysonski & Durvasula, 2008). Furthermore, ethical and legal predispositions play a significant role in determining both past and future music piracy behavior (Coyle *et al.*, 2009).

Moral or ethical predispositions generally impact one's intention to commit digital piracy (Yoon, 2011b). Ethical judgment, affecting digital piracy intention, is formed by factors of justice, relativism, utilitarianism, and deontology (Yoon, 2011a). Specifically, ethics and morals affect involvement in music piracy (Chiou *et al.*, 2005; Gopal *et al.*, 2004) and softlifting (Gupta *et al.*, 2004; Thong & Yap, 1998). Ethical tendency is considered the main factor in determining attitude towards music piracy (Cuadrado *et al.*, 2009). Conversely, illegal downloading is not perceived as ethically wrong (Lysonski & Durvasula, 2008) and the use of moral justification (e.g., "There is nothing wrong with file sharing") is not a form of disengagement praised by

downloaders in order to make their conduct more socially acceptable (Jacobs *et al.*, 2012; LaRose & Kim, 2007).

Furthermore, Woolley and Eining (2006) observed that although knowledge of copyright laws increased over the years, this greater law awareness did not translate in lesser piracy. This finding outlines the inefficacy of anti-piracy arguments (d'Astous *et al.*, 2005) and copyright laws (Woolley & Eining, 2006) over music and software downloading. Conversely, Goles *et al.* (2008) observed that law awareness influenced one's attitude towards piracy, but only at school.

2.2.2.5 Other attitudes and beliefs towards digital piracy

Current research unanimously validate the role of individual attitude towards piracy on one's intention to download music (d'Astous *et al.*, 2005; Kwong & Park, 2008; Morton & Koufteros, 2008; Nandedkar & Midha, 2012), movies (Taylor *et al.*, 2009; Yoon, 2011b), or software (Cronan & Al-Rafee, 2008; Peace *et al.*, 2003; Woolley & Eining, 2006). Coyle and colleagues (2009) also suggested that music pirates are more likely to subjectively distinguish between various forms of piracy (e.g., "It is okay to pirate music as long as you don't share it with anyone else" or "It is okay to pirate music from well-known artists, but less appropriate to pirate music from unknown"). Finally, one's conceptualizations of attitude towards piracy (hedonic and utilitarian) affects both music and movie piracy intentions (Taylor *et al.*, 2009). Others have focused on attitudes that are not directly related towards piracy, such as anti-corporation attitude (Lysonski & Durvasula, 2008) and level of Machiavellianism. (Al-Rafee & Cronan, 2006; Cronan & Al-Rafee, 2008).

Current research appears to validate the views that expected monetary gains and other positive outcomes motivate involvement in digital piracy whereas risks and other deterrence factors generally reduce one's intention to commit digital piracy. While the vanishing role of normative influence, especially subjective norms, could indicate an increasingly growing social acceptation of digital piracy, it seems clear that social circles and deviant peer association also encourage someone to engage in such behavior. Morally and legally-inclined people tend to pirate less despite the belief that illegally downloading copyrighted material is not ethically objectionable. And even if people are more aware of copyright laws, digital piracy is just not seen as morally reprehensible. Finally, attitude and beliefs related or not to digital piracy can affect behavioral intentions.

2.2.3 Technological and behavioral considerations

Technological and behavioral considerations have also strongly contributed to the study of music, movie, and software piracy. Technological considerations include access to information technology (IT) resources and technical proficiency. Behavioral considerations were grouped under past behavior and habit development, the later including deficient self-control since they are two closely-related concepts.

2.2.3.1 IT access and proficiency

Understandably, access to information technologies (IT) seems key in influencing downloaders' attitude and intention towards piracy. Results support evidence that music piracy increases dramatically as bandwidth improves (Bhattacharjee *et al.*, 2003) people mainly downloading music illegally from the

Internet have a greater access to new technologies (computer, Internet connection, broadband access, and CD burner) and possess a P2P file sharing software (Cuadrado *et al.*, 2009).

Having access to technology might not be sufficient, since owning the necessary knowledge, skills, and opportunities to access illegal files and programs also seems essential to engage in digital piracy. Accordingly, Internet proficiency and Internet-use variety were significantly correlated with the level of software piracy (Hinduja, 2003). Also, evidence suggests that the more the opportunities (e.g., daily computer usage) the greater the intention to illegally download software (Moon *et al.*, 2010). Students with greater Internet experience were also more likely to have a more favorable attitude towards music and movie piracy (Malin & Fowers, 2009).

Similarly, trusting in one's self-abilities might be sufficient to engage in digital piracy. Accordingly, intention to engage in music piracy is affected by perceived behavioral control (d'Astous *et al.*, 2005) and perceived behavioral control (i.e., difficulty and control) significantly leads to both music and movie piracy intentions (Taylor *et al.*, 2009). Many studies confirm the role of effort expectancy and self-efficacy on participants' intention to use or download software (Liao *et al.*, 2010; Peace *et al.*, 2003; Udo *et al.*, 2014). Reasonably, perceived ease-of-use and behavioral control are strongly correlated, but Kwong and Park (2008) found that their effect on intention was not significant, suggesting students already possess the sufficient computer literacy required to easily share files online. Divergently, perceived self-efficacy did not significantly affects participants' number of movie downloads (Jacobs *et al.*, 2012).

2.2.3.2 Past behavior and habit development

Past piracy behavior appears to motivate individuals to do it again. (d'Astous *et al.*, 2005). In that sense, some suggested a correlation between past behavior and future intention to illegally download music (Lysonski & Durvasula, 2008), movies (S. A. Taylor *et al.*, 2009), and software (Nandedkar & Midha, 2012; Udo *et al.*, 2014). Goles and colleagues (2008) found that past behavior, but only at home, influenced one's attitude formation. They also note that a correlation between past and future behavior is an indication of behavioral stability, not of a causal relationship. In that sense, affects and outcomes learned from past behavior should be favored in predicting future behavior (Goles *et al.*, 2008).

While Nandedkar and Midha (2012) debatably labelled past piracy behavior "habit", there is evidence that when someone loses control of their downloading (i.e., deficient self-regulation), piracy becomes a habit (LaRose & Kim, 2007) and increases participants' number of downloads (Jacobs *et al.*, 2012). Therefore, habit impact one's intention to commit digital piracy (Yoon, 2011b). Accordingly, adolescents suffering from low self-control are more likely to have a more favorable attitude towards music, movie (Malin & Fowers, 2009), and software piracy (Moon *et al.*, 2010). To an even greater extent, high-school students with Internet-addiction problems are also more likely to commit software piracy (Navarro *et al.*, 2014).

2.2.4 Content-related considerations

Content-related considerations include different factors related to consumers' preferences and perception regarding music and movie piracy. Considerations

specifically related to music and movie piracy were subjectively grouped under: (1) quality concerns, (2) interest-related factors, (3) consumption preferences, and (4) perceived effect on entertainment industry.

Depending on the chosen storage format when ripping music from a CD, sound and content quality could be a concern to audiophiles and music lovers. Still, quality of music alone is not a factor leading to a purchase (Bhattacharjee *et al.*, 2003). On the contrary, easy listening and sound quality influence customers' attitude and behavioral intention towards music piracy behavior (Chiou *et al.*, 2005). The most effective constraint on both music and movie piracy is the belief that P2P content is of lower quality relative to paid material (Cox & Collins, 2014). Music downloaders prefer listening music on MP3 players and/or personal computers, where they can store large music collections (Cuadrado *et al.*, 2009).

Findings suggest that music downloading, paying or not, affects traditional music consumption (Walsh *et al.*, 2003). People intending to pirate are more likely to indicate an increase (decrease) in legally downloaded music (total purchase music) (Coyle *et al.*, 2009). Downloaders' access to assortment, independence, trend consciousness, and topicality have positive effects on willingness-to-pay for online music (Walsh *et al.*, 2003), although novelty-seeking encourage participants' intention to keep on illegally downloading (LaRose & Kim, 2007). Similarly novelty compulsion and completionism motivates movie downloading (Jacobs *et al.*, 2012).

Downloaders prefer certain music genres (pop, electronic, and classical) and enjoy music for different motives than other music consumers. That is, music evokes

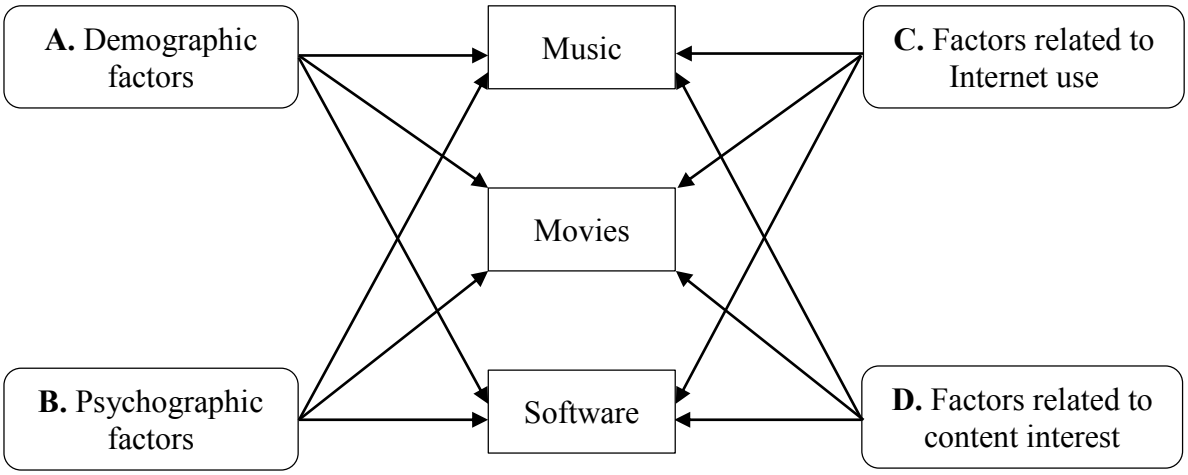
for downloaders sensorial responses as opposed emotional, imaginal, or analytical responses (Dilmperi *et al.*, 2011). Genre preference (e.g., hip-hop/rap and electronic) could be an indicator of one's propensity to pirate online digital music. However, an alternative explanation is that respondents from certain demographic groups, where piracy is more widely accepted/practiced, also happen to prefer hip-hop or rap music (Gopal *et al.*, 2004).

Regarding the effect on the industry, it seems fair that fans would tend to pay more for music from their favorite band or singer, as a gesture of appreciation or encouragement for examples. However, singer or band idolization only affects attitude and intention towards the purchase of pirated CD's (Chiou *et al.*, 2005). For downloaders, piracy is not seen as harmful but rather beneficial to the music industry (Lysonski & Durvasula, 2008), helping the musicians, industry, and consumers with the diffusion of new music (Coyle *et al.*, 2009). The music and movie industries' potential benefits from piracy (e.g., network effect, disintermediation) are even considered an incentive to download (Cox & Collins, 2014).

A candid attempt at coherently integrating the many factors influencing digital piracy resulted in four thematic groups: (1) Demographic research mainly focused on gender, age, and income. (2) Psychographic characteristics are various and often closely-linked to digital piracy. They include financial apprehensions and beliefs about the expected outcome, perceived risks and other deterrence factors, normative and social influences, moral and legal predispositions, and other attitudes and beliefs towards piracy. (3) Technological and behavioral considerations include access to technologies, personal abilities, past behavior, and habit development. (4) Content-

related considerations include quality concerns, the level of interest in music or movie, consumption preferences, and the perceived effect on entertainment industry. Previous studies, organized by groups of factors affecting music, movie, and software piracy, are graphically presented in Figure 2.4.

Figure 2.4: Individual factors affecting digital piracy



Factor	Music	Movies	Software
A.	Bhattacharjee *et al.* (2003) Coyle *et al.* (2009) d'Astous *et al.* (2005) Dilmperi *et al.* (2011) Gopal *et al.* (2004)	Cox & Collins (2014) Malin & Fowers (2009)	Al-Rafee & Cronan (2006) Gupta *et al.* (2004) Hinduja (2003) Moon *et al.* (2010)
B.	Chiou *et al.* (2005) Cuadrado *et al.* (2009) Gopal *et al.* (2004) LaRose & Kim (2007)	Cox & Collins (2014) Jackman & Lorde (2014) Jacobs *et al.* (2012) Taylor *et al.* (2009)	Cronan & Al-Rafee (2008) Goles *et al.* (2008) Gupta *et al.* (2004) Hsu & Shiue (2008) Liao *et al.* (2010) Peace *et al.* (2003) Udo *et al.* (2014)
C.	Bhattacharjee *et al.* (2003) Cuadrado *et al.* (2009) d'Astous *et al.* (2005) Kwong & Park (2008)	Jacobs *et al.* (2012) Malin & Fowers (2009) Taylor *et al.* (2009)	Goles *et al.* (2008) Hinduja (2003) Liao *et al.* (2010) Moon *et al.* (2010) Peace *et al.* (2003) Udo *et al.* (2014)
D.	Chiou *et al.* (2005) Coyle *et al.* (2009) Cuadrado *et al.* (2009) Dilmperi *et al.* (2011) Gopal *et al.* (2004) Lysonski & Durvasula (2008) Walsh *et al.* (2003)	Cox & Collins (2014) Jacobs *et al.* (2012) Rob & Waldfogel (2007)	

Note. Compiled by author.

2.3 SUMMARY OF ACCUMULATED EMPIRICAL EVIDENCE

This section aims to gather and present the empirical evidence accumulated on digital piracy by content type. Key findings are grouped under music, movie, and software piracy. A last segment will present general or undefined findings about digital piracy. Although this approach is sub-optimal to generate conclusions about illegal downloading, it provides specific and detailed information to readers interested in only one product type. It should be noted that studies are ranked chronologically to provide readers with a depiction of research evolution.

2.3.1 Key findings related to music piracy

Study	Findings
Bhattacharjee *et al.* (2003)	Females display a significantly lower tendency to freeload music. Older people pirate less, but the effect is small. Income has a negative effect on piracy for unknown songs. Music piracy increases dramatically as bandwidth improves. Quality of music alone is not a factor leading to a purchase.
Walsh *et al.* (2003)	Assortment, independence, trend consciousness, and topicality increase downloaders' WTP of online music. Availability of free music on Internet and opposing the overpriced music industry decrease downloaders' WTP of online music.

Study	Findings
Gopal *et al.* (2004)	Ethical predispositions and expected monetary gains affect participants' involvement in music piracy clubs. Deterrent policies (e.g., jail time) have no effect on illegal music sharing. Women and older individuals were found to pirate less digital audio files. Music genre preference (e.g., hip-hop/rap and electronic) could be an indicator of one's propensity to pirate online digital music.
Chiou *et al.* (2005)	Satisfaction of legally purchased CD (e.g., easy listening, price, and sound quality), prosecution risk, and moral factors influence customers' attitude and behavioral intention towards music piracy behavior. Singer or band idolization (e.g., "It is really a wonderful time to attend the concert of my favorite singer/band", "I like to have a talk with those who also like my favorite singer/band") affects attitude and intention, but only for pirated CD purchase.
d'Astous *et al.* (2005)	Intention to engage in music piracy is affected by attitude towards piracy, subjective norms, and perceived behavioral control. Past piracy behavior also appears to motivate individuals to do it again. Age is moderately and negatively related intention to engage in piracy. Anti-piracy arguments have no significant impacts on pirates' behavior.
LaRose & Kim (2007)	Deficient-self regulation and expected outcomes (social, novelty seeking, and economic) motivate intentions to continue downloading. Moral justification and descriptive norms precede deficient self-regulation.

Study	Findings
Chiang & Assane (2008)	Male students are more likely to use file-sharing technologies. Female students possess relatively higher risk perceptions and willingness-to-pay for legal alternatives compared to males. Female students tend to respond to enforcement actions and economic incentives with greater consistency.
Kwong & Park (2008)	Attitude, subjective norms, and perceive behavioral control positively affect behavioral intention (TPB) Perceived usefulness and ease of use have positive effects on attitude (TAM). Ease of use and behavioral control have non-significant effect on attitude and intention, suggesting students possess the computer literacy required to easily share files online.
Lysonski & Durvasula (2008)	Correlation between past behavior and intention to illegally download music. Belief that there are benefits, but no social costs, to P2P sharing. Downloading is not perceived as ethically wrong and fear of legal consequences is very low.
Morton & Koufteros (2008)	Attitude, subjective norms, and perceived behavioral control are significant predictors of piracy intentions. Negative effect of punishment severity on female music downloaders (gender moderated).

Study	Findings
Coyle *et al.* (2009)	Attitudinal (legal/ethical), perceived risk, and discriminating between types of piracy affect piracy intention. Male, younger, and lower household income participants have a stronger intention to pirate. Participants intending to pirate are more likely (1) to indicate an increase (decrease) in legally downloaded music (total purchase music), and (2) to consider music piracy to be beneficial (networking effect). Legal/ethical only factor significant in predicting past and future piracy behaviors.
Chiang & Assane (2009)	Income is relatively stronger than deterrence variables. Older and female students are more willing to pay for music. Ethical considerations are a contributing factor in a student's decision to purchase music.
Cuadrado *et al.* (2009)	(Mainly) illegal downloaders attach no importance to ethical issues but recognize the financial benefits attached to piracy. (Mainly) illegal downloaders are comprised of a majority of males with great access to new technologies (computer, Internet connection, broadband access, and CD burner). (Mainly) illegal downloaders' vehicles of choice for listening music are MP3 players and computers. A majority of illegal downloaders possess a downloading software and large music collections.
Malin & Fowers (2009)	Low self-control and deviant peer associations are predictors of adolescent music and movie piracy intentions. Students with the highest Internet experience and male students are more likely to pirate music and movies.

Study	Findings
Dilmperi *et al.* (2011)	Downloaders are younger, listen to pop, electronic, and classical music and enjoy imaginal response. Minority who pays for at least some downloads tend to be younger than illegal downloaders. Youth and low income are predictors of downloading in general, not of illegal behavior.
Nandedkar & Midha (2012)	Optimism bias is a significant moderator of the relationship between perceived risks and attitude towards music piracy. Habit is a significant predictor of attitude towards digital piracy. Facilitating conditions were not significantly related to downloaders' attitude towards piracy.
Cox & Collins (2014)	Financial savings and piracy potential benefits (e.g., network effect, disintermediation) serve as incentives to download. Belief that P2P content is of lower quality is the most effective constraint on piracy.

Note. Compiled by author.

2.3.2 Key findings related to movie piracy

Study	Findings
Rob & Waldfogel (2007)	Average of 54.2 instances of paid vs. 3.0 instances of unpaid consumption. Nearly 60% of first viewings occur in theatres, 19% is rental and 4% is unpaid. Unpaid consumption is rare; but when it occurs, it usually is on first viewing. People with larger libraries, more frequent theatre patronage and higher levels of movie fandom have more paid first viewings. Persons with high interest in movies engage in both more paid and more unpaid consumption (heterogeneity). Difference from music: File size (downloading time), extent to which initial consumption is a complement to subsequent use, low (no) sampling effect. On bandwidth: Broadband access is virtually ubiquitous and most unpaid consumption copies are obtained via copying rather than downloading.
Taylor *et al.* (2009)	Anticipated emotions (positive and regrets), attitude towards piracy (hedonic and utilitarian), perceived behavioral control (difficulty and control), and past-piracy frequency significantly influence one's motivations leading to movie piracy intentions.
Jacobs *et al.* (2012)	Deficient self-regulation, descriptive norms, and expected outcomes affects participants' number of downloads. As a result of social changes, moral justification or self-efficacy did not significantly affects participants number of downloads.
Navarro *et al.* (2014)	Males are more likely to commit software and movie piracy.

Study	Findings
Cox & Collins (2014)	Movie downloaders are more likely to have a higher monthly income and to be male than music downloaders. Movie pirates are less likely to reduce their paid consumption as a result of piracy compared to music pirates. Being aware of the harm caused by piracy to the entertainment industry proves to be more effective in reducing illegal downloading of movies than music. Movie pirates are less likely to believe in deterrent consequences (e.g., being fired from work) resulting from their illegal behavior than music pirates. Financial savings and piracy potential benefits (e.g., network effect, disintermediation) serve as incentives to download. Belief that P2P content is of lower quality is the most effective constraint on piracy.

Note. Compiled by author.

2.3.3 Key findings related to software piracy

Study	Findings
Hinduja (2003)	A higher level of Internet-use proficiency differentiates software pirates from non-pirates. Those with a higher degree of variety in their Internet activities pirate software with greater frequency. Univariate statistics suggest that a greater proportion of male admit to software piracy.

Study	Findings
Peace *et al.* (2003)	Attitude, subjective norms, and perceived behavioral control are significant predictors of software piracy intentions. Punishment severity, punishment certainty, and software cost have direct effects on one's attitude toward piracy.
Gupta *et al.* (2004)	Attitude (legal and ethical) and social support factors play a significant role in determining software acquisition mode. Those spending more on software also pirate more. Younger are more likely to pirate.
Al-Rafee & Cronan (2006)	Antecedents of attitude towards piracy are cognitive and affective beliefs, perceived importance of the issue, subjective norms, age, and Machiavellianism.
Woolley & Eining (2006)	Attitudes and subjective norms have an effect on software piracy. Peer-related subjective norms are more influential (rather than authority-related). Although knowledge of copyright laws has increased over the years, this greater awareness has not translated in a lesser piracy rate. Education about copyright laws does not influence students' attitude toward piracy.
Cronan & Al-Rafee (2008)	Attitude, perceived behavioral control, past piracy behaviors and moral obligations were shown to have a significant effect on one's intention to pirate.

Study	Findings
Goles *et al.* (2008)	Moral obligation and perceived usefulness were found to be significantly related to attitude towards softlifting across all settings. Past behavior at home and law awareness at school influenced one's attitude formation in specific settings only. Attitude and past behavior affect intention. Neither age nor gender influence attitude towards softlifting.
Hsu & Shiue (2008)	WTP for software is much lower than actual retail prices. Performance risk and social norms are correlated with WTP. Low WTP are more likely to use pirated software. High WTP factors are source reliability, legitimacy, technical support and customer service. A majority of low WTP has no intention to use legal software.
Liao *et al.* (2010)	Perceived prosecution (psychological) risks impact participants' intention (attitude) towards using pirated software. Attitude and perceived behavior control contribute significantly to the intended use of pirated software. Subjective norm did not influence pirated programs usage intention.
Moon *et al.* (2010)	Low self-control and more opportunities (i.e., daily computer usage in hours and cyber club membership) positively affect one's intention to illegally download software. Males and more academically competent students are more likely to engage in software piracy.

Study	Findings
Navarro *et al.* (2014)	High school students with Internet-addiction problems are more likely to commit software piracy. Males are more likely to commit software and movie piracy.
Udo *et al.* (2014)	Perceived usefulness, effort expectancy, past behavior, and self-efficacy affects participants' intention to download software. Consequences and responsibility affect personal norms, but are strongly moderated by culture.

Note. Compiled by author.

2.3.4 Key findings related to digital piracy in general

Study	Findings
Morris & Higgins (2010)	Peer association, definitions, and neutralization explained some of the variance in digital piracy intention only when grouped together under social learning factors. Demographic factors (e.g., region, gender, age) were found to have a direct effect on both social learning factors and intention to commit piracy.
Yoon (2011a)	Ethical judgment, affecting behavioral intention, is preceded by moral philosophy factors of justice, relativism, utilitarianism, and deontology. Egoism does not significantly influence software piracy intention.

Study	Findings
Yoon (2011b)	Subjective norms are a deontological evaluation affected by normative ethics (i.e., moral obligation and justice). Attitude is a teleological evaluation of the expected outcome (i.e., perceived benefit/risk and habit). Moral obligation and perceived benefit also directly impact intention to commit digital piracy.
Navarro *et al.* (2014)	Digital pirates are more likely to have association with deviant peers.

Note. Compiled by author.

2.4 QUESTIONS NEEDING FURTHER INVESTIGATION

Reviewing the relevant literature on individual factors affecting downloaders' online payment patterns has prompted four significant questions that, in the author's humble opinion, would benefit from further investigation. The first two observations are predominantly conceptual and relate to (1) the adequacy of the theoretical frameworks commonly used and (2) the suitability of studying content types separately. The last two questions are essentially methodological and relate to (3) the generalization capabilities of samples most often selected and (4) the aptness of the terminology frequently used in recent studies.

2.4.1 Adequacy of theoretical frameworks

Digital piracy has previously been explained within many theoretical frameworks such as the social cognitive theory (Jacobs *et al.*, 2012; LaRose & Kim, 2007), the theory of reason action (Nandedkar & Midha, 2012; Woolley & Eining,

2006), the theory of planned behavior (Cronan & Al-Rafee, 2008; Goles *et al.*, 2008; Wang & McClung, 2012), technology use/adoption models (Kwong & Park, 2008; Udo *et al.*, 2014), deterrence theories (Morton & Koufteros, 2008; Peace *et al.*, 2003), ethical theories (Gopal *et al.*, 2004; Yoon, 2011a; 2011b), the general crime theory (Malin & Fowers, 2009; Moon *et al.*, 2010), deviant behaviors learning models (Morris & Higgins, 2010; Navarro *et al.*, 2014), and the exchange theory (Coyle *et al.*, 2009).

