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WHY DO PIRATES DEMAND MOVIES? EMPIRICAL EVIDENCE FROM ITALY

Abstract

The aim of this paper is to partition the general population of «pirates» into market segments: movie pirates are heterogeneous among their motivations and attitudes to use piracy and their willingness to pay for the original compared to the copy. The main research goals will focus on examining both consumers' perception of pirated movies consumption and their motivations to pirate by different means.

We use data survey collected from a sampling of 2038 adults (over 15 years old) with the aim to identify different pirates' groups as well as the underlying features that characterize different types of pirates.

Using factor analysis and cluster analysis we are able to identify four clusters.

This result allows us to investigate demand segments and piracy behaviour and can suggest areas where policies and practices to fight against piracy could be strengthened.

Key words:

Movie piracy, Consumer behaviour, Cluster analysis.

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1. Introduction

Piracy has considerably grown since the development of digital distribution channels and the advancement of network structures, such as the Internet. The availability of digital distribution channels for media content makes it easier now to copy a digital product illegally and, as the copy of a copy does not usually deteriorate in terms of quality, the activity of copying has become a widespread phenomenon.

Since the development of the highly popular file-sharing program Napster, in 1999, economists were engaged in the debate about piracy and an important number of articles were devoted to the problem of digital piracy. With respect to piracy literature, most of existing studies were dedicated to theoretical aspects of the consequences of copying or to examine the effect of online piracy on physical media sales.

While music piracy has generated many economic studies, there are fewer studies that specifically focus on movie piracy. Nevertheless, it may be particularly important to analyze the impact of video piracy separately from music piracy because the situation of each industry is unique. Moreover, there are different risks and obstacles that individuals must face when using the illegal items and there are also differences in size, download speed, digital rights protection and consumption patterns between the two types of content (Liebowitz: 2006; Smith, Telang: 2009). Moreover, movie piracy has a different impact on each segments of the movie business, a complication not found for music, whose distribution chain is simpler. Hence, the results obtained in the music industry cannot be applied as such to analyze movie piracy.

The paper's research goal is to understand the behaviours of the people who are involved in movie piracy, exploring the motivations for the purchase and download of pirated movies and the rationale for engaging with this illegal activity.

Our assumption is that movie pirates are heterogeneous among their motivations and attitudes to use piracy and their willingness to pay for the original compared to the copy. Using a clusters analysis, it is possible to partition pirates and to have a close look to investigate demand segments and piracy behaviour; moreover, it could be useful to investigate which, among the clusters, could be induced to change the piracy behaviour. The results can suggest areas where policies and practices to fight against piracy could be strengthened.

The result will present a pirates' demand segmentation that can be used both in a public and in an industrial perspective to understand if and how it is possible to change the piracy behaviour.

This paper fits into the economics literature on digital goods, both studying interactions among various distribution channels and the consumers' behaviour.

The paper is organised as follows. In section 2, we will review the relevant empirical literature; in section 3 we will give a general description of the different types of piracy taken in account and present descriptive statistics from our data set; in section 4 we will present methodology; in section 5 we will present the empirical models and discuss the results. Finally, in section 6, we will discuss the implication of these findings, the limitations of the analysis and areas for future research.

2. Literature review

The empirical literature on movie piracy is scarce and the results from the few empirical studies are ambiguous. The empirical work on piracy has predominantly focused on estimating piracy effects on demand for legitimate content.

Bounie, Waelbroeck and Bourreau (2006) survey a sample of 620 university members including undergraduate students, graduate students and professors to assess the effect of digital piracy on legal demand. They find no impact of piracy on theatre attendance and a strong negative impact on video rentals and purchases.

Rob and Waldfogel (2007) use survey data from 500 University of Pennsylvania undergraduates to study whether (and how much) unpaid consumption of movies displaces paid consumption. The authors estimate that the unpaid consumption of movies reduced paid consumption by 3.5 percent among college students. They analyze legal and unauthorized viewing of the top 50 movies during the period 2003-2005 and find that piracy displaces paid consumption by nearly 100% on the first viewing and 20% of the second viewing.

According to the authors, the basic characteristics of movies and music are different because of the time consuming nature and non-repetitive usage of movies compared to music.

An empirical study, conducted by De Vany and Walls (2007), shows that Internet piracy diminished the box-office revenues of a widely released motion picture. They estimate that pre-release and contemporaneous Internet downloads of a major studio movie accelerated its box-office revenue decline and approximate the losses from Internet piracy to 42 million dollars for the particular movie.

Smith and Telang (2009) investigated the consequence of digital piracy on DVD sales over the period 2000-2003: their results suggest that the rise of the Internet and broadband access led to a \$1.4 billion increase in DVD sales.

The same authors (2007) collected data on the availability of movies on the Bit Torrent to measure their impact on DVD sales during eight months between 2005 and 2006. Their results show that both ad-cable and over-the-air movies experience a large increase in sales immediately following their broad-

cast. Moreover, they measure the impact of pirated content on after-broadcast DVD sales: the results show a significant increase in piracy after movies are broadcast on over-the-air channels. The results generally underline the complementary relationship between free content distribution (TV and cable broadcast as well as P2P network) and the selling of DVDs. Their data show that TV and cable broadcast stimulate digital piracy as well as DVD sales without substituting a sale by a download, suggesting the existence of two distinct demands, one for the DVDs and one for pirated movies.

Danaher, Dhanasobhon, Smith, Telang (2010) examine the interaction between legitimate and illegitimate digital distribution channels. They quantify the effect of the removal of NBC content from Apple's iTunes store in December 2007, and its restoration in September 2008, as natural shocks to the supply of legitimate digital content and analyse its impact on demand through DVD and piracy channels. Their results show a significant substitution between legitimate digital distribution and piracy channels and, in contrast, they find no change in the Amazon.com sales rank of NBC television season box sets, implying that though customers who cannot purchase digitally may turn to piracy, they do not consider DVD box sets as a substitute to digital downloads.

