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Report on effect of digitisation and regulatory changes on access to cultural/creative goods and services

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ReCreating Europe

Rethinking digital copyright law for a culturally diverse, accessible, creative Europe

Grant Agreement No. 870626

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Executive Summary

The results presented in this report shed some lights on three aspects of authorised and unauthorised acquisition and consumption of these content types:

1. we provide information about the usage of legal and illegal channels of consumption both across countries and across four types of cultural goods (i.e., music, video, books, and games). We find that the share of legal users is always larger that the share of illegal users, with a larger heterogeneity at country level for illegal consumption. Across all the cultural goods, there is higher incidence of illegal use in Spain than in other countries. The exam of the motivation for illegal access indicates no clear patters, suggesting that, on average, there are several motivations at work ranging from prices to content availability and quality. Finally, we consistently find that the group of pirates and non-pirates overlap, indicating a strong complementarity between the two types of consumption. In particular, pirates consume a larger volume of cultural goods through legal channel than non-pirate.
2. we investigate the consumer's characteristics of different access channels. Similarly to previous studies we find that young males (even minor) tend to rely more on unauthorised channels. No other individual characteristics look salient in the choice between the two types of consumption channels. Looking at the relation between income and piracy, we find a strong negative correlation between them with some country variability.
3. we assess how the pandemic emergency has changed the acquisition and consumption through unauthorised channels. In particular, while there are some differences in the magnitude, we find that all consumers experiencing either a transition to online work (or study) or a decrease in income increased their reliance on piracy. We also document the extent to which the pandemic emergency triggered the use of illegal channels for the first time. These results confirm previous findings indicating that income levels play a key role in predicting the use of illegal channels to access different content type.

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1 Background and Aim

This report stems from the research conducted within the *reCreating Europe* [1] Work Package (WP) 2, which focuses on End-users and access to culture. The overall purpose of the project is to gain an understanding of which regulatory framework best supports a culturally diverse production, as well as inclusive access and consumption. It endeavours to produce ground-breaking research that takes into account different stakeholders' perspectives. In that connection, WP 2, by focusing on End-users and access to culture, will provide, through a combination of desk-based research and participatory research methods, a comparative cross-national mapping of regulatory measures having a positive or negative impact on digital access to culture. The project also investigates the degree of users' knowledge and understanding of EU and national copyright laws, and suggests alternative coping strategies adopted by individual users, communities and networks to overcome regulatory obstacles to access and sharing of digital cultural goods and services. It is worth recalling that, for the purpose of this project, an 'End-user' is a 'natural person, that is, an individual, easily distinguishable from institutional users such as broadcasters, content suppliers, libraries, archives, and so forth', and, broadly speaking 'a consumer of digital goods and services who benefits from consumer protection law when contracting with professional traders' (Mazziotti, 2008). The work plan of WP2 encompasses a broad range of interdisciplinary research activities, which will result in nine deliverables, as well as academic outputs and recommendations on best practices and policy reform.

Among its key objectives, WP2 aims to understand the effectiveness of regulatory measures in relation to digital access for specific cohorts of end-users. In that regard, Task 2.4 documents the use of legal and illegal content acquisition channels in seven European countries (France, Germany, The Netherlands, Poland, Spain, Sweden, United Kingdom). Empirical data on the use of specific channels for specific cultural goods are collected through a consumer survey administered by a specialised marketing service company. In a nutshell, this task provides an updated picture on cultural goods consumption channels as the one provided by the "Global Online Piracy Study" (see https://www.ivir.nl/projects/global-online-piracy-study/). Furthermore, as the survey was undertaken right after the acute pandemic phase, we also document how the pandemic emergency has affected the legal and illegal consumption of different types of content.

This report (D2.7) complements other final deliverables which include: a final report and public dataset on copyright flexibilities (D.2.3), a final policy brief on barriers for vulnerable groups (D.2.4), a final report on two empirical case studies assessing the impact of copyright perception and knowledge on access of two specific group of users who benefit of specific copyright exceptions (i.e. academics and persons with visual

[1] For an overview of the project objectives and activities, please see *Recreating Europe* (n.d.). Available at: https://www.recreating.eu/ accessed 17 June 2021.

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impairment) (D.2.8), a peer-reviewed publication on the impact of copyright law and perception on the demand for cultural goods and services (D.2.6), and final policy recommendations (D.2.9).

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2 Introduction

Digitalisation has strongly affected how consumers access cultural goods such as music, films, series, books and games in the last decades. While it is still possible to buy CDs, vinyls, DVDs or enjoy live concerts and movie shows, an increasing amount of cultural goods are acquired or accessed digitally through the internet. Subscriptions to streaming platforms such as Netflix, Spotify, Amazon Prime have already become common channels through which consumers do not acquire ownership of the music and videos, but they can still access it. Furthermore, similar platforms are increasingly common also for other cultural goods such as books and games.

In 2020, recorded music revenues totalled US$21.6 bn, an increase of 7.4% in 2019 and the sixth consecutive year of growth. However, most of the growth is through streaming (+19.9%) as other channels are languishing (e.g., -15.7% for downloading, -4.7% for physical carriers, and -10.1% for live performances) (IFPI, 2020: 13). Looking at the European video publishing industry, the total consumer spending grew by 31%, reaching EUR 17.6 billion. Following previous trends, digital distribution models increased by 41%, whereas physical formats contracted by 17.9% (International Video Federation, 2020). Though it doesn't get the same attention as the movie and music industry do, there are over two billion gamers across the world, and the value of the video gaming industry is now estimated to be $178.73 billion in 2021, which is an increase of 14.4% from 2020[2]. Also, in the case of gaming, digital access accounted for over 60% of the console gaming market worldwide in 2020.[3] Finally, books are the cultural goods generally displaying a lower level of digitalisation. While eBooks sales in the United States were up 21% in January of last year, they have plummeted by a massive 10.1% in the same month of this year. This figure is particularly striking when physical book sales have increased 3.7% over the same period. Increasing digitalised book access, however, covers audiobooks whose sales have grown by 5%[4].

While digitalisation and internet diffusion have facilitated the access to copyright-protected cultural goods through the *authorised* distribution of content, they have also facilitated access to copyright-protected cultural good through *unauthorised* online content distribution – commonly referred to as 'online piracy'. Consumers wanting to access digital cultural goods can often choose between a legal and illegal distribution and consumption of content as these various channels coexist.

[2] Data retrieved at https://www.wepc.com/news/video-game-statistics/ on the 17th March 2022.
[3] Data retrieved at: https://www.wepc.com/news/video-game-statistics/?ignorenitro=447a782aa3bccb0e62b4b7572be31012 on the 17th March 2022.
[4] Data elaborated by the Association of American Publishers retrieved at https://goodereader.com/blog/e-book-news/ebook-sales-plummet-10-1-in-january-2022 on the 17th March

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What drives their choice to use illegal channels might depend on several factors. In a recent meta-analysis, Eisend (2019) underlines four groups of digital piracy explanations. First, the cultural dimension related to the emergence and consolidation of collectivistic attitudes can result in a more significant social acceptance of 'on line piracy' (Chang MK 1998, Phau et al. 2014). Second, illegal access implies the infringement of the copyright law, and some individuals might be more sensitive to breaking the law (Jacobs et al. 2012). Furthermore, some consumers might perceive copyright infringements as something forbidden by law but not wrong per se (Nicholas et al. 2019). The third explanation relates to the costs and benefits of illegal access (Coyle et al. 2009), where the costs are the perceived risk of being caught or receiving social/institutional sanctions. The benefit is the money saved accessing the pirated product or the possibility to access contents not available through other ways (e.g., non-mainstream contents). On this last point, the availability of accessible authorised contents decreases the use of unauthorised channels (Quintais and Poort 2019, Poort and Weda 2015). Finally, the last explanation of digital piracy relates to a reinforcement mechanism, which is the level of experience with pirating (Cronan et al. 2008).

Besides the interest in ascertaining motivations and characteristics of individuals' use of unauthorised channels, economists have been interested in studying digital piracy consequences on copyright owners' revenues and incentives. This line of research tries to assess whether and the extent to which illegal consumption might displace legal consumption. Liebowitz (2005) indicates how piracy harms copyright owners through a substitution effect (i.e., consumers decide to access a cultural good through illegal channels rather than legal channels) or a delay effect (i.e. consumers postpone the legal consumption). Other studies using different data sources identify a negative relation between piracy and legal consumption (Michel, 2006). However, Aguiar (2017) finds a positive relation between free streaming and consumption, which is also plausible because illegal consumption might introduce consumers to music, films and games and, therefore, might promote demand. Furthermore, illegal consumption might drive demand for complementary goods such as concerts for music. Similarly, evidence from French universities shows that piracy increased video rentals and purchases (Bounie et al., 2006).

This report documents the acquisition and consumption of music, films, series, books and games through the various legal and illegal channels that exist nowadays in seven European countries. The purpose is threefold:

1. To provide factual information about the state of authorised and unauthorised acquisition and consumption of these content types.
2. To investigate the consumer's characteristics of different access channels.
3. To assess how the pandemic emergency has changed the acquisition and consumption through unauthorised channels.

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While the first two purposes are comparable with previous similar exercises, such as the "Global Online Piracy Study" (Poort, Quintais et al., 2018)[5], the third one is novel. We exploit the timing of the survey administration in January 2022 to gather information on cultural consumption during the pandemic emergency. Industry reports and popular literature[6] suggests that the Covid-19 crisis has fostered illegal consumption. For instance, MUSO[7] data indicates that film piracy increased by 41% in the USA, 43% in the UK, 50% in Spain, 62% in India and an astonishing 66% in Italy during the last week of March 2021, compared with the last week of February 2020. Our report provides a more comprehensive analysis of the usage patterns of legal and illegal content acquisition channels during the pandemic emergency and for a broader set of cultural goods.

This report's analysis uses data collected through a consumer survey administered by a specialised company[8]. The dataset includes nearly 12,901 respondents, including over 3,511 minors, in seven European countries (France, Germany, The Netherlands, Poland, Spain, Sweden, United Kingdom). These countries represent various regions and cultural traditions in Europe. They have been selected to deduce representative statements for the EU as a whole and be consistent with two earlier studies performed by members of the consortium in 2014 (Van der Ende, Poort et al., 2015) and 2018 (Poort, Quintais et al., 2018).

The structure of this report is the following: Section 3 describes the sample and some procedures of data cleaning and weighting; Section 4 presents the results of the survey concerning the acquisition of music, films and series, books and games via the various legal and illegal channels; Section 5 reports the results of the study concerning the unauthorised acquisition of music, films and series, books and games during the pandemic emergency. Conclusions will follow.

[5] The report is available at: https://www.ivir.nl/projects/global-online-piracy-study/
[6] See https://www.rollingstone.com/pro/features/music-piracy-is-going-old-school-in-the-age-of-covid-19-993412/
[7] https://www.muso.com/magazine/the-new-normal-what-the-coronavirus-means-for-digital-piracy accessed on the 24th March 2022
[8] The survey was carried out by Dynata (www.dynata.com).

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3 Survey sample descriptive statistics, weighting, and data cleaning

3.1 Sample composition and recruitment

Table 1 reports the composition of the sample. The survey was completed by a total of 12,901 respondents, 1,819 per country. In total, the response contains 3,511 minors between 14 and 17 years of age, between 495 and 508 per country.