While these theories offered valuable insights about digital piracy in relation to their respective discipline, they were mostly adequate to explain participants' attitudes towards piracy (Al-Rafee & Cronan, 2006; Goles *et al.*, 2008) or intentions to engage in piracy (Moon *et al.*, 2010; Morton & Koufteros, 2008), but no framework stressed the dilemma faced by Internet users when deciding whether or not to pay when downloading digital goods. The present dissertation will suggest an alternative model particularly promising in explaining the quandary faced by music, movies, and software downloaders.

Moreover, Brooks and Hoberg (2008) explain the principle of parsimony (in Latin, *parcere*, to spare) as "the more limited, if adequate, is always preferable". This simplicity principle is a suggestion to scientists that, when two competing theories make the same predictions, the simpler one is the better (Carey, 2010). Still, Hale and colleagues (2002) recommend that theories should be sufficiently broad not to confirm the obvious. On these grounds, there are compelling reasons to argue that many theories used to explain the extent of digital piracy (e.g., social psychology models) lack in parsimony or eventually state the obvious. For example, it is evident that a more favorable attitude towards digital piracy will translate in a greater intention to engage

into the behavior (d'Astous *et al.*, 2005) or that when perceived risk increases, people tend to refrain from pirating (Chiou *et al.*, 2005). Theoretical frameworks are seemingly forcing researchers to rely on factors closely and directly related to digital piracy (e.g., attitude) while, in Gupta's (2004) words, the study of digital piracy is a multifaceted topic that should be submitted to a large collection of factors.

2.4.2 Suitability of studying content types separately

Apart from few and notable exceptions (Navarro *et al.*, 2014), most researchers have focused on a single type of content at the time. It is worth mentioning that a few authors have studied music and movie piracy simultaneously (Cox & Collins, 2014; Malin & Fowers, 2009; Taylor *et al.*, 2009). Studying music, movies, and software separately is a situation that possibly leads to the accumulation of mainly partial and fragmented conclusions. Since these content types are typically available conjointly on the most widely-used downloading sites (e.g., file-sharing services), it is likely that music, movie, and software downloaders have relatively homogeneous paying patterns.

Conversely, other authors have considered digital piracy as one, regardless of the type of content being pirated (Morris & Higgins, 2010; Wang & McClung, 2012; Yoon, 2011a; 2011b). It seems a sub-optimal situation since songs, movies, and softwares are undoubtedly very different product types. For example, given the size difference of a song and a movie[7], it is reasonable to believe that one's Internet bandwidth size is more (less) influential in movie (music) downloading decision-

[7] The average MP3 song weights approximately 3 megabytes, while the average 90-minute AVI movie weights approximately 700 megabytes (Jacobs *et al.*, 2012).

making. As Jacobs *et al.* (2012) remarked, not differentiating music, movies, and software downloading naturally leads to inaccurate conclusions on digital piracy.

In such circumstances, it appears preferable to seek an integrated explanation of the downloading phenomenon that takes into account the differences between the different product types rather than (1) partial explanations limited to the downloading of a single product type nor (2) general explanations of digital piracy regardless of the product type.

2.4.3 Generalization capabilities

The view that students are systematically different and thus cannot be treated as an adequate representation for the population in general is not universal. On the one hand, some authors suggest that the use of a college students sample is acceptable since a high proportion of students were shown to pirate (Al-Rafee & Cronan, 2006) or in instances where their response is linked to their "real world context" (Goles *et al.*, 2008).

On the other hand, it is reasonable to question the generalizability of studies about digital piracy when they rely on students samples. Responses of college undergraduates may not be representative of the entire population of online downloaders (LaRose & Kim, 2007; Nandedkar & Midha, 2012). For example, college students are believed to possess a higher level of computer-literacy than the general population (Kwong & Park, 2008). As Cooper (2007) remarked, social psychology is concerned by the way "most people" react in social situation, but it bases its conclusions on the response of predominantly young, white, middle-class students at U.S. colleges

and universities. Accordingly, findings based on college student samples should be generalized to the university populations. Therefore, as most previous studies on digital piracy have used student samples, it could be clarifying to study downloaders' payment behaviors from a sample representative of all the demographic strata. Findings would presumably have a greater level of generalizability.

2.4.4 Appropriateness of terminology

Studies about digital piracy commonly use assertive wording to characterize unpaid downloading, asking the interviewees if they are Internet pirates (LaRose & Kim, 2007), practice digital piracy (Cronan & Al-Rafee, 2008; Udo *et al.*, 2014), have downloaded unauthorized products (Nandedkar & Midha, 2012), intend to copy (Goles *et al.*, 2008), or swap files over the Internet (d'Astous *et al.*, 2005).

Short of criticizing the suitability of the terminology normally used, we know that studies dealing with the extent of unethical or illegal behaviors face the difficulty of obtaining authentic responses (Woolley & Eining, 2006). Participants desire to appear more socially responsible than the reality and tend to minimize the extent of their unethical behaviors to eventually cause a social desirability bias (Chung & Monroe, 2003). The effect is that illegal or unethical behaviors tend to be underreported by participants, a practice already observed in behaviors related to tax evasion (Hessing, Elffers, & Weigel, 1988) or risky sexual practices (Schroder, Carey, & Vanable, 2003).

Understandably, attesting the authenticity of participants' self-reported behavior is nearly impossible. Woolley and Eining (2006) encouraged honest answers

regarding software piracy using a randomized response technique.[8] Other approaches could include asking sensitive questions in an indirect way. Avoiding terms like "piracy" and "illegal downloads", commonly used in the academic literature, could help obtain a greater response rate and a higher degree of accuracy in the answers (Cannell, Oksenberg, & Converse, 1977; Mooney & Gramling, 1991).

Chapter summary

Canvassing the vast literature on digital piracy can be a daunting task since it requires delving into various disciplines and contemplating numerous groups of considerations. But this academic undertaking seems required to capture a broad understanding of the phenomenon, especially acknowledging that different models can offer equally valid standpoints and considerations often overlap research disciplines. This chapter discussed various disciplines' contributions to the study of digital piracy. Learnings were assembled by discipline: social psychology, ethics and criminology, consumerism, and exploratory research. The following section attempted to coherently regroup individual factors affecting digital piracy into four thematic groups of considerations: demographic, psychographic, technological and behavioral, and content-related concerns. The third and last section discussed some questionings that could lead to further investigation, namely the theoretical frameworks commonly used, the product types often individually studied, the students samples habitually selected, and the terminology frequently encountered.

[8] See Tracy and Fox (1981) for a detailed explanation of the randomized response technique.

3 Frameworks

"The talent for self-justification is surely the finest flower of human evolution, the greatest achievement of the human brain."

— Michael Foley, author, *The Age of Absurdity*

"Copyright promotes creativity by proscribing the right to copy"

— Kalyan C. Kankanala, author, *Pirates of Bollywood*

Governments and copyright holders associations are urging downloaders to legally acquire digital content in order to reduce the perverse effects of piracy in general and to duly compensate the creative rights holders in particular. Corporate sponsors, often financially backed by governments around the world, invest vast amounts of money and resources in communicating anti-piracy messages. In order to change downloaders' online habits, many communication styles and persuasion models have been used, most resulting in various degrees of disappointment.

Obtaining greater compliance with anti-piracy messages seems problematic, partly because downloaders are already aware of the messages' proposition: Downloading digital content without duly compensating the copyright holder is unacceptable since it has an adverse impact on society (e.g., claiming the illegality of digital piracy, comparing with shoplifting, and stating piracy-related economic losses).

This situation is bearing salient similarities with anti-smoking communication campaigns, where most anti-smoking message propositions are centered on the aversive effects of tobacco use. Still, it is highly unlikely that smokers are unaware of the negative effects of tobacco use on their health.

Many researchers have resorted to the theory of cognitive dissonance in an attempt to explain smokers' persistent behavior despite their widespread understanding of smoke-related health problems. Could the same theory help enlighten downloaders unresponsive behavior to anti-piracy communications?

It seems impossible that downloaders are still unaware that they must monetarily compensate the owners of copyrighted material downloaded from the Internet. Data gathered by Altschuller and Benbunan-Fich (2009) suggests a legality-reality gap between how downloaders believe they should behave and the way they actually behave. Similarly, findings from Friedman (1997) provide convincing evidence that illegal downloaders are well aware of property rights and the resulting compensation obligation.

This doctoral dissertation proposes to explain why unpaid downloading is still prevalent, despite numerous anti-piracy campaigns, drawing on Festinger's cognitive dissonance theory (1957). The current chapter is therefore divided into three sections. The first section serves as a broad introduction to the original theory of cognitive dissonance. It includes the theory's basic premises, paradigms, modifying conditions, and alternative theories. The section closes on a brief theoretical justification.

The following section focuses on using the theory of cognitive dissonance as the backbone of our hypothesis development. Three theoretically grounded hypotheses are proposed, each one suggesting that a unique factor differentiates each group of downloaders based on their respective online payment pattern: downloaders who never pay, downloaders who always pay, and eclectic downloaders.

The last section introduces several other potentially differentiating factors, however outside of the proposed theoretical framework. Those additional factors were treated as research questions and conceptually grouped into four thematic areas: demographics, psychographics, factors related to Internet use, and factors related to content interest (music/movie).

3.1 THEORY OF COGNITIVE DISSONANCE

3.1.1 Inconsistency, cognitions, arousal, and reduction

The original theory of cognitive dissonance was first introduced by Leon Festinger (1957). The basic premise behind Festinger's original theory of cognitive dissonance, based on his observations in the field of social psychology, is that people do not like inconsistency. Inconsistencies are uncomfortable: they create unwanted and unpleasant sensations to humans.

Festinger (1957) also advocates that people do not simply prefer consistent over inconsistent states, but are rather urged to deal with inconsistencies. On this ground, inconsistency acts as a drive-like motivation to find ways to resolve our discrepancies. People are consequently driven to reduce dissonant cognitions in order to reestablish cognitive consistency.

For Festinger (1957), people's inconsistencies are forcing them into action to reduce the incumbent state of cognitive dissonance. As outlined in Figure 3.1, a state of cognitive dissonance occurs when people believe they simultaneously hold two relevant but inconsistent cognitions.

Using the concept of "cognition" allowed Festinger (1957) to describe any "piece of knowledge" conceivable: knowledge of one's behavior but also knowledge of one's attitude, belief, or perception. It should also be noted that people tend to change an attitudinal cognition relatively more easily than a behavioral cognition. Accordingly, the theory of cognitive dissonance can be mistaken for an attitude change theory, although all cognitions are equally important (Cooper, 2007).

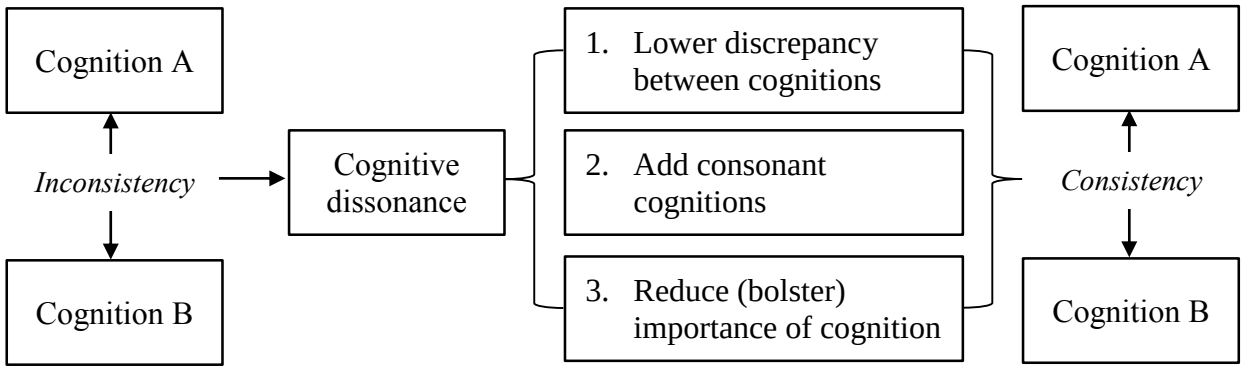
According to Cooper (2007), there are three possible ways of reducing the magnitude of cognitive dissonance:

1. To lower discrepancy between cognitions: Reducing the level of discrepancy between two relevant but inconsistent cognitions is considered the most direct way of reducing the magnitude of cognitive dissonance.

2. To add consonant cognitions: Accumulating cognitions that are relevant with one of the discrepant cognitions can serve in reducing the total magnitude of the dissonance.

3. Bolster (reduce) the importance of a consonant (dissonant) cognition: Modifying the weight of one of the discrepant cognitions can serve in reducing the magnitude of dissonance.

Figure 3.1: Theory of cognitive dissonance's original model



Note. Adapted from Festinger (1957) and Cooper (2007).

While Festinger's (1957) use of the concept of cognition is convenient, the theory of cognitive dissonance sets itself apart from other consistency theories by advancing that dissonance has magnitude. The more discrepant two cognitions are, the greater the magnitude of dissonance, and the greater the need to reduce it (Cooper, 2007). The total magnitude of the dissonance is proportional to the number of discrepant cognitions and inversely proportional to the number of consonant cognitions, each cognition weighted by its respective given importance:

$$Dissonance\ magnitude = \frac{\Sigma\ (Discrepant\ cognitions * Importance)}{\Sigma\ (Consonant\ cognitions * Importance)}$$

Festinger's (1957) original theory conceptualized cognitive dissonance in two ways. First, holding two or more inconsistent cognitions is arousing, which is experienced as uncomfortable tension. The affects defining arousal range from "uneasy" to "bothering", and can comprehensively be grouped under the term psychological discomfort (Elliot & Devine, 1994).

Then, the arising tension has motivational properties. Cognitive dissonance act as a body tension with drive-like properties, where people feel pressed to action in order to reduce the psychological discomfort. According to Cooper (2007), cognitive dissonance's arousing tension leading to drive-like motivation to reduce it matches Freud's sexual tensions build-up and reduction principles.

Inherent difficulties are associated with the measurement of both cognitive dissonance's states of arousal and drive, although indicators of the former were proposed: adrenaline (Schachter & Singer, 1962) and hand perspiration (Croyle & Cooper, 1983), among others. Research from Losch and Cacioppo (Losch & Cacioppo, 1990) also advocate that while cognitive dissonance may create favorable affect, only negative arousing will result in attitude change.

As Cooper (2007) suggests, Festinger believed in the importance of potentially unobservable and perhaps unmeasurable internal states. The consensus view is that Festinger's original theory of cognitive dissonance is a true black box making interesting predictions.

3.1.2 Paradigms, limitations, and alternative models

Almost sixty years have passed since the theory of cognitive dissonance's original formulation (Festinger, 1957). The passing of time has resulted in both support and criticism toward the original theory. Consequently, experimental paradigms have been developed (Table 3.1), limitations have been exposed (Table 3.2), and alternative interpretations and revised models were put forward (Table 3.3).

The numerous experimental paradigms have created enduring frameworks to better understand the theory of cognitive dissonance and guide theorists in predicting cognitive changes (Table 3.1). Brehm's free choice paradigm (1956) stipulates that, in decision situations, dissonance will be greater when alternatives are close-by in terms of attractiveness. Close alternatives make for difficult decisions, and generate more cognitive dissonance. Dissonance is reduced by viewing the chosen (rejected) alternative as more (less) attractive, a dissonance-reduction mechanism known as spreading of alternatives. Interesting insight from the free choice paradigm is the pervasiveness of dissonance in decision making.

Festinger and Carlsmith's induced compliance paradigm (1959) postulates that dissonance arises when someone acts in a way contrary to his or her attitude (e.g., students writing essays supporting a tuition increase). To reduce cognitive dissonance, people modify their attitude to be less discrepant with their actions. Their results also suggest that lower (higher) justification (e.g., monetary compensation) for the task results in greater (smaller) attitude change toward the task, a finding conflicting with Skinner's learning theory (Cooper, 2007).

Aronson and Mills' effort justification paradigm (1959) claims that dissonance arises when people engages in unpleasant activities to obtain a desirable outcome (e.g., initiation rituals). To reduce dissonance, people will exaggerate the desirability of the outcome. Experimental evidences recommend that severe (mild) conditions result in greater (smaller) attitude changes.

Cooper, Zanna, and Taves' misattribution paradigm (1978) shows that when people are provided with the opportunity to misattribute their arousal (e.g., perturbing lightning), the need to reduce dissonance disappears and attitude will not be modified.

Table 3.1: Paradigms resulting from the theory of cognitive dissonance

Paradigm	Study	Findings
Free choice	Brehm (1956)[9]	Dissonance arises following a decision (ubiquitous phenomenon). Dissonance is reduced by viewing the chosen (rejected) alternative as more (less) attractive. Harder (easier) decision resulted in greater (lesser) spreading of alternative.
Induce compliance	Festinger and Carlsmith (1959)	Dissonance arises when someone is asked to act in a way contrary to his or her attitude. Dissonance is reduced by changing the attitude toward the task. Low (high) justification (i.e., compensation) for the task resulted in a greater (smaller) attitude change.

[9] Brehm's (1956) early article followed Festinger's lecture of a paper titled "The relation between cognition and action" at a symposium on cognition held in Boulder, Colorado, in May of 1955.

Paradigm	Study	Findings
Effort justification	Aronson and Mills (1959)	Dissonance arises when someone engages in an unpleasant/punishing activity to obtain a desirable outcome. Dissonance is reduced by exaggerating the desirability of the outcome. Severe (mild) condition resulted in a greater (smaller) attitude change.
Misattribution	Cooper *et al.* (1978)	Providing a stimulus (e.g., placebo) to misattribute arousal eliminates the need to reduce dissonance.
Vicarious cognitive dissonance	Cooper and Hogg (2007)	Dissonance vicariously arises when witnessing other people's inconsistencies. Under intersubjectivity conditions with another in-group member.

Note. Adapted from Cooper (2007).

Cooper and Hogg's (2007) theory of vicarious dissonance suggest that cognitive dissonance can be derived from the counter-attitudinal behavior of someone else. Vicarious dissonance arises when people witness other people's inconsistencies under conditions of intersubjectivity (i.e., ability to feel others' states as your own). Intersubjectivity is reinforced when both the individuals and the dissonant group member are categorized as prototypal in-group members.

The research paradigms resulting from early experiments on cognitive dissonance evidence the broad and flexible applicability of Festinger's (1957) original theory. Cognitive dissonance suggested an internal psychological process that was initiated when people take decision (Brehm, 1956), behave in counter-attitudinal ways (Festinger & Carlsmith, 1959), or engage in an unpleasant activity to obtain a desired outcome (Aronson & Mills, 1959). Given that the ensuing arousing state could not be misattributed to a peripheral factor (Cooper *et al.*, 1978), people engage in a dissonance reduction process to reestablish consistency between their discrepant cognitions.

While there is a strong consent in support behind Festinger's (1957) original theory, other studies uncovered limiting conditions of the theory's applicability. That is, holding discrepant cognitions is arousing and creates dissonance only under certain modifying conditions (Table 3.2). Inconsistencies produce dissonance subject to the modifying effects of decision freedom (Linder, Cooper, & Jones, 1967) and behavioral commitment (Davis & Jones, 1960). Moreover, for a person to experience arousal, behavioral consequences must be aversive (Nel, Helmreich, & Aronson, 1969) and foreseeable (Cooper, 1971; Staw, 1974).

Table 3.2: Modifying conditions to the theory of cognitive dissonance

Conditions	Study	Findings
Decision freedom	Linder *et al.* (1967)	High choice condition is necessary to experience dissonance in induced compliance situations. No dissonance in absence of freedom.
Behavioral commitment	Davis and Jones (1960)	Commitment to counter-attitudinal behavior is necessary for dissonance to arise. No dissonance when a possibility of retraction exists.
Aversive consequences	Nel *et al.* (1969)	Potentially unwanted consequence are necessary to arise dissonance. No dissonance in guaranteed absence of aversive consequences.
Foreseeable consequences	Cooper (1971)	Foreseeable aversive consequences lead to dissonance. Surprise aversive consequences do not produce dissonance.

Note. Adapted from Cooper (2007).

The early modifying conditions challenging the original theory of cognitive dissonance (Festinger, 1957) have led researchers to question the theory and propose alternative motivational explanations (Harmon-Jones, 2012). Relevant alternative theories are the new look model (Cooper & Fazio, 1984), the self-affirmation theory (Steele, 1988), the action-based model (Harmon-Jones, 1999), and the self-standards model (Stone & Cooper, 2001). Alternative models are summarized in Table 3.3.

Cooper and Fazio (1984) first suggested that inconsistencies alone were not generating dissonance. They argued that dissonance occurs when an individual feels personally responsible for bringing about aversive consequences. Dissonance would be the result of an action (1) with unwanted and irrevocable consequences and (2) for which the individual accept the responsibility. A combination of choice and foreseeability are required for responsibility to be accepted. The resulting attitude change would not occur to restore consistency, but rather to render the consequences of the behavior non aversive.

The basic premise behind Steele's (1988) self-affirmation theory is that people are motivated to maintain an overall self-image of moral and adaptive adequacy. Dissonance threatens this positive self-image by upsetting one's equilibrium, ensuing the need to rationalize one's activities or to distort/add information that will preserve one's self-image. Steele's (1988) theory holds one important difference from the original theory of cognitive dissonance: people are not motivated to restore cognitive consistency, but rather the overall self-integrity system, suggesting the attitude change is global and not local. The self-affirmation theory was latter challenged by Simon, Greenberg, and Brehm (1995), who suggested that self-affirmation is mostly

trivialization (i.e., decreasing the importance of cognitions involved in the inconsistency) as a mode of dissonance reduction, rather than a global attitude change, hence supporting Festinger's original theory.

Harmon-Jones' (1999) action-orientation model proposes that inconsistency between important cognitions (i.e., action tendencies) make people uncomfortable since such discrepancy have the potential to interfere with effective action (i.e., action that follows on a decision). Harmond-Jones and Harmond-Jones (2002) explain that the cognitions most-likely to evoke dissonance are those that provide useful information for action. When information inconsistent with cognitions that guide action is encountered, negative affect (i.e., dissonance) is aroused because the dissonant information will potentially interfere with unconflicted action. Factors traditionally affecting the magnitude of the dissonance (e.g., importance, aversive consequences, and self-relevance) are considered factors carrying significant implications for action. Individuals will resort in various cognitive strategies to resolve the dissonance, including attitude change but also behavioral disengagement. Harmon-Jones propounds the view that the production of aversive consequences is not necessary to create dissonance and that cognitive discrepancy, as defined by the original theory, is sufficient to cause dissonance (Harmon-Jones & Harmon-Jones, 2002).

In an attempt to adapt the new look model (Cooper & Fazio, 1984) to the self-affirmation theory (Steele, 1988) and the action-based model (Harmon-Jones, 1999), Stone and Cooper (2001) came up with a self-standard model of dissonance. While the starting point is still one's behavior (as in Cooper and Fazio, 1984), the assessment of the desirability of such behavior requires a comparison with two standards of judgment:

(1) normative standards creating nomothetic dissonance, and (2) personal standards crating idiographic dissonance and moderated by self-esteem. As Cooper (2007) notes, self-esteem only affects dissonance in special circumstances since people typically judge their behaviors against normative standards. Thus, most people reduce dissonance by self-justification of behavior (i.e., attitude change and decision rationalization).

Table 3.3: Proposed revised models to the theory of cognitive dissonance

Model	Study	Findings
New look model	Cooper and Fazio (1984)	Dissonance caused by feeling personally responsible for producing an aversive consequence. Dissonance reduced by attitude change to render the consequence of behavior non-aversive. Dissonance does not occur following inconsistency, but rather action.
Self-affirmation theory	Steele (1988)	Dissonance threatens individuals' positive self-image of moral and adequacy. Dissonance creates motivation to reaffirm the integrity of the self (e.g., stating an important value). Attitude change is global, not local.

Model	Study	Findings
Action-based model	Harmon-Jones (1999)	Dissonance caused by inconsistent cognitions (action tendencies) that interfere with unconflicted action (action freeze). Dissonance creates negative affect (arousal). Negative affect motivates to reduce dissonance by traditional attitude-change or behavior disengagement. Aversive consequences are not necessary.
Self-standards model	Stone and Cooper (2001)	Dissonance caused by feeling personally responsible for producing an aversive consequence. Consequences assessed on two different standards of judgement: personal or normative. Dissonance typically reduced by self-justification of behavior (attitude change and decision rationalization). Self-consistency/ self-affirmation affects dissonance only happens in special circumstances.

Note. Adapted from Cooper (2007) and Harmon-Jones (1999; 2012).