The original contribute of this paper refers to the original set of data used to explore how consumers manage decisions to pirate movies and to partition the general population of pirates into market segments. The result will be a pirates' demand segmentation that can be used both in a public and in an industrial perspective to understand if and how it is possible to change the piracy behaviour and to recover consumers.

3. Sample description

The sample survey results will be presented in this section.

The survey was conducted by IPSOS from 4th to 7th February 2009 by CAPI methodology (Computer Aided Personal Interview). The data were collected from a sampling of 2038 adults (over 15 years old) representative of the whole Italian population as far as gender, age and geographical area. The respondents who got in contact with any form of piracy (661 «pirates») have successively been in depth interviewed (from 13th to 27th February), with a main focus on their attitude and their previous experience with piracy as well as its contributing factors.

The demographic information about the participants includes age, gender, provenience and occupation. The demographic data will be presented in section 4, with cluster analysis results¹.

Overall, pirates represent 32% of the population. Pirates have a close profile to the analysed sample of population for gender (little higher male prevalence), provenience and town size (Table 5). The most relevant variable is the age (Table 5, nr. 2). However, even if pirates can be found among all age groups, there is a slight decrease with age: pirates are mainly represented in the 15–34 age range, whereas their presence decreases in the over 45–54 age range².

The survey consisted of questions to determine the scale of piracy, the features of pirated movies consumption and the rationale for engaging with the piracy³. Particularly, among others, respondents were asked how often they go to movie theatres and how frequently they rent or purchase a video, how often they get unauthorized physical and digital copies and by which means (purchasing illegal DVDs, borrowing/viewing material illegally copied, internet peer-to-peer networks, specialized internet sites, intranet networks, physical exchanges). The survey also investigated what the pirates would do if they could not access such pirated material.

For the purpose of the analysis we consider the three types of piracy:

- Physical piracy, including the sale/purchase of counterfeit and home-copied DVDs⁴.
- Digital piracy, including unauthorised material which is ultimately sourced from and distributed via digital platforms such as the Internet – including material which is file-shared/downloaded onto a PC or other devices, illegally streamed, copied onto a memory stick, burned onto a DVD or emailed⁵.

¹ We will present all the total sample data in Section 4 with cluster analysis results. In this section it's possible find the reference Table for each relevant feature.

² In detail, piracy penetration ratio is 30pts lower for over 45 years old consumers than for 15-34 years old consumers.

³ Why and how they accessed the pirate material, the average number of pirated movies, the incidence of the phenomenon considering the piracy trend of the last 12 months, what is done with the unofficial copies made after the usage.

⁴ Counterfeit DVDs are any fake DVD produced commercially and typically sold from market stalls, by street traders etc. Home-copied DVDs are those made by individuals for themselves and/or friends or colleagues.

⁵ File sharing involves distributing and receiving digital files over peer to peer (P2P) networks. Files are typically stored on personal computers or other mobile devices, with users typically making files available and receiving them with file-sharing software via the Internet. Apart from this, infringing material can also be simply downloaded from various websites and social networks. Streaming involves accessing continuously online content rather than downloading a file onto the hard drive.

- Secondary piracy that consists in viewing/borrowing material illegally copied by others: as a result the individuals involved in it do not pay for a legal source of this material.

Survey's data reveal that physical piracy has an incidence of 17%, especially as to counterfeit DVDs (available on the market, in the streets etc). Digital piracy involves 21% of the respondents: downloading and P2P are the principal activities, with electronic distribution from non-official sources (memory stick). Streaming has been chosen by 4% of respondents.

Altogether 27% of the sample has been involved in at least one form of direct piracy (physical or digital), though secondary piracy (borrowing/viewing material illegally copied by others) is widespread (22% and 16%).

A large percentage of respondents get pirated movies by different means: on P2P networks, from an intranet, by physical means (CD-R, DVD-R, USB keys..).

On average each pirate got 21 movies in the last year, by different means, summarized in Table 1.

Table 1

Piracy: average number of pirated movies in the last year

Physical piracy	Counterfeit DVDs	7,9
	Home copied DVDs	6,4
Digital piracy	Download	8,8
	Streaming	3,8
	Peer to peer	12,6
	Digital copies	6,5
Secondary piracy	Borrowing unofficial	5,4
	Viewing unofficial	7,3

About the life cycle of pirated movie, we can observe some differences. Therefore, as to physical piracy, first viewings are most pirated movies, while for digital piracy there is a high percentage of titles that are still not available in theatres⁶. Generally speaking, among digital pirates, just one third of the pirated titles are not first viewings.

With regard to the previous year, the levels of piracy are relatively stable, although there is evidence of a decline in physical piracy (-32%) and unofficial streaming appears to be a widespread form of piracy (+7%).

⁶ 25% by streaming, 22% by P2P, 20% by download, 14% for digital copies.

The quality of the pirated products appears satisfying when they are obtained by the digital sources: dissatisfaction is a little higher than 10%. The situation changes if we consider physical piracy where dissatisfaction is about 30%.

What do pirates do when they have a title in their hands? We can point out that digital pirates watch everything, or nearly everything, they can download⁷.

After viewing, the typical life cycle of a title is to be filed and lent or given to other people as a gift. Few people say they simply eliminate the copy (especially digital pirates).

As to legal consumption, we can underline that pirates get films also through legal means, too (Table 9).

4. Methodology

Using data survey collected by IPSOS and with the aim to identify different pirates' groups, each of one homogenous, a cluster analysis was conducted on the basis of 30 items (i.e. attitudinal statements) to measure attitudes towards movie piracy. All 30 statements were anchored on a Likert-type scale ranging from (1) strongly disagree to (5) strongly agree.