Table 1 Sample composition by country, age, and gender

	Total	Adult	Minor	Gender			
				Male	Female	Non binary or third gender	Prefer not to say
DEU	1819	1319	500	907	898	10	4
ESP	1814	1319	495	940	861	11	2
FRA	1851	1343	508	868	971	6	6
GBR	1879	1375	504	910	949	10	10
NLD	1840	1335	505	933	892	7	8
POL	1839	1342	497	917	909	9	4
SWE	1859	1357	502	952	878	17	12
TOTAL	12901	9390	3511	6427	6358	70	46

The respondents were reached through Dynata (www.dynata.com) a specialised company in online market research. Dynata offers a national representative proprietary online panel for each country which is built using a multi-sourced online approach. National panel sizes of Dynata are necessarily far larger than the number of respondents (less than 3,000 per country), because not all panellists can be reached at the same time and panellists are not allocated to a survey if enough respondents in the same category (gender and age) have already answered the survey. Although Dynata reaches out to offer panel membership as broadly as possible, and anyone can apply to join, Dynata does not accept all applications. A 'moat' is built around the panel to ensure that any panel member whose application to join is accepted is likely to answer surveys carefully and truthfully. Respondents are not paid to join a panel, and Dynata employs various quality checks to identify potential poor-quality respondents and prevent them from joining or remaining on Dynata panels. These include identity checks and pattern recognition across surveys to detect fraudulence and checks on inattention such as speeding (answering questions in a very short time), straight-lining (checking the same option for all answers), unthoughtful answers to open questions and quickly clicking away introductory texts).

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3.2 Representativeness and weighting

Respondents in each country were admitted to the survey until gender and age proportions were reached. These quotas were set to ensure a sample that reflects the Internet-using population. By design, minors have been oversampled because this is a small age group of specific interest. Conversely, people above 50 are underrepresented in the panels of some countries and are hence undersampled. To correct for this, respondents are given weights by gender and age, such that respondents in oversampled categories are given smaller-than-unit weights and respondents in undersampled categories are given larger-than-unit weights. More details about the calculation of weights, the data sources and data used, and the resulting weighting factors are provided in the Appendix B.

3.3 Data cleaning

Consumption per type of content was calculated by combining the consumption from different reference periods (number of transactions such as purchases, downloads, or streaming in the past one, three or twelve months) and different measurement units (tracks versus albums versus hours of streaming, episodes versus seasons). This implies that assumptions had to be made to add these content-acquisition channels and to convert consumption of the past one, three and twelve months to annual totals. For comparability reasons, we clean and harmonise our data following the procedure adopted for the "Global Online Piracy Survey" (Poort, Quintais, et al., 2018).[9]

Consumption in the past one, three and twelve months was combined to calculate annual figures. Since the survey was held in January 2022, this raises the question of how representative consumption in the winter is for the rest of the year. In previous exercises (Poort, Quintais, et al., 2018) seasonality was accounted for looking (when available) at sales during the previous year and calculating the share of sales that occurred over the quarter in which the survey was administered. This share provides a benchmark of seasonality trends for different cultural goods. Given the COVID-19 emergency occurred since March 2020, it is meaningless to use the same approach as Q1 in 2021 is probably rather different from Q1 in 2022 (when our survey was carried out). For instance, in early 2021 movies theatres where still closed and live performance still forbidden in all countries under examination. For these reasons we decided not to correct for seasonality for the reported volumes, hence, figures for the last 1 and 3 months are multiplied by 12 and 4, respectively, to arrive at annual figures. While this is a strong assumption, given the circumstances we think it is the most conservative approach. Furthermore, also in the previous report, seasonality was not very strong for most consumption/content combinations (a notable exception being live concerts) and only accounted for selected specific contents.

[9] See Chapter 3 and Annex B of the "Global Online Piracy Survey" (2018) available at: https://www.ivir.nl/projects/global-online-piracy-study/

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To convert different measurement units for some cultural goods, we apply the following rules:

- For music, 1 album is assumed to contain 10 tracks on average.
- For music, 1 hour of streaming is treated as equivalent to 0.1 albums or 1 track.
- For tv series, 1 season is assumed to consist of 10 episodes on average.

This means that, for example, 90 albums consumed in the last three months would be transformed into 3,600 music tracks per year: 10 tracks per album, times four seasons, times the reported number of 90.

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4 Channels of consumption

In this section, we present the survey's descriptive results on the use of legal and illegal acquisition channels for music, film and series, books and games. We first provide the percentage of the Internet population using various channels for each content. These percentages are presented for both authorized and unauthorized contents and for each country separately. We also show estimated consumption volume per capita per channel and country. By differentiating those who use illegal channels and those who do not, we also provide some evidence on the different consumption behaviors of these two profiles. Finally, we describe the main socio-economic characteristics of legal and illegal users and provide insights regarding the motivations for using illegal channels.

As explained in Appendix B, results have been weighted to be representative of the Internet population in each country. However, Table B1 indicates rather homogeneous and very high shares of the Internet population as a percentage of the total population across the countries included in this study: from 96%, in the Netherlands, to 100%, in UK for population between 12 and 54.

4.1 Music

Legal sources and related products

In Figure 1 we present the percentages of the Internet population consuming music trough legal channels in each country. The proportion varies from 39% in Poland to around 49% in Spain. The percentages for each distinct channel are provided in Table 2.

Figure 1 Consumed recorded music from any legal channel in the last year

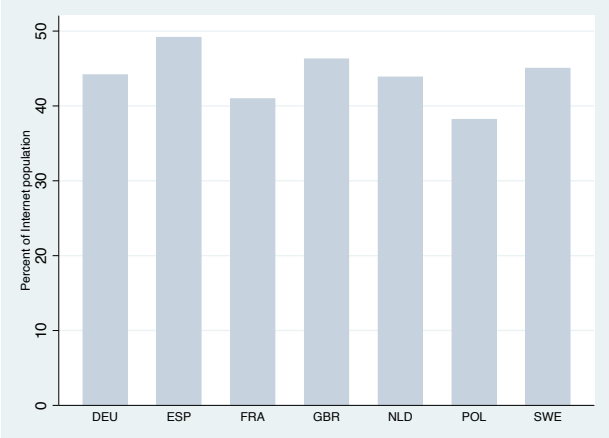

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Table 2 Percentage of the Internet population using legal channels to consume music

	DEU	ESP	FRA	GBR	NLD	POL	SWE
Physical carriers	27%	23%	26%	28%	27%	24%	19%
Download, legal sources	30%	35%	27%	36%	26%	26%	18%
Streaming, legal sources	37%	47%	38%	42%	40%	31%	43%
Live concerts and festivals	19%	32%	24%	29%	23%	26%	19%

Note: The percentages do not sum to 100 as one individual can indicate more than one channel.

Table 2 shows that over all 7 countries in this study digital channels are the most commonly used legal channels to consume music. In particular, streaming is the most used channel with shares ranging from 31% in Poland to 47% in Spain. Digital downloads are more often used than physical carriers in all countries but the Netherlands and Sweden. However, in these two countries the shares for downloads and physical acquisition are very close. Finally, live concerts, festival and music-related merchandise range from 19% to 32%, rather high figures considering the limitations in most countries due to the Covid-19 emergency.

Table 3 Per capita consumption of music per type of legal channel (Internet population)

	DEU	ESP	FRA	GBR	NLD	POL	SWE
Physical carriers (albums)	1,0	0,7	1,2	1,6	0,9	0,9	0,7
Download, legal sources (hours)	2,5	4,1	1,9	4,0	1,0	1,3	1,1
Streaming, legal sources (album)	11,9	32,2	17,6	13,9	12,8	10,4	31,0
Live concerts and festivals	0,3	1,0	0,7	0,9	0,5	0,7	0,6
Digital (hours)	3,7	7,3	3,7	5,4	2,3	2,4	4,2

Note: Digital is calculated as the sum of the categories “Download” and “Streaming”, after converting the streaming consumption from albums to hours. For the details see Section 3.3.

Table 3 presents the per capita consumption of music acquired through legal channels per country. Since distribution of the amount of declared consumption of music is highly skewed, we calculated the per capita consumption as the median value, instead of the simple mean. Moreover, we do not include those respondents with zero consumption in this calculation. However, to account for consumers with no music acquired, the median value is multiplied by the fraction of non-zero numbers. Thus, the first row in Table 3 gives the per capita consumption of physical music carriers in number of albums acquired. The median value ranges between 0.7 in Spain to 1.6 in UK. In terms of hours, respondents acquired a much higher volume of music through streaming channels compared to download legal sources. This result in consistent with the general transition from acquisition to access of cultural goods triggered by digitalisation and the diffusion of platforms such as Spotify. However, we find that the digital consumption per capita varies significantly, ranging from 2.3 hours in the Netherlands to 7.3 in Spain. Finally, the yearly amount of music concerts and festivals is between 0.3 in Germany and 1 in Spain.

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Illegal Sources

In Figure 2 we represent the percentage of Internet users consuming recorded music through illegal sources in the last year. By illegal channels we mean illegal streaming and download but also the use of dedicated devices with pre-installed links to stream music from illegal sources. The distinct percentages for each channel are provided in Table 4.

Figure 2 Consumed recorded music from any illegal channel in the last year

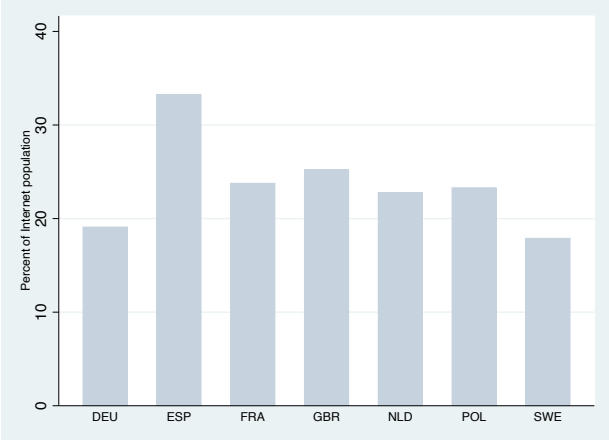

Figure 2 reveals that acquisition of music from illegal sources is most popular in Spain, where around 35% of the Internet population consume music through these channels. In all the other countries, the percentage is around 20%. Sweden is the country with the lowest share of respondents using illegal channels to acquire music. Overall, it is significant that in all countries considered at least one digital consumer out of 5 is using illegal channels.

Table 4 Percentage of the Internet population using illegal channels to consume music

	DEU	ESP	FRA	GBR	NLD	POL	SWE
Download, illegal sources	16%	27%	18%	23%	20%	18%	14%
Streaming, illegal sources	14%	27%	20%	22%	18%	17%	13%
Streamripping	14%	21%	14%	22%	18%	15%	11%
Streaming, dedicated devices	17%	23%	16%	22%	19%	17%	13%

Note: The percentages do not sum to 100 as one individual can indicate more than one channel.

Table 4 displays the percentages of users for each distinct illegal channel by country. In the table we add streamripping as a separate channel as its illegal status is uncertain. To the extent that streamripping occurs from authorised content on platforms such as YouTube, Soundcloud or Netflix, the source itself is not illegal, even if the ripping may be a violation of the service provider's terms of service. The table confirms previous

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findings, indicating that in all countries the preferred channels of consumption and access are illegal streaming or downloading. However, the percentages for each channel tend not to vary significantly within countries, indicating the four different ways to access music illegally are almost equally used by respondents.

Table 5 Per capita consumption of music per type of illegal channels (Internet population)

	DEU	ESP	FRA	GBR	NLD	POL	SWE
Download, illegal sources (album)	0,6	1,7	0,9	1,2	0,6	0,9	1,0
Streaming, illegal sources (hours)	0,6	4,1	1,8	1,3	0,6	1,1	0,9
Streaming, dedicated devices (hours)	0,6	2,1	0,9	1,3	0,5	0,9	0,8
Streamripping (hours)	0,8	2,4	1,1	1,3	0,6	1,1	0,8
Digital illegal (albums)	0,8	2,6	1,3	1,6	0,8	1,2	1,2

Regarding the per capita volume of consumption for each type of illegal channel, Table 5 shows that the amount acquired by respondents varies substantially across countries. While German and Dutch users are those with the lowest volume of illegal consumption of music, Spanish respondents declare the highest consumption of music through illegal channels, particularly through streaming.