Following Festinger's (1957) original theory of cognitive dissonance, a number of alternative theories were proposed mainly to try and explain the motivational

processes behind the dissonance reduction. Both the new look (Cooper & Fazio, 1984) and the self-standard (Stone & Cooper, 2001) models suggest that inconsistency is not behind dissonance, but rather feeling responsible for aversive consequences. The self-affirmation theory (Steele, 1988) suggests that dissonance threatens positive self-image, thus creating a motivation for reaffirming one's general self-integrity. The action-based model (Harmon-Jones, 1999), supporting Festinger's original theory, claims that inconsistent cognitions have a freezing effect on one's need for unconflicted actions.

3.1.3 Theoretical positioning

Current research does not appear to validate a consensual view on cognitive dissonance. The centrality of the debate resides on (1) the necessity of inconsistency (Festinger, 1957; Harmon-Jones, 1999; Harmon-Jones & Harmon-Jones, 2002) and (2) the need of an aversive consequence (Cooper & Fazio, 1984; Stone & Cooper, 2001) to arouse dissonance.

Cooper and Fazio (1984) and Stone and Cooper (2001) suggested that attitude change serves in rendering the consequence of an action non-aversive. However, they also insist that inconsistency is still a very important heuristic representation to understand the conditions leading to the uncomfortable tension state. They argue that inconsistency almost invariably produces aversive consequences. Thus, inconsistency can be seen as a proxy variable for unwanted consequences. They also state the inherent difficulty in visualizing (1) inconsistent cognitions without unwanted consequences or (2) unwanted consequences without inconsistent cognitions (Cooper, 2007).

Simon, Greenberg, and Brehm (1995) refuted most of the self-affirmation theory (Steele, 1988) as a dissonance-reduction mechanism, and convincingly advanced that the idea of cognitive dissonance being systematically reduced by attitude change was an experimental exaggeration. People would rather simply and commonly trivialize their attitude or action to achieve the same dissonance-reduction objective. Their results provided strong confirmatory evidences favoring Festinger's (1957) original theory.

While the action-based model (Harmon-Jones, 1999) discusses the reasons why cognitive inconsistency feels aversive, something Festinger was silent on, Harmon-Jones' model entirely accepts Festinger (1957) original proposition: that the magnitude of dissonance is a function of the number and importance of dissonant (inconsistent) cognitions relative to the number and importance of consonant (consistent) cognitions.

The inconclusive debate on the very causes of arousal and ensuing drive-like motivation has overshadowed the much greater level of consensus behind Festinger's (1957) original theory. In our opinion, the theory of cognitive dissonance, in its original form, can serve as a broad and flexible theoretical backbone in explaining why unpaid downloading is still prevalent despite the avalanche of anti-piracy campaigns in the recent years.

On these grounds, we argue that downloading copyrighted material without duly and monetarily compensating the rightful owners are two related and dissonant cognitions free from the constraints of the theory's modifying conditions (Cooper, 1971; Davis & Jones, 1960; Linder *et al.*, 1967; Nel *et al.*, 1969; Staw, 1974). In other

words, downloading without paying is inconsistent and therefore will produce dissonance since the downloader acts freely (Linder *et al.*, 1967) and is committed to the behavior (Davis & Jones, 1960). Moreover, downloading without paying is arousing because the consequences are both aversive (Nel *et al.*, 1969) and foreseeable (Cooper, 1971; Staw, 1974) to the downloaders.

Finally, the theory of cognitive dissonance is well-established both in the general population and the scientific literature. It has become one of the most influential and widely documented theory in social psychology[10] (Cooper, 2007), handing its author the fifth rank among the most eminent psychologists of the 20th Century (Haggbloom *et al.*, 2002). The variety of research paradigms demonstrates the broad and flexible applicability of the theory, which also has the capacity to integrate a wide range of social phenomena (Gawronski, 2012).

3.2 THEORETICAL FRAMEWORK

Unlike streaming, downloading involves the ability to autonomously use, permanently retain, and indiscriminately share digital copies of creative works whose intellectual property rights do not belong to the downloaders. Acquisition of these important abilities is (not) justified when downloaders do (not) pay compensation to the copyright holders. In practice, there are (1) downloaders who, inconsequently, never pay, (2) downloaders who, reasonably, always pay, and (3) eclectic downloaders who, inconsistently, only pay at times.

[10] According to Google Scholar, Festinger's original work, *A theory of cognitive dissonance*, has been cited 26,716 times (accessed on November 20, 2014).

The theory of cognitive dissonance is providing a broad framework to allow the development of hypotheses on the differences between three groups of downloaders based on their online payment habits. On logical ground, and according to the theory of cognitive dissonance, there are compelling reasons to argue that:

1. Downloaders who never pay are in a state of cognitive disequilibrium, because they simultaneously exhibit two dissonant actions (i.e., downloading copyrighted creative works and never-paying monetary compensation);

2. Downloaders who always pay are in a state of cognitive equilibrium, because they simultaneously exhibit two consonant actions (i.e., downloading copyrighted creative works and always-paying monetary compensation);

3. Eclectic downloaders who only pay at times alternate between states of cognitive equilibrium and disequilibrium, because they inconsistently respond to the same initial behavior (i.e., downloading copyrighted creative works and sometimes paying monetary compensation).

3.2.1 Attitude towards newness and never-paying downloaders

According to the theory of cognitive dissonance, downloaders who never pay are in a state of cognitive disequilibrium because they simultaneously exhibit two dissonant actions. On the one hand, they download copyrighted creative work and gain the ability to use, retain, and share such works as if they were their own. On the other

hand, they never pay any compensation to the creators/producers, whose creative works are legally protected by intellectual property laws[11].

The state of cognitive disequilibrium is arousing and produces such an uncomfortable tension that users who keep downloading without ever paying need to underestimate/counterargue the importance of compensating the owners of copyrighted creative work. The process of trivialization (Simon *et al.*, 1995) aims at reducing the magnitude of an inconsistency by reducing the importance given to one of the dissonant elements. In other terms, to reduce the dissonance from their inconsistent actions, never-paying downloaders must decrease the importance of the compensating legally protected creative works, a component involved in the dissonant relation.

The importance given to compensation understandably depends on how consumers evaluate the originality and innovativeness of creative works, which is precisely what makes them objectively differentiable and therefore legally protectable (Del Corral, 1997). Also, copyrights force compensation in order to protect the incarnation of innovative idea (Hall, 1992).

The tendency to welcome and adopt new things earlier than most others is called innovativeness (Rogers, 2010). A favorable attitude towards new and innovative products is an important concept in marketing since it is closely related to new product success. A higher innovativeness suggests a higher appraisal of innovative products (Arts, Frambach, & Bijmolt, 2011).

[11] The Universal Declaration of Human Rights protects authors' material compensation for their artistic productions.

Reasonably, a higher product appraisal leads to a lesser price sensitivity. There is ample support that one's willingness to try new and innovative products is therefore related to price insensitivity (Goldsmith, Flynn, & Kim, 2010), a phenomenon observed in the videogames (Wingfield, 2005) or mobile services (Munnukka, 2005) industries.

Inversely, consumers with a more negative attitude towards newness would tend to undervalue new products' creativity (Hirschman, 1980). There is evidence that the more negative the consumers' attitude toward newness, the more their unwillingness to pay for copyrighted work (Hsu & Shiue, 2008) and fashionable clothing (Goldsmith *et al.*, 2010; Goldsmith, Kim, Flynn, & Kim, 2005).

As consumers with more negative attitude towards newness will likely give less importance to compensating creativity, they are expected to experience less tension when not paying for their download of protected original work. Based on this rationale, we can hypothesize that a distinctive feature of those who never pay for downloading digital content is their comparably more negative attitude towards newness.

> **H1.** Among music/movies/software downloaders, those who never pay differ from all others in terms of their comparatively more negative attitude towards newness.

3.2.2 Internet-use history and always-paying downloaders

According to the theory of cognitive dissonance, downloaders who always pay are in a state of cognitive equilibrium because they simultaneously exhibit two consonant actions (i.e., downloading copyrighted creative works; always-paying

monetary compensation). However, such equilibrium can break down with the passing of time as a result of the gradual assimilation of dissonant actions that are very common in the online environment.

Specifically, assimilation-related evidence shows that when people engaged in consonant actions witness other people displaying dissonant actions, the former tend to become more tolerant to the latter's actions (Cooper & Hogg, 2007; Norton, Monin, Cooper, & Hogg, 2003). Not only do they become more tolerant, but vicarious consumption experiences can enlarge one's own mental repertoire of consumption scripts (Hirschman, 1980).

Within the framework of the neutralization theory (Matza, 1964; Sykes & Matza, 1957), the omnipresence of a dissonant behavior has been found to be a powerful claim used by people to neutralize their dissonance and justify their own behavior's legitimacy (Henry, 1989; Hinduja, 2007). Along similar lines, Sisti (2007) found evidence that such behavioral prevalence (i.e., "everybody is doing it") can serve as justification for immoral conducts.

Gibson (2000) lends support to the influence of the majority, and further suggests that justifying a dissonant behavior by its prevalence could be applied in specific environment. The author describes this extension as the "when in Rome" justification, where a normally dissonant conduct could be justified by its omnipresence, but only in a given setting, like the Internet.

Therefore, the shorter the Internet-use history downloaders have, the less likely they will be able and willing to download without paying. We conjecture that

downloaders who always pay for digital content tend to have comparatively shorter Internet-use histories.

> **H2.** Among music/movies/software downloaders, those who always pay differ from all others by having a shorter Internet use history.

3.2.3 Breadth of online activities and eclectic downloaders

Eclectic downloaders alternate between states of equilibrium and disequilibrium because they at times they congruously compensate copyrights owners and other times they incongruously do not.

The changing responses to the same initial activity (i.e., downloading copyrighted creative works; *sometimes* paying monetary compensation) are fundamentally inconsistent and reveal the presence of a more or less conscious "doublethink", which relieves cognitive dissonance by ignoring the contradiction between two ideas or action. The term and notion of "doublethink" was introduced in George Orwell's literary classic *Nineteen eighty-four* (Orwell, 1949). "Doublethinking" permits holding two opposite cognitions, knowing them to be contradictory, but believing in both of them (Martin, 1984).

El-Sawad, Arnold, and Cohen (2004) found support to the existence of "doublethink" and concluded that, while holding conflicting cognitions should create arousal and provoke dissonance, "doublethink" provides a mean of containing the contradiction and ignoring the apparent inconsistency. Independently bracketing opposite cognitions absolves the need to resolve the dissonance that would normally

spur from the conflicting cognitions. "Doublethink" has also been used to understand contradictions in the acceptance of deviant behavior (Allaste & Lagerspetz, 2005) and the practice of public relations (Willis, 2014).

"Doublethinkers" are not necessarily conscious of the intrinsic contradiction in their ideas/actions (El-Sawad *et al.*, 2004). While they could briefly and occasionally be aware of their contradiction, unconsciousness is essential for contradictory cognitions to persist over time and avoid the arousing feelings of falsity and guilt (Martin, 1984).

Contrasting ambivalence from "doublethink" (M. E. Brooks, Highhouse, Russell, & Mohr, 2003; El-Sawad *et al.*, 2004), the former allows holding simultaneously and consciously inconsistent cognitions, while the latter is believed to be sequential (i.e., alternatively one cognition at the time) and nonconscious (although possibly goal-oriented). Accordingly, "doublethink" would allow eclectic downloaders to live free of dissonance while sequentially and unconsciously adopting inconsistent online paying behaviors.

The changing behavior characterizing the eclectic downloaders may be understood through the so-called "chameleon effect". The chameleon is commonly known to change its color in order to better blend in its surrounding. The reptile's adaptive capacity was first transferred to humans in the original motion picture Zelig (Allen, 1983), a mocking documentary about Leonard "the Lizard" Zelig who cannot resist but adopting the behaviors, personalities and values of people surrounding him.

While Woody Allen's (1983) work brought the main character's adaptive capacities to absurd extremes (e.g., Zelig's will change his speech, size, and skin complexion to match whatever crowd surrounds him), it is nonetheless a common experience to realize that people adopt their interaction partner's accent, posture or behavior. For example, public knowledge - and scientific demonstration (Provine & Hamernik, 1986)- tells us that publicly yawning will unvaryingly prime contagious yawning from surrounding and possibly well-rested individuals.

Chartrand and Bargh (1999) argue that one's behavior passively and unintentionally changes to match that of others in a current social environment. Humans have an innate tendency to mimic the behavior of interaction partners in an unintentional and nonconscious way (Chartrand & Bargh, 1999; Chartrand, Maddux, & Lakin, 2005; Lakin, Jefferis, Cheng, & Chartrand, 2003) and can significantly influence consumer behaviors (Tanner, Ferraro, Chartrand, Bettman, & Van Baaren, 2008).

The chameleon effect draws on research about the perception-behavior link, where the perceptual activity nonconsciously spreads to behavioral representations, increasing the likelihood of behaving similarly to others in the current environment (Chartrand & Bargh, 1999). Thus perception and behavior are inextricably intertwined in a way that perceiving strangers' behavior has a direct and immediate effect on our own behavior (Chartrand *et al.*, 2005).

Mimicry (i.e., copying one's observables) is an elementary and adaptive manifestation of the perception-behavior link, given one possesses the ability to

replicate a behavior. It historically evolved from a physical survival mechanism (e.g., running away when others do, without being aware of the actual danger) to a social survival one (Chartrand & Bargh, 1999), nowadays strengthening social bonds (van Baaren, Holland, Kawakami, & van Knippenberg, 2004) or avoiding social exclusion (Lakin, Chartrand, & Arkin, 2008).

About group implications, Chartand *et al.* (2005; 1999) insist that the chameleon effect can occur in the most minimal group circumstances, since mimicry is not conditioned to (1) awareness, (2) previous rapport, nor (3) affiliation objectives.

Accordingly, the more the social environments in which an individual personally interacts, the greater the variety of mimicry the individual will perform when interacting with others (van Baaren, Horgan, Chartrand, & Dijkmans, 2004).

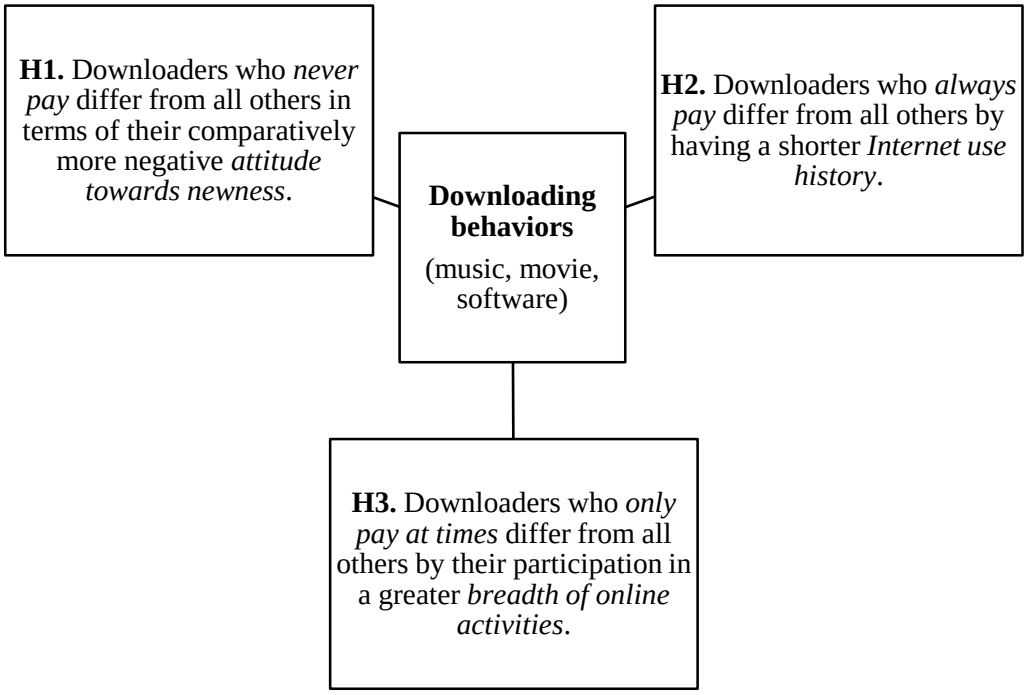
In the case of downloaders, those who interact with a greater variety of Internet outlets (by participating in a greater breadth of online activities), are expected to change their payment patterns more easily to match the behavior found in each outlet. Thus we can hypothesize that downloaders who irregularly pay for digital content participate in a relatively greater breath of online activities.

> **H3.** Among music/movie/software downloaders, those who only pay at times differ from all others by their participation in a greater breadth of online activities.

The theory of cognitive dissonance served in conceptualizing the choice facing digital content downloaders and helped in hypothesizing differences between the three

groups of downloaders, consistent with three common online payment patterns. As Figure 3.2 outlines, among music, movie and software downloaders, (1) those who never pay differ from all others in terms of their comparatively more negative attitude towards newness, (2) those who always pay differ from all others by having a shorter Internet use history, and (3) those who only pay at times differ from all others by their participation in a greater breadth of online activities.

Figure 3.2: Hypotheses developed within the theoretical framework



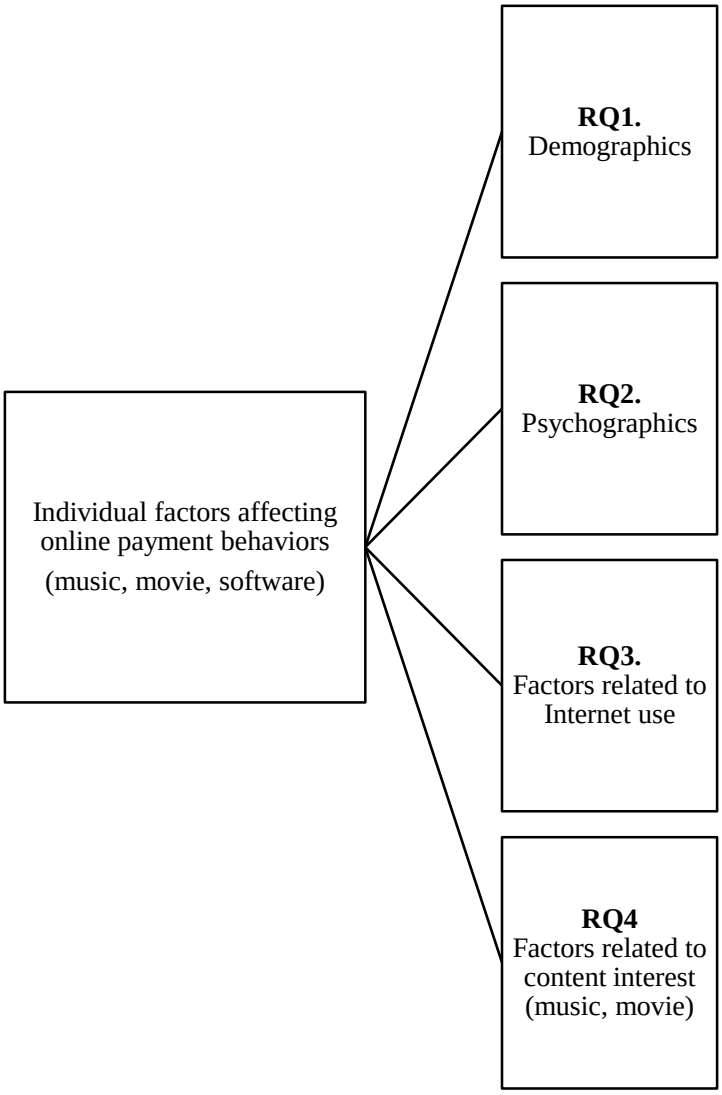
Note. Created by author.

3.3 CONCEPTUAL FRAMEWORK

Simultaneously, the research intends to explore other potentially differentiating factors that are outside of the proposed theoretical framework. These additional factors were grouped into four thematic areas: demographics (**RQ1**), psychographics (**RQ2**),

factors related to Internet use (**RQ3**), and factors related to content (music/movie) interest (**RQ4**). Insufficient theoretical background and scarce empirical evidence recommended not to hypothesize on these factors and suggested to treat them as research questions. Groups of factors potentially influencing downloaders' online payment behaviors are conceptually presented in Figure 3.3.

Figure 3.3: Proposed conceptual framework



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3.3.1 Demographic factors affecting online payment behaviors

Because cognitive dissonance affects all demographic strata in a substantially similar way, the moderating role of demographics has not been extensively studied in the cognitive dissonance literature (Cooper, 2007). The author supports the view that while different culture, races, or social classes might frame cognitions in different ways (e.g., different behavioral expectations, and desires), the underlying process motivating a person to action when cognitive dissonance arises are believed to remain similar. However, demographics do play a relevant moderating role in Internet use in general and in creative downloading in particular (Assael, 2005).

In total, five items serve in conceptualizing possible demographic factors affecting downloaders' online paying behaviors. Those potential factors are participants' sex, age, social class, size of municipality, and acknowledged presence of kids in household.

In relations to sex and age, the first is typically defined as the state of being male or female while age is a commonly understood term signifying the length of time that a person has lived. Several studies have found that males and younger people are more likely to download without paying than are females and older individuals (Bhattacharjee *et al.*, 2003; Chiang & Assane, 2009; Coyle *et al.*, 2009; Dilmperi *et al.*, 2011). But Acilar (2010) has not found any significant impact of sex or age on attitudes toward downloading without paying.

Social class is nominally defined by a division of a society based on social and/or economic status. Rose and Harrison (2014) cite various bases of social power,

such as race and gender, but advance that most sociologists have agreed on social class being the most important one. There seems to be compelling reasons to believe that social class could affect online paying behaviors. On the one hand, it seems reasonable to think that lower-class individuals may be more motivated to download without paying in order to preserve their limited resources. On the other hand, available research suggests that upper-class (lower-class) individuals are more (less) likely to exhibit unethical decision-making tendencies or endorse unethical behavior at work (Piff, Stancato, Côté, Mendoza-Denton, & Keltner, 2012).

Size of municipality refers to the number of inhabitants of a particular place (i.e., the population of a town or a city). Savage and Waldman (2009) found out that urban consumers are willing to pay a substantive premium for an improved Internet bandwidth, supposing an increased downloading capacity. However, Rahim and Rahman (1999) found no significant differences in the prevalence of piracy between city and remote areas.

Presence of kids at home is an indicator of family structure (i.e., the composition and membership of the family and the organization of relationships among individual family members), although family structure can be conceptualized in many other ways (e.g., presence or absence of legally married spouses or common law partners). Empirical evidence suggests that (1) the presence of children in the household is associated with a faster technological adoption (Goolsbee & Klenow, 2002) and (2) software sharing between family members is a proven digital piracy scenario (Wagner & Sanders, 2001). However, the disapproval of piracy from family members may

provide a sense of stigma that could produce inhibitions toward piracy (Higgins *et al.*, 2005).

As most of the preceding studies have used student samples, it would be clarifying to test the potential effect of demographics on a sample representative of all demographic layers of the population. The aforementioned factors (*sex*, *age*, *social class*, *size of municipality*, and *presence of children at home*) could serve in observing the potential influence of demographics on participants' online downloading habits. Thus, all five demographic factors are congregated to generate the first research question:

> **RQ1.** Among music/movies/software downloaders, are there differences in terms of sex, age, social class, size of municipality, and presence of children at home between those who always pay, those who never pay, and eclectics?

3.3.2 Psychographic factors affecting online payment behaviors

Psychographic factors have proven more effective than demographic factors in understanding users' online behavior (Dutta-Bergman, 2002). A total of four items are used in conceptualizing possible psychographic factors affecting downloaders' online paying behaviors. Those potential factors are participants' confidence in using the internet, sensitivity to price, sensitivity to quality, and level of cosmopolitanism.

The level of confidence with the Internet could be a relevant factor because (1) computer-confident individuals report having higher Internet skill level (Schumacher & Morahan-Martin, 2001) and (2) those who are highly skilled at Internet activities are

more likely to download without paying than their lower-skilled counterparts (Hinduja, 2003).

Sensitivity to price could also be a significant factor because price sensitive customers tend to be more satisfied when not paying for their download (Jain, 2008) and free online music attracts consumers who would normally refrain from downloading paid songs (Papies, Eggers, & Wlömert, 2011). Willingness to pay for a music decreases when downloaders expect to find it for free online (Bhattacharjee *et al.*, 2003). Additionally, it seems reasonable to expect some changes in price sensitiveness across content types (music, movies, and software) considering the dissimilar levels of selling price, expected utility, and intended usage between the various products.

Quality sensitivity might also be a discriminative factor because current research confirms that the expected quality of pirated content is lower given the probability to download a wrong, incomplete, or highly compressed (lower quality) file (Fetscherin, 2005; Peitz & Waelbroeck, 2006). Accordingly, quality sensitive customers are more satisfied when acquiring high standard material through paid downloading (Danaher, Dhanasobhon, Smith, & Telang, 2010).

Finally and understandably, the level of cosmopolitanism could affect users' need to access multilingual material downloadable from worldwide file-sharing platforms. Equally, digital piracy is for some downloaders a way of accessing otherwise geographically-restricted content (Hong, 2011; Shi, 2010).