In order to obtain a reduction of complexity in the number of items which are likely to explain the phenomenon, a factor analysis using the Principal Component Analysis (PCA) was conducted prior to the cluster analysis. The aim of the PCA was to transform the set of 30 items in a new and reduced set of variables (indeed the principal components), so that most of the variance (62%) was explained by the first 5<30 components. The results are summarized in Tables 2 and 3.

The results from the factorial analysis are five main factors describing the most relevant characteristics of the different approaches to piracy. The five main factors characterization are explained in Table 3.

Eight items explain the 1st factor (economics/saving) characterization. Out of the total items, four have an economic nature (money saving, nr. 8, 9, 10, 12), two are connected to the practical and quick use (time saving, nr. 17, 18), one underlines the opportunity to find products that would not have been found otherwise (nr. 11) and one, which is common to all factors, is connected to the missing perception of an illegal action (nr. 26).

⁷ About 70% of them declare they have watched all the films they have downloaded. This percentage slightly decreases if we consider peer to peer, which results to be less selective by its nature.

Table 2

Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
I want high quality audiovisual materials	13,133	43,776	43,776	4,968	16,561	16,561
I am not interested in the extras of an original DVD	2,223	7,409	51,185	4,254	14,182	30,743
It is the best way to get hold of a film	1,153	3,845	55,030	3,550	11,835	42,577
I do not want to wait for the original versions to be in the stores	1,057	3,522	58,552	2,896	9,655	52,232
I want to choose from a wide range of films	0,896	2,987	61,539	2,792	9,307	61,539
I can find all the films on first release	0,765	2,551	64,091			
I always want to be up to date, a step ahead of the others	0,735	2,449	66,540			
It is far cheaper than buying a DVD	0,699	2,329	68,868			
It is far cheaper than going to the cinema	0,670	2,234	71,102			
It is far cheaper than renting a DVD	0,608	2,026	73,129			
I get hold of films that I would not have seen otherwise	0,582	1,941	75,069			
It is a way to save up money	0,558	1,859	76,928			
I want to evaluate the film before buying it	0,543	1,809	78,737			
I want to be at ease when watching a film	0,509	1,697	80,434			
I do not want to go to the cinema	0,494	1,645	82,079			
I do not want go and look for a DVD	0,490	1,632	83,711			
It is far more practical and simple to watch a film	0,461	1,537	85,248			
It is quicker to watch a film	0,436	1,454	86,702			
I want to watch films that have not been on TV yet	0,410	1,367	88,069			
I want to watch films that I have missed on TV	0,402	1,341	89,410			
I easily get hold of a film that has already been broadcast on TV	0,387	1,291	90,701			
I want to get hold of a film that is no longer on TV or that is hard to find in the stores	0,379	1,262	91,963			
I want to watch films that are broadcast on TV channels that I do not have	0,363	1,209	93,172			
I want to watch all the films that I have missed at the cinema	0,350	1,166	94,338			
I do not damage the cinema industry	0,330	1,100	95,437			
It is a chance more, there are no reasons not to do it	0,299	0,996	96,433			
I do not harm anyone if I get a non-official copy	0,289	0,963	97,396			
I do what everybody does	0,273	0,911	98,307			
It is not easy to find who gets a non-official film	0,265	0,883	99,190			
Who gets a film from non-official sources is not punished	0,243	0,810	100,000			

Extraction Method: Principal Component Analysis.

Table 3

Rotated Component Matrix(a)

	Saving	1st showing / up-to-date	Cult	Laziness	Innocence (underesti- mation)
1. I want some high quality audiovisual material	0,16	<u>0,51</u>	0,06	0,30	0,27
2. I am not interested in the extras of an original DVD	0,34	0,02	0,12	0,27	<u>0,46</u>
3. It is the best way to get a film	0,42	<u>0,54</u>	0,21	0,22	0,21
4. I do not want to wait for the original versions to be in stores	0,32	<u>0,57</u>	0,35	0,22	0,07
5. I want to choose from a wide range of films	0,28	<u>0,60</u>	0,37	0,22	0,18
6. I can find all the films on first release	0,45	<u>0,62</u>	0,21	0,17	0,14
7. I always want to be up to date, a step ahead of the others	0,16	<u>0,71</u>	0,22	0,20	0,26
8. It is far cheaper than buying a DVD	<u>0,83</u>	0,13	0,13	0,10	0,07
9. It is far cheaper than going to the cinema	<u>0,78</u>	0,20	0,11	0,20	0,09
10. It is far cheaper than renting a DVD	<u>0,75</u>	0,09	0,17	0,21	0,11
11. I get hold of films that I would not have seen otherwise	<u>0,46</u>	0,21	<u>0,44</u>	0,25	0,23
12. It is a way to save up money	<u>0,82</u>	0,20	0,10	0,05	0,16
13. I want to evaluate the film before buying it	-0,11	<u>0,55</u>	0,32	0,14	0,39
14. I want to be at ease when watching a film	0,33	0,20	0,20	<u>0,71</u>	0,05
15. I do not want to go to the cinema	0,19	0,26	0,13	<u>0,7</u>	0,23
16. I do not want to go and look for a DVD	0,16	0,31	0,29	<u>0,63</u>	0,21
17. It is far more practical and simple to watch a film	<u>0,56</u>	0,28	0,28	0,39	0,05
18. It is the quickest way to watch a film	<u>0,51</u>	0,34	0,21	0,37	0,06
19. I want to watch films that have not been on TV yet	0,37	<u>0,54</u>	0,28	0,29	0,09
20. I want to watch films that I have missed on TV	0,11	0,26	<u>0,74</u>	0,16	0,19
21. I easily get hold of a film that has already been broadcast on TV	0,26	0,26	<u>0,62</u>	0,19	0,28
22. I want to get hold of a film that is no longer on TV or that is hard to find in stores	0,2	0,10	<u>0,75</u>	0,09	0,18