Motivations and profiles

Figure 3 and Figure 1Figure 4 displays the primary reasons for downloading and streaming music from illegal sources. These figures reveal that all the possible reasons provided in the survey are considered relevant motivations for illegal consumption. This evidence suggests that a variety of different reasons, ranging from the price, the ease of use and the quality, the availability and the likelihood to get caught, may explain illegal acquisition of music.

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Figure 3 Primary reason for downloading music from illegal sources

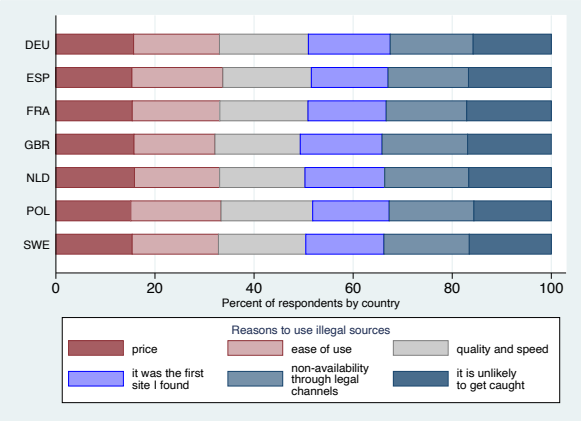
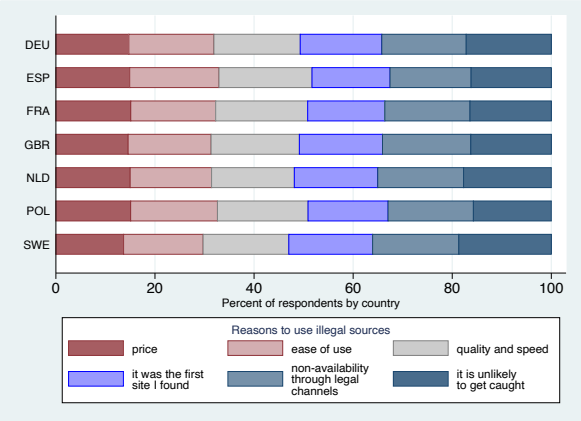


Figure 4 Primary reason for streaming music from illegal sources



Highlighting whether the two groups of users have diverging characteristics in terms of demographics or working conditions may provide important insights about specific profiles and motivations of consumers and might suggest different policy interventions. Table 6 and **Error! Reference source not found.** examines the demographic composition of users of legal and illegal channels to access music.

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Table 6 Demographic composition of legal consumers accessing music

	DEU	ESP	FRA	GBR	NLD	POL	SWE
Female	44%	43%	45%	45%	41%	44%	42%
Male	55%	56%	55%	54%	58%	55%	56%
third gender	1%	1%	0%	0%	1%	1%	2%
prefer not to say	0,0%	0,2%	0,1%	0,2%	0,5%	0,1%	0,6%
<18	36%	35%	37%	34%	37%	36%	36%
18-34	22%	21%	24%	27%	26%	27%	28%
35-54	24%	27%	23%	26%	24%	23%	20%
>=55	18%	17%	16%	13%	14%	13%	16%
Employed	72%	76%	72%	75%	72%	81%	67%
Unemployed	28%	24%	28%	25%	28%	19%	33%
primary school or none	9%	3%	7%	4%	6%	8%	7%
lower secondary education	32%	17%	30%	16%	15%	8%	13%
upper secondary education	25%	17%	25%	26%	30%	37%	40%
further education	10%	22%	10%	19%	13%	11%	24%
higher education	23%	40%	27%	34%	37%	37%	17%
Minor	36%	35%	37%	34%	37%	36%	36%
Adult	64%	65%	63%	66%	63%	64%	64%
with income reduction	40%	45%	40%	56%	48%	45%	45%
no income reduction	60%	55%	60%	44%	52%	55%	55%
change to smart working	62%	64%	55%	70%	69%	62%	67%
no smart working	38%	36%	45%	30%	31%	38%	33%

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Table 7

	DEU	ESP	FRA	GBR	NLD	POL	SWE
female	36,9%	40,9%	44,3%	42,2%	31,2%	40,9%	33,2%
male	62,4%	58,1%	55,2%	56,9%	67,4%	58,2%	63,7%
third gender	0,7%	0,7%	0,4%	0,5%	0,7%	0,7%	2,1%
prefer not to say	0,0%	0,3%	0,2%	0,3%	0,7%	0,2%	1,0%
<18	49,8%	42,0%	46,3%	43,4%	48,3%	44,9%	53,0%
18-34	27,2%	21,6%	24,5%	30,9%	30,2%	24,3%	31,1%
35-54	17,1%	24,3%	21,2%	22,4%	16,6%	21,7%	11,3%
>=55	5,9%	12,1%	7,9%	3,3%	4,9%	9,0%	4,5%
employed	79,1%	78,7%	77,3%	82,8%	77,1%	86,6%	73,6%
unemployed	20,9%	21,3%	22,7%	17,2%	22,9%	13,4%	26,4%
primary school or none	13,1%	3,4%	9,0%	5,6%	6,5%	8,3%	7,8%
lower secondary	31,7%	18,9%	29,7%	16,7%	16,0%	8,3%	14,0%
upper secondary	20,7%	16,9%	26,2%	25,5%	26,1%	38,1%	39,8%
further education	11,7%	23,8%	9,2%	18,2%	12,5%	10,3%	25,8%
higher education	22,8%	37,0%	25,8%	34,0%	38,8%	35,0%	12,6%
minor	49,8%	42,0%	46,3%	43,4%	48,3%	44,9%	53,0%
adult	50,2%	58,0%	53,7%	56,6%	51,7%	55,1%	47,0%
with income reduction	60,1%	49,4%	49,1%	72,4%	69,4%	51,4%	63,3%
no income reduction	39,9%	50,6%	50,9%	27,6%	30,6%	48,6%	36,7%
change to smart	79,8%	71,7%	65,7%	85,1%	81,9%	68,5%	83,9%
no smart working	20,2%	28,3%	34,3%	14,9%	18,1%	31,5%	16,1%

Demographic composition of illegal consumers accessing music

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Regarding gender, Table 6 displays higher percentages of men consuming music legally compared to female and third gender across countries. However, with the exception of France, these percentages and differentials increase while focusing on music illegal consumers in **Error! Reference source not found.**. A telling difference also regards the age distribution. The sample of illegal consumers is composed by younger respondents across all countries. Therefore, music pirates are slightly more often male and less than 35 years old. Interestingly, the sample of illegal users is composed by a higher percentage of employed people, particularly so in the UK. However, keep in mind that unemployed respondents include also retired or not able to work users or respondents studying. We do not observe any clear difference between legal and illegal users with respect to the education level. The only exception is Germany, whose music pirates are slightly less educated. Some diverging numbers can be observed also for those respondents who experienced relevant changes in working conditions during the Covid-19 pandemic. In particular, among music pirates there are many more respondents who declared a reduction of income during the pandemic or a relevant change from in presence to smart working (or online studying).

Finally, in Table 8 we compared the percentage and the amount of *legal* music consumption of pirate and non-pirate users. We refer to pirates as those respondents who used at least one illegal channel. In the first part of the table, we provide the percentages of pirates and non-pirates users accessing music through legal channels. These figures are computed as percentages of the Internet population. Consistently with previous studies (Van der Ende, Poort et al., 2015; Poort, Quintais et al., 2018), our results confirm t that almost every pirate user do also consume music through legal channels. On the contrary, in the group of non-pirates, only between 25 and 50% of consumers access music legally. This percentage is particularly low in Spain and Poland. This evidence clearly indicates that illegal users very often access music also through legal channels and they represent an important share of legal consumers. Pirates and non-pirates are therefore not two distinct groups of users, but they overlap. The second half of Table 8 confirms this finding, comparing the amount of legal consumption between pirates and non-pirates. The volume of consumption is computed as the median number of albums consumed in the last year. Across countries, the median volume is always higher for pirates than for non-pirates. The difference is particularly high in Poland, with pirates consuming mostly three time the number of albums of non-pirates. In Spain, Netherlands and Sweden the volume is twice as high.

Table 8 Consumption of music from any legal channel: pirates vs. non-pirates

	DEU	ESP	FRA	GBR	NLD	POL	SWE
	Percentage of respondents consuming music from any legal channel						
Pirates	98%	98%	99%	99%	97%	98%	99%
Non pirates	50%	25%	34%	37%	39%	28%	48%

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	Median consumption of music from any legal channels						
Pirates	26,5	44	34,4	28,9	21,5	22,4	33,6
Non pirates	24	25,8	24	24	13,8	8	21,3

4.2 FILM AND TV-SERIES

Legal sources and related products

Figure 5 shows the percentage on Internet population accessing films or TV-series through legal channel in the last year. Across countries, Spanish and Swedish respondents are those with the highest legal consumption of films or TV-series. In Table 8 we display the percentages of Internet users across different legal channels such as DVDs sales or rental, digital download or streaming, film or TV-series merchandise and cinema visits.

Figure 5 Consumed films or TV-series from any legal channel in the last year

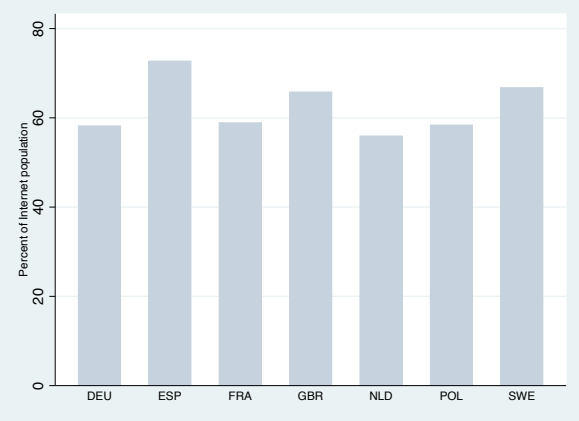

Table 9 Percentage of Internet population using legal channels to consume films and TV-series

	GBR	FRA	DEU	ESP	SWE	POL	NLD
DVD	36%	30%	34%	29%	24%	30%	25%
Rentals	27%	24%	23%	24%	18%	22%	20%
Download, legal sources	39%	29%	28%	40%	35%	25%	35%
Streaming, legal sources	61%	51%	50%	69%	60%	44%	51%
Cinema	48%	46%	33%	57%	37%	49%	38%
Film/series merchandise	31%	26%	21%	32%	18%	30%	21%

Note: The percentages do not sum to 100 as one individual can indicate more than one channel.

We find that the most popular legal channels are streaming platforms, followed by cinema visits. However, some country differences emerge as the incidence of streaming ranges between 44% for Polish users and 69% for Spanish, followed by UK (61%) and Swedish (60%) users. UK respondents are those with the highest percentage of users assessing films or TV-series through physical carriers, either through sales or rentals. Legal downloads of films and TV-series are less popular than streaming and percentages are between 25% in

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Poland and 40% in Spain. Table 10 shows the volume of per capita consumption of films and TV-series accessed through legal channels.

Table 10 Per capita consumption of films and TV-series per legal channel (Internet population)

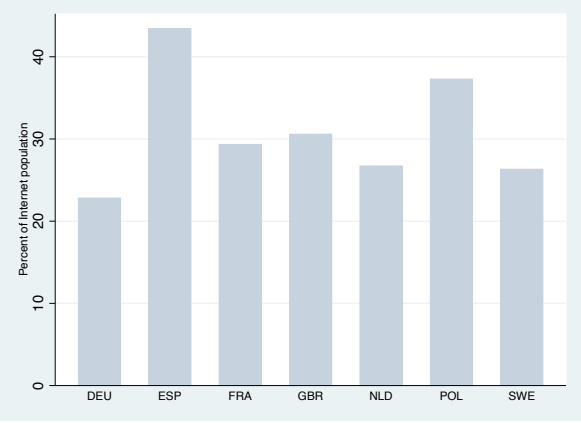
	DEU	ESP	FRA	GBR	NLD	POL	SWE
Physical carriers, sales	1,7	1,3	1,7	2,1	1,3	1,2	1,5
Physical carriers, rental	1,1	1,5	1,5	1,7	1,0	1,0	1,3
Download, legal sources	0,8	2,2	1,4	1,7	1,2	0,8	1,8
Streaming, legal sources	12,0	40,7	18,8	17,8	12,6	7,1	25,6
Cinema	0,7	3,5	2,8	2,2	0,9	2,5	1,3
Digital, legal	12,9	42,9	20,2	19,5	13,8	8,0	27,5

These numbers show some heterogeneity across countries, with Spanish users consuming the highest number of films through most the legal channels. The number of films watches at cinemas varies also substantially, ranging from 0.7 in Germany to 3.5 in Spain. In all countries, the highest number of films per capita is consumed via streaming platforms. This latter result point to the same direction as Table 3, indicating consistent consumption patterns as in the music case.