Consequently, it could be enlightening to explore the effect of psychographics (*confidence in using the Internet*, *sensitivity to price*, *sensitivity to quality*, and *level of cosmopolitanism*) on participants' online downloading habits. Thus, these four psychographic factors were assembled together to form the second research question:

> **RQ2.** Among music/movies/software downloaders, are there differences in terms of confidence in using the Internet, sensitivity to price and quality, and level of cosmopolitanism between those who always pay, those who never pay, and eclectics?

3.3.3 Factors related to Internet use

Factors related to Internet use are plausibly intertwined with the action of downloading media content and could provide interesting insights on users' compensation behaviors. Apart from the two factors that already served in the development of hypotheses, three items help in conceptualizing the possible effect of Internet-related factors on downloaders' online paying behaviors. Those potential factors are participants' home Internet usage, social network participation, and bandwidth capacity.

Home Internet usage time could influence downloaders' paying behaviors because heavy users (1) are more likely to download more than the average user (Assael, 2005) and (2) have a more positive attitude towards downloading without paying (Acilar, 2010). It also appear that more opportunities, such as a high daily computer usage in hours, translate into stronger intention to pirate (Moon *et al.*, 2010).

The level of social network participation can also have an impact on online payment patterns because it somehow indicates a user's willingness to share information, photos, and videos with other users. Chaudry and Stumpf (2011) found a positive relationship between collectivism (as opposed to individualism) and consumers' willingness to obtain, share, or use counterfeit products.

Even though Internet bandwidth was long considered a major determinant of unpaid downloading (Bhattacharjee *et al.*, 2003), this factor seems to be potentially less influential recently since it has been found to be irrelevant due to the iniquitousness of broadband access (Rob & Waldfogel, 2007).

Accordingly, exploring the possible influence of factors related to Internet use (*home Internet usage time, social network participation,* and *home bandwidth capacity*) on participants' online behaviors could inform this research. Thus, three factors related to Internet use were brought together as the third research question:

> **RQ3**. Among music/movies/software downloaders, are there differences in terms of home Internet usage time, social network participation, and home bandwidth capacity between those who always pay, those who never pay, and eclectics?

3.3.4 Factors related to content interest

Downloaders' level of interest in either music or movies can conceivably affect their online behavior. A total of 22 factors related to content interest can potentially

affect downloaders' online payment behavior. These factors conceptualize participants' level of music and movie fandom, consumption habits and genre preferences.

Concerning specific interest in a content type (i.e., music, movies), there is evidence that (1) people with a high interest in movies (e.g., with larger libraries) tend to engage in both more paid and unpaid consumption (Rob & Waldfogel, 2007); (2) people with a higher degree of music involvement tend to visit music-related websites and download songs more often than their non-musically active counterparts (Walsh *et al.*, 2003); (3) topicality – that is appreciating the benefits of early music and music-related news – is a factor contributing to paid downloading (Walsh *et al.*, 2003); and (4) music downloaders prefer certain music genres over others (Dilmperi *et al.*, 2011; Gopal *et al.*, 2004).

Given the potential impact of content-related factors, we explore the effects of downloaders' fondness for music and movies, genre preferences, and various content-related consumption habits on online compensation patterns.

Prospective factors specifically related to interest in music are *playing a music instrument*, *having attended a live concert in the last year*, *liking to watch concerts on TV*, *number of music radio stations listened to*, self-reported *importance of music in own life*, and six different music genres' *listening frequency* (*classical, pop, rock, dance, hip-hop/rap,* and *blues/jazz*).

Exploratory factors explicitly related to interest in movies are *movie theatre visit frequency*, *preference for viewing movies in theatre*, *movie selection based on cast/director*, *movie selection based on critical reviews*, *reading of movie-related*

magazines, and the level of *interest* in six different movie genres (*comedy, drama, action, romance, children,* and *suspense movies*).

Hence, eleven music-related and ten move-related factors were assembled together to form the last and fourth research question:

> **RQ4**. Among music/movies downloaders, are there differences in terms of fondness for music/movies, consumption habits, and genre preference between those who always pay, those who never pay, and eclectics?

Chapter summary

It is no secret that most government-sponsored anti-piracy communication campaigns have largely failed to change downloaders' online behavior. Could it be that, like many smokers resorting to dissonance-reduction mechanisms to justify their enduring and possibly fatal behavior, never-paying downloaders would trivialize the importance of monetarily compensating the creative rights' owners?

We posit that Festinger's (1957) theory of cognitive dissonance serves as a broad and flexible theoretical framework to posit on individual factors possibly affecting downloaders' online paying behavior. The exercise resulted in one hypothetical and differential factor for each group of downloaders based on their online payment habit: downloaders who never pay should have a more negative attitude towards newness, downloaders who always pay are expected to have a shorter Internet-use history, and eclectic downloaders would participate in a wider breadth of online activities.

Apart from the proposed theoretical framework, additional potentially-differentiating factors were conceptually gathered into four thematic areas: demographics, psychographics, factors related to Internet use, and factors related to content (music/movie) interest. These exploratory factors are treated as research questions.

4 Method

"I don't like the term piracy as it has romantic connotations. It makes people think of Johnny Depp. It must be called robbery, and that is that."

— Christopher J. Dodd, president MPAA

"Truth is ever to be found in simplicity, and not in the multiplicity and confusion of things."

— Sir Isaac Newton

This study proposes a correlational design using a cross-sectional survey methodology that instrumentally relies on a postal questionnaire. The purpose of the design is to measure the predictive utility of three hypothesized factors on the corresponding groups of music, movie, and software downloaders' according to their online payment behaviors. Moreover, this design permits to explore the predictive ability of other variables thematically grouped under demographics, psychographics, factors related to Internet use, and factors related to music/movie interest.

The current chapter will emphasis on the research design and methodology. Participants are first described in detail. Hypotheses and research questions are then operationalized, including a detailed description of all investigated variables and measures. Measures are thematically grouped in the same coherent way that research questions were proposed. Finally, procedures are reviewed in order to provide detailed information on the instrument as well as the sampling, data collection, and data

reorganization techniques. Finally, a short segment covering ethical concerns related to the survey research closes the chapter. A technical description of the procedures is summarized in Table 4.6 towards the end of the chapter.

4.1 RESEARCH DESIGN

Creswell (2003) suggests that research is not limited to a set of procedures, but rather interrelated levels of decisions that inform the elected approaches, ranging from theoretical considerations to more practical and technical decisions. This idea's groundwork was originally proposed by Crotty (1998) but conceptualized by Creswell (2003), for whom three interrelated levels of decisions are central to the process of designing a research: the researchers' philosophical assumptions, strategy of inquiry, and methodological approach.

Objectivism is, in Crotty's (1998) words, the "view that things exist as meaningful entities independently of consciousness and experience, that they have truth and meaning residing in them as objects (…) and that careful scientific research can attain that objective truth and meaning". Post-positivism is normally associated with this epistological stance and reflects a deterministic philosophy in which causes determines the effects or outcomes. It is also reductionistic in that the intent is to reduce the ideas into a small, discrete set of ideas to test, such as variables that constitute hypotheses and research questions.

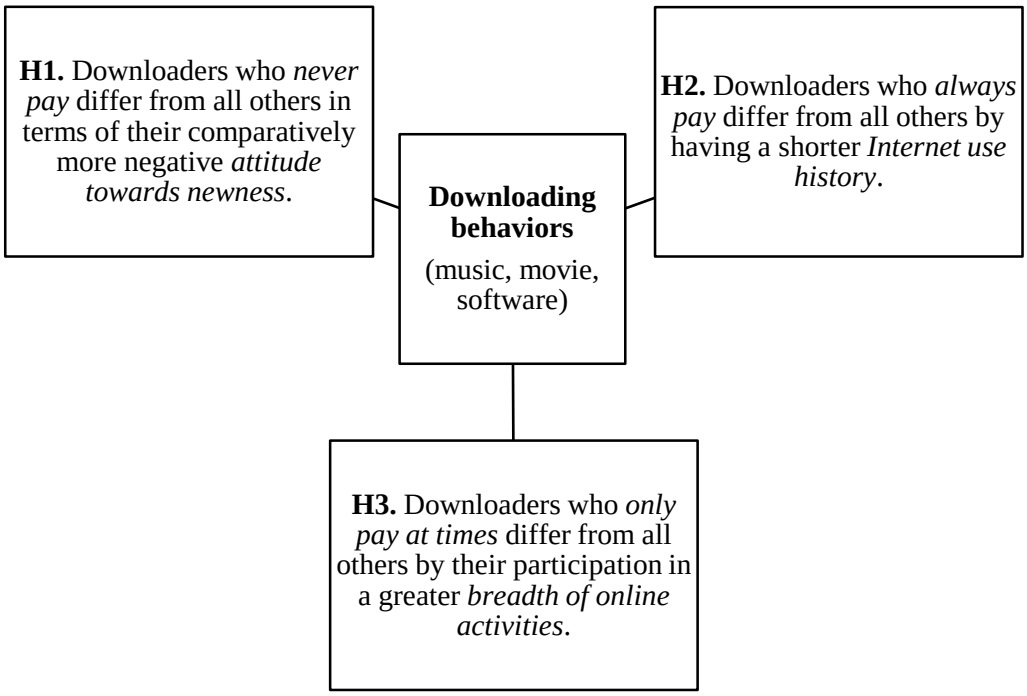
Phillips and Burbules (2000) have outlined the key assumptions underlying the post-positivism position. First, knowledge is hypothetical and the absolute truth is impossible to find. Second, research is a process of making claims, then refining them,

and abandoning some for stronger ones. Third, data, evidence, and rational considerations shape knowledge. Fourth, research seeks to develop relevant true statements, ones that can serve to explain a given situation or relationships in-between variables. And last, being objective is an essential aspect of competent inquiry, and biases must be examined. These assumptions strongly support that theory verification is well suited in a context of post-positivism and suggests the appropriateness of a deductive design with a quantitative measurement approach, as opposed to a constructivism position normally calling for an inductive design with a qualitative observational approach (Creswell, 2003).

Finally, research design appropriateness should enable investigators to answer the research question in an unequivocal manner (De Vaus, 2001). Therefore, before moving on with the methodology *per se*, it appears convenient to review the broad objective of this research. This study aims at identifying which individual characteristics help explaining the differences between various groups of music/movie/software downloaders consistent with three common payment patterns: (1) those who never pay, (2) those who always pay and (3) those who only pay at times.

To do so, the theory of cognitive dissonance served in conceptualizing the choice facing music, movie, and software downloaders. This theoretical framework allowed for generating three general hypotheses equally applicable to all three content types, as shown in Figure 4.1.

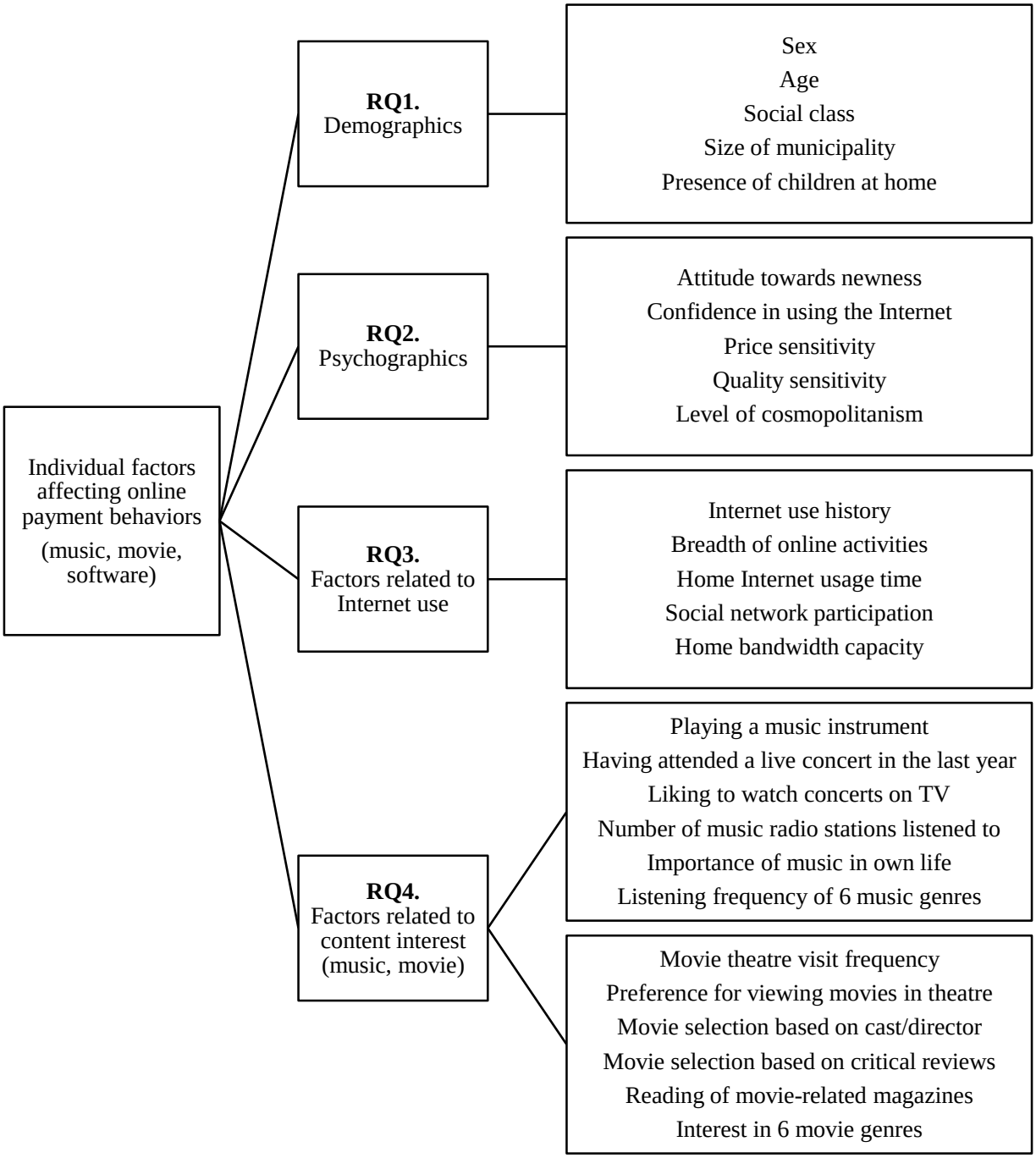
Figure 4.1: Hypotheses developed within the theoretical framework



Note. Created by author.

Simultaneously, this study intended to explore other potentially differentiating factors not included in the proposed theoretical framework. These additional factors were grouped into four thematic areas: demographics (**RQ1**), psychographics (**RQ2**), factors related to Internet use (**RQ3**), and factors related to music or movie interest (**RQ4**). Insufficient theoretical background and scarce empirical evidence recommended not to hypothesize on these factors and suggested to treat them as research questions. Figure 4.2 outlines all potentially differentiating factors considered in the empirical research.

Figure 4.2: All factors considered in the empirical research



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4.2 PARTICIPANTS

The target population included individuals aged 14 or older living in households in Spain, a territory composed of the Spanish peninsula and both archipelagos (Balearic and Canary Islands), nevertheless excluding the two autonomous cities of Ceuta and Melilla. This population accounts for 39.4 million individuals. A total of 10,641 participants contributed to this research. The final amount of valid participants summed up to 10,409. Table 4.1 outlines valid participation by content type. Accordingly, music is downloaded by almost a quarter of respondents, followed by movies (18.3%) and software (12.6%). Music is a content type downloaded by almost twice as many people than software is.

Table 4.1: Number of downloaders by product type

	Participants (*N*=10,409)	Percent of *N*
Product type		
Music	2,394	23.0
Movies/TV Series	1,907	18.3
Software	1,309	12.6

Note. Compiled by author.

The demographic characteristics of the 10,409 participants reflected the demographic characteristics of the Spanish residents' population. Regarding participants' gender, a number slightly more elevated of women than men participated in the research. In total, 5,429 female participants (52.2%) versus 4,980 (47.8%) validly filled the questionnaire.

Participants' age distribution, which average was slightly above 46, also matched the Spanish population: 1,251 participants (12.0%) were aged 14-24; 1,459 participants (14.0%) were aged 25-34; 2,309 participants (22.2%) were aged 35-44; 2,024 participants (19.4%) were aged 45-54; and 3,366 participants (32.3%) were at least 55 years old at the moment of taking part in the survey.

Participants were also coming from all social classes of society. From the 10,409 valid participants, 7.5% were from the lower class; 24.5% were from the lower-middle class; 37.7% were from the middle class; 21.2% were from the upper-middle class; and 9.1% were from the upper class.

In terms of populated neighboring areas, 6.6% participants were living in municipalities consisting of less than 2000 inhabitants; 7.4% were from municipalities with a population between 2000 and 5000 people; 8.2% were living in municipalities with a population between 5000 and 10,000 residents; 26.3% were from municipalities with a population between 10,000 and 50,000 inhabitants; 23.1% were living in municipalities with a population between 50,000 and 200,000 people; 10.4% were from municipalities with a population between 200,000 and 500,000 inhabitants; and finally 18.0% were living in municipalities with a population of over half a million people.

Finally, 2,584 households (24.8%) were graced by the presence of kids under the age of 14. Table 4.2 describes overall participants' demographic profile. As this study attempts to shed light on downloaders' online behaviors, the table also presents central tendency measures specifically for subjects who acknowledged downloading music, movie/TV series, and software content in the past twelve month.

Table 4.2: Participants' demographic profile

	Sample (*N*=10,409)		Downloaders					
			MUSIC (*N*=2,394)		MOVIE (*N*=1,907)		SOFTWARE (*N*=1,309)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Sex [a]	1.52	.500	1.42	.494	1.41	.492	1.33	.472
Age	46.37	17.025	36.64	13.465	35.52	13.340	36.12	13.304
Social class [b]	3.00	1.059	3.19	.986	3.22	.963	3.31	.970
Size of municipality [c]	4.55	1.714	4.69	1.565	4.77	1.550	4.74	1.554
Presence of children at home [d]	.25	.432	.30	.460	.31	.463	.29	.456

Note. Compiled by author.
a. *Sex* is coded 1="Male" and 2="Female".
b. *Social class* is coded 1="Lower", 2="Lower-middle", 3="Middle-middle", 4="Upper-middle" and 5="Upper".
c. *Size of municipality* is coded 1="Below 2000", 2="2000 to 5000", 3="5000 to 10,000", 4="10,000 to 50,000", 5="50,000 to 200,000", 6="200,000 to 500,000" and 7="Above 500,000".
d. *Presence of children at home* is coded 0="No", 1="Yes".

4.3 MEASURES

Factors possibly influencing participants' online paying behaviors (DV) belongs to one of four categories of variables: (1) demographic indicators, (2) psychographic multi-item variables, (3) variables related to Internet use, (4) variables measuring interest in music, and (5) variables measuring interest in movies. This section contains the descriptions of the measures employed for each variable. The piece opens with the dependent variable (behaviors) and subsequently unwraps with the independent variables (i.e., factors).

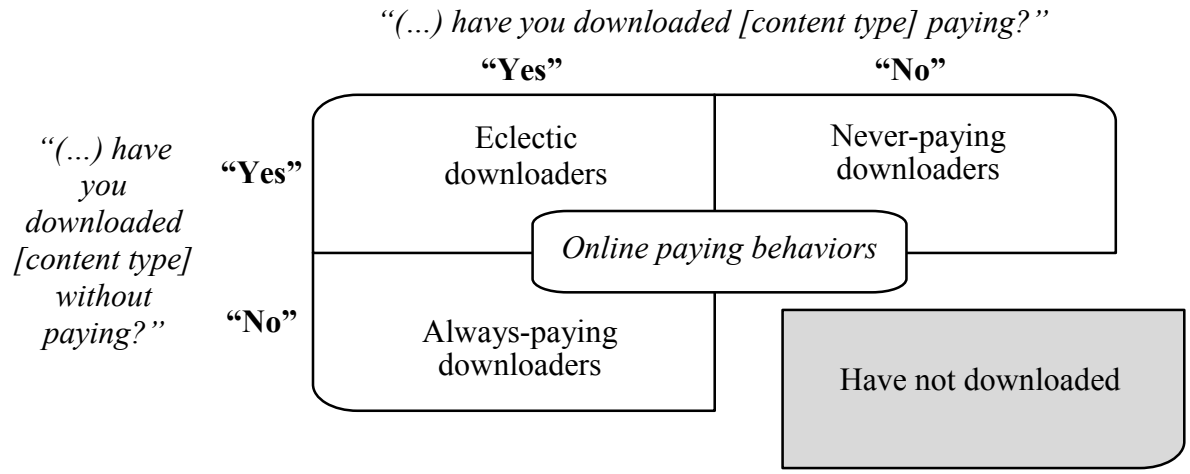
4.3.1 Online payment behaviors

For each content type (music, movie, and software), the dependent indicator of online payment behaviors was obtained by crossing the answers of two separate questions: “Over the Internet during the last 12 months, have you:

1. downloaded [content type] paying?”
2. downloaded [content type] without paying?”

Participants would select the box if the described situation applied to them. Both dichotomous questions were later merged and coded into a single variable per content type, yielding four discrete possible behavioral group for the respondents: 0=”Have not downloaded [content type]” (i.e., no checkmark), 1=”Always paid to download [content type]” (i.e., checkmark only on the first question), 2=”Downloaded [content type] both paying and not paying” (i.e., two checkmarks), 3=”Never paid to download [content type]” (i.e., checkmark only on the second question). The group with respondents who did not download (i.e., no check mark) was later discarded since their behavior, although interesting, was not crucial in addressing the central issue of this study. Figure 4.3 outlines the three online paying behaviors obtained from two discrete questions.

Figure 4.3: Three online payment behaviors from two discrete questions



Note. Created by author.

4.3.2 Demographic variables

Independent variables grouped under the concept of demographics were: *sex*, *age*, *social class*, *size of municipality* and *presence of children at home*.

Regarding *sex* and *age*, participants' gender was identified by a single dichotomous categorical item asking them whether they are a male or a female. *Sex* was coded 1 for males and 2 for females. Participants' *age* was measured by a single item that asked the respondent to report his/her exact age in number of years.

Social class was defined according to both the educational and professional levels of the household's main provider. This dual-measure indicator of social class is reminiscent of Hollingshead (1957) two-factor index of social position, using scales of education and occupation to establish the social status of the head of the household. The survey's measure result in categories of five social class, coded as 1 = Lower, 2 = Lower-middle, 3 = Middle-middle, 4 = Upper-middle and 5 = Upper.

Size of municipalities was reported by participants into a single item containing seven ordinal categories, coded as follow: 1 = Below 2000 inhabitants, 2 = From 2000 to 5000, 3 = From 5000 to 10,000, 4 = From 10,000 to 50,000, 5 = From 50,000 to 200,000, 6 = From 200,000 to 500,000 and 7 = Above 500,000.

Regarding *presence of children at home*, answers were coded 1 if participants indicated that at least one child under the age of 14 was living in the household and 0 otherwise.

4.3.3 Psychographic variables

Five multi-item variables are grouped under the concept of psychographic factors: *attitude towards newness*, *confidence in using the Internet*, *price sensitivity*, *quality sensitivity*, and *level of cosmopolitanism*. Each of the psychographics is constructed by averaging the responses to six survey items, which are shown in Table 4.3.

All items were measured using five-point Likert scales (1 = Completely disagree, 2 = Tend to disagree, 3 = Neutral, 4 = Tend to agree, and 5 = Completely agree). The use of multi-item measures to weigh participants' psychographic factors (e.g., attitudes, interests, opinions) serves two purposes: they provide higher reliability and greater validity (Liu, 2003).

Table 4.3: Items to measure psychographic factors

Items	Cronbach's alpha
Attitude towards newness	.657
1. I aspire to a life filled with challenges, novelties, and changes.	
2. I like trying new products.	
3. I love buying new gadgets and appliances.	
4. I like to change and try new food products and brands.	
5. I am always looking for new ideas to improve my home.	
6. When I see a new brand I usually buy it to see how it works.	
Confidence in using the Internet	.727
1. Buying and paying over the Internet is safe.	
2. I would use the Internet to meet people.	
3. Internet advertising allows one to get more product information.	
4. Internet is the first place to look when I need information.	
5. I usually check the Internet before making a purchase.	
6. I would not mind buying fresh foods (yogurt, butter, etc.) over the Internet.	
Price sensitivity	.771
1. I usually buy the cheapest food available.	
2. I usually take advantage of offers and promotions on grocery products.	
3. I like to be informed of promotions, discounts, and deals through advertising.	
4. I always look for the lowest prices when shopping.	
5. I take advantage from the discount coupons.	
6. I always look for special offers.	
Quality sensitivity	.692
1. I do not mind paying more for quality food products.	
2. It is worth paying a little more for a good beer.	
3. I am willing to pay more for a good wine.	
4. I like owning high-quality products.	
5. It is worth paying a little more for high quality items.	
6. I prefer a few but good articles to many cheap ones.	
Level of cosmopolitanism	.756
1. I am interested in international events.	
2. I like the idea of traveling abroad.	
3. I am interested in other cultures and countries.	
4. I like to eat foreign food.	
5. With food, I like to try foreign specialties.	
6. I would rather stay in Spain than go on vacation to another country. [Inverted]	

Note. Compiled and translated by author.