	Saving	1st showing / up-to-date	Cult	Laziness	Innocence (underesti- mation)
23. I want to watch films that are broadcast on TV channels that I do not have	0,14	0,41	<u>0,57</u>	0,26	0,18
24. I want to watch all the films that I have missed at the cinema	0,22	0,46	<u>0,56</u>	0,17	0,13
25. I do not damage the cinema industry	-0,01	0,10	0,19	0,13	<u>0,76</u>
26. It is a chance more, there are no reasons not to do it	<u>0,4</u>	0,18	0,33	0,30	<u>0,41</u>
27. I do not harm anyone if I get a non-official copy	0,37	0,17	0,20	0,25	<u>0,5</u>
28. I do what everybody does	0,30	0,34	0,15	<u>0,47</u>	0,30
29. It is not easy to find who gets a non-official film	0,08	0,38	0,28	0,15	<u>0,54</u>
30. Who gets a film from non-official sources is not punished	0,13	0,35	0,12	-0,03	<u>0,63</u>

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 Rotation converged in 7 iterations.

Eight items define also the 2nd factor (up to date demand). Four of these items are connected to the need of the real time up-to-date (impatience and time to be ready, nr. 3, 4, 6, 7). They deal with products belonging to different distribution channels (cinema, home-video, TV) and are considered to be the best way to get a film. One item is about the need to have a high-quality audiovisual material (nr. 1) showing that the factor is linked not only to the time but also to the quality (therefore to the use). One item can define the phenomenon being the purchase and the use complementary (nr. 13): it refers to the typical need of the experience goods to get some information about the quality of the product.

The 3rd factor (cult) is composed of six items which find out the pirates' perception of a lack of alternatives to get films that would not be available otherwise (either because no longer on TV/cinema or because never broadcast before or because are only on not available TV channels (nr. 11, 20, 21, 22, 23, 24).

The 4th factor (laziness) presents three items connected to the comfortable domestic use, staying at home (nr. 14, 15, 16). While another item reveals the awareness of a justifiable behaviour as common to many other people (nr. 28).

The 5th factor (innocence/underestimation) presents five relevant items: three are connected to the missing perception of the potential damages to the overall industry (nr. 25, 26, 27) and two are about the lack of punishment in case of piracy (nr. 29, 30).

A cluster analysis over the five main components has then been effected using the k-means technique offered by SPSS. The analysis has been repeated seven times varying the number of clusters (from 3 to 6). The solution giving 4 clusters has been judged the best, for the distance between the barycentres on the four-dimensional space; therefore it has been chosen and the results have been added to the data set. The four clusters are summarized in Table 4.

Table 4

From components to cluster

	Seekers	Savers	Demanding	Lazy
Saving	0,33	1,03	-0,46	0,64
1st showing/ up-to-date	-0,20	-0,64	0,36	-0,69
Cult	1,09	-0,20	0,02	-1,03
Laziness	0,04	-1,41	0,05	0,98
Innocence (underestimation)	-1,30	0,33	0,29	-0,11
Weights	20%	15%	54%	11%

5. Cluster analysis results

The cluster analysis results will be given in this section. Paragraph 5.1 focuses on the clusters themselves, in terms of the most relevant aspects in order to establish the pirates' segmentation. Paragraph 5.2 aims to understand the important outcomes which have resulted from the investigation.

5.1. Cluster description

We have clearly defined 4 clusters of pirates.

Cluster 1, defined as (cult) in item three, counts for 20%, the 2nd cluster, defined as (saving) in item one counts for 15%; the 3rd cluster, defined as (1st showing/up-to-date) by the 2nd factor counts for 54%, and finally the 4th cluster, defined by the 4th factor (laziness), counts for 11%.

For each cluster we will describe:

- the incidence and the profile of the individuals that have purchased, downloaded, borrowed pirated films;
- the perception of the pace of the phenomenon (growth, decrease, stability);

- the average number of pirated films over the last 12 months, according to the different use and channels;
- the following use of the pirated film (eliminated/filed/lent);
- rationale for the different forms of piracy.

Step by step we will analyse other features relevant in order to create a segmentation (occupation, scholarship, provenience). The most relevant socio-demographics data, both for the total sample and for each cluster, are summarized in Table 5.

Table 5

Profile demographics (total sample + clusters,%)

			CLUSTER			
	TOTAL SAMPLE	PIRATES	CL 1	CL 2	CL 3	CL 4
<i>Base (n)*</i>	2038	661	135	99	358	69
1. GENDER						
Male	48	52	55	55	50	50
Female	52	48	45	45	50	50
CLUSTER						
2. AGE						
	TOTAL SAMPLE	PIRATES	1	2	3	4
15-24 y.o.	14	25	30	27	23	19
25-34 y.o.	18	27	22	34	27,6	22,84
35-44 y.o.	22	24	24	20	26,44	20,64
45-54 y.o.	17	13	15	11	13,37	15,71
55-99 y.o.	29	10	10	8	9,14	22,06
CLUSTER						
3. GEOGRAPHICAL AREA						
	TOTAL SAMPLE	PIRATES	1	2	3	4
North West	26	28	23	34	26	38
North East	19	16	16	20	17	7
Center	19	19	23	19	20	9
South/Island	36	37	38	27	37	46
CLUSTER						
4. CITY SIZE						
	TOTAL SAMPLE	PIRATES	1	2	3	4
Up to10.000 inh.	38	36	48	23	36	28
From 10.001 to 30.000 inh.	23	25	19	26	25	33
From 30.001 to 100.000 inh.	19	18	8	26	17	28
From 100.001 to 250.000 inh.	7	8	5	9	9	1
Over 250.000 inh.	14	14	19	16	12	10

5. EDUCATION	TOTAL SAMPLE	PIRATES	CLUSTER			
			1	2	3	4
Specialisation or master after degree	1	1	1	1	1	0
University	7	6	5	12	6	4
High school	3	5	3	7	5	2
Secondary school	43	57	57	55	59	46
Primary school	34	28	30	22	27	37
Elementary school	11	3	3	3	2	10
No title	1	0	1	0	0	1
			CLUSTER			
			1	2	3	4
6. PROFESSION	TOTAL SAMPLE	PIRATES				
EMPLOYED (NET)	53	61	62	59	63	56
Full time	45	54	51	51	56	48
Part time	6	7	10	8	6	8
Seasonal work	1	0	1	0	0	
NOT EMPLOYED	47	39	38	41	37	44

* The Base is the same for each feature.