Illegal sources

Moving to the consumption of films and TV-series through illegal channels, Figure 6 reports the proportions of Internet users consuming films or TV-series in the past year via illegal sources. By illegal sources we mean both illegal download and streaming but also streaming through dedicated devices. As in the case of legal movie consumption (Figure 5), Spanish respondents are those with the highest percentage of Internet users accessing films and TV-series through illegal channels, followed by Polish and UK respondents. The lowest percentage is instead found in Germany.

Figure 6 Consumed film or TV-series from any illegal channel in the last year



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Differently from legal channels, Table 11 highlights that streaming is not the most popular way to access films and TV-series illegally in all countries, with Germans, UK and Dutch users slightly preferring downloads from illegal sources. Again, Spanish respondents display the highest percentages across all illegal channels. Similarly to the music case, in the table we also include the percentage of respondents using streamripping, even if its illegal status might be uncertain.

Table 11 Percentage of the Internet population using illegal channels to consume movies

	DEU	ESP	FRA	GBR	NLD	POL	SWE
Download, illegal sources	16,5%	32,6%	20,2%	25,3%	20,8%	20,3%	18,0%
Streaming, illegal sources	15,5%	33,9%	22,7%	24,9%	20,2%	27,6%	18,8%
Streamripping	16,1%	28,5%	18,2%	25,6%	17,9%	20,8%	14,3%
Streaming, dedicated devices	21,0%	30,2%	22,2%	26,5%	22,1%	29,4%	18,9%

Note: The percentages do not sum to 100 as one individual can indicate more than one channel.

We have similar findings in Table 12, showing the per capita number of consumed films via illegal channels across countries. The reported figures indicate that the volume of films accessed via illegal sources is much lower than via legal sources. In this case, the highest volume of films is accessed through illegal downloads, followed by illegal streaming. Again, Spanish consumers experience the highest volume of pirated films across countries.

Table 12 Per capita consumption of films and TV-series per illegal channel (Internet population)

	DEU	ESP	FRA	GBR	NLD	POL	SWE
Download, illegal	0,4	1,8	0,7	1,1	0,6	0,8	1,0
Streaming, illegal	0,9	3,1	1,7	2,3	1,0	1,7	1,6
Streaming, dedicated devices	0,8	3,0	1,3	2,3	0,9	1,4	1,4
Streamripping	0,3	2,0	1,0	1,2	0,7	1,1	0,9
Digital, illegal	2,4	9,9	4,7	6,9	3,2	5,0	4,9

Motivations and profiles

In Figure 7 and Figure 8 we display the primary declared reasons for accessing films and TV-series through illegal sources, either through downloads or streaming platforms. Similarly, to the motivations for illegally

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access music, no clear-cut differences emerge across different reasons to pirate. The motives behind illegal access to films and TV-series are therefore multiple. We can instead observe some demographic differences across legal and illegal users, as displayed in Table 13 and Table 14.

Figure 7 Primary reason for downloading films and TV-series from illegal sources

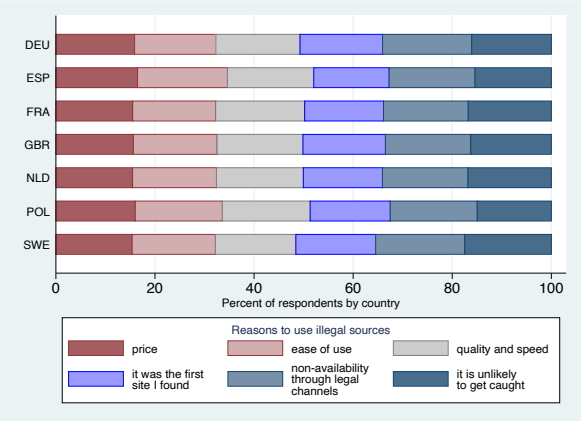

Figure 8 Primary reason for streaming films and TV-series from illegal sources

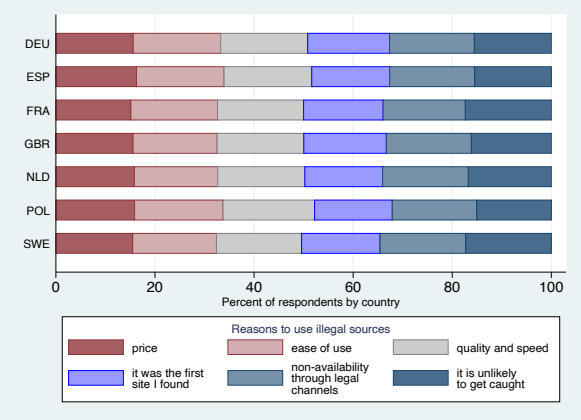

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Table 13 Demographic composition of legal consumers accessing films or TV-series

	DEU	ESP	FRA	GBR	NLD	POL	SWE
female	46,2%	46,1%	48,0%	49,8%	45,4%	46,7%	46,3%
male	53,2%	53,2%	51,7%	49,4%	53,8%	52,4%	52,1%
third gender	0,6%	0,6%	0,3%	0,4%	0,5%	0,6%	1,0%
prefer not to say	0,0%	0,1%	0,1%	0,5%	0,4%	0,3%	0,6%
<18	34,2%	30,8%	33,1%	30,7%	34,5%	33,1%	30,9%
18-34	21,3%	19,5%	22,9%	24,4%	24,5%	27,9%	28,3%
35-54	26,1%	28,9%	25,7%	27,2%	25,8%	25,1%	22,0%
>=55	18,5%	20,7%	18,3%	17,7%	15,2%	13,9%	18,9%
employed	70,7%	75,6%	70,2%	71,4%	71,2%	80,4%	65,9%
unemployed	29,3%	24,4%	29,8%	28,6%	28,8%	19,6%	34,1%
primary school or none	7,5%	3,4%	7,1%	3,6%	6,0%	8,4%	6,0%
lower secondary education	33,5%	16,9%	30,1%	16,7%	17,6%	7,5%	12,8%
upper secondary education	26,7%	17,2%	27,2%	27,1%	30,9%	34,7%	40,9%
further education	9,4%	21,5%	10,0%	21,0%	11,3%	10,9%	23,8%
higher education	22,9%	40,9%	25,7%	31,7%	34,3%	38,5%	16,5%
minor	34,2%	30,8%	33,1%	30,7%	34,5%	33,1%	30,9%
adult	65,8%	69,2%	66,9%	69,3%	65,5%	66,9%	69,1%
with income reduction	32,7%	41,7%	33,7%	47,7%	40,1%	42,8%	39,4%
no income reduction	67,3%	58,3%	66,3%	52,3%	59,9%	57,2%	60,6%
change to smart-working	54,5%	56,7%	46,9%	60,9%	62,9%	56,3%	60,3%
no smart-working	45,5%	43,3%	53,1%	39,1%	37,1%	43,7%	39,7%

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Table 14 Demographic composition of illegal consumers accessing films or TV-series

	DEU	ESP	FRA	GBR	NLD	POL	SWE
Female	41,5%	43,7%	43,6%	44,1%	34,4%	44,9%	37,2%
Male	57,3%	55,3%	55,8%	54,9%	64,3%	53,9%	60,3%
third gender	1,2%	0,9%	0,5%	0,3%	0,7%	0,8%	1,4%
prefer not to say	0,0%	0,1%	0,2%	0,7%	0,7%	0,4%	1,1%
<18	45,8%	36,2%	44,2%	41,6%	45,6%	39,3%	46,7%
18-34	25,3%	23,0%	24,8%	28,7%	30,2%	28,6%	30,9%
35-54	20,6%	26,2%	21,5%	23,3%	19,1%	23,0%	16,3%
>=55	8,3%	14,6%	9,4%	6,3%	5,0%	9,1%	6,1%
Employed	77,1%	77,3%	75,5%	81,1%	75,5%	84,5%	72,2%
Unemployed	22,9%	22,7%	24,5%	18,9%	24,5%	15,5%	27,8%
primary school or none	11,5%	3,5%	9,7%	5,0%	6,0%	9,5%	7,8%
lower secondary education	34,0%	17,3%	30,8%	17,6%	16,9%	7,9%	14,8%
upper secondary education	23,5%	16,8%	25,9%	25,4%	28,2%	35,9%	40,4%
further education	10,1%	23,9%	10,8%	19,6%	12,4%	10,7%	24,1%
higher education	20,9%	38,5%	22,9%	32,4%	36,4%	36,0%	12,9%
Minor	45,8%	36,2%	44,2%	41,6%	45,6%	39,3%	46,7%
Adult	54,2%	63,8%	55,8%	58,4%	54,4%	60,7%	53,3%
with income reduction	49,6%	47,7%	44,2%	64,4%	62,2%	48,1%	55,2%
no income reduction	50,4%	52,3%	55,8%	35,6%	37,8%	51,9%	44,8%
change to smart working	70,6%	65,8%	61,2%	77,8%	78,7%	63,2%	76,5%
no smart working	29,4%	34,2%	38,8%	22,2%	21,3%	36,8%	23,5%

The most significant demographic difference between pirates and non-pirates is gender. Illegal sources users are mostly males, and the differences are higher in Sweden, Netherlands and UK. Some further differences between the two groups regard age. As in the case of music, illegal users are more often less than 35 years old. Regarding employed and not employed consumers, the former is more often using illegal sources to access films and TV-series. Again, we note that not employed users include both not able to work respondents as well as retired or studying respondents. No differences are found when looking at users' education level. As in the case of music, German illegal users in are more often respondents with only primary school or no education. Telling differences in the two samples are found with respect to respondents experiencing either income reduction or changes in the working conditions during the Covid-19 pandemic. In particular, users using illegal channels are more often those who experienced income reduction or those with a significant change from in presence to smart working during the pandemic.

Finally, in Table 15 we check whether different behaviours regarding legal consumption exists between pirates and non-pirates. In this case, pirates are defined as those respondents who access films or TV-series from at least one illegal channel. On the contrary, non-pirates are those who never use illegal sources.

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Table 15 Consumption of films and TV-series from any legal channel: pirates vs non pirates

	DEU	ESP	FRA	GBR	NLD	POL	SWE
	Percentage of respondents consuming games from any legal channel						
Pirates	90,8%	89,8%	89,2%	96,2%	93,3%	90,1%	92,7%
Non pirates	25,5%	11,7%	16,6%	17,9%	17,7%	15,8%	15,6%
	Median consumption of recordered games from any legal channels						
Pirates	17	22	14	22	19	18	23
Non pirates	4	6,5	2	7	4	5	3

The results show that, similarly to music, pirates are also very often consuming legal channels too. However, the percentages are slightly lower than music. In Spain and France, 89% of pirates also use legal sources to access films and TV-series, while the rest use only illegal sources. In the second half of Table 15 we also observe that most of the legal consumption of films and TV-series in terms of volumes is accessed by pirate users, and only a smaller amount is consumer by non-pirates. The median value is three time as high in UK and four times as high in Germany, Spain and Poland. The difference is even much higher in Sweden and France. These findings suggest that pirate consumers are responsible for most of the legal consumption of films and TV-series.