In terms of reliability, multi-item measures offer stability over time and inter-observer consistency. A third feature of reliability is internal consistency: to ensure coherence in between all indicators. The most commonly used measure of internal reliability is Cronbach's alpha, where a score of .800 normally denotes an acceptable level of reliability, although researchers typically admit lower figures (Bryman, 2004). Regarding validity, it is reasonable to expect a multi-item indicator to reflect a complex construct more precisely than a single item could, thus offering a greater level of face validity (Liu, 2003).

4.3.4 Variables related to Internet use

Five variables were grouped under the factors related to Internet use: *Internet use history*, *breadth of online activities*, *home Internet usage time*, *social network participation*, and *home bandwidth capacity*. Factors were drawn from consensual research on the two main dimensions of micro-computer usage: actual usage and variety of use (Igbaria, Guimaraes, & Davis, 1995; Park & Jun, 2003). Actual usage implies elements of duration (*Internet use history*) and frequency (*home Internet usage time*). Usage variety refers to the number of tasks (*breadth of online activities*) and the diversity of tools to accomplish a task (*social network participation*).

Consistent with previous studies (e.g., Leung, 2010; Sum, Mathews, Pourghasem, & Hughes, 2008), *Internet use history* was defined as the number of years using the Internet and was applied on a four-point scale (1 = Less than 1 year, 2 = From 1 to 2 years, 3 = From 2 to 4 years, and 4 = More than 4 years).

Also consistent with earlier articles (e.g., Hinduja, 2003; Jung, Qiu, & Kim, 2001), *breadth of online activities* was calculated by counting how many of the ten suggested activities the respondent participated in – namely, buying over the Internet, playing/betting on lottery, poker, or other games, participating in online auctions, creating blogs, creating/updating a personal website, uploading videos (e.g., on YouTube), uploading photos, downloading podcasts, making voice calls over the Internet, and participating in the virtual world.

Similar to Igbaria *et al.* (1995), *home Internet usage time* measured participants' frequency in using the Internet from home. Answers were reported on a five-point scale (0 = Never, 1 = Less than 3 times a week, 2 = From 3 to 6 times a week, 3 = Once a day, and 4 = More than once a day).

Unlike other measures of virtual community participation behavior (Dholakia, Bagozzi, & Pearo, 2004), respondents directly reported their *social network participation* by entering the exact number of social network they participate in. This variable was later recoded into categories, where 0 = None, 1 = 1, 2 = 2, and 3 = 3 or more.

In a more detailed form than previous studies (Bhattacharjee *et al.*, 2003), *home bandwidth capacity* was coded into six ordinal categories (0 = None, 1 = Less than 2 MB, 2 = 2 MB, 3 = 4 MB, 4 = 8 MB, and 5 = More than 8 MB).

4.3.5 Variables related to content interest

Exploring the effects of factors related to music and movies interest was achieved downloaders' fondness for music and movies, genre preferences and media-related consumption habits. Interest in music and movies were each evaluated by eleven factors.

Variables specifically measuring interest in music are *playing a music instrument*, *having attended a live concert in the last year*, *liking to watch concerts on TV*, *number of music radio stations listened to*, self-reported *importance of music in own life*, and six different music genres' listening frequency.

Playing a music instrument, *having attended a live concert in the last year*, and *liking to watch concerts on TV* were coded 1 for affirmative responses and 0 otherwise.

Importance of music in own life was measured with a five-point Likert scale (1 = Completely disagree, 2 = Tend to disagree, 3 = Neutral, 4 = Tend to agree, and 5 = Completely agree).

Listening frequency for each six music genre (*classical*, *pop*, *rock*, *dance*, *hip-hop/rap*, and *blues/jazz*) was measured through a three-category ordinal scale (0 = Never, 1 = Sporadically, and 2 = Usually).

Variables specifically measuring interest in movies are *movie theatre frequency*, *preference for viewing movies in in theatre*, *movie selection based on cast/director*, *movie selection based on critical reviews*, *reading of movie-related magazines*, and self-reported interest in six different movie genres.

Movie theatre visit frequency was recoded according on a six-point scale (1 = Never, 2 = Less than twice a year, 3 = 2–3 times a year, 4 = 4–6 times a year, 5 = Once a month, and 6 = More than once a month).

Preference for viewing movies in theatre, *movie selection based on cast/director*, and *movie selection based on critical reviews* were measured on a five-point Likert scale (1 = Completely disagree, 2 = Tend to disagree, 3 = Neutral, 4 = Tend to agree, and 5 = Completely agree).

Reading of movie-related magazines was recoded 1 if the subject read any of these publications and 0 otherwise.

Interest in each six movie genre (*comedy*, *drama*, *action*, *romance*, *children*, and *suspense*) was measured on a four-category ordinal scale (0 = Not at all interested, 1 = A little interested, 2 = Fairly interested, and 3 = Very interested).

4.4 PROCEDURES

The current section about procedures includes detailed information on the instrument and the sample used, as well as data collection and reorganization techniques. The section closes on a brief comment over ethical concerns related to this survey research and a technical summary of the procedures (Table 4.6).

4.4.1 Instrument

Data were obtained from the *2010 AIMC Marcas*, which is a secondary information source widely used in the Spanish advertising industry since 1999. The *Asociación para la Investigación de Medios de Comunicación* (*AIMC* or Association

for Media Research) sponsored the survey and provided the guidelines and process controls while the company Taylor Nelson Sofres (TNS) conducted the survey development (questionnaire design, sampling, fieldwork, data compilation, and result presentation).

This annual survey contains plenty of questions related to media audiences, consumption habits, attitudes, lifestyles, etc. The questionnaire is divided into 13 sections, each one of which containing specific topic-related questions as shown in Table 4.4.

Table 4.4: Sections of *AIMC Marcas* survey

Section	Content
Intro	Instructions to fill the questionnaire
1	Media
2	Clothing, footwear, toys, and childcare products
3	Food, beverage, and household products (purchase maker)
4	Personal consumption
5	Clothing and footwear (M/F)
6	Shopping
7	House equipment
8	Finance, insurance, and transportation
9	Travel, holidays, sports, and leisure
10	A day in your life
11	Hygiene, beauty, and healthcare (Male/Female)
12	Employment, studies, and others
13	Socio-demographic characteristics

Note. Compiled and translated by author.

Instructions included a message to "collaborators" echoing the importance of the survey and gratitude for their participation. This message was followed by pieces of advice on how to fill the survey (e.g., "Please read carefully the questions before

answering. Some relate to the purchase and others to the usage of a product"). Finally, survey participants stumbling upon difficulties in filling the questionnaire could contact the collaborators' helpdesk since a free phone service was provided to assist participants during office hours (from 09h00 to 18h00).

4.4.2 Sample

The sampling universe covers the Spanish population aged 14 years or older living on the peninsula, the Canaries, or the Balearic Islands. The sample target was fixed to 10,000 respondents. Most of the sample was recruited through existing TNS Access-Panel (88.6%), while the remaining participants came from other sources: participants from *AIMC Marcas* of previous years (8.3%), participants from *Estudio General de Medios* (1.6%), and other TNS sources (1.5%). A total of 10,641 participants contributed to this research. Returned questionnaires were validated and checked for consistency. 232 surveys (2.2%) have not passed the required filters and were therefore rejected. The final amount of valid participants summed up to 10,409.

The elected sampling method is called quota sampling, which allows for the production of a sample proportionally reflecting the population's characteristics in terms of sex, age, social class, size of municipality, geographic zone, household size, and family role. Quota sampling is similar to stratified random sampling since both samples are typically divided into strata, where the number of participants to interview in each strata reflects the population's strata in proportion. The main difference resides in that the choice of respondents of a quota sample is left to the interviewer, a

characteristic impeding the calculation of the standard error of the mean and possibly resulting in bias (Bryman, 2004).

Consequently, quotas are shown to depend on availability for interviewing and evidence shows that sex, age, and employment status are reasonable predictors of availability. In that sense, quota sampling methods are not unbiased, but research suggests that the bias is generally of the order of three to five percent (Sudman, 1966). Additionally, weighting matrices were used to maintain proportionality when crossing socio-demographic variables.

This sample is an enhancement over student samples typically used in the study of digital piracy. While quota sampling, as all non-random sampling methods, could technically result in a small bias, great care was taken to ensure that the sample proportionally reflects certain population's characteristics (i.e., sex, age, social class, size of municipality, geographic zone, household size, and family role) thus improving the generalization capabilities of the findings and the representativeness of the Spanish population.

4.4.3 Data collection

Fieldwork occurred in three waves from April 1st to October 18, 2010. Each wave consisted of sending the questionnaires and sending a reminder to participants approximately six weeks later. Sample subjects received the questionnaire at their home address and had to complete it alone and then return it by mail. The last questionnaire was received on December 17, 2010. All fieldwork was conducted by TNS, suggesting that collectors were properly trained, monitored, and compensated. In that sense, no

known irregularity was reported during fieldwork and verification procedures have invalidated 232 surveys (2.2% of the received questionnaires).

Table 4.5: Information-gathering schedule

	Waves		
	1st	2nd	3rd
Questionnaires sent	April 1	May 10	September 1
Reminding notes sent	May 17	June 28	October 18

Note. Compiled by author.

To stimulate participation, a reward (50 euros worth of gifts to be chosen from a catalogue or the same amount in cash) was given to participants that responded to the questionnaire appropriately. The survey's cost was borne by mass media outlets, advertising agencies, and other firms providing marketing services.

4.4.4 Data reorganization

In regards of coding procedures, a single item ("I would rather stay in Spain than go on vacation to another country"), part of the *level of cosmopolitanism* multi-item variable, was inverted. Categories were recoded for the variables *social network participation*, *Internet use history*, *number of music radio stations listened to*, *movie theatre visit frequency*, and *reading of movie-related magazines*. Recoding was necessary to avoid an insufficient number of participant (i.e., less than five participants) per category in a given group.

Table 4.6: 2010 *AIMC Marcas* technical description

Technique	Mail self-administered questionnaire
Universe	Individuals aged 14 or older residing in Spain (peninsula, Balearics and Canary Islands). 39.4 million residents
Sampling	Quota sampling (non-random). Proportionally reflecting population's sex, age, social class, size of municipality, geographic zone, household size, and family role
Sample size	10,409 valid participants
Fieldwork	Conducted by TNS Mailing: April 1st to September 1st, 2010 Reminders: May 17 to October 18, 2010 Last questionnaire received: December 17, 2010
Quality control	Questionnaires checked for consistency. 2.2% rejected as invalid
Data analysis	SPSS 21 for Windows

Note. Compiled by author.

4.4.5 Ethical considerations

McNamara (1994) identifies five ethical concerns to be considered when conducting survey research. These guidelines deal with voluntary participation, no harm to respondents, anonymity, purpose and sponsor identification, and analysis and

reporting. To the best of our knowledge, no breach of ethical practices were reported throughout the entire procedures. Participation was voluntary, compensated, and risk-free. Additionally, participants' information was forbidden, thus protecting their privacy and confidentiality. Participants were clearly informed of both the purpose and the sponsor of the survey. Finally, great care was taken to maintain data integrity at all time.

Chapter summary

This research proposed a correlational design using a cross-sectional survey methodology that instrumentally relies on a postal questionnaire. The purpose of the design is to measure the predictive utility of three hypothesized factors on the corresponding groups of music, movie, and software downloaders' according to their online payment behaviors. This design also allows to explore the predictive ability of other variables thematically grouped under demographics, psychographics, factors related to Internet use, and factors related to music/movie interest.

The current methodological chapter reviewed the research design, participants, variables and measures, and fieldwork procedures. The applied methodology offered two relatively innovative characteristics. First, it proposed to study downloaders' payment behaviors from a sample proportionally representative of the Spanish population's characteristics in terms of sex, age, social class, size of municipality, geographic zone, household size, and family role. Findings will presumably have a greater level of generalizability.

Second, it asked sensitive questions about payment patterns in an indirect, less assertive way. Avoiding terms like “piracy” and “illegal downloads”, commonly used in the academic literature, should have minimized the social desirability bias and provided a higher degree of accuracy in the answers (Cannell *et al.*, 1977; Chung & Monroe, 2003; Mooney & Gramling, 1991).

5 Results

"There is nothing like looking, if you want to find something. You certainly usually find something, if you look, but it is not always quite the something you were after."

— J.R.R. Tolkien, author, *Lord of the Rings*

The present chapter focuses on the empirical study that led to the development of three multinomial logistic regression models, one model for each product type (music, movie and software). Whatever the product type, the analysis repeatedly consisted of two stages: (1) differentiating downloading habits across individual characteristics and (2) building a predictive model using the significantly discriminating factors that had emerged from the previous stage.

The chapter is made of five broad sections. First, guidelines on how to interpret the various metrics used in the two main stages of the present study are suggested. These guidelines are followed by a broad overview of the results generated by descriptive and frequency analyses, which will primarily consist of relevant differences in distribution percentages between total respondents and each of the product type samples. The three following sections are dedicated to present the actual results of both stages of the statistical approach successively and independently for each product type (music, movie and software), where special attention is granted to the magnitude and significance of the findings. Subsequently, cross-validation of results is discussed. Finally, the proposed answers to our initial hypotheses and research questions are

summarized and harmonized to better explain the influence of all significant differentiators/predictors of downloading habits across all product type.

5.1 INTERPRETATION GUIDELINES

The first analysis consisted of differentiating downloading habits across individual characteristics. One-way ANOVAs, using the *F*-ratio, provided a test to establish if the means of different groups were statistically equal or different, assuming independence, normality and equality of variance. Moreover, a Tukey post-hoc Honestly Significant Difference (HSD) tests were used in conjunction of the ANOVAs to offer tentative explanations on *how* significantly different groups diverge from each other using a set of paired comparisons.

The second statistical analysis is a multinomial logistic regression, a technique similar to multiple regression but appropriate for categorical dependent variables. Through a forward stepwise selection procedure, we fitted three multinomial logistic regressions, one for each product type (music, movie, and software), by choosing the predictors from the candidate factors – that is, those found to be significantly differentiating in the preceding and corresponding ANOVAs. At each step, the candidate factor with the highest score statistic is selected to enter the model, whose improvement was measured through the chi-square test for the change in the log likelihood value (comparable to the overall *F*-test in multiple regression). The stepwise procedure stops when none of the remaining variables reaches the significance threshold for entry.

Since there are three categories (always-paying, never-paying and eclectics downloaders) in the dependent variables (movie/music/software downloading groups), the multinomial logistic regression compares the three categories through a combination of two binary logistic regressions (always-paying vs. never-paying downloaders and eclectic vs. never-paying downloaders).

Coefficients of each binary logistic regression are straightforward, robust, and easy to interpret: (1) A positive (negative) sign of the B coefficient indicates that the corresponding group scores higher (lower) in the predictor than the reference group, which is the one that does not appear in results; and (2) the Wald statistic is used to assess whether or not the predictor is statistically significant in differentiating between the corresponding group and the reference group. Another very convenient feature of the logistic regression is its lack of strict assumptions, such as multivariate normality and equal variance–covariance matrices across groups (Hair, Black, Babin, & Anderson, 2010).

5.2 SAMPLE FREQUENCIES

From the overall sample of 10,409 individuals, music is the product type downloaded by most (23.0%), followed by movies (18.3%) and software (12.6%). That is, music is downloaded by almost twice as many people than software is. As outlined in Table 5.1, independently of the product type, downloaders are divided into similar proportions according to their online habits: more than three quarters of downloaders never pay, while the remaining downloaders are approximately split between a third that always pays and two thirds that only pay at times (eclectics).

Table 5.1: Downloading habits across product types

	Sample (*N*=10,409)	Percent	Groups' share of sample		
			ALWAYS PAY	ECLECTICS	NEVER PAY
Product type					
Music	2,394	23.0	7.4	15.6	77.0
Movies/TV Series	1,907	18.3	6.2	12.3	81.5
Software	1,309	12.6	7.3	15.1	77.6

Note. Compiled by author.

Total sample frequencies, as well as percentage distributions for each product type, are displayed across demographic characteristics (Table 5.2). Downloading emerges as a more (less) popular activity amongst males (females), particularly for software where males account for two-third of downloaders. Similarly, younger (older) respondents represent a larger (smaller) proportion of all downloaders. Respondents aged 14 to 34 years, accounting for only a quarter of the Spanish population, represent half of all downloaders while respondents aged 45 years or more, representing more than half of the Spanish population, merely account for a quarter of downloaders. Regarding *social class*, both lower and lower-middle class respondents were found in lesser proportion amongst downloaders than in the general population. Unworthy to mention are the minor differences in distribution found between downloaders and the general population when observing the *size of municipality* one lives in or the presence of children in one's house. Additional cross-tabulations between the various groups of downloaders and demographics characteristics are available for music, movies, and software downloading in Appendix.

Table 5.2: Product-specific distribution across demographic characteristics

	Sample (*N*=10,409)	Percent	Percent of downloaders		
			MUSIC (*N*=2,394)	MOVIE (*N*=1,907)	SOFTWARE (*N*=1,309)
Sex					
Male	4,980	47.8	57.8	58.8	66.6
Female	5,429	52.2	42.2	41.2	33.4
Age					
14-24 years	1,251	12.0	27.7	25.0	22.3
25-34 years	1,459	14.0	24.4	24.1	25.8
35-44 years	2,309	22.2	25.8	27.1	27.8
45-54 years	2,024	19.4	14.1	15.3	14.5
55+ years	3,366	32.3	8.0	8.5	9.5
Social class					
Lower	782	7.5	3.7	2.9	2.7
Lower-middle	2,550	24.5	19.6	19.3	16.5
Middle-middle	3,922	37.7	40.6	40.6	39.4
Upper-middle	2,210	21.2	25.9	27.4	29.6
Upper	945	9.1	10.1	9.8	11.8
Size of municipality					
Below 2000	687	6.6	4.2	3.6	3.8
2000 to 5000	773	7.4	5.4	5.4	5.6
5000 to 10,000	856	8.2	7.3	6.5	7.2
10,000 to 50,000	2,740	26.3	28.2	27.4	26.4
50,000 to 200,000	2,400	23.1	27.1	27.6	28.6
200,000 to 500,000	1,080	10.4	10.2	10.7	10.7
Above 500,000	1,873	18.0	17.5	18.7	17.8
Presence of children at home					
No	7,825	75.2	69.5	69.0	70.5
Yes	2,584	24.8	30.5	31.0	29.5

Note. Compiled by author.

Total sample versus product-specific distributions across Internet-related factors (Table 5.3) show that a large proportion of the overall sample has no *Internet use history* (37.1%) while most downloaders count on at least five years of experience

using Internet. Only a marginal proportion of downloaders report having no *Internet use history* whatsoever (0.2%). Approximately 60% of the downloaders report accessing the web from home more than once a day, while this is only the case for 25.5% of the overall sample. Likewise, only a small proportion of downloaders never access the Internet from home, while almost half of the respondents say they never connect to the Internet from home. Finally, despite the fact that almost one out of two respondents lacks a home Internet connection, more than 80% of downloaders benefit from an in-house broadband Internet access.

Table 5.3: Product-specific distribution across Internet-related factors

	Sample (*N*=10,409)	Percent	Percent of downloaders		
			MUSIC (*N*=2,394)	MOVIE (*N*=1,907)	SOFTWARE (*N*=1,309)
Internet use history					
None	3,866	37.1	0.2	0.2	0.2
Less than 1 year	648	6.2	7.3	7.1	6.6
From 1 to 2 years	428	4.1	3.9	4.0	2.4
From 3 to 4 years	995	9.6	12.7	13.0	8.6
More than 4 years	4,472	43.0	75.8	75.7	82.3
Home Internet usage time					
Never	4,783	46.0	7.0	5.6	6.3
Less than 3x a week	851	8.2	6.5	6.6	4.4
From 3x to 6x a week	890	8.6	10.6	11.4	9.1
Once a day	1,230	11.8	18.4	18.0	15.7
More than once a day	2,655	25.5	57.6	58.4	64.6
Home bandwidth capacity					
None	5,079	48.8	19.1	16.7	15.0
Less than 2 MB	478	4.6	5.8	6.2	6.7
2 MB	754	7.2	10.6	10.0	8.9
4 MB	1,954	18.8	30.2	30.3	31.3
8 MB	975	9.4	14.7	16.5	14.6
More than 8 MB	1,169	11.2	19.4	20.3	23.5

Note. Compiled by author.

5.3 MODEL PREDICTING MUSIC DOWNLOADING HABITS

5.3.1 Demographic factors

The one-way ANOVAs results comparing means between the different groups of music downloaders are outlined in Table 5.4. Demographics are unconvincing in independently differentiating between always-paying, eclectics and never-paying downloaders. Among all observed demographics, *age* is the only factor having a significant effect on music downloading habits [$F\,(2, 2391) = 3.027, p = .049$], although Tukey post-hoc comparisons reveal no significant pairwise difference. Nevertheless, it is worth mentioning that the various groups of music downloaders do not significantly differ in relation with all other surveyed demographics: namely *sex*, *social class*, *size of municipality* and *presence of children at home*. These non-significant factors will be ignored for the ensuing analysis.

5.3.2 Psychographic factors

While demographics appear to have a very limited influence on respondents' music downloading habits, psychographic variables come out to be more convincing in differentiating between the three music downloading groups. Four out of the five psychographic variables observed significantly differ according to the way music downloaders compensate the copyrights owners. These significant psychographic factors are: *attitude towards newness*, *confidence in using the Internet*, *quality sensitivity* and *level of cosmopolitanism*.

Table 5.4: Differences in music downloading habits across individual characteristics

	Average per group			*F*	*Sig.*
	ALWAYS PAY (*N*=178)	ECLEC-TICS (*N*=373)	NEVER PAY (*N*=1,843)		
Demographics					
Sex	1.47	1.43	1.42	.835	.434
Age	33.71	33.28	35.01	3.027	.049
Social class	3.16	3.22	3.19	.238	.788
Size of municipality	4.65	4.61	4.71	.704	.495
Presence of children at home	.31	.29	.31	.346	.707
Psychographics					
Attitude towards newness	3.15	3.20	3.04	14.150	.000
Confidence in using the Internet	2.97	3.13	3.06	4.007	.018
Price sensitivity	3.39	3.41	3.39	.184	.832
Quality sensitivity	3.47	3.52	3.42	4.535	.011
Level of cosmopolitanism	2.98	3.10	3.02	3.092	.046
Factors related to Internet use					
Internet use history	3.27	3.59	3.59	10.833	.000
Breadth of online activities	1.38	2.24	1.61	24.967	.000
Home Internet usage time	2.93	3.24	3.13	3.861	.021
Social network participation	1.28	1.72	1.40	10.976	.000
Home bandwidth capacity	2.60	2.79	2.74	.787	.455
Factors related to music interests					
Playing a music instrument	.19	.20	.18	.410	.664
Having attended a live concert in the last year	.34	.39	.39	1.040	.353
Liking to watch concerts on TV	.57	.63	.59	1.108	.330
Number of music radio stations listened to	1.47	1.84	1.53	5.728	.003
Importance of music in own life	3.43	3.62	3.51	2.294	.101
Classical music listening frequency	.34	.46	.44	2.515	.081
Pop music listening frequency	.92	1.01	1.00	1.309	.270
Rock music listening frequency	.44	.60	.53	4.383	.013
Dance music listening frequency	.57	.61	.62	.461	.631
Hip-hop/rap music listening frequency	.29	.36	.30	1.872	.154
Blues/jazz music listening frequency	.26	.33	.32	.930	.395

Note. Compiled by author.

There is a significant effect of *attitude towards newness* on music downloading habits [F (2, 2391) = 14.150, p = .000]. Post-hoc comparisons using Tukey's honestly significant difference (HSD) test indicate that the mean score of never-paying downloaders (M = 3.04, SD = 0.56) is significantly different from the mean scores of always-paying downloaders (M = 3.15, SD = 0.56) and eclectics (M = 3.20, SD = 0.60) together at $p < .05$. Specifically, findings propose that a more negative *attitude towards newness* is typical of never-paying downloaders. It should be noted that always-paying and eclectic downloaders do not significantly vary on their *attitude towards newness*.

Moreover, people's *confidence in using the Internet* differed significantly across music downloading behaviors [F (2, 2391) = 4.007, p = .018]. Tukey post-hoc comparisons of the three groups indicate that always-paying downloaders (M = 2.97, SD = 0.63) are significantly different in their level of *confidence using the Internet* than the eclectics (M = 3.13, SD = 0.65). This result suggests that respondents' *confidence in using the Internet* has an effect on music downloading habits. Precisely, we found that being more *confident using the Internet* is emblematic of the eclectic downloaders, while being less *confident using the Internet* is typical of the always-paying downloaders. It is worth mentioning comparisons between the never-paying downloaders (M = 3.06, SD = 0.64) and the two other groups are not statistically significant at $p < .05$.