5.2.1. Cluster 1: Seeker

The cluster 1 is positively characterised by factor 3 (cult) and negatively by factor 5 (innocence). Indexes show a strong awareness of the piracy offence. With reference to movie piracy, a large percentage of the respondents, 73% vs. 63% (the highest percentage of all analysed clusters), are aware of the illegality of piracy and violation of copyrights protection. Indeed, the individuals in this cluster tend to get the material which they deem to be legally inaccessible otherwise; we can therefore notice that saving and comfort are not relevant. The products they seek are not merely new films available on legal channels (cinema/home-video/TV). As a matter of fact, physical piracy is under-represented in this cluster in comparison to the questioned sample, especially as far as purchasing counterfeit DVD is concerned (usually first release movies)⁸ (see Table 6).

Unlike the questioned sample, this cluster is made of individuals that do not present any social-demographic differences as to gender and geographical area (see Table 5, nr. 1 and 3).

It is important to highlight that this cluster is over-represented in the towns with less than 10.000 inhabitants (Table 5, nr. 4). Another considerable aspect is age: individuals in the 15–24 age range are over-represented (table 5, nr. 1) and this is compatible with a low level of scholarship (22% are still students).

⁸ Street sellers only tend to have the most common and recent titles

Table 6

Piracy incidence (%)

	Pirates	Seekers	Savers	Demanding	Lazy
<i>Base</i>	661	135	99	358	69
PHYSICAL/DIGITAL PIRACY (NET)	83	82	86	82	82
PHYSICAL PIRACY (SUBNET)	52	43	49	56	55
Counterfeit DVDs	46	35	46	50	45
Home copied DVDs	24	26	12	26	30
DIGITAL PIRACY (SUBNET)	64	63	67	64	59
Download	26	26	16	29	21
Peer to peer	24	25	29	25	10
Streaming	14	12	13	16	3
Ricezione di contenuti non ufficiali	48	46	49	48	47
SECONDARY PIRACY (NET)	75	81	80	70	84
Borrowing unofficial	68	67	70	64	83
Viewing unofficial	50	58	55	44	59

These individuals have had a growing piracy trend as to digital piracy over the last 12 months and a decreasing trend as to physical piracy⁹.

They are generally less satisfied than the total sample regarding quality audiovisual pirated material. In detail this datum is summarized in table 7.

If they could not have accessed the pirated contents, in larger quantity compared to the total sample, they would have rented original DVDs (see Table 8).

⁹ The growing trend, compared to the previous year, mainly concerns downloading (26% vs. 14%), P2P (26% vs. 21%) receiving and viewing non-official contents (respectively 18% vs. 14% and 14% vs. 9%). The reason of this trend, in comparison to the total sample, is due to the higher availability of films (even if unknown) and to some recent technologies' availability: the individuals of the cluster have indeed found out new systems to pirate. As far as technologies are concerned, these people, in larger quantity than the total sample, have the Internet connection at home, (80% vs. 75%). In detail they have broadband ADSL (81% vs. 77%), fibre (6% vs. 4%) connections, and they are also more aware of the kind they have at home. That is why those who do not have any Internet connection are penalized (20% vs. 25%). Besides, they know other people that pirate and with whom they exchange the products that they have obtained. The aspect of the convenience of piracy is not relevant according to the questioned sample.

Table 7

Quality pirated movie satisfaction (total sample + cluster,%)

	Pirates	Seekers	Savers	Demanding	Lazy
<i>Base</i>	661	135	99	358	69
TOP TWO BOXES	36	29	28	42	17
(5) Extremely satisfying	8	4	7	10	4
(4) Very satisfying	28	25	21	32	13
(3) Quite satisfying	47	53	48	42	65
(2) Little satisfying	14	15	21	12	17
(1) Not satisfying at all	3	3	3	3	1

Table 8

How would you have viewed movie if not seen unofficial copy? (%)

	Pirates	Seekers	Savers	Demanding	Lazy
<i>Base</i>	661	135	99	358	69
In the cinema	21	16	16	27	5
Rented DVD	16	22	14	16	7
Bought official DVD (at release)	2	4	2	2	0
Bought official DVD (later)	3	5	3	3	0
Borrowed DVD	8	9	6	9	4
Viewed DVD someone else bought etc.	4	4	6	4	5
Pay per view TV	0	1	0	0	1
Satellite TV/digital cable	2	2	4	2	1
TV on-demand	0	0	0	0	0
Downloaded from official site	1	0	0	1	0
Free TV	12	15	13	10	19
Wouldn't have watched	30	22	36	26	57

What do they do with the pirated material? They usually lend or exchange it with other people¹⁰. Their level of legal consumption of films is on average with the sample¹¹ (see Table 9).

¹⁰ 65% vs. 57% and 25% vs. 20%.

¹¹ On average, in the last 12 months 71% have gone to the cinema 7 times; 52% have rented original DVDs 12 times; 39% have bought original DVDs 4 times and have downloaded movies official copies 4 times.