4.3 BOOKS

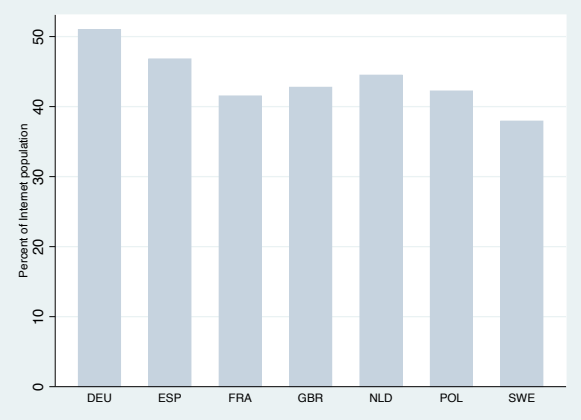
Legal sources

In

Figure 9 we present the percentages of Internet users accessing books or e-books through any legal channel. Across countries, the highest percentages are found among German and Spanish respondents. Legal channels to acquire books are either sales and rental of physical carriers or download and streaming of books in digital forms. We display the percentages of Internet users using each of this channel in Table 16.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 870626

Figure 9 Consumed books and e-books from any legal channel in the last year



In all countries, the most popular way to access books is buying or renting physical carriers. However, the percentages vary from 48% in Germany to 29% in Sweden for sales and from 32% in Poland to 22% in Germany for rental. The other mentioned legal channels are also widely used by Internet users, with percentages around 20-30%.

Table 16 Percentage of the Internet population using legal channels to consume books and e-books

	DEU	ESP	FRA	GBR	NLD	POL	SWE
Books or e-books, physical carrier	47,9%	41,9%	38,8%	38,7%	40,0%	38,4%	29,1%
Books or e-books, rental	21,7%	30,3%	25,8%	26,2%	25,5%	32,2%	21,9%
Download, legal	25,4%	34,4%	20,1%	31,4%	24,8%	26,1%	23,9%
Streaming, legal	21,5%	30,1%	18,8%	29,2%	22,7%	28,5%	25,6%

Note: The percentages do not sum to 100 as one individual can indicate more than one channel.

These results are confirmed in Table 17, where we examine the distribution of per capita consumption volume across legal channels. Interestingly, beyond physical carrier acquisition, across countries respondent consume between 1.7 (to 3.5 books using digital channels (e.g., legal download or legal streaming).

Table 17 Per capita consumption of books and e-books from any legal channel (Internet population)

	DEU	ESP	FRA	GBR	NLD	POL	SWE
Books or e-books, physical carrier	3,2	2,6	3,6	3,3	2,0	2,8	1,4
Books or e-books, rental	0,8	1,4	1,6	1,4	1,7	2,1	1,3
Download, legal	1,2	1,9	0,8	1,7	0,8	1,1	1,2
Streaming, legal	0,6	1,6	0,8	1,4	0,7	1,0	1,4
Digital, legal	1,8	3,5	1,7	3,1	1,5	2,0	2,6

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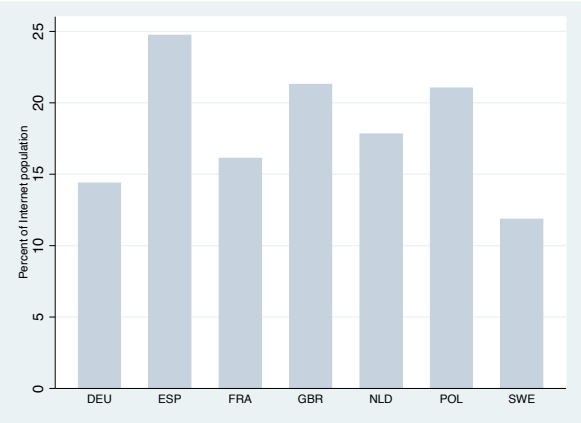
Illegal Sources

Moving to illegal sources to access books and e-books, we display in Figure 10 the percentage of the Internet population acquiring them through illegal channels.

Figure 10 Consumed books and e-books from any illegal channel in the last year



In the case of books and e-books, we are considering only one illegal channel, namely illegal download. The percentages of Internet users are much lower compared to the percentages of legal users (

Figure 9). Illegal download of books or e-books seem to be a niche, with per capita consumption ranging between 0.37 in Germany and 1.4 in Spain (Table 18).

Table 18 Per capita consumption of books and e-books from illegal channel (Internet population)

	DEU	ESP	FRA	GBR	NLD	POL	SWE
Download, illegal	0,37	1,40	0,60	1,01	0,48	0,72	0,46

Motivations and profiles

As for music and films or TV-series, we now turn to analysing the motivations beyond illegal consumption of books and the profiles of legal and illegal users. As for the other content types, Figure 11 indicates that different reasons were found to be the primary motives to consume books illegally. We stress again that reasons for illegal behaviours are multiple and cannot be identify in one category only.

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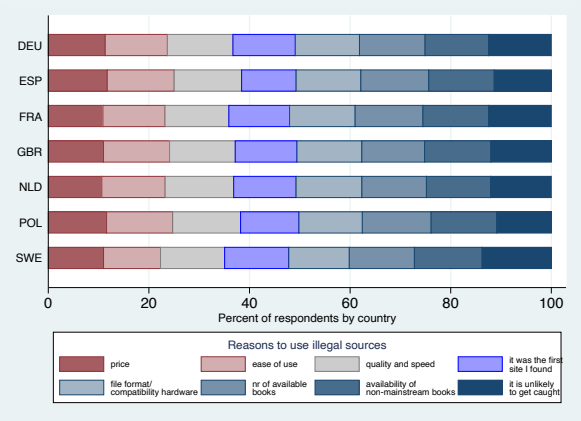
Figure 11 Primary reason for downloading books and e-books from illegal sources



Interesting insights can be found once looking at the different characteristics, in terms of demographics, among users consuming legal channels only (

) and users using illegal sources too (Table 20).

	DEU	ESP	FRA	GBR	NLD	POL	SWE
female	49,9%	49,6%	51,9%	47,5%	48,7%	51,1%	49,0%
male	49,2%	49,4%	47,7%	50,9%	50,5%	47,9%	48,8%
third gender	0,7%	0,9%	0,3%	0,8%	0,5%	0,6%	1,7%
prefer not to say	0,1%	0,1%	0,1%	0,7%	0,4%	0,4%	0,5%
<18	29,9%	33,1%	32,0%	30,1%	32,4%	30,7%	33,5%
18-34	18,5%	19,3%	22,1%	24,1%	22,4%	26,7%	28,4%
35-54	24,4%	26,7%	25,3%	26,6%	24,5%	24,1%	21,3%
>=55	27,1%	20,9%	20,7%	19,2%	20,7%	18,4%	16,8%
employed	68,4%	75,9%	70,1%	74,1%	69,2%	79,0%	66,5%
unemployed	31,6%	24,1%	29,9%	25,9%	30,8%	21,0%	33,5%
primary school or none	6,6%	3,3%	5,5%	3,4%	4,9%	6,2%	5,3%
lower secondary education	29,8%	14,7%	26,9%	14,1%	16,1%	6,1%	10,5%
upper secondary education	26,1%	16,4%	25,8%	24,2%	28,9%	34,6%	37,6%
further education	11,9%	21,2%	11,3%	22,2%	11,8%	11,6%	27,2%
higher education	25,6%	44,3%	30,5%	36,0%	38,3%	41,5%	19,4%
minor	29,9%	33,1%	32,0%	30,1%	32,4%	30,7%	33,5%
adult	70,1%	66,9%	68,0%	69,9%	67,6%	69,3%	66,5%
with income reduction	33,2%	43,9%	36,1%	55,9%	46,1%	45,1%	46,5%
no income reduction	66,8%	56,1%	63,9%	44,1%	53,9%	54,9%	53,5%
change to smart working	52,4%	62,6%	52,3%	68,1%	65,0%	57,8%	68,7%
no smart working	47,6%	37,4%	47,7%	31,9%	35,0%	42,2%	31,3%

Table 19 Demographic composition of legal consumers accessing books and e-books

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 870626

	DEU	ESP	FRA	GBR	NLD	POL	SWE
female	33,9%	46,0%	41,7%	41,3%	27,9%	49,1%	36,4%
male	65,4%	53,0%	57,6%	57,5%	71,2%	49,6%	60,0%
third gender	0,8%	0,9%	0,3%	0,7%	0,6%	1,1%	2,2%
prefer not to say	0,0%	0,0%	0,3%	0,5%	0,3%	0,3%	1,5%
<18	55,1%	40,6%	47,6%	41,3%	47,1%	41,7%	55,6%
18-34	24,0%	22,6%	24,6%	31,2%	30,6%	26,8%	29,5%
35-54	16,1%	21,4%	22,3%	23,2%	16,8%	22,0%	12,0%
>=55	4,7%	15,3%	5,5%	4,3%	5,4%	9,5%	2,9%
employed	83,5%	79,5%	79,0%	84,1%	77,2%	86,7%	73,1%
unemployed	16,5%	20,5%	21,0%	15,9%	22,8%	13,3%	26,9%
primary school or none	13,4%	4,1%	12,3%	4,8%	5,4%	5,7%	10,2%
lower secondary education	28,0%	14,4%	30,7%	15,0%	16,5%	7,3%	12,0%
upper secondary education	22,0%	15,6%	21,0%	23,7%	19,5%	37,7%	34,9%
further education	15,0%	24,6%	9,7%	18,8%	12,3%	11,7%	26,5%
higher education	21,7%	41,3%	26,2%	37,7%	46,2%	37,7%	16,4%
minor	55,1%	40,6%	47,6%	41,3%	47,1%	41,7%	55,6%
adult	44,9%	59,4%	52,4%	58,7%	52,9%	58,3%	44,4%
with income reduction	63,0%	49,9%	58,9%	76,1%	74,8%	52,6%	72,4%
no income reduction	37,0%	50,1%	41,1%	23,9%	25,2%	47,4%	27,6%
change to smart working	81,1%	70,2%	72,2%	85,4%	89,2%	67,5%	86,5%
no smart working	18,9%	29,8%	27,8%	14,0%	10,8%	32,5%	13,5%
third gender	0,7%	0,9%	0,3%	0,8%	0,5%	0,6%	1,7%
prefer not to say	0,1%	0,1%	0,1%	0,7%	0,4%	0,4%	0,5%
<18	29,9%	33,1%	32,0%	30,1%	32,4%	30,7%	33,5%
18-34	18,5%	19,3%	22,1%	24,1%	22,4%	26,7%	28,4%
35-54	24,4%	26,7%	25,3%	26,6%	24,5%	24,1%	21,3%
>=55	27,1%	20,9%	20,7%	19,2%	20,7%	18,4%	16,8%
employed	68,4%	75,9%	70,1%	74,1%	69,2%	79,0%	66,5%
unemployed	31,6%	24,1%	29,9%	25,9%	30,8%	21,0%	33,5%
primary school or none	6,6%	3,3%	5,5%	3,4%	4,9%	6,2%	5,3%
lower secondary education	29,8%	14,7%	26,9%	14,1%	16,1%	6,1%	10,5%
upper secondary education	26,1%	16,4%	25,8%	24,2%	28,9%	34,6%	37,6%
further education	11,9%	21,2%	11,3%	22,2%	11,8%	11,6%	27,2%
higher education	25,6%	44,3%	30,5%	36,0%	38,3%	41,5%	19,4%
minor	29,9%	33,1%	32,0%	30,1%	32,4%	30,7%	33,5%
adult	70,1%	66,9%	68,0%	69,9%	67,6%	69,3%	66,5%
with income reduction	33,2%	43,9%	36,1%	55,9%	46,1%	45,1%	46,5%
no income reduction	66,8%	56,1%	63,9%	44,1%	53,9%	54,9%	53,5%
change to smart working	52,4%	62,6%	52,3%	68,1%	65,0%	57,8%	68,7%
no smart working	47,6%	37,4%	47,7%	31,9%	35,0%	42,2%	31,3%

Table 20 Demographic composition of illegal consumers accessing books and e-books

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As for music and films or TV-series, we find that pirates are more often males, particularly so in Germany, Netherlands and Sweden. In the same way, the sample of pirates is composed by a higher percentage of younger respondents, in particular minors. As for previous content types, income reduction and change from in presence to smart working during the pandemic is also a discriminatory feature of the two samples. This is less evident only in Spain and Poland.