Quality sensitivity also has a significant effect on music downloading habits [F (2, 2390) = 4.535, p = .011], although the post-hoc comparisons using the Tukey's HSD method did not suggest significant differences between paired groups.

Level of cosmopolitanism differed in a lesser yet significant fashion between music downloading crowds [F (2, 2390) = 3.092, p = .046]. Tukey post-hoc comparisons of the three groups of downloaders indicate a *level of cosmopolitanism* mean score for the always-paying downloaders (M = 2.98, SD = 0.58) significantly different from the mean score of the eclectic downloaders (M = 3.10, SD = 0.61). This outcome proposes that one's *level of cosmopolitanism* has an effect on the person's compensation patterns when downloading music online. Explicitly, results suggest that having a higher *level of cosmopolitanism* is a trait of the eclectic downloaders while a lower *level of cosmopolitanism* is a peculiarity of always-paying downloaders. It is worth mentioning that never-paying downloaders do not significantly differ from other music downloaders on their *level of cosmopolitanism* at $p < .05$.

Thus, the one-way ANOVAs employed to evaluate the effects of psychographic factors on music downloading behaviors suggest the existence of significant differences between groups of music downloaders on *attitude towards newness*, *confidence in using the Internet*, *quality sensitivity* and *level of cosmopolitanism*. Tukey post-hoc pairwise comparisons of the three groups propose that, on average, always-paying (eclectic) downloaders are less (more) *confident in using the Internet* and have a lower (higher) *level of cosmopolitanism* while never-paying downloaders have a more negative *attitude towards newness*. No significant differences between groups were observed on *price sensitivity*, which factor will be filtered out for the subsequent analysis.

5.3.3 Factors related to Internet use

Similarly effective in differentiating between the three music downloading groups are factors related to Internet use. Again, four out of the five Internet-related factors have surfaced as significantly different when comparing music downloading groups. *Internet use history*, *breadth of online activities*, *home Internet usage time*, and *social network participation* all came out as significant differentiators from the one-way ANOVAs.

There is a significant effect of *Internet use history* on music downloading habits [F (2, 2391) = 10.833, p = .000]. Post-hoc comparisons using the Tukey HSD test indicate that the mean score of always-paying downloaders (M = 3.27, SD = 1.14) is significantly different from the mean scores of eclectic (M = 3.59, SD = 0.90) and never-paying downloaders (M = 3.59, SD = 0.85) together at $p < .05$. Specifically, findings suggest that always-paying downloaders are typically less experienced in using the Internet. Worth mentioning is that never-paying and eclectics downloaders do not significantly vary on *Internet use history*.

Breadth of online activities is a factor having a strong and significant effect on music downloading behaviors [F (2, 2391) = 24.967, p = .000]. When comparing paired groups using the Tukey HSD test at $p < .05$, the eclectics average number of activities (M = 2.24, SD = 2.30) appears to be significantly different than both always-paying (M = 1.38, SD = 1.58) and never-paying (M = 1.61, SD = 1.54) downloaders. This result implies that eclectic downloaders are involved in a superior number of online activities than the other music downloaders, meanwhile both always-paying and never-paying downloaders would not significantly differ on their number of online activities.

Home Internet usage time also significantly differs between music downloading groups, although to a lighter degree [F (2, 2391) = 3.861, p = .021]. Tukey post-hoc comparisons of the three groups of downloaders indicate that the average *home Internet usage time* for always-paying downloaders (M = 2.93, SD = 1.37) is significantly different from the average of the eclectic downloaders (M = 3.24, SD = 1.24), suggesting that, taken alone, *home Internet usage time* influences online paying behaviors when downloading music. Explicitly, results recommend that spending more time online from home is an attribute of the eclectic downloaders while a lower *home Internet usage time* is a characteristic of always-paying downloaders. Never-paying downloaders do not significantly differ from the two abovementioned music downloading groups on *home Internet usage time* at $p < .05$.

The various music downloading groups also significantly diverge according to *social network participation* [F (2, 2391) = 10.976, p = .000]. Pairwise comparisons using Tukey's HSD test show that the eclectics' average score on *social network participation* (M = 1.72, SD = 1.47) is significantly different from the *social network participation* scores of both always-paying (M = 1.28, SD = 1.11) and never-paying (M = 1.40, SD = 1.26) downloaders which, in turn, do not significantly differ from each other's at $p < .05$. This finding implies that *social network participation* has a significant effect on one's music downloading habits. Particularly, results suggest that being active on a higher number of blogs or social networks tends to be a feature typical of the eclectic downloaders.

Results from the one-way ANOVAs propose the existence of significant differences between groups of music downloaders on four Internet-related factors:

Internet use history, *breadth of online activities*, *home Internet usage time*, and *social network participation*. Tukey's HDC pairwise comparisons of the three groups propose that, on average, always-paying (eclectic) downloaders have a shorter (longer) *Internet use history*. Moreover, always-paying downloaders have a lower *home Internet usage time* while eclectic downloaders have a larger *breadth of online activities* and a greater *social network participation*. No significant differences between music downloading groups were observed in relation with *home bandwidth capacity*. Hence, *home bandwidth capacity* will not be maintained as a candidate factor for the next analysis.

5.3.4 Factors related to music interest

Regarding factors related to music interest, only two out of the eleven surveyed variables can serve as individual differentiators of music downloading behaviors. Results from the one-way ANOVAs indicate that the various groups of music downloaders vary on both the *number of music radio stations listened to* and the *rock music listening frequency*.

There is indeed a significant difference on the *number of music radio stations listened to* between the various groups of music downloaders [F (2, 2391) = 5.728, p = .003]. Post-hoc pairwise comparisons using the Tukey HSD test indicate that the average *number of music radio stations listened to* by eclectic downloaders (M = 1.84, SD = 1.82) is significantly different from the average *number of music radio stations listened to* by both always-paying (M = 1.47, SD = 1.57) and never-paying downloaders (M = 1.53, SD = 1.65). This result suggests that respondents' *number of music radio stations listened to* have a significant effect on music downloading behaviors.

Explicitly, findings suggest that, on average, eclectic downloaders listen to a greater number of music radio stations. It should be noted that always-paying and never-paying downloaders do not significantly vary on their respective *number of music radio stations listened to* at $p < .05$.

In regards to the listening frequency by music genre, rock is the only kind of music where significant differences exist between the various groups downloaders [F (2, 2391) = 4.383, p = .013]. Tukey's HSD pairwise comparisons show that the mean score for *rock music listening frequency* is significantly different between always-paying (M = 0.44, SD = 0.58) and eclectic downloaders (M = 0.60, SD = 0.62). Particularly, these findings propose that, on average, eclectic downloaders would be fonder of rock music than always-paying downloaders. Incidentally, neither group significantly differs from never-paying downloaders (M = 0.53, SD = 0.59) on *rock music listening frequency* at $p < .05$.

Thus, in terms of music-related factors, the three groups of music downloaders significantly differ on both the *number of music radio stations listened to* and *rock music listening frequency*. Tukey's post-hoc tests suggest that eclectic downloaders (1) listen to a greater number of music radio stations than other music downloaders and (2) are fonder of rock music than always-paying downloaders. Both variables will be included as candidate factors in the following analysis, while all other music related factors are to be disqualified, namely *playing a music instrument*, *having attended a live concert in the last year*, *liking to watch concerts on TV*, *importance of music in own life* and almost all music genres' *listening frequency* (*classical*, *pop*, *dance*, *hip-hop/rap*, and *blues/jazz*).

Finally, a collection of eleven candidate factors will be included in the subsequent multinomial logistic regression predicting music downloader's online behaviors from the 26 factors originally considered: one demographic (*age*), four psychographics (*attitude towards newness*, *confidence in using the Internet*, *quality sensitivity*, *level of cosmopolitanism*), four factors related to Internet use (*Internet use history*, *breadth of online activities*, *home Internet usage time*, and *social network participation*) and two factors related to music interest (*number of music radio stations listened to*, *rock music listening frequency*). From that point on, the remaining 15 individually non-significant factors are filtered out from the list of candidate factors.

5.3.5 Music multinomial logistic regression

An eleven-predictor multinomial logistic regression was fitted to the data to test our hypotheses and to define the relationships between such factors and the three music downloading groups. Candidate factors were added to the model using a forward stepwise selection process to sequentially include terms until further additions does not improve the overall model fit.

The final music multinomial logistic regression model (Table 5.5) consisted of a combination of three factors: *breadth of online activities*, *attitude towards newness* and, *Internet use history*. In terms of the overall model evaluation, a likelihood ratio test confirmed a significant improvement over the null model (i.e., reduction in the -2 log likelihood), evidencing an overall relationship between the final predictors and music downloading groups [χ^2 (6, N = 2392) = 80.230, p = .000]. Concerning model

usefulness, the predictive accuracy rate reaches 77.0%, a 14.7 percent point improvement over the by-chance accuracy rate (62.3%).

Table 5.5: Multinomial logistic regression for music downloading groups

Step Summary

Model	Effects	*-2 Log Likelihood*	*Chi-Square*	*df*	*Sig.*
0	Intercept	3270.566			
1	Breadth of online activities	3226.338	44.228	2	.000
2	Attitude towards newness	3205.278	21.060	2	.000
3	Internet use history	3190.336	14.942	2	.001

Parameter Estimates

		B	*Std. Error*	*Wald*	*df*	*Sig.*
ALWAYS PAY	Intercept	-2.276	.505	20.330	1	.000
	Breadth of online activities	-.090	.055	2.696	1	.101
	Attitude towards newness	.356	.140	6.457	1	.011
	Internet use history	-.300	.074	16.585	1	.000
ECLECTICS	Intercept	-3.089	.400	59.767	1	.000
	Breadth of online activities	.166	.030	30.964	1	.000
	Attitude towards newness	.418	.103	16.534	1	.000
	Internet use history	-.035	.066	.278	1	.598

Note. Compiled by author.

According to the model individual predictors, both always-paying and eclectic downloaders scored significantly higher in *attitude towards newness* than never-paying downloaders. This result suggests that *attitude towards newness* negatively affects one's likelihood of never-paying for music downloads. Specifically, never-paying

downloaders differ from other groups of music downloaders by having a relatively more negative *attitude towards newness*, hence confirming H1 for music.

Regarding *Internet use history*, always-paying downloaders scored significantly lower than never-paying downloaders who, in turn, were not any different than eclectics. This finding proposes that downloaders with a longer *Internet use history* have a decreased probability of always paying for music downloads. Consequently, always-paying downloaders differ from other groups of music downloaders due to their relatively shorter *Internet use history*, thus confirming H2 for music.

Results also indicate that eclectic downloaders scored significantly higher in *breadth of online activities* than never-paying downloaders who, in turn, did not differ from always-paying downloaders. This result suggest that a larger range of online activities increases one's likelihood of occasionally paying for music downloads. Accordingly, downloaders who only pay at times differ from other groups of music downloaders by having a larger *breadth of online activities*, therefore confirming H3 for music.

The proposed music multinomial logistic regression model is then composed of three predictors of music downloading behaviors: *attitude towards newness*, *Internet use history*, and *breadth of online activities*. The model suggests that, amongst music downloaders, those who never pay differ from all others in terms of their comparably more negative *attitude towards newness* (H1); those who always pay differ from all others by having a shorter *Internet use history* (H2) and; those who only pay at times differ from all others by their participation in a greater *breadth of online activities* (H3).

All three hypotheses are then confirmed for music downloaders, while none of the factors reported in the research questions where able to make any significant exploratory contribution.

5.4 MODEL PREDICTING MOVIE/TV SERIES DOWNLOADING HABITS

5.4.1 Demographic factors

Results from the one-way ANOVAs comparing means between the different groups of movie downloaders are outlined in Table 5.6. Demographics are unpersuasive in independently differentiating between always-paying, eclectics, and never-paying downloaders. None of the observed demographics have a significant effect on movie downloading habits. Therefore, all factors will be disregarded for the subsequent analysis.

5.4.2 Psychographic factors

Whereas demographic factors were vain in differentiating between respondents' movie downloading habits, psychographic factors have surfaced as strong differentiators between downloading groups. Four out of the five psychographic variables presented significant divergences between the three groups of movie downloaders. The four significant psychographic factors are *attitude towards newness*, *confidence in using the Internet*, *price sensitivity*, and *quality sensitivity*.

Table 5.6: Differences in movie downloading habits across individual characteristics

	Average per group			*F*	*Sig.*
	ALWAYS PAY (*N*=118)	ECLEC-TICS (*N*=235)	NEVER PAY (*N*=1,554)		
Demographics					
Sex	1.39	1.43	1.41	.275	.760
Age	35.56	35.70	35.49	.027	.973
Social class	3.15	3.17	3.23	.800	.449
Size of municipality	4.52	4.80	4.79	1.685	.186
Presence of children at home	.25	.34	.31	1.364	.256
Psychographics					
Attitude towards newness	3.11	3.22	3.03	11.015	.000
Confidence in using the Internet	2.91	3.12	3.08	4.320	.013
Price sensitivity	3.26	3.42	3.40	3.118	.044
Quality sensitivity	3.50	3.56	3.42	6.088	.002
Level of cosmopolitanism	2.96	3.06	3.06	1.323	.267
Factors related to Internet use					
Internet use history	3.30	3.53	3.60	6.574	.001
Breadth of online activities	1.44	2.31	1.74	13.723	.000
Home Internet usage time	3.12	3.21	3.17	.260	.771
Social network participation	1.31	1.57	1.40	2.336	.097
Home bandwidth capacity	2.79	2.88	2.84	.122	.886
Factors related to movie interests					
Movie theatre visit frequency	2.53	2.69	2.54	.982	.375
Preference for viewing movies in theatre	3.92	3.80	3.82	.529	.589
Movie selection based on cast/director	2.75	2.89	2.70	3.466	.031
Movie selection based on critical reviews	2.76	2.90	2.73	2.760	.064
Reading of movie-related magazines	.12	.18	.14	1.844	.158
Interest in comedy movies	1.87	2.02	1.96	1.359	.257
Interest in drama movies	1.43	1.50	1.41	1.118	.327
Interest in action movies	1.97	2.09	1.95	2.661	.070
Interest in romantic movies	1.44	1.48	1.40	.768	.464
Interest in children movies	1.07	1.24	1.13	2.211	.110
Interest in suspense movies	1.95	2.16	2.13	2.659	.070

Note. Compiled by author.

There is a significant effect of *attitude towards newness* on movie downloading habits [F (2, 1902) = 11.015, p = .000]. Tukey post-hoc comparisons of the three groups indicate that the mean score of never-paying downloaders (M = 3.03, SD = 0.56) is significantly different from the eclectics' mean score (M = 3.22, SD = 0.60) at $p < .05$. This results suggests that having a more negative (positive) *attitude towards newness* is a distinctive characteristic of never-paying (eclectic) downloaders. It is worth mentioning that always-paying downloaders do not significantly differ from the other two groups of movie downloaders on *attitude towards newness*.

Confidence in using the Internet also has a significant effect on movie downloading behaviors [F (2, 1904) = 4.320, p = .013]. Post-hoc pairwise comparisons indicate that always-paying downloaders' mean score (M = 2.91, SD = 0.71) significantly differs from the mean scores of both eclectic (M = 3.12, SD = 0.63) and never-paying (M = 3.07, SD = 0.65) downloaders, which two groups do not significantly differ from each other at p = .05. Specifically, results suggest that always-paying downloaders are less confident in using the Internet than both the eclectics and the never-paying downloaders who, in turn, share similar levels of *confidence in using the Internet*.

There is a similar and significant influence of *price sensitivity* on movie downloading habits [F (2, 1895) = 3.118, p = .044]. Post-hoc comparisons using Tukey's honestly significant difference (HSD) test indicate that the mean score of always-paying downloaders (M = 3.26, SD = 0.67) is significantly lower from the mean scores of both eclectic (M = 3.42, SD = 0.62) and never-paying (M = 3.40, SD = 0.63) downloaders together at $p < .05$. Precisely, always-paying downloaders are less price

sensitive than the other two groups of movie downloaders which, conversely, do not significantly differ from each other on *price sensitivity*.

Quality sensitivity is also having a significant effect on movie downloading practices [F (2, 1903) = 6.088, p = .002]. Pairwise comparisons using the post-hoc HSD test indicate significant differences in the level of *quality sensitivity* between never-paying (M = 3.42, SD = 0.60) and eclectic (M = 3.56, SD = 0.63) downloaders at $p <$ .05. Explicitly, never-paying (eclectic) downloaders are significantly less (more) sensitive to quality products. Noteworthy, always-paying movie downloaders (M = 3.50, SD = 0.63) do not significantly differ from the two above-mentioned groups on *quality sensitivity*.

Hence, one-way ANOVAs used to evaluate the potential influence of psychographic factors on movie downloading behaviors suggest the existence of significant differences between groups of downloaders on *attitude towards newness*, *confidence in using the Internet*, *price sensitivity*, and *quality sensitivity*. Tukey post-hoc pairwise comparisons of the three movie downloading groups propose that, on the one hand, eclectic (never-paying) downloaders have a more positive (negative) *attitude towards newness* and are more (less) sensitive to quality products. On the other hand, always-paying downloaders are less confident in using the Internet and also less price sensitive. No significant differences between groups were observed on the *level of cosmopolitanism*, which factor will be filtered out from the list of candidate factors for the ensuing analysis.

5.4.3 Factors related to Internet use

Factors related to Internet use are not as extensive in differentiating between the movie downloading groups as they were in differentiating between the music downloading groups. Two out of the five observed factors related to Internet use significantly influence one's movie downloading habits. *Internet use history* and *breadth of online activities* emerged as significant differentiators from the one-way ANOVA.

There is a significant effect of *Internet use history* on movie downloading habits [F (2, 1904) = 6.574, p = .001]. Post-hoc comparisons using the Tukey HSD test indicate that the mean score of always-paying downloaders (M = 3.30, SD = 1.06) is significantly lower from the mean scores of eclectic (M = 3.53, SD = 0.91) and never-paying downloaders (M = 3.60, SD = 0.86) together at $p < .05$. Specifically, this finding suggests that always-paying downloaders tend to be less experienced in using the Internet. Worth mentioning is that never-paying and eclectics downloaders do not significantly vary on *Internet use history*.

Breadth of online activities also has a strong and significant influence on movie downloading behaviors [F (2, 1904) = 13.723, p = .000]. Pairwise comparisons using the post-hoc HSD test indicate that eclectics' mean score (M = 2.31, SD = 2.50) for *breadth of online activities* is higher than the mean scores of always-paying (M = 1.44, SD = 1.42) and never-paying (M = 1.74, SD = 1.60) downloaders together at $p < .05$. This outcome proposes that eclectic downloaders tend to interact in a greater variety of Internet outlets than both always-paying and never-paying downloaders, while those

two last groups do not significantly differ from each other on *breadth of online activities*.

Therefore, findings from the one-way ANOVAs propose the existence of significant differences between groups of movie downloaders on two Internet-related factors: *Internet use history* and *breadth of online activities*. Tukey's HDC pairwise comparisons of the three groups suggest that (1) always-paying downloaders have a shorter *Internet use history* and (2) eclectic downloaders have a larger *breadth of online activities*. Both variables will be included as candidate factors in the following analysis, while all other factors will not be preserved, namely *home Internet usage time*, *social network participation*, and *home bandwidth capacity*.

5.4.4 Factors related to movie interest

Regarding factors related to movie interest, only one out of the eleven surveyed variables could conceivably discriminate between groups of movie downloaders. Findings from the one-way ANOVAs reveal the existence of significant differences on *movie selection based on critical reviews* between groups of movie downloaders [F (2, 1870) = 3.466, p = .031], although post-hoc pairwise comparisons using Tukey HSD test failed to provide further explanation on the nature of such differences at $p < .05$.

While *movie selection based on cast/director* will justifiably be included as a candidate factor in the succeeding analysis, all other factors related to movie interest are to be disqualified: *movie theatre visit frequency*, *preference for viewing movies in theatre*, *movie selection based on critical reviews*, *reading of movie-related magazines*

as well as interest in six different movie genres (*comedy*, *drama*, *action*, *romantic*, *children*, and *suspense*).

Therefore, a gathering of seven candidate factors will be included in the subsequent multinomial logistic regression predicting movie downloader's online behaviors from the 26 factors originally observed: none of the demographics, four psychographics (*attitude towards newness*, *confidence in using the Internet*, *price sensitivity*, and *quality sensitivity*), two factors related to Internet use (*Internet use history* and *breadth of online activities*) and only one factor related to movie interest (*movie selection based on cast/director*). From that point on, the remaining 19 individually non-significant factors are filtered out from the list of candidate factors.

5.4.5 Movie multinomial logistic regression

A multinomial logistic regression was fitted to the data in order to test our hypotheses and define the possible relationships between the seven candidate factors and the three movie downloading groups. Candidate factors were added to the model using a forward stepwise selection process to sequentially include terms until further additions does not improve the overall model fit.

The final movie multinomial logistic regression model (Table 5.7) consisted of a combination of four factors: *breadth of online activities*, *attitude towards newness*, *Internet use history*, and *price sensitivity*. In terms of overall model evaluation, a likelihood ratio test confirmed a significant improvement over the intercept-only model (i.e., reduction in the -2 log likelihood), supporting a significant overall relationship between the final predictors and movie downloading groups [χ^2 (6, N = 1,866) = 57.849,

p = .000]. Regarding model usefulness, the predictive accuracy rate stretched from 68.3% to 81.5%, a 13.2 percent point improvement over the by-chance accuracy rate.

Table 5.7: Multinomial logistic regression for movie downloading groups

Step Summary

Model	Effects	*-2 Log Likelihood*	*Chi-Square*	*df*	*Sig.*
0	Intercept	2224.394			
1	Breadth of online activities	2199.946	24.447	2	.000
2	Attitude towards newness	2183.303	16.643	2	.000
3	Internet use history	2174.792	8.511	2	.014
4	Price sensitivity	2166.545	8.247	2	.016

Parameter Estimates

		B	*Std. Error*	*Wald*	*df*	*Sig.*
ALWAYS PAY	Intercept	-1.363	.730	3.484	1	.062
	Attitude towards newness	.443	.185	5.755	1	.016
	Price sensitivity	-.442	.162	7.443	1	.006
	Breadth of online activities	-.101	.066	2.359	1	.125
	Internet use history	-.273	.094	8.470	1	.004
ECLECTICS	Intercept	-3.000	.562	28.521	1	.000
	Attitude towards newness	.538	.135	15.848	1	.000
	Price sensitivity	-.141	.119	1.403	1	.236
	Breadth of online activities	.141	.036	15.617	1	.000
	Internet use history	-.101	.079	1.652	1	.199

Note. Compiled by author.

According to the model individual predictors, both always-paying and eclectic downloaders scored significantly higher in *attitude towards newness* than never-paying downloaders. This result suggests that *attitude towards newness* negatively affects one's likelihood of never-paying for movie downloads. Specifically, never-paying downloaders differ from other groups of movie downloaders by having a relatively more negative *attitude towards newness*, hence confirming H1 for movies.

Always-paying downloaders scored significantly lower on both *Internet use history* and *price sensitivity* than never-paying downloaders who, in turn, were not any different from eclectics. These findings propose that movie downloaders with (1) a lesser number of years using the Internet and (2) a lower degree of price sensitivity have an increased probability of always disbursing for their downloads. Consequently, always-paying downloaders differ from other groups of movie downloaders due to their relatively (1) shorter *Internet use history*, confirming H2 for movies, and (2) lower *price sensitivity*.

Results also indicate that eclectic downloaders scored significantly higher on *breadth of online activities* than never-paying downloaders who, in turn, did not differ from always-paying downloaders. This result suggest that a wider range of online activities increases one's likelihood of occasionally paying for movie downloads. Accordingly, eclectic downloaders, who only pay at times, differ from other groups of movie downloaders by having a larger *breadth of online activities*, therefore confirming H3 for movies.

The proposed movie multinomial logistic regression model is composed of four predictors of movie downloading behaviors: *attitude towards newness*, *Internet use history*, *breadth of online activities*, and *price sensitivity*. The model suggests that, amongst movie downloaders, those who never pay differ from all others in terms of their comparably more negative *attitude towards newness* (H1); those who always pay differ from all others by having a shorter *Internet use history* (H2) plus a lower *price sensitivity* (RQ2); and those who only pay at times differ from all others by their participation in a greater *breadth of online activities* (H3). Thus, all three hypotheses are confirmed for movie downloaders, meanwhile one of the psychographic factors reported in the research questions made a significant exploratory contribution.