Table 9

Movie legal consumption (%)

LAST TWELVE MOUNTHS (AT LEAST ONCE)	TOTAL	cl. 1	cl. 2	cl. 3	cl. 4
Base: Total interviewed	661	135	99	358	69
In the cinema	74,3	71,0	81,4	80,2	40,0
Rented official DVDs	53,2	51,5	50,8	55,9	46,3
Bought official DVDs both in shops and on-line	47,7	38,9	51,5	52,0	36,6
Borrowed/gift official DVD	59,1	54,1	66,6	58,4	61,8
Viewed official DVDs or official downloads (of movies) someone else bought, rented, downloaded, borrowed	31,4	32,6	31,4	28,8	42,5
Paid download from official site	17,1	15,4	12,9	19,1	15,7
Viewed official copies directly on a website	16,6	23,1	10,8	16,4	13,1

So, the individuals inside the first cluster get hold of movies which they wouldn't buy otherwise because these titles are not available or they simply aren't able to get hold of by legal alternative sources. Indeed, the most part of the pirated movies are not recent titles and piracy is perceived as the only way to view them.

Moreover, they live in towns of small size, where the movie supply is scarce, even in the theatres, especially if they are not seeking first viewing movies or recent titles (at least even renting them). The individuals inside this cluster are really aware of the illegality of movie piracy and moreover they indicated that they would have viewed the material through various paid formats (i.e. cinema, DVD sales, DVD rentals, downloads etc.), if available (Table 7). Yet, they are not satisfied with pirated movie quality either.

These individuals are also very aware of the high availability of the range of titles by illegal means: so this cluster perceives the illegal supply as wider than the legal one. They also have an explorative attitude that they can easily satisfy by illegal means. In fact, these individuals declare that through piracy, they discovered new interesting movies (not necessarily recent titles) that they would not have known nor seen, rented or purchased otherwise.

5.2.2 Cluster 2: Savers

Cluster 2 is positively characterised by factor one (saving) and negatively by factors four (laziness) and two (up to date): indexes show a level of awareness of the piracy offence which is in line with the total sample. The individuals belonging to this cluster, aligned with the total of pirates, get hold of both the first

release material (still on or just out of programme schedule) and the material which is already available on DVD. The most used channels are digital piracy¹².

This cluster, compared to the questioned sample, does not present any social-demographic differences as to gender (Table 5, nr.1). It is important to highlight that this cluster is over-represented in the North (table 5, nr. 3); also the middle-sized towns (from 30.000 to 250.000 inhabitants, Table 5 nr. 4) are over-represented. Another relevant aspect is age: this cluster is younger than the sample presenting a middle-high level of scholarship; lower levels are under-represented (Table 5, nr. 5).

We can find two different piracy trends in this cluster on the basis of the last 12 months: some (16%) pirate more, while others (21%) have the opposite decreasing behaviour.

The positive trend of piracy is due to the higher acquisition of technical skills (strengthening of the line) and to a higher interaction with friends and acquaintances (51% vs. 31%).

On the contrary, the negative trend is mainly due to the lack of quality among pirated films¹³.

In this cluster, we notice a rising and overall dissatisfaction about the quality of the audiovisual pirated material (Table 7).

If they could not have accessed the pirated contents, the individuals belonging to cluster 2 would not have seen it (in line with the total sample) and would have gone to the cinema less compared to the total sample.

The usage of the pirated material principally belongs to the users that file it or, less commonly, share it with others.

The most represented legal consumptions are, against all predictions, cinema¹⁴ and, in line with the profile, lending/offering original DVDs as gift¹⁵.

The profile of pirates in the cluster 2 is characterized by costs and time saving motives, along with the consciousness of the high availability of movies by illegal means.

¹² Especially P2P (29% vs. 24%) and secondary piracy, 80% vs. 75% (especially viewing non-official contents). Downloading and physical piracy (especially copying DVDs at home) are less incident on this cluster, respectively 16% vs. 26% 12% vs. 24%.

¹³ We can especially identify a strong negative trend concerning physical piracy, mainly caused by the decrease of counterfeit DVD purchases (- 36%). At the same time, we can register a slight increase of secondary piracy and a stable level as far as digital piracy is concerned. The stability of the latter is due to two opposite paces: a positive one, which is the increase of P2P and the reception of non-official DVDs and contents and a negative one represented by the activity of downloading and streaming.

¹⁴ 81% vs. 74% declare they have gone 6 times on average in the last 12 months.

¹⁵ 67% vs. 59% 4 times on average in the last 12 months.

Costs saving motives play the major role in the explanation of the individual extent of movie piracy: illegal movie copies enable consumers to save money in comparison with consuming the same movie through commercial and legal channels¹⁶.

A substantial number of respondents also indicated that, in the absence of piracy, they would have viewed the material through means that do not necessarily involve payment (e.g. borrowing DVDs).

Overall, some viewers of pirated films indicated that they would not view the material at all if it was unavailable in unauthorized forms (Table 8).

Nevertheless, these individuals show that they are interested in movies: they would like to view good quality movies and, in their legal consumption, they choose to go to the cinema. The information could be useful to understand if and how it is possible to change their piracy behaviour.

5.2.3 Cluster 3: Demanding

This cluster contains 54% of the total respondents, representing the largest proportion of the respondents. Clearly this cluster is the most crucial group to target for combating movie piracy.

Cluster 3 is positively characterised by factor two (up to date) and by factor five (innocence), while presents a negative factor one which means that it does not have any time and/or money saving reasons. The pirated material does not result to be available in Italian cinemas yet, in larger quantity compared to the total of pirates (13% vs. 9%). Another important aspect to be underlined is that these individuals illegally get films which are already available on DVD, in less quantity compared to the total sample (37% vs. 39%).

This cluster, compared to the questioned sample, does not present any social-demographic differences as to gender, age and geographical area (Table 5).

The high rate of scholarship and the most represented occupations (many freelancers) probably involve high social classes.