Finally, in Table 21 we show how the volume of the legal consumption of books and e-books varies among pirates and non-pirates.

Table 21 Consumption of books and e-books from any legal channel: pirates vs non pirates

	DEU	ESP	FRA	GBR	NLD	POL	SWE
	Percentage of respondents consuming games from any legal channel						
Pirates	90,8%	89,8%	89,2%	96,2%	93,3%	90,1%	92,7%
Non pirates	25,5%	11,7%	16,6%	17,9%	17,7%	15,8%	15,6%
	Median consumption of recordered games from any legal channels						
Pirates	17	22	14	22	19	18	23
Non pirates	4	6,5	2	7	4	5	3

In the first half of the table, we display the percentages of users consuming through legal channels. These numbers are similar to those observed in Table 15, regarding the acquisition of films and TV-series. Between 90% and 96% of pirate users do also consume through legal channels. The second half of the table shows that in terms of volume consumed, the amount is much higher for pirates than for non-pirates, confirming previous findings for music and films and TV-series. In most of the countries, pirates consume four times as high as non-pirates. The difference in the amount of consumption is particularly strong in France and Sweden.

4.4 GAMES

Legal sources

Figure 12 reports the percentages of Internet users accessing games through any legal channel in the last year. Similarly to previous cultural goods, the highest share of legal consumption is registered in Spain (40%), followed by UK and Poland.

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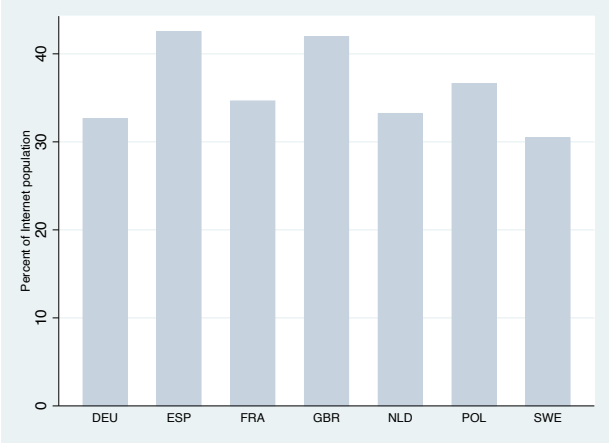
Figure 12 Consumed games from any legal channel in the last year



In the case of games, the legal channels considered in our questionnaire are either the purchase of physical carriers or download and streaming, free games online or games merchandise. In Table 22 we display the percentages for each distinct legal channel across countries. Percentages of these different channels are similar, with only game merchandising registering slightly lower percentages. However, once looking at the per capita number of games acquired through legal channels, displayed in Table 29, the numbers suggest that streaming is the most used channel across countries in terms of volumes acquired. In the case of Spain, the number of games streamed is four time as high as those downloaded in the last year.

Table 22 Percentage of the Internet population using legal channels to consume games

	DEU	ESP	FRA	GBR	NLD	POL	SWE
Physical carrier, legal	25%	30%	26%	32%	25%	25%	20%
Download, legal	26%	39%	29%	38%	29%	31%	27%
Streaming, legal	23%	33%	23%	34%	25%	28%	22%
Free online	25%	40%	31%	34%	28%	33%	26%
Games merchandise	16%	27%	22%	27%	19%	23%	19%

Note: The percentages do not sum to 100 as one individual can indicate more than one channel.

Table 23 Per capita consumption of games from legal channel (Internet population)

	DEU	ESP	FRA	GBR	NLD	POL	SWE
Physical carrier	0,57	1,35	0,80	1,33	0,67	0,78	0,64
Download, legal	0,87	1,75	1,38	1,66	0,97	1,35	1,31
Streaming, legal	1,73	5,43	3,14	3,34	2,63	3,36	2,99
Digital, legal	2,60	7,17	4,52	5,00	3,60	4,70	4,30

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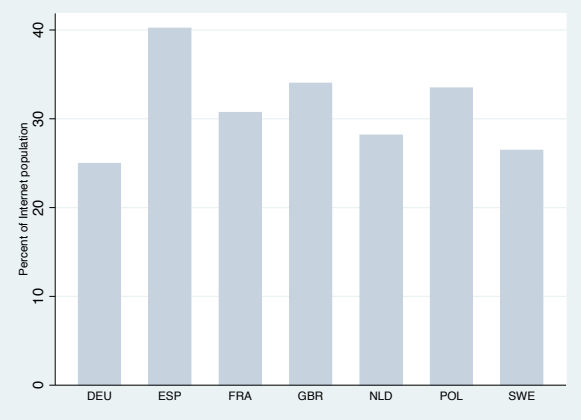
Illegal sources

Looking at illegal channels to access games, we present in Figure 13 the percentage of Internet users accessing games through any illegal channel in the last year. The percentages registered across countries are similar to those observed for legal channels in Figure 12, but the numbers are slightly lowers.

Figure 13 Consumed games from any illegal channel in the last year



We display in Table 24 the percentages of Internet users acquiring games through each illegal channel. In the case of games, possible illegal channels are download through illegal sources or the use of a chipped-modded console. The percentages of these two channels are very similar across countries, ranging from 11% to 24% of the Internet population.

Table 24 Percentage of the Internet population using illegal channels to consume games

	DEU	ESP	FRA	GBR	NLD	POL	SWE
Download, legal	11%	18%	13%	21%	14%	15%	12%
Chipped-modded	12%	24%	13%	21%	15%	15%	12%

Note: The percentages do not sum to 100 as one individual can indicate more than one channel.

The same findings can be inferred from Table 25, showing that the volume of per capita consumption is very similar for the two illegal sources in the last year. Overall, the amount of digital illegal consumption of games is around one game per capita. However, the median value is lower for German respondents (0.7) and much higher for Spanish users (2.8).

Table 25 Per capita consumption of games from illegal channel (Internet population)

	DEU	ESP	FRA	GBR	NLD	POL	SWE

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Download, illegal	0,31	0,96	0,57	0,91	0,46	0,52	0,54
Chipped-modded	0,37	1,80	0,56	1,07	0,50	0,57	0,75
Digital, illegal	0,68	2,76	1,13	1,99	0,96	1,09	1,29

Motivations and profiles

The primary reasons provided by respondents in our survey for using illegal sources to purchase games are shown in Figure 14 and

Figure 15. The findings are in line with the same figures related to the other content types: all the provided reasons seem to be equally relevant to explain the use of illegal channels to acquire games.

Figure 14 Primary reason for downloading or streaming games from illegal sources

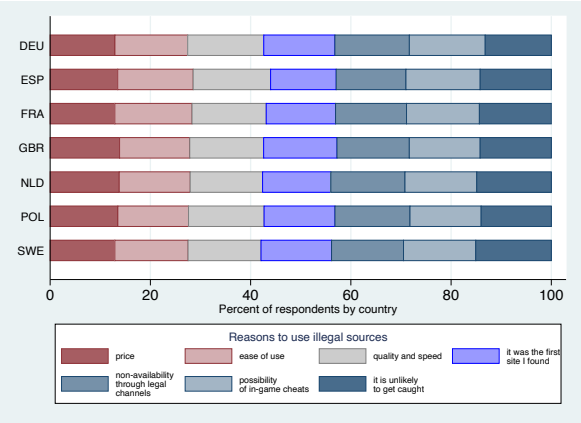

Figure 15 Primary reason for playing games on a modded console (illegal sources)

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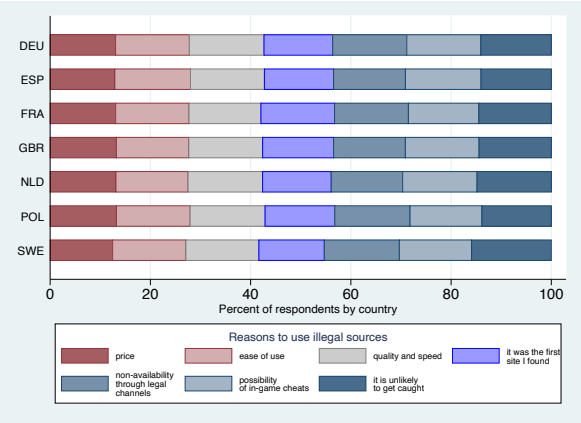

In Table 26 and Table 27 we present the demographic characteristics of legal and illegal consumers of games respectively.

Table 26 Demographic composition of legal consumers accessing games

	DEU	ESP	FRA	GBR	NLD	POL	SWE
female	37,9%	39,2%	41,8%	42,9%	33,3%	38,0%	34,0%
male	60,9%	60,0%	57,6%	56,1%	65,3%	60,9%	63,7%
third gender	1,2%	0,7%	0,4%	0,6%	0,8%	0,9%	1,4%
prefer not to say	0,0%	0,1%	0,1%	0,5%	0,6%	0,3%	1,0%
<18	45,9%	41,4%	43,4%	39,9%	44,3%	41,7%	47,1%
18-34	24,9%	23,0%	26,5%	30,6%	28,7%	30,7%	33,8%
35-54	22,2%	25,9%	23,6%	25,4%	23,7%	21,2%	15,1%
>=55	7,0%	9,7%	6,4%	4,1%	3,3%	6,4%	4,0%
employed	74,7%	79,5%	77,2%	77,0%	73,7%	83,9%	71,5%
unemployed	25,3%	20,5%	22,8%	23,0%	26,3%	16,1%	28,5%
primary school or none	10,6%	4,5%	9,4%	4,8%	8,0%	10,2%	8,9%
lower secondary education	36,6%	21,6%	29,9%	18,4%	17,5%	8,5%	16,6%
upper secondary education	25,6%	15,0%	26,3%	28,1%	29,6%	38,1%	40,1%
further education	9,4%	21,8%	11,3%	18,6%	11,6%	11,1%	21,8%
higher education	17,7%	37,1%	23,2%	30,2%	33,4%	32,1%	12,6%
minor	45,9%	41,4%	43,4%	39,9%	44,3%	41,7%	47,1%
adult	54,1%	58,6%	56,6%	60,1%	55,7%	58,3%	52,9%
with income reduction	44,8%	45,9%	42,8%	56,9%	53,1%	47,5%	52,0%
no income reduction	55,2%	54,1%	57,2%	43,1%	46,9%	52,5%	48,0%
change to smart working	65,6%	66,7%	58,0%	72,1%	74,7%	65,1%	74,9%
no smart working	34,4%	33,3%	42,0%	27,9%	25,3%	34,9%	25,1%

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Table 27 Demographic composition of illegal consumers accessing games

	DEU	ESP	FRA	GBR	NLD	POL	SWE
female	38,3%	41,4%	44,1%	42,7%	34,1%	41,1%	34,8%
male	60,3%	57,8%	55,4%	55,9%	64,4%	57,7%	62,8%
third gender	1,4%	0,6%	0,3%	0,7%	1,0%	0,9%	1,5%
prefer not to say	0,0%	0,1%	0,2%	0,7%	0,5%	0,3%	1,0%
<18	49,5%	42,3%	45,0%	43,0%	46,0%	42,9%	49,4%
18-34	22,6%	20,7%	24,7%	30,3%	29,3%	27,5%	29,9%
35-54	19,4%	25,7%	22,4%	22,6%	21,7%	23,0%	15,0%
>=55	8,4%	11,2%	7,9%	4,1%	3,0%	6,6%	5,7%
employed	73,3%	78,5%	75,4%	79,5%	74,4%	85,1%	72,5%
unemployed	26,7%	21,5%	24,6%	20,5%	25,6%	14,9%	27,5%
primary school or none	11,2%	3,7%	10,2%	5,4%	7,0%	9,9%	9,2%
lower secondary education	34,4%	21,8%	30,1%	18,0%	18,2%	8,7%	16,5%
upper secondary education	25,7%	15,4%	25,2%	28,7%	27,8%	36,7%	40,6%
further education	11,4%	23,3%	12,1%	18,2%	11,5%	10,5%	22,7%
higher education	17,3%	35,7%	22,4%	29,7%	35,5%	34,1%	11,0%
minor	49,5%	42,3%	45,0%	43,0%	46,0%	42,9%	49,4%
adult	50,5%	57,7%	55,0%	57,0%	54,0%	57,1%	50,6%
with income reduction	48,5%	47,7%	45,2%	63,6%	60,0%	48,7%	54,9%
no income reduction	51,5%	52,3%	54,8%	36,4%	40,0%	51,3%	45,1%
change to smart working	70,5%	66,9%	59,4%	77,4%	78,4%	67,8%	77,2%
no smart working	29,5%	33,1%	40,6%	22,6%	21,6%	32,2%	22,8%

The sample of legal users is more often composed of males (between 33% and 43% of respondents) and minors (between 40% and 49.5%). Similar percentages are found for illegal users. Differently from previous discussed content types, we do not observe clear differences in terms of demographics between legal and illegal users.