5.5 MODEL PREDICTING SOFTWARE DOWNLOADING HABITS

5.5.1 Demographic factors

The one-way ANOVAs results comparing means between the different groups of software downloaders are outlined in Table 5.8. Demographics are mildly persuasive in independently differentiating between always-paying, eclectics, and never-paying software downloaders. Among all observed demographics, *age* is the only factor having a significant effect on software downloading habits [F (2, 1306) = 6.283, p = .002]. Post-hoc pairwise comparisons using the Tukey HSD test indicate that always-paying downloaders scored significantly higher on *age* (M = 40.21, SD = 14.46) than eclectic (M = 37.25, SD = 13.50) and never-paying (M = 35.52, SD = 13.08) downloaders together. Explicitly, this finding suggests that, on average, always-paying software downloaders are older than other downloaders. It should be noted that eclectic and never-paying software downloaders do not significantly vary on *age* at $p < .05$.

Table 5.8: Differences in software downloading habits across individual characteristics

	Average per group			*F*	*Sig.*
	ALWAYS PAY (*N*=95)	ECLEC-TICS (*N*=198)	NEVER PAY (*N*=1,016)		
Demographics					
Sex	1.33	1.32	1.34	.080	.924
Age	40.21	37.25	35.52	6.283	.002
Social class	3.46	3.28	3.31	1.294	.274
Size of municipality	4.74	4.82	4.72	.376	.687
Presence of children at home	.25	.33	.29	.954	.385
Psychographics					
Attitude towards newness	3.14	3.21	3.07	5.544	.004
Confidence in using the Internet	3.19	3.29	3.20	1.806	.165
Price sensitivity	3.28	3.41	3.45	2.988	.051
Quality sensitivity	3.56	3.69	3.46	12.574	.000
Level of cosmopolitanism	3.07	3.18	3.09	2.051	.129
Factors related to Internet use					
Internet use history	3.57	3.65	3.67	.731	.482
Breadth of online activities	2.00	2.98	1.96	25.485	.000
Home Internet usage time	3.24	3.46	3.25	2.906	.055
Social network participation	1.27	1.69	1.46	3.300	.037
Home bandwidth capacity	3.05	3.09	2.91	1.171	.310

Note. Compiled by author.

Still, it should be noted that the three groups of software downloaders do not significantly differ on all other demographics surveyed: specifically *sex*, *social class*, *size of municipality*, and *presence of children at home*. As so, *age* will be preserved as a candidate factor, but all other non-significant demographics will be overlooked for the subsequent multinomial logistic regression analysis.

5.5.2 Psychographic factors

Two out of the five psychographic variables surveyed revealed significant differences between the three groups of software downloaders. Both *attitude towards newness* and *quality sensitivity* have separate and significant effects on software downloaders' payment patterns.

There are significant differences on *attitude towards newness* between software downloading groups [F (2, 1306) = 5.544, p = .004]. Tukey post-hoc pairwise comparisons of the three groups indicate that never-paying downloaders (M = 3.07, SD = 0.57) scored significantly lower on *attitude towards newness* than eclectic downloaders (M = 3.21, SD = 0.59) at $p < .05$. These results suggest that never-paying (eclectic) downloaders have a less (more) favorable *attitude towards newness*. Unlikely, comparisons between always-paying downloaders (M = 3.14, SD = 0.64) and the other two groups of software downloaders failed to yield statistically significant differences at $p < .05$.

Quality sensitivity also has a significant effect on software downloading conducts [F (2, 1306) = 12.574, p = .000]. Pairwise comparisons using the post-hoc HSD test indicate significant differences in the degree to which never-paying (M = 3.46, SD = 0.60) and eclectic (M = 3.69, SD = 0.59) software downloaders are sensitive to quality at $p < .05$. Simply put, never-paying (eclectic) downloaders report being significantly less (more) sensitive to quality products. Other noteworthy finding is that always-paying software downloaders (M = 3.56, SD = 0.60) do not significantly differ from the two aforementioned groups on *quality sensitivity* at $p < .05$.

In consequence, findings from these ANOVAs propose the existence of two significant psychographic differences between the various groups of software downloaders: *attitude towards newness* and *quality sensitivity*. Tukey's HDC pairwise comparisons of the three groups suggest that never-paying (eclectic) software downloaders tend to (1) have a less (more) favorable *attitude towards newness* and (2) be less (more) *quality sensitive*. Both variables will be included as candidate factors. The three outstanding non-significant psychographic factors (*confidence in using the Internet*, *price sensitivity*, and *level of cosmopolitanism*) will be filtered out and removed from the ensuing multinomial logistic regression.

5.5.3 Factors related to Internet use

Two out of the five Internet-related factors significantly influenced respondents' software downloading habits. *Breadth of online activities* and *social network participation* emerged as significant influencers from the software downloading one-way ANOVAs.

Breadth of online activities has a strong and significant influence on software downloading behaviors [F (2, 1306) = 25.485, p = .000]. Pairwise comparisons using the post-hoc HSD test indicate that the eclectics mean score (M = 2.98, SD = 2.73) for *breadth of online activities* is higher than the mean scores of both always-paying (M = 2.00, SD = 1.75) and never-paying (M = 1.96, SD = 1.63) downloaders together at $p <$ .05. This outcome proposes that eclectic downloaders tend to interact in a greater variety of Internet outlets than both always-paying and never-paying downloaders,

while those two groups do not significantly differ from each other on *breadth of online activities*.

There is also a significant effect from *social network participation* on respondents' software downloading habits [F (2, 1306) = 11.015, p = .000]. Tukey post-hoc comparisons of the three groups indicate that always-paying downloaders' average number of social networks (M = 1.27, SD = 1.18) is significantly lower than the eclectics' average number (M = 1.69, SD = 1.63) at $p < .05$. This result suggests that participation in a relatively elevated (reduced) number of online social networks is a distinctive characteristic of eclectic (always-paying) downloaders. It is worth mentioning that never-paying downloaders (M = 1.46, SD = 1.36) do not significantly differ from the other two groups of software downloaders on *social network participation*.

Thus, findings from the third one-way ANOVAs propose the existence of significant differences between groups of software downloaders on two Internet-related factors: *breadth of online activities* and *social network participation*. HDC tests suggest that participation in (1) a greater variety of online activities in general and (2) a superior (inferior) number of social networks in particular are distinctive features of the eclectic (always-paying) downloaders. Both factors will be preserved for the following multinomial logistic regression, while all other factors will not be included in the list of candidate factors, specifically *Internet use history*, *home Internet usage time*, and *home bandwidth capacity*.

Finally, a collection of five candidate factors will be included in the subsequent multinomial logistic regression predicting software downloader's online behaviors from the 15 factors originally observed: one demographic (*age*), two psychographics (*attitude towards newness*, and *quality sensitivity*) and two factors related to Internet use (*breadth of online activities*, and *social network participation*). From that point on, the remaining 10 non-significant factors will be filtered out from the list of candidate factors.

5.5.4 Software multinomial logistic regression

A five-predictor multinomial logistic regression was fitted to the data to test our hypotheses and define the possible relationships between such factors and the three software downloading groups. Candidate factors were added to the model using a forward stepwise selection process to sequentially include terms until further additions does not improve the overall model fit.

The final software multinomial logistic regression model (Table 5.9) consisted of a combination of three factors: *breadth of online activities*, *quality sensitivity*, and *age*. In terms of the overall model evaluation, a likelihood ratio test confirmed a significant improvement over the null model (i.e., reduction in the -2 log likelihood), evidencing an overall relationship between the final predictors and software downloading groups [χ^2 (6, N = 1309) = 74.998, p = .000]. Concerning model usefulness, the predictive accuracy rate reaches 78.2%, a 15.2 percent point improvement over the by-chance accuracy rate (63.0%).

Table 5.9: Multinomial logistic regression for software downloading groups

Step Summary

Model	Effects	*-2 Log Likelihood*	*Chi-Square*	*df*	*Sig.*
0	Intercept	1758.45			
1	Breadth of online activities	1715.47	42.983	2	.000
2	Quality sensitivity	1694.01	21.465	2	.000
3	Age	1683.46	10.550	2	.005

Parameter Estimates

		B	*Std. Error*	*Wald*	*df*	*Sig.*
ALWAYS PAY	Intercept	-3.915	.684	32.748	1	.000
	Breadth of online activities	.031	.062	.256	1	.613
	Quality sensitivity	.160	.184	.759	1	.384
	Age	.024	.008	9.426	1	.002
ECLECTICS	Intercept	-4.577	.530	74.571	1	.000
	Breadth of online activities	.241	.037	41.703	1	.000
	Quality sensitivity	.563	.139	16.462	1	.000
	Age	.009	.006	2.378	1	.123

Note. Compiled by author.

According to the model individual predictors, always-paying downloaders scored significantly higher on *age* than never-paying downloaders who, in turn, were not any different than eclectics. This result suggests that older software downloaders have an increased probability of always paying for the computer programs they acquire online. Consequently, always-paying downloaders differ from other groups of software downloaders due to their comparatively older *age*.

On *breadth of online activities*, eclectic downloaders scored significantly higher than never-paying downloaders who, conversely, do not considerably vary from always-paying downloaders. This finding implies that *breadth of online activities* positively affects one's likelihood of occasionally paying for software downloads.

Specifically, downloaders who only pay at times differ from other groups of software downloaders by having a larger *breadth of online activities*, therefore confirming H3 for software.

On *quality sensitivity*, eclectic downloaders once more scored significantly higher than never-paying downloaders who, in turn, did not differ from always-paying downloaders. This outcome implies that being more sensitive to quality products increases one's probability of occasionally paying for downloaded softwares. Accordingly, eclectic downloaders also differ from other groups of software downloaders by being relatively more *quality sensitive*.

The proposed multinomial logistic regression model is composed of three predictors of software downloading behaviors: *age*, *quality sensitivity*, and *breadth of online activities*. The model suggests that, amongst software downloaders, those who only pay at times differ from all others by having a larger *breadth of online activities* (H3) together with a higher *quality sensitivity* (RQ2); and those who always pay differ from all others in terms of their comparably older *age* (RQ1). Consequently, one of the three hypothesis is confirmed for software downloaders, while two factors reported in the research questions (one demographic and one psychographic) made a significant exploratory contribution. H1 and H2 are then rejected for software downloaders. It is also worth mentioning that none of the measured factors could discriminate never-paying downloaders from the other groups of software downloaders.

5.6 RESULTS VALIDATION

Results were validated to guarantee external validity and practical significance of the multinomial logistic regression models, principally given the disproportionally large number of never-paying downloaders, regardless of the product type. Accordingly, never-paying downloaders were randomly split into halves, and then two additional multinomial logistic regressions were fitted using the same stepwise entry procedure, one with each half (*odd* and *even*) plus the two remaining groups of downloaders. This validation process was repeated for each product type (music, movie, and software).

For both music and movies, the factors entering the validation models, the directions of the relationships between groups, and their statistical significance all agreed with the findings of the models using the full data sets.

Regarding software, the validation model generated from the *odd* never-paying downloaders was in complete accordance with the full data set model. However, the model resulting from the *even* never-paying downloaders, while being similar in some aspects, was altered from the original software model. Similarities and differences are as follow:

1. *Breadth of online activities* and *quality sensitivity* remain identical in regards to both the direction of the relationships between groups and their statistical significance;

2. *Attitude towards newness* is included in the model, where *even* never-paying downloader differ from the other groups of software downloaders by having a more negative *attitude towards newness*;

3. Eclectics also appear significantly older than *even* never-paying downloaders. Thus *even* never-paying downloaders differ from the other groups of software downloaders by having a younger *age*.

Additional investigation was conducted in order to uncover the sources of such discrepancies without clear triumph. All things considered, two models are fully validated (music and movie downloading) and the third model (software downloading) is partly validated since the "*even* half" model presented two minor differences: (1) the inclusion of an additional factor (*attitude towards newness*) and (2) the change of significance of a relationship (eclectics older than never-paying downloaders now significant at $p = .03$).

Chapter summary

This chapter focused on the empirical study that led to the development of three multinomial logistic regression models, one model for each product type (music, movie, and software). Apart from a broad overview of the results generated from univariate analyses, actual results from both stages of the statistical approach were reviewed successively and independently. Cross-validation of results was concisely discussed before all research questions and hypotheses were summarized to facilitate the understanding of the unique features predicting downloading habits for each group.

An outline of all significant differences between downloading groups across individual characteristics resulting from the three one-way ANOVAs is presented in Table 5.10. Although the ANOVAs primarily served at filtering out non-significant variables from the list of candidate factors, it already appeared at this initial stage that both psychographics and factors related to Internet use were much sturdier differentiators than demographics or factors related to music/movie interest.

Table 5.10: Summary of differences in downloading habits across individual characteristics

	Undefined	Groups differences [a, b]		
		ALWAYS PAY	ECLEC-TICS	NEVER PAY
Demographics				
Age	1	+ (3)		
Psychographics				
Attitude towards newness			+ (2,3)	– (1,2,3)
Confidence in using the Internet		– (1,2)	+ (1)	
Price sensitivity		– (2)		
Quality sensitivity	1		+ (2,3)	– (2,3)
Level of cosmopolitanism		– (1)	+ (1)	
Factors related to Internet use				
Internet use history		– (1,2)		
Breadth of online activities			+ (1,2,3)	
Home Internet usage time			+ (1)	
Social network participation		– (3)	+ (1,3)	
Factors related to music/movie interest				
Number of music radio stations listened to			+ (1)	
Rock music listening frequency		– (1)	+ (1)	
Movie selection based on cast/director	2			

Note. Compiled by author.

a. Product types: 1 = music, 2 = movie/TV series, 3 = software.

b. Groups differences: + = scored higher, – = scored lower.

As for the first research question (RQ1), results suggest that *age* is the only demographic factor that can significantly differentiate between those who always pay, those who never pay, and eclectic downloaders. However, *age* would only influence music and software downloaders. No individual differences between groups were encountered on *sex*, *social class*, *size of municipality* and *presence of children at home*.

Regarding the second research question (RQ2), there are significant differences based on psychographic characteristics between downloading groups. Both *attitude towards newness* and *quality sensitivity* influence downloading habits for all three product types (music, movie, and software). *Confidence in using the Internet* individually affects both music and movie downloaders. Only affecting the downloading habits for one product type are *price sensitivity* (movie) and *level of cosmopolitanism* (music).

Reflecting on the third research question (RQ3), findings support the existence of significant differences between downloaders based on factors related to Internet use: *Internet use history* (music and movie), *breadth of online activities* (music, movie, and software), *home Internet usage time* (music) and *social network participation* (music and software). There are no significant differences based on *home bandwidth capacity*.

Concerning the fourth research question (RQ4), results yielded only three significant differences between always-paying, never-paying and eclectic downloaders based on one's level of interest in either music or movie. While *number of music radio stations listened to* and *rock music listening frequency* affect music downloading habits, *movie selection based on cast/director* has an influence on movie downloading

behaviors. There were no significant differences based on all other observed factors related to music/movie interest.

As Table 5.11 outlines, all three hypotheses were accepted for music and movie/TV series downloaders and two hypotheses were rejected for software downloaders.

Table 5.11: Acceptance (rejection) of hypotheses across product types

Hypotheses	Product type		
	MUSIC	MOVIE	SOFTWARE
H1 - Downloaders who never pay differ from all others in terms of their comparatively more negative attitude towards newness.	Accepted	Accepted	Rejected
H2 - Downloaders who always pay differ from all others by having a shorter Internet use history.	Accepted	Accepted	Rejected
H3 - Downloaders who only pay at times differ from all others by their participation in a greater breadth of online activities.	Accepted	Accepted	Accepted

Note. Compiled by author.

Music and movie downloading behaviors share three common predictors: *attitude towards newness*, *Internet use history*, and *breadth of online activities*. The two models equally suggest that, amongst music/movie downloaders:

1) those who never pay differ from all others in terms of their comparably more negative *attitude towards newness* (confirming H1 for music and movie);

2) those who always pay differ from all others by having a shorter *Internet use* history (confirming H2 for music and movie), and;

3) those who only pay at times differ from all others by their participation in a greater *breadth of online activities* (confirming H3 for music and movie).

Additionally, always paying movie downloaders differ from all others by being less *price sensitive* (RQ2). Thus, for both music and movie downloading, all three hypotheses are confirmed.

Regarding software, there are three predictors of downloading behaviors: (1) *age*, (2) *quality sensitivity* and (3) *breadth of online activities*. The final model suggests that, amongst software downloaders:

1) those who only pay at times differ from all others by having a larger *breadth of online activities* (confirming H3 for software) and a higher *quality sensitivity* (RQ2), and;

2) those who always pay differ from all others in terms of their comparably older *age* (RQ1).

None of the observed factors can serve as a predictor of never-paying software downloader. One of the three hypothesis is confirmed.

6 Discussion

"(...) a new theory, even when it appears most unitary and most all-embracing, deals with some immediate element of novelty or paradox within the framework of far vaster, unanalyzed, unarticulated reserves of knowledge, experience, faith, and presupposition. Our progress is narrow; it takes a vast world unchallenged and for granted. This is one reason why, however great the novelty or scope of new discovery, we neither can, nor need, rebuild the house of the mind very rapidly. This is one reason why science, for all its revolutions, is conservative. This is why we will have to accept the fact that no one of us really will ever know very much. This is why we shall have to find comfort in the fact that, taken together, we know more and more."

— J. Robert Oppenheimer

As Oppenheimer judiciously observed in this chapter's opening quote, the present dissertation is not expected to entirely explain the complex phenomenon of digital piracy, but rather to shed some light on the individual characteristics influencing downloaders' payment patterns in order to better understand the dilemma facing music, movie, and software downloaders. The current discussion chapter will first address the findings of this research. Findings pertaining to software downloaders are treated separately from those pertaining to music/movie downloaders since the former bear several distinctions from the later. Nonetheless, a more general section will also discourse the similarities across all content types. Limitations concerning geographical, temporal, and organizational restrictions are then individually addressed. Both theoretical and managerial implications are also discussed (managerial suggestions are

addressed to the entertainment and software industries separately). Finally, future lines of research are briefly evoked to close the chapter.

6.1 FINDINGS

Despite the limited scope of this research, two methodological features are reinforcing the ability to make general inferences from the results. First, it is reasonable to question the generalizability of studies about digital piracy when they solely rely on student samples because responses from college undergraduates may not be representative of the entire population (LaRose & Kim, 2007; Nandedkar & Midha, 2012) but rather of the university students' population (Cooper, 2007). The demographic composition of our sample is representative of all strata of society, and therefore has a greater degree of generalizability versus a sample consisting of students only.

Second, studies about digital piracy commonly use assertive wording to characterize unpaid downloading and its actors, such as Internet pirates (LaRose & Kim, 2007), digital piracy (Cronan & Al-Rafee, 2008; Udo *et al.*, 2014), unauthorized products (Nandedkar & Midha, 2012), and copying (Goles *et al.*, 2008). While criticizing the suitability of the terminology normally used is not an objective of this dissertation, we know that studies dealing with unethical or illegal behaviors can struggle to obtain honest and open responses (Woolley & Eining, 2006). Participants wish to appear socially responsible and tend to minimize the degree of their unethical actions. This comportment can eventually lead to a social desirability bias (Chung & Monroe, 2003), where illegal or unethical behaviors tend to be underreported (Hessing *et al.*, 1988; Schroder *et al.*, 2003). Accordingly, this study avoided assertive terms such

as “piracy” or “illegal downloading” to help obtain a greater response rate and a higher degree of accuracy in the answers (Cannell *et al.*, 1977; Mooney & Gramling, 1991).

Based on the results, we must infer that the cognitive dissonance theory helps to understand the downloading of the three content types studied, whose results are partially divergent. It appears that factors influencing both music and movie downloaders’ payment behaviors were mainly similar, while factors explaining software downloaders’ compensation patterns were partly dissimilar. Accordingly, inferences about the different content types will be treated independently: findings regarding music and movie downloaders will first be addressed, then those regarding software downloaders will follow.

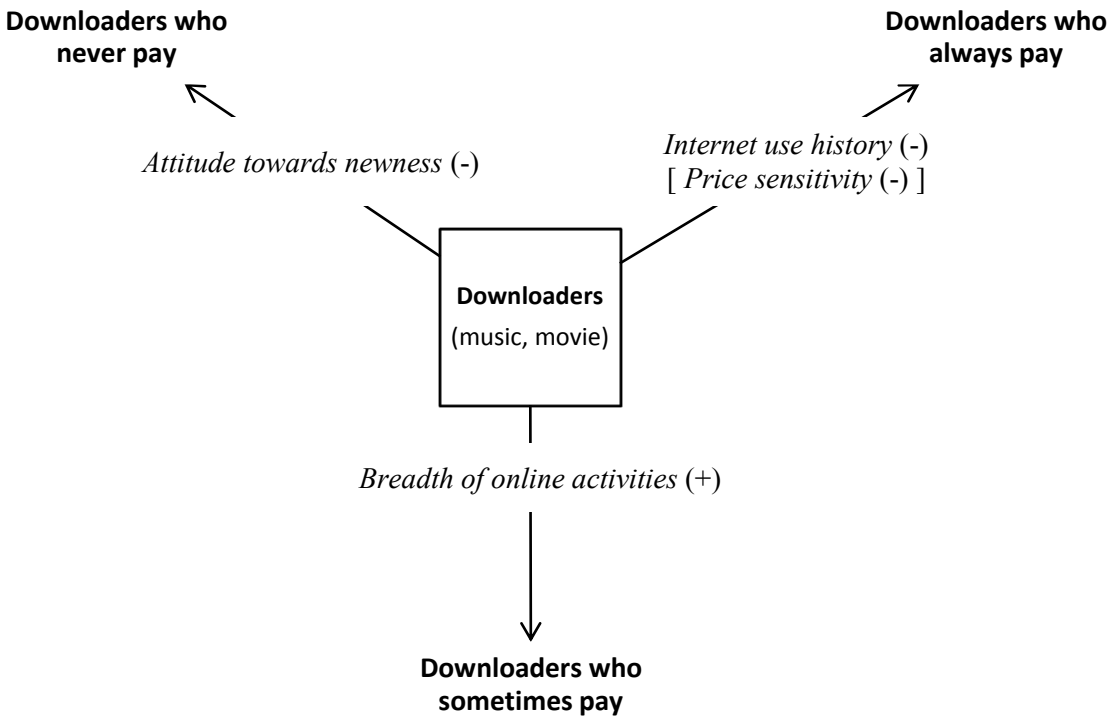
6.1.1 Findings pertaining to music and movie downloaders

As illustrated by Figure 6.1, all three groups of music and movie downloaders enjoy distinctive characteristic that so far has received limited attention: (1) Downloaders who never pay differentiate themselves from the other downloaders by having a more negative attitude towards newness; (2) downloaders who always pay differentiate themselves from the rest by having spent fewer years using the Internet; and (3) eclectic downloaders differentiate themselves from the rest through their tendency to operate in a wider variety of Internet outlets.

The aforementioned conclusions are correspondingly pertinent to both movie and music downloaders. It was certainly predictable that downloaders’ behavior would not substantially vary depending on the type of content downloaded because movies

and music are concomitantly available on most file-sharing venues and both are normally downloaded for entertainment purposes.

Figure 6.1: Predicting music/movie downloaders compensation behavior



Note. Compiled by author. *Price sensitivity* appears between brackets to symbolize that its predicting capability is limited to movie downloaders.

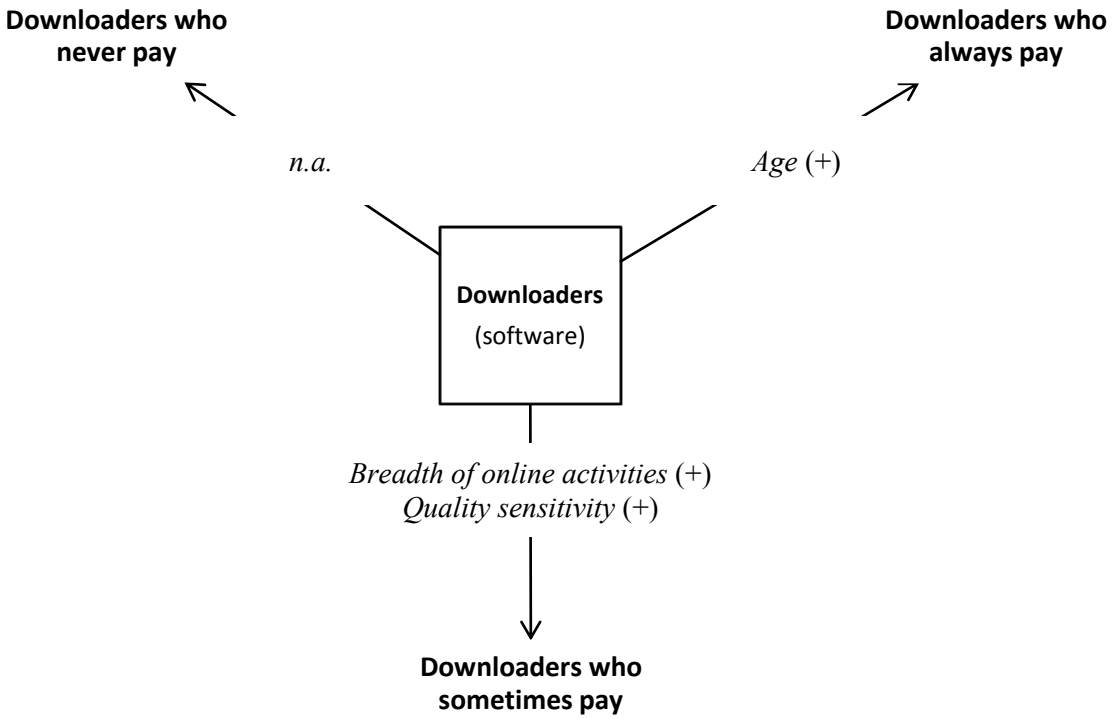
Nevertheless, we found that price sensitivity is a significant factor affecting always-paying movie downloaders but is irrelevant to their music counterparts. This difference can tentatively be explained by the superior price usually asked for movie downloads. Another possible explanation is related to the difference between a song and a movie in terms of the utility it will bring to the downloader over time. While a song will habitually be listened to several times, a movie tend to lose its appeal quickly once it has been watched in its entirety. Therefore, price sensitive downloaders would

be less likely to always pay for expensive movies than to always pay for affordable music.