People belonging to this cluster have diminished every kind of piracy in the last 12 months, except P2P and streaming (where we register a light positive pace).

Compared to the total sample, they are generally more satisfied with the quality of the audiovisual pirated material (Table 7).

If they could not have accessed the pirated contents, these people would have gone to the cinema; besides, in larger quantity than the total sample, they

¹⁶ Indeed, they don't buy counterfeit DVDs either (0% is the percentage of those who have increased the purchase of counterfeit DVDs in the last 12 months).

would have waited for the film to be available or would have paid to download or watch it from official sources (Table 8).

What do they do with the pirated material?

They usually lend or exchange it with other people (in line with the total sample).

The individuals belonging to this cluster show rather high level of film legal consumption¹⁷.

In this cluster the individuals have an attitude for demanding a prompt availability of movies; moreover they are asking for a good quality of movies they want to view. Specifically, the survey results and analyses clearly show that the consumers in the third cluster are willing to pay for legal movie versions. These consumers would like to be able to access genuine products but they can't get hold of movies they want to see in the legal marketplace. Therefore, they get hold of films that they wouldn't buy otherwise. Because of the non-legal prompt availability of the movies they would like to see, they pirate without the perception to have a negative impact on the film industry¹⁸. They could justify their behaviour as both the physical and online legal distribution channels aren't able to satisfy their movie demand: indeed, some of the movies they pirate not only are not available yet at theatres or by other legal means, but they don't know if they will ever be.

Moreover, about what they would have done if they could not have accessed such pirated materials, respondents indicated they would have viewed material in a cinema, through DVD rental or sale, paid for TV broadcasts, digitally and through various other paid formats of legal media.

Otherwise, by their scholarship level and kind of occupation (many freelancers), it is possible to infer that they have a high-income level on average. Their levels of legal consumption confirm this remark and, in turn, it is a confirmation of their real willingness to pay.

In this cluster the individuals declare that watching pirated movies is a way to sample the movie¹⁹: so piracy can also increase their demand for films. Although in the economic literature has already been argued that sampling is probably limited for movie piracy, according to these individuals, sometimes piracy allows them to sample a product such as a first release movie. This possibility may encourage the consumers both to see the movie on the big screen («sampling effect») and to spread the word, which induces others to watch it: so there is still a case for «positive informational externalities» through positive word-of-mouth.

¹⁷ On average 80% vs. 74% declare they have gone to the cinema 7 times at least in the last 12 months, 56% vs. 53% have rented original DVDs 6 times, 19% vs. 17% have downloaded official copies directly from a website 4 times.

¹⁸ «I don't really harm movie industry», 41% vs. 32%.

¹⁹ «I want to evaluate a film before buying it», 45% vs. 33%.

5.2.4 Cluster 4: Lazy

This cluster is positively characterised by factor four (laziness) and one (saving time/money) and, negatively, by factor three (cult) and two (up to date).

According to social-demographic variables, in this cluster we notice a high presence of over 55 years old people and a low presence of the young. Geographically, South and Islands and North-West are most represented; small and middle-sized towns are over-represented.

Here we find a strong presence of low level of scholarship, housewives, retired people, workers.

People belonging to this cluster have had a decreasing piracy trend in the last 12 months, as for every kind of piracy. The reasons are mainly connected to the difficulty to find the material that others have pirated; therefore they tend to use free TVs. In this cluster there is a very high consumption of home-copied DVDs (physical piracy) and secondary piracy, especially borrowing/receiving non-original DVDs.

P2P, streaming and download are under-represented compared to the pirate total sample. Besides, we register a high concentration of people without the Internet access (39% vs. 25%). The «lazy» generally use first release films, but they appear to be far more unaware of the material they are using.²⁰

According to our data survey, in this cluster there are people who mainly obtain pirated movies from physical exchanges: they are not involved in piracy and don't have a real attitude to piracy. This negative behaviour is also shown by the strong unawareness of the illegality of the piracy offence (53% vs. 37%).

If they had not accessed the pirated material, they would not have seen the film, or they would have waited for the film to be available on free TVs. Not very much represented compared to the total sample are those who would have gone to the cinema and rented original DVDs. They are generally quite satisfied with the quality of the audiovisual pirated material (Table 7).

What do they do with the pirated material?

They keep it and they file it, whereas all the other behaviours are under-represented compared to the total sample.

Individuals from cluster 4 show the lowest level of film legal consumption: only 40% vs. 74% have gone to the cinema at least one in the last 12 months. The only legal consumptions that give high percentages in this cluster are borrowing or receiving original DVDs as gift and viewing original DVDs or official

²⁰ When they were asked «Was the last film that you have seen still at the cinemas or just out of programme schedules? Or was it an old film, already available on DVD?» 7% vs. 5% answered, «I don't know».

downloads of films/TV series that somebody else had bought, rented, downloaded, borrowed²¹

The individuals in the fourth cluster show a very passive behaviour toward piracy. For these individuals all those aspects that preview an active attitude both in the activity of access and in that of post-vision of the pirated contents are strongly turned out as absentees or under-represented.

Moreover, neither are they aware if the pirated movies they view are first viewing, recent titles still available at the theatres or in DVD shops: so they don't really show to have a strong taste (and interest) for audiovisual products.

They simply view the movies that they can obtain by others: indeed they have a main «starring role» in secondary piracy, borrowing or viewing an illegal copy – as opposed to making or buying one. So individuals from cluster 4 are representative of a «drop down» piracy attitude. Even in their legal movie consumption, these individuals show to be second-hand users: their film consumption (legal or illegal) always includes intermediation and/or the intervention of other people.

Moreover they justify their behaviour because they are confident that piracy is so prevalent that it has become «socially acceptable» (all people do it: why not?).