In line with previous findings concerning music, films and TV-series and books, however, we find relevant differences between pirates and non-pirates in their legal consumption of games. In Table 28 we indeed show that, as discussed for the other contents, most of pirate users also purchase games through legal channels, with percentages ranging from 89% in France to 96% in UK. On the contrary, 12% to 25.5% of non-pirates users consume legally. Again, the number of games purchased through legal sources is considerably higher for pirates compared to non-pirates. In particular, the median amount of consumption of pirates is between three and seven times as high as for non-pirates, across countries. The divergences in the amounts between the two groups is particularly high in France and Sweden, confirming previous discussed results about films and TV-series and books acquisition.

Table 28 Consumption of games from any legal channel: pirates vs non pirates

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	DEU	ESP	FRA	GBR	NLD	POL	SWE
	Percentage of respondents consuming games from any legal channel						
Pirates	90,8%	89,8%	89,2%	96,2%	93,3%	90,1%	92,7%
Non pirates	25,5%	11,7%	16,6%	17,9%	17,7%	15,8%	15,6%
	Median consumption of recordered games from any legal channels						
Pirates	17	22	14	22	19	18	23
Non pirates	4	6,5	2	7	4	5	3

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5 The consumption of cultural goods during the COVID-19 emergency

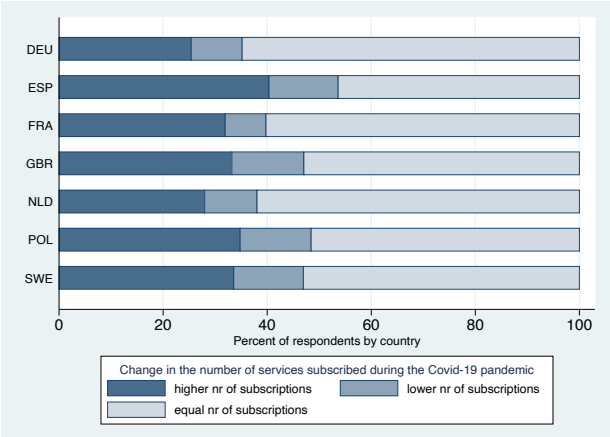
As the survey took place during the final phase of the pandemic emergency (i.e., when most of the EU countries had implemented effective vaccination campaign), we included in the survey some questions to monitor how COVID-19 has affected patterns of cultural goods consumption.

5.1 Subscriptions before and after the pandemic

Subscriptions to services to access any content related to music, films and videos, books and games are nowadays very common across countries. However, Covid-19 emergency might have changed the level of consumption of cultural goods and their preferred acquisition channels. While extended lockdown and the closure of several productive activities have freed time to consume cultural goods, some cultural activities, and places such as movie displays, concerts, and music and books shops have been shut down or restricted. To highlight how the pandemic emergency has changed the consumption of cultural goods we included a few questions aiming at documenting how the use of legal and illegal content acquisition channels has changed during the pandemic emergency.

Figure 16 shows the extent to which consumers have changed the level of their consumption through legal subscriptions as it shows the percentage of respondents that increase, decrease, or keep the same number of subscriptions. While the large majority of respondents do not change the number of subscriptions, between 20 and 40% of respondents declare to have increased the number of subscriptions during the pandemic. On the contrary, Figure 1 shows an average of about 11.7% of respondents that decrease their number of subscriptions, possibly due to income reductions.

Figure 16 Change in the number of services subscribed during the Covid-19 pandemic



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To assess the primary reasons to subscribe or unsubscribe legal access services to music, films and videos, books, and games during the pandemic, we included in the survey two specific questions. Figure 17 reports the primary motivation for new subscriptions and we can notice negligible differences both across different motivations and across countries. As several respondents choose more than one reason for getting a new subscription we can conclude that often such decision stems from articulated considerations covering economic and quality aspects of the new service.

Figure 17 Primary reasons for new subscriptions during the Covid-19 pandemic

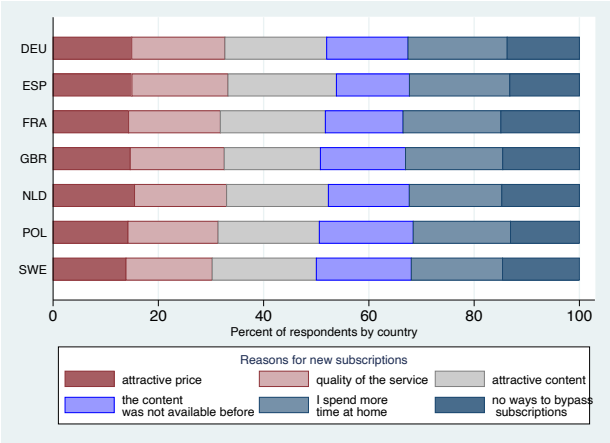
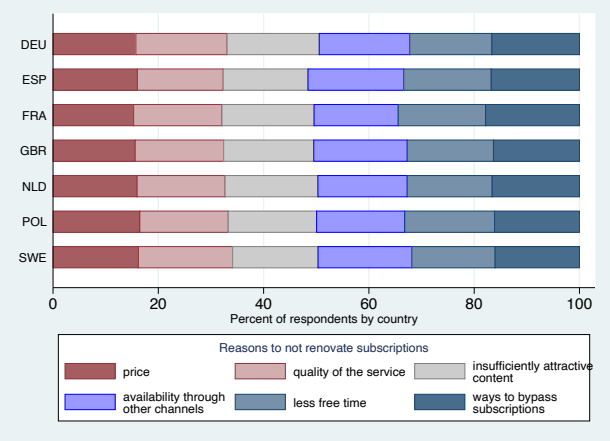


Figure 18 reports similar results for motivations regarding unsubscribing new services. We find negligible differences both across different motivations and across countries.

Figure 18 Primary reasons not to renovate subscriptions during the Covid-19 pandemic



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5.2 Change in the use of piracy channels during the pandemic

While the pandemic emergency might have freed time for more cultural goods consumption, it might have also reduced the available income. As the relation between income per capita and online piracy is not straightforwardly negative (Poort, Quintais et al., 2018), we expect that the pandemic emergency might have mixed effects on the use of illegal channels to access and consume cultural goods. We address the issue with questions assessing individual changes in the use of unauthorised channels during the pandemic across different content types. In this subsection, we examine the results looking at whether there is an increase, a decrease or a stable usage of illegal channels by content type. We focus on disentangling whether illegal access increase is driven by new users of such channels or by an intensification of usage by respondents already using such channels. Furthermore, we will explore such differences looking at patterns across different users' type focusing on respondents: (i) experiencing income reductions during the pandemic, (ii) involved in smart-working or study from home, (iii) with high interest in the related content type. While the results are descriptive in nature, this analysis highlights possible relations between users' preferences, income, and piracy.

Music

Figure 19 summarizes habits changes related to illegal music acquisition during the COVID-19 emergency. It highlights that between 28% and 48% of the respondents did not change their behaviour. Interestingly, during the same period, between 14% and 25% of respondents started using piracy channels, around 20% slightly increased the use of these channels, and around 10-12% considerably increased the use of these channels. Finally, only a minority of respondents decreased the use of piracy channels (7-11%). This figure indicates that the pandemic emergency triggered an increase in illegal channels used to access music. This increase has been driven both by new users and by more consumption of those that already used these channels.

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Figure 19 Change in the use of piracy channels during the pandemic for accessing music

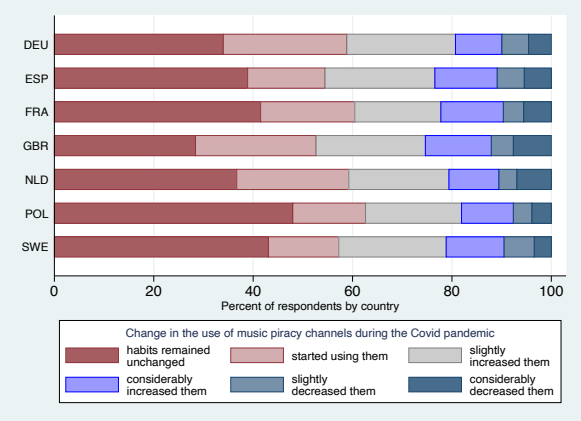
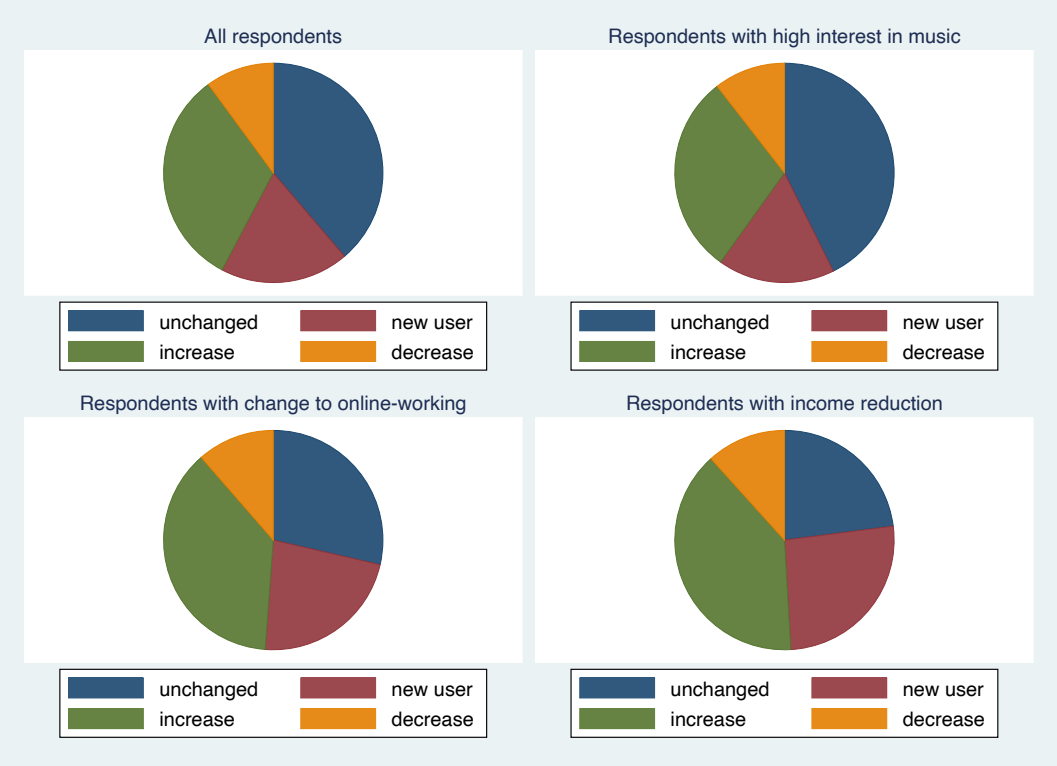


Figure 20 reports the share of users by categories of habits changes of piracy channels usage and by type of users.