6.1.2 Findings pertaining to software downloaders

Figure 6.2 illustrates that two groups of software downloaders enjoy each at least one distinctive characteristic. First, downloaders who always pay differentiate themselves from the other software downloaders by being older. Second, eclectic downloaders differentiate themselves from the rest through (1) their tendency to operate in a wider variety of Internet outlets and (2) their higher sensitivity to quality products. None of the tested factors was a distinctive characteristic of never-paying downloaders.

Figure 6.2: Predicting software downloaders compensation behavior



Note. Compiled by author.

Evidence suggest that always-paying software downloaders are characterized by being older. This result either suggests that as people mature, they become more receptive in always compensating software copyrights or that always-paying for software is something from past generations. These conclusions are in line with previous literature advocating where older individuals pirate less (Bhattacharjee *et al.*, 2003) and younger people are more likely to engage in software piracy (Gupta *et al.*, 2004). In both cases, age is a distinctive characteristic of always-paying software downloaders, but not of always-paying music or movie downloaders. As software is most-often required for work purposes (Cheng, Sims, & Teegen, 1997), as opposed to entertainment motivations, a tentative explanation is related to employment, where costly but work-related software is legally paid for/reimbursed by corporations for more senior employees, although previous research has discarded the effect of employment status on software piracy (Smallridge & Roberts, 2013).

Additionally, results indicate that eclectic software downloaders differentiate themselves from the rest through their higher sensitivity to quality products. Knowing that the main reason to acquire software is for work or study (Cheng *et al.*, 1997), eclectic downloaders' behavioral duality is perhaps best explained by the search for a quality software through "trial before purchase". This conclusion finds support in Gupta *et al.* (2004) views of functional risk minimization through software piracy, where consumers use pirated software as a trial product in order to avoid purchasing a negative cost good.

Finally, the absence of a unique characteristic distinguishing the never-paying software downloaders suggest that this behavior is generalized across all strata of the

society. Consequences related to this and other findings will be further commented in the implications section of this chapter.

6.1.3 Findings pertaining to downloaders in general

Results reveal that many of the explored factors do not significantly help explain the differences among the various groups of music, movie, and software downloaders. Apart from age, the main demographics (sex, social class, size of municipality, and presence of children at home), which influence has been discussed in the literature without drawing definite conclusions, are particularly inefficient in this regard. The same is true of some psychographics (confidence in using the Internet and level of cosmopolitanism) as well as some factors related to Internet use (home Internet usage time, social network participation, and home bandwidth capacity). Finally, factors pertaining to movies and music (level of interest, genre preferences, and consumption habits) are also irrelevant at uncovering differences among groups of downloaders.

It should also pointed out that, regardless of the content type, downloaders who interact with a greater variety of Internet outlets change their payment patterns more easily to match the behavior found in each venue. This finding suggests that downloaders have a tendency to mimic the behavior to match that of others in a current online environment, a conclusion that had previously been established in traditional retail settings (Tanner *et al.*, 2008). Our findings also support previous conclusions (Chartrand *et al.*, 2005; Chartrand & Bargh, 1999) about the chameleon effect occurring in the most minimal group circumstances, meaning that the effect is not conditioned to awareness, previous rapport, nor affiliation objectives.

6.2 LIMITATIONS

Three limitations from this study affect the potential generalizability of its results and call for cautiousness when extrapolating the conclusions into different environments from the present one.

The first limitation is the restricted geographical area covered by the fieldwork. Although the survey enjoys the benefits of including respondents from all demographic strata, this sample is only capable of accurately representing the Spanish situation. Whether the results obtained in Spain can be directly applied or partially adapted to other countries is still unknown at this point in time. It seems unlikely that considerable differences based on nationality or language exist when other key demographics have failed to prove significant. Still, evidence suggests the existence of cross-cultural differences in Internet buying behaviors (Park & Jun, 2003). Moreover, some authors on cognitive dissonance have encountered significant disparities between Westerners and Eastern Asians (Heine & Lehman, 1997; Hoshino-Browne *et al.*, 2005).

The second limitation refers to the restricted number of variables that could be used in this study. The source of information used (*AIMC Marcas*) includes a wide range of variables that allowed us to contrast major thematic areas (demographics, psychographics, Internet-related factors, and factors related to content interest). However, as the *AIMC Marcas* is a secondary data source, we were unable to introduce into the questionnaire tailor-made items on ethical standards or other potential predictors of online payment patterns. It is worth recalling that ethical standards have been identified as powerful predictors of both the intention to pay (Coyle *et al.*, 2009;

Yoon, 2011a; Yoon, 2011b) and the actual payment (Cuadrado *et al.*, 2009; Gupta *et al.*, 2004) when downloading content from the Internet.

The third constraint resulted from taking a fixed portrait of a continuously evolving phenomenon. Although the results accurately represent what happened at the time of measurement, the model's predictive ability is conditioned by the stability of all factors involved. Still, it is expected that the importance of some factors will vary over time. For example, as consumers' price sensitivity is more intense during periods of economic crisis (Dutt & Padmanabhan, 2011), it is currently impossible to predict whether such a factor will remain significant for movie downloaders when the current economic crisis gives way to a period of prosperity.

6.3 THEORETICAL IMPLICATIONS

To our knowledge, this study is the first to use the theory of cognitive dissonance to better understand downloaders' payment patterns. Digital piracy has previously been explained within many theoretical frameworks before, such as the social cognitive theory (Jacobs *et al.*, 2012; LaRose & Kim, 2007), the theory of reason action (Nandedkar & Midha, 2012; Woolley & Eining, 2006), the theory of planned behavior (Cronan & Al-Rafee, 2008; Goles *et al.*, 2008; Wang & McClung, 2012), technology use/adoption models (Kwong & Park, 2008; Udo *et al.*, 2014), deterrence theories (Morton & Koufteros, 2008; Peace *et al.*, 2003), ethical theories (Gopal *et al.*, 2004; Yoon, 2011a; Yoon, 2011b), the general crime theory (Malin & Fowers, 2009; Moon *et al.*, 2010), deviant behaviors learning models (Morris & Higgins, 2010; Navarro *et al.*, 2014), and the exchange theory (Coyle *et al.*, 2009). While these theories offered valuable insights about digital piracy in relation to their respective discipline,

they were mostly adequate to explain participants' attitudes towards piracy (Al-Rafee & Cronan, 2006; Goles *et al.*, 2008) or intentions to engage in piracy (Moon *et al.*, 2010; Morton & Koufteros, 2008), but no framework stressed the dilemma faced by Internet users when deciding whether or not to pay when downloading digital goods.

Using the theory of cognitive dissonance as a theoretical framework offers three important advantages. First, cognitive dissonance is one of the best documented theories in social psychology, both in terms of quantity and variety of practical applications (Cooper & Hogg, 2007), some of which refer to the heterogeneous reaction to tobacco by smokers and non-smokers (e.g., Halpern, 1994; McMaster & Lee, 1991) or to traffic laws by abiding and contravening drivers (Yagil, 1998). Second, the theory of cognitive dissonance serves as a wide theoretical framework that can harmoniously incorporate various principles to better explain specific aspects of downloaders' behaviors. The variety of research paradigms associated with this theory demonstrates its broad and flexible applicability and capacity to integrate a wide range of social phenomena (Gawronski, 2012). Third, the cognitive dissonance theory and other theoretical foundations have allowed us to hypothesize about some differences among downloaders who never pay, downloaders who always pay, and eclectic downloaders. These differences were entirely confirmed by the results for both music and movie downloaders, and partially confirmed for software downloaders.

Another significant contribution from this study is the underlying paradigm shift regarding the study of different content types. Apart from few noticeable exceptions (Cox & Collins, 2014; Malin & Fowers, 2009; Navarro *et al.*, 2014), most researches on digital piracy have traditionally focused on a single type of content at the time

(Cronan & Al-Rafee, 2008; Dilmperi *et al.*, 2011; Jacobs *et al.*, 2012) or alternatively considered digital piracy as one, regardless of the type of digital content being pirated (Morris & Higgins, 2010; Wang & McClung, 2012; Yoon, 2011a; Yoon, 2011b). This study acknowledges both similarities and differences between the various types of content. Accordingly, further research on the topic should (1) study simultaneously music and movie piracy to elude the accumulation of partial and fragmented conclusions and (2) differentiate music/movie from software downloading to avoid inaccurate general conclusions on digital piracy.

The last significant contribution from this study is the identification of relatively new factors that differentiate the three types of downloaders but were not traditionally given much consideration in the literature. Attitude towards newness, Internet use history, and breadth of online activities all have an impact on both movie and music downloaders. Price and quality sensitiveness also have a significant effect on respectively movies and software downloaders. Since digital piracy is a multifaceted topic that should be submitted to a large assortment of considerations (Gupta *et al.*, 2004), these factors should be paid closer attention in the future than they have so far. Conversely, the lack of significance of other factors frequently addressed in the past (especially the demographics) casts doubt on the need to keep paying these so much attention in the future.

6.4 MANAGERIAL IMPLICATIONS

Differences found among the various groups of downloaders can help both the entertainment and software industries by more effectively guiding their decisions to prevent (take advantage of) threats (opportunities) in the market. Managerial

implications are presented separately for each industry because downloaders' differences are predominantly specific to the type of product being downloaded. Therefore, implications derived from music/movie downloaders' features are oriented towards the entertainment industry and implications consequential of software downloaders' features are directed at the software industry.

6.4.1 Implications for the entertainment industry

The distinctive feature of never-paying music/movie downloaders (more negative attitude towards newness) can help focus anti-piracy campaigns towards this large and unresponsive group. Such campaigns ought to avoid insisting that one should not "pirate" or "illegally download" content from the Internet because the targets of these ads, being well-aware of their inconsistent behavior, alleviate the arising tension simply by undervaluing the due compensation of creators for their original works. A similar reaction is provoked by anti-smoking campaigns on smokers, who reduce the stress of cognitive dissonance by underestimating the messages about the adverse health effects of tobacco (Freeman, Hennessy, & Marzullo, 2001). Instead, campaigns directed to never-paying downloaders could be more effective if they attack the root of the problem by using positive messages to celebrate the value of artistic creativity. As increasing the awareness of an unresponsive public can be quite challenging, it would be advisable to seek the involvement of public authorities, media, educational institutions, etc. For example, there is evidence that anti-tobacco campaigns are more effective when simultaneously conducted by educational institutions (Flynn *et al.*, 1992). To illustrate a good practice, a 2014 educational pilot project named "Defend our Culture" [*Defiende nuestra cultura*] and developed by *La Coalición*, proposed

workshops in ten schools within the Madrid community with the aim of promoting awareness among children about the value in respecting intellectual property rights.

That always-paying music/movie downloaders are distinguished by having fewer years of experience on the Internet has two important practical implications. First, the entertainment industry should assume that over time, as they gain enough experience, many of these downloaders will stop paying. Second, to lessen this inevitable trend, the entertainment industry should tailor its messages aimed at this group of downloaders. Campaigns should praise consistent model behavior and promote paying as a deliberate option and not as a mere consequence of ignoring how to download for free. They should also foster the idea that an inconsistent behavior does not develop into a consistent one just because it is performed by many.

The fact that eclectic music/movie downloaders differentiate themselves by participating in more online activities can be used to persuade them to correct their contradictory behavior. The eclectic downloaders operate in diverse Internet settings and, as they replicate various payment practices from different environments, they may feel less dissonant than downloaders who never pay. To avoid this problem, campaigns aimed at the eclectic downloaders should help them realize that (1) they apply a double standard when they sometimes pay and sometimes freeload, and that (2) the obligation to compensate the creators does not depend on the circumstances such as the payment pattern of an environment or an opportunity to download for free. Making people aware that they are acting hypocritically has been effective in changing their inconsistent behaviors to socially desirable ones, such as efficient water use (Dickerson, Thibodeau, Aronson, & Miller, 1992), safe driving (Fointiat, 2004), recycling (Fried & Aronson,

1995), AIDS prevention (Stone, Aronson, Crain, Winslow, & Fried, 1994), and assistance to the homeless (Stone, Wiegand, Cooper, & Aronson, 1997).

6.4.2 Implications for the software industry

The fact that not a single factor tested could distinguish the large group of never-paying software downloaders (77.6%) apart from the other groups of downloaders bears an important implication. The software industry must assume that this payment behavior is already generalized across all strata of society. Developing an anti-piracy campaign in the absence of factors distinguishing never-paying software downloaders could result challenging because one of the central aspects of marketing practice is the targeting of distinct segments of homogeneous consumers who can be identified by readily available information (Dickson & Ginter, 1987; Fuat Firat & Shultz, 1997; Rossi, McCulloch, & Allenby, 1996).

That always-paying software downloaders are characterized by being older carries an important implication regardless of the cause. One possible cause is that software downloaders, as they get older, mature into copyright-abiding citizens (if, for example, a longitudinal study indicates that the group of always-paying downloaders grows as the population gets older). The other possible cause is that always paying for software is something from the past generation (if, for example, a longitudinal study indicates that the group of always-paying downloaders decreases despite the population getting older). In both cases, the software industry must attract younger downloaders into the always-paying group. Campaigns aimed at software downloaders should claim that it is never too soon to start acting responsibly about software downloading. Another

approach should consist of vigorously communicating special offers and age promotions to younger software downloaders. Software companies, such as Microsoft and Adobe, already have virtual stores for eligible students, where software packages are offered at a fraction of the regular retail price.

Finally, eclectic software downloaders, equally differentiating themselves by participating in more online activities, should also be persuaded to correct their contradictory behavior in a similar way than the one suggested for eclectic music/movie downloaders. Moreover, as eclectics software downloaders are also characterized by a higher sensibility to quality products, and adhering to the view that piracy may constitute a way to reduce functional risk (Gupta *et al.*, 2004), offering free software trial before purchase should constitute a persistent managerial practice over time.

6.5 FUTURE AVENUES OF RESEARCH

A possible avenue is to examine to what extent these findings can be extrapolated to other areas. As both the arousal and reduction of cognitive dissonance can vary from one culture to another (Heine & Lehman, 1997; Hoshino-Browne *et al.*, 2005), future studies should also examine cultural differences to understand this phenomenon from a broader perspective. For example, in a more interrelated society than the Spanish one, the underestimation of authors' due compensation could be conditioned by an attitude developed in closer connection with family, friends, and colleagues. It would also be interesting to extend the scope of this study to other downloadable materials, especially digital books and videogames. Being both entertainment-oriented products, this extension is likely to reinforce our conclusions about music and movies downloaders.

Another opportunity is to research the same phenomenon over time. A longitudinal study would help (1) distinguish whether each factor's influence is episodic or continuous (for example, by discovering whether the influence of price sensitivity on movie downloaders is restricted to periods of economic crisis), and (2) identify how downloaders evolve over time (for example, by observing whether the group of always-paying downloaders increases or decreases as population is aging).

Finally, a topic largely unexplored but particularly relevant to the entertainment industry is the methodical measure of the effectiveness of anti-piracy campaigns. According to evidence gathered by Tellis (2004), advertisers from various product categories steadily repeat ineffective advertising campaigns because these advertisers (1) do not systematically measure the effectiveness of such campaigns and (2) naively assume that advertising has an automatic persuasive effect. The need to measure advertising effectiveness is even more crucial when a part of the public is unsympathetic to the message, as is usually the case for anti-piracy campaigns. Therefore, it is urgent to investigate the true impact of anti-piracy messages on both downloaders' attitudes and behaviors. It is also important to compare the persuasiveness of different anti-piracy communication approaches (educational vs. threatening messages, emotional vs. rational messages, etc.) so as to choose the focus of future campaigns in such a way that is based on well documented criteria.

Conclusions (English)

In recent years, the magnitude of digital piracy has grown dramatically worldwide and particularly in Spain. The estimated losses are massive for the various businesses that make up the entertainment and software industries. Concerning piracy, downloaders are far from exhibiting a homogeneous conduct: some always pay to download music, movies, or software; some others pay from time to time; and yet others simply never pay. Unfortunately, this third group is (by far) the largest and most-likely to grow in the upcoming years.

This dissertation has identified some factors that help explain the divergent payment behaviors. The empirical work offers four important innovations compared to previous studies: a never before used theoretical framework to explain digital piracy (the theory of cognitive dissonance); the simultaneous analysis of three important downloadable types of content (music, movies and software); a sample representative of all strata of the population (compared to the all too common student samples); and the use of a non-intimidating terminology in the questionnaire (by avoiding labels such as "pirate" for people who do not necessarily consider themselves as such, but who illicitly download content from the web).

Results indicate that those who never pay for music and movie downloads are characterized by undervaluing creativity. It is therefore strongly suggested that public and private efforts to discourage illegal downloading concentrate on teaching the value of creative innovation through educational institutions and the media.

Evidence also suggests that those who always pay for music and movies differ from other downloaders by having used the Internet for fewer years. This finding is quite alarming because it shows that, as Internet downloaders gain experience, they become less likely to keep paying for every download. Given that a substantial portion of the population is still not familiar with the Internet, the share of unpaid downloading is expected to keep growing vividly in upcoming years.

Another finding shows that being involved in many activities online is a peculiarity of those who only pay at times when downloading music, movies, and software. In order to steer these individuals into constant and authorized downloading, campaigns should emphasize that (1) only paying from time to time is incoherent, and (2) it is essential to compensate the work of artists regardless of the downloading options available online.

Conclusions (Spanish)

Durante los últimos años, la magnitud de la piratería digital ha crecido dramáticamente en todo el mundo y, en particular, en España. Son enormes las pérdidas estimadas para las variadas empresas que integran las industrias del entretenimiento y de la informática. Respecto a la piratería, los internautas no tienen (ni mucho menos) un comportamiento homogéneo: algunos pagan siempre que descargan contenidos de música, cine o informática; otros pagan de vez en cuando; y otros no pagan nunca. Desgraciadamente, este tercer grupo es (con gran diferencia) el más numeroso y el que previsiblemente va a aumentar más en los próximos años.

Esta tesis ha identificado algunos factores que contribuyen a explicar unos comportamientos de pago tan divergentes. El trabajo empírico realizado ofrece cuatro importantes novedades en comparación con estudios previos: un marco teórico nunca usado anteriormente para explicar la piratería digital (la teoría de la disonancia cognitiva); un análisis simultáneo de tres importantes tipos de contenidos descargables (música, películas y programas informáticos); una muestra representativa de todos los estratos de población (en comparación con las demasiado habituales muestras de estudiantes); y el uso de una terminología no intimidante en el cuestionario (que evita calificar como "piratas" a personas que no necesariamente se consideran tales, aunque descarguen contenidos ilícitamente).

Los resultados muestran que los que nunca pagan sus descargas de música y cine se caracterizan por dar un menor valor relativo a la creatividad. Por eso sería muy

recomendable que el esfuerzo de las empresas/organizaciones afectadas se concentrase en enseñar el valor de la creatividad a través de las instituciones educativas y los medios de comunicación.

Los resultados también revelan que los que siempre pagan las descargas de música y cine se caracterizan por haber estado usando Internet durante menos años. Es hallazgo es bastante inquietante porque pone de manifiesto que, cuando se gana experiencia en el uso de Internet, se hace menos probable seguir pagando siempre. Teniendo en cuenta que una parte importante de la población todavía no está familiarizada con Internet, es previsible que en los próximos años sigan aumentando dramáticamente las descargas no pagadas.

Otro hallazgo revela que una gran cantidad de actividades online es lo distintivo de quienes solo pagan en algunas de las veces en que descargan contenidos de música, cine e informática. Para estimular a estas personas sería conveniente enfatizar (1) en la falta de coherencia que supone pagar unas veces sí y otras veces no, y (2) en la conveniencia de retribuir el trabajo de los artistas con independencia de que ciertos comportamientos irresponsables estén muy extendidos en la red.

Appendix

Table A1: Cross-tabulations between music downloading habits and demographics

	Sample	Groups' share of sample		
		ALWAYS PAY	ECLECTICS	NEVER PAY
		(*N*=178)	(*N*=373)	(*N*=1,843)
Sex				
Male	1,384	6.9	15.5	77.7
Female	1,010	8.2	15.7	76.0
Age				
14-24 years	663	8.4	17.3	74.2
25-34 years	584	7.4	17.1	75.5
35-44 years	618	7.3	14.4	78.3
45-54 years	338	5.6	13.3	81.1
55+ years	191	7.9	12.6	79.6
Social class				
Lower	89	10.1	20.2	69.7
Lower-middle	469	8.3	15.8	75.9
Middle-middle	973	7.0	13.9	79.1
Upper-middle	621	6.1	16.1	77.8
Upper	242	9.9	19.0	71.1
Size of municipality				
Below 2000	101	12.9	12.9	74.3
2000 to 5000	130	6.9	18.5	74.6
5000 to 10,000	175	7.4	18.9	73.7
10,000 to 50,000	674	7.0	15.1	77.9
50,000 to 200,000	649	6.6	16.5	76.9
200,000 to 500,000	245	6.5	16.3	77.1
Above 500,000	420	8.8	12.9	78.3
Presence of children at home				
No	1,665	7.3	16.0	76.7
Yes	729	7.7	14.7	77.6

Note. Compiled by author.

Table A2: Cross-tabulations between movie downloading habits and demographics

	Sample	Groups' share of sample		
		ALWAYS PAY (*N*=118)	ECLECTICS (*N*=235)	NEVER PAY (*N*=1,554)
Sex				
Male	1,121	6.4	12.0	81.6
Female	786	5.9	12.8	81.3
Age				
14-24 years	477	8.8	12.2	79.0
25-34 years	460	4.3	12.8	82.8
35-44 years	516	5.0	12.0	82.9
45-54 years	292	4.8	10.6	84.6
55+ years	162	9.9	15.4	74.7
Social class				
Lower	55	5.5	16.4	78.2
Lower-middle	368	7.1	11.7	81.3
Middle-middle	774	6.7	13.6	79.7
Upper-middle	523	4.6	10.7	84.7
Upper	187	7.0	11.8	81.3
Size of municipality				
Below 2000	69	14.5	5.8	79.7
2000 to 5000	103	5.8	8.7	85.4
5000 to 10,000	124	9.7	14.5	75.8
10,000 to 50,000	523	5.5	12.0	82.4
50,000 to 200,000	527	5.5	15.6	78.9
200,000 to 500,000	204	4.9	11.8	83.3
Above 500,000	357	6.2	9.8	84.0
Presence of children at home				
No	1,315	6.7	11.8	81.5
Yes	592	5.1	13.5	81.4

Note. Compiled by author.

Table A3: Cross-tabulations between software downloading habits and demographics

	Sample	Groups' share of sample		
		ALWAYS PAY (*N*=95)	ECLECTICS (*N*=198)	NEVER PAY (*N*=1,016)
Sex				
Male	872	7.3	15.4	77.3
Female	437	7.1	14.6	78.3
Age				
14-24 years	292	5.1	14.7	80.1
25-34 years	338	5.9	13.6	80.5
35-44 years	364	7.4	14.0	78.6
45-54 years	190	8.9	20.5	70.5
55+ years	125	12.8	15.2	72.0
Social class				
Lower	35	5.7	31.4	62.9
Lower-middle	216	5.1	14.4	80.6
Middle-middle	516	7.6	14.3	78.1
Upper-middle	388	7.0	14.4	78.6
Upper	154	10.4	16.9	72.7
Size of municipality				
Below 2000	50	10.0	8.0	82.0
2000 to 5000	73	11.0	9.6	79.5
5000 to 10,000	94	4.3	21.3	74.5
10,000 to 50,000	345	6.7	15.7	77.7
50,000 to 200,000	374	6.1	14.4	79.4
200,000 to 500,000	140	10.0	15.7	74.3
Above 500,000	233	7.7	15.9	76.4
Presence of children at home				
No	923	7.7	14.4	77.9
Yes	386	6.2	16.8	76.9

Note. Compiled by author.

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