Furthermore, illegal copies enhance consumer's mobility: the individuals in this cluster prefer staying at home instead of leaving home to go to the cinema or to rent the movie.

These individuals indicated that they would not view the material at all if it was unavailable in an unauthorized form: these users simply would «drop out of the market» for AV material if it was not available in its pirated forms.

6. Results discussion and conclusions

As far as the analysis, we can find some similarities among the cluster 1 and 3 and the cluster 2 and 4, even if pirates' attitudes and motivations among the four clusters are different.

Indeed, data reveal that the individuals of cluster 1 and 3 would never pirate regardless of the availability of a legal alternative source. Nevertheless, they don't get hold of movies they want to see. Specifically, individuals who are in the cluster 1 get even hold of old (or not recent) movies, surely not easily available in video rental shops, even for their physical constraints.

²¹ Respectively 62% vs. 59% 6 times on average in the last 12 months and 42,5% vs. 31% 9 times on average in the last 12 months.

Though online services carry far more inventory than traditional retailers, the world of abundance, theoretically allowed by the on line distribution systems (Anderson, 2004), so far, has been more illegal than legal, at least in the common perception.

These results confirm the hypothesis that the current online distribution systems do not succeed in reaching the audience and providing a legal alternative for the movies that are illegally (but effectively) distributed on the Internet. Indeed, the illegal channel is characterized by high and prompt availability, size of available titles, easy to use tools, a low cost to learn how to use different means to pirate, and low risk to be caught.

Individuals in cluster 3 strongly demand to get real time hold of up-to-date movies. They are involved in piracy as response to an inefficient online and physical distribution system, both for a wide range of available titles and for time movies' release. They are getting hold of recent movies that have not been available at theatres or by other legal means, so far and maybe they will never be. What we don't know is whether the movies have not been distributed yet or if they will ever be.

For these clusters, the type of distribution and/or the system of windowing is not effective and/or suitable. This involves a more general problem about the circulation of films not only within Europe, but also in the rest of world²². The majority of films (with the exception of those from Majors) still do not find their way into the cinemas, especially outside their home territories.

The US Major supremacy in the audiovisual market, the growing concentration of distribution, the little movies' exposure time, the reduced choice of available titles are some of the biggest obstacles faced by movie consumers who can not get hold of many audiovisual products that they would like to view. Moreover, nowadays Internet helps the consumers' exploration of unknown movies mostly neglected by legal distribution channels: so these users can know that some movies exist but they can't get hold of them by legal means.

The data survey results also manifest a general tendency of those individuals in the cluster 1 and 3 against piracy. So, if these individuals could get hold of the movies they are seeking and demanding, they wouldn't pirate.

According to Danaher (et al. 2009), if the legal purchase option is not available (either is removed or is unknown) then the individuals will start to pirate. This may also imply a spill-over effect: once individuals start to pirate, they pirate more content than they would have originally purchased, and the more they find, the more they like.

In order to change the behaviour of cluster 1 and 3, it could be useful to change the current movie distribution system, both the online and the theatrical one (wider range of available titles and a supply in real time).

²² This is a very interesting issue that will not be discussed in this paper.

Data reveal that the individuals from cluster 2 and 4 would not necessarily have paid for content in the absence of piracy. So, not every unauthorised viewing of movie counts as a lost sale. Indeed, movie piracy had no effect on demand if the people that illegally buy, copy videos or download films from the Internet would not purchase the original anyway.

Despite some similarities, there are some important differences between the two clusters. For the individuals in the second cluster, price is a key driver and they have a very high perception of piracy as a totally free activity. This is even the consequence of the perceived features of digital piracy, i.e. the seemingly low marginal costs of additional download: if individuals have paid for the fixed costs to pirate online (i.e. the cost to learn to pirate), the more they pirate, the more they perceive to save time and money (being a fixed cost, the more they pirate the more average fixed cost diminishes). Even if piracy is perceived as free, there are some costs (specifically non-financial costs) linked to piracy, that individuals in cluster 2 perceive. Increasing the perception of these costs, like the moral one and the risk to be caught and punished, could diminish the attraction of piracy (Danaher et al. 2009). Regarding the moral cost, that implies public policies involvement (like advertisements) and the effect could be detected only in the long run; as far as the legal risk, that could be an effective short run deterrent, useful as intermediate tool.

On the other hand, according to the movie industry perspective, especially the on line distribution movie channels could try to capture this demand segment by an attractive and convenient movies' supply: an appropriately priced legal online distribution model can be used by the movie industry to capture revenue from the population in this cluster.

In addition, it is often possible that pirated products have lower quality if compared to originals: the individuals in this cluster prefer good quality. If the legal supply were wide and convenient (in a correct price discrimination way), it could be attractive for these people.

The users in the fourth cluster pirate because other people do it. Their attitude to piracy is «drop down». As long as they can easily obtain pirated movies, and as long as piracy is overall perceived as social acceptable, they will continue to do it.

It is possible to deduce that if the other people were not involved in piracy, they wouldn't be too. Noteworthy, some of these individuals are slowly beginning to pirate by themselves through digital means. Worryingly they could become future active pirates, if piracy continues to grow. If the first 3 clusters are recovered, even cluster 4 will be and that turns out to be fundamental, both from the public and the industrial point of view.

7. Limitations and future research

As far as our knowledge, the results presented above are the first regarding pirates' segmentation by attitudes and motivations. The results highlight the possibility that the legal distribution channels are able to compete with illegal piracy channels. As such, they offer decision-makers at media firms some evidence regarding the different attitudes to piracy by different clusters and the current limitation perceived by consumers on both online and physical distribution channels.

However, we also note that there are several important data and econometric limitations associated with this study. The most important is that the data are only nationally representative.

Nevertheless, the results came out to be generalized and may also be used to suggest areas where government and industry should focus their efforts in order to combat the illicit operations and to recover lost consumers.

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