Figure 20 Change in the use of piracy channels during the pandemic for accessing music by respondent type



Note: The cathegory “unchange” includes respondents whose habits remain unchanged. The cathegory “new user” includes respondents who start using illegal channels. The cathegory “increase” includes respondents who slightly considerably increase the use of illegal channels. The cathegory “decrease” includes respondents who slightly decrease, and considerably decrease the use of illegal channels.

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The largest share (around 38.7%) of users experienced no change in the use of piracy channels, and the percentage increases up to 42.7% when we look at users with a particular interest in music. However, if we sum new users to consumers who slightly or considerably increase piracy, we found that 51% of respondents raise their use of illegal channels during the pandemic against 38.7% who did not change their behavior. The percentage of new users of piracy channels is around 19%, whereas the respondents share increasing the use of illegal channels is about 32%. When focusing on respondents with a significant change to online working/studying and respondents with income reduction during the pandemic, we find that the percentage of respondents increasing piracy behaviours is notably higher (around 37.4% and 39%, respectively) as well as the share of new users (about 22.6% and 26.1%, respectively). The increase in piracy consumption documented in Figure 19 and in the top-left pie is driven by users who experienced income reduction and a relevant change from in-presence to online-working/studying. While just descriptive, this result might indicate an increase in online piracy in accessing music due to more free-time availability and a lower income at disposal.

Table 29 reports the same disaggregated by countries, and few differences emerge. The largest share of respondents increases their illegal access to music in most countries. Instead, this share is dispersed, ranging between 47% in Sweden and 60% in the United Kingdom. On the contrary, in Poland, most respondents did not change their level of piracy use. While in all the countries, the increase of piracy use is due to respondents intensifying their use of this specific source, the share of new users is significant, ranging between 15% in Poland and 25% in Germany.

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Table 29 Change in the use of piracy channels during the pandemic for accessing music by countries and consumers' group

		DEU	ESP	FRA	GBR	NLD	POL	SWE
All respondents	unchanged	34%	39%	42%	28%	37%	48%	43%
	increase, of which:	56%	50%	49%	60%	53%	44%	47%
	new user	25%	16%	19%	24%	23%	15%	14%
	already users	31%	35%	30%	35%	30%	30%	33%
	decrease	10%	11%	10%	12%	11%	8%	9%
Respondents with high interest in music	unchanged	40%	37%	48%	33%	40%	51%	53%
	increase, of which:	51%	49%	42%	54%	51%	41%	39%
	new user	22%	15%	14%	24%	24%	13%	11%
	already users	29%	35%	28%	29%	26%	28%	27%
	decrease	9%	13%	10%	13%	10%	8%	9%
Respondents with change to online working	unchanged	25%	28%	31%	21%	25%	38%	33%
	increase, of which:	65%	58%	58%	66%	63%	53%	56%
	new user	30%	17%	24%	28%	27%	17%	17%
	already users	35%	42%	34%	39%	36%	36%	40%
	decrease	10%	13%	11%	13%	12%	9%	10%
Respondents with income reduction	unchanged	16%	26%	26%	17%	17%	36%	23%
	increase, of which:	74%	60%	63%	71%	69%	54%	66%
	new user	37%	18%	26%	30%	32%	20%	21%
	already users	37%	42%	36%	41%	37%	35%	45%
	decrease	9%	13%	11%	12%	14%	9%	11%

Looking at different respondents' categories, just one difference emerges. Among respondents experiencing a change to online working or income reduction during the pandemic, we find that most respondents increase their illegal consumption in all countries. In particular, we find that the share of new users significantly contributes to the increase of access to music to unauthorized channels, especially in Germany, with a share of 30% for the case of respondents with a change to online working and 37% for the case of respondents experiencing income reduction.

Overall, Table 29 confirms the aggregated results of Figure 20, suggesting that more free-time availability and a lower income increase music consumption through illegal channels during the pandemic.

Film and video

Figure 21 summarizes habits changes related to illegal film and video acquisition during the COVID-19 emergency, indicating that most respondents increased their use of unauthorised channels. On average, 45% of respondents did not change the use of unauthorised channels and around 46% increased the use of these channels, where new users contribute for the 16%. Finally, only a minority of respondents decreased the use of piracy channels. Very similarly to the music case, the pandemic emergency has increased the use of illegal channels both by triggering new users and by more consumptions of already users of these channels.

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Figure 21 Change in the use of piracy channels during the pandemic for accessing film and videos

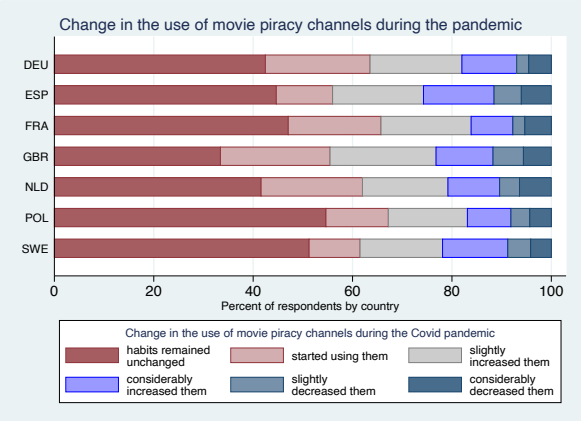
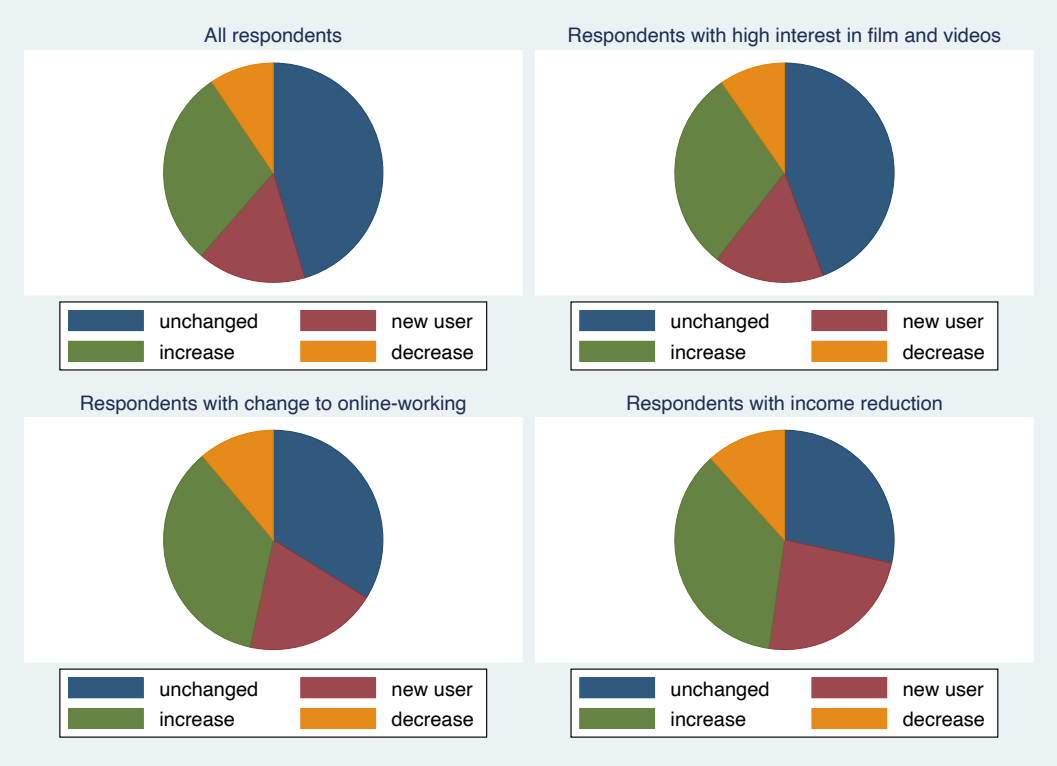


Figure 22 reports the share of users by categories of habit changes of piracy channels usage and by type of users highlighting rather different patterns.

Figure 22 Change in the use of piracy channels during the pandemic for accessing film and videos by respondent type



Note: The cathegory “unchange” includes respondents whose habits remain unchanged. The cathegory “new user” includes respondents who start using illegal channels. The cathegory “increase” includes respondents who slightly considerably increase the use of illegal channels. The cathegory “decrease” includes respondents who slightly decrease, and considerably decrease the use of illegal channels.

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Differently from the music case, in the movies and film, patterns of increased reliance on illegal channels are less marked. While most users and users with a specific interest in films experienced an increase in illegal access and consumption, their share is 45.1% and 46%, respectively, with a contribution of new users of such channels equal to 16% and 16.3%, respectively. When focusing on respondents with change to online working/studying and respondents with income reduction during the pandemic, patterns are more evident. We find that between 55% and 59.9% of them increase their access to movies through illegal channels with 19.6% and 23.9% of new users.

Table 30 reports the same data disaggregated by countries and in this case some heterogeneity emerges. Only in three countries (i.e., Germany, United Kingdom, Netherlands) the largest share of respondents increases their illegal access to movies with share ranging between 48% in the Netherlands and 55% in the United Kingdom. In the remainder four countries (i.e., Spain, France, Poland, and Sweden) the largest share of users did not change his propensity to access movie through illegal channels.

Table 30 Change in the use of piracy channels during the pandemic for accessing films and videos by countries and consumers' group

		DEU	ESP	FRA	GBR	NLD	POL	SWE
All respondents	unchanged	42%	45%	47%	33%	42%	55%	51%
	increase, of which:	51%	44%	45%	55%	48%	37%	40%
	new user	21%	11%	19%	22%	20%	13%	10%
	already users	29%	32%	27%	33%	28%	25%	30%
	decrease	7%	12%	8%	12%	10%	8%	9%
Respondents with high interest in music	unchanged	42%	43%	50%	34%	40%	51%	51%
	increase, of which:	52%	46%	43%	53%	50%	41%	39%
	new user	22%	11%	14%	24%	22%	16%	9%
	already users	29%	35%	29%	29%	28%	25%	30%
	decrease	6%	11%	7%	13%	10%	8%	10%
Respondents with change to online working	unchanged	31%	34%	36%	25%	28%	43%	39%
	increase, of which:	63%	51%	56%	62%	59%	47%	51%
	new user	27%	13%	23%	25%	25%	15%	13%
	already users	35%	38%	33%	37%	34%	32%	38%
	decrease	6%	14%	8%	13%	13%	10%	10%
Respondents with income reduction	unchanged	20%	33%	28%	21%	19%	44%	30%
	increase, of which:	73%	53%	62%	66%	66%	47%	58%
	new user	34%	16%	29%	29%	31%	17%	17%
	already users	39%	37%	33%	37%	34%	30%	41%
	decrease	7%	14%	10%	13%	15%	9%	12%

Some other differences emerge, when we look at different respondents' categories, some. Respondents with high interest in movies increased their illegal consumption (with the share of new users ranging between 9% and 24%) in all countries with the exception of France, Poland, and Sweden, where the largest percentage of respondents did not change their illegal consumption.

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Finally, we find consistent patterns across countries looking at respondents experiencing either a change to online-working or income reduction. Most respondents increase their usage of illegal channels to access movies, with new users being on average 20% and 25%, respectively. Consistently with the music case, Table 30 confirms the aggregated results of Figure 22, pointing to an increase in online piracy to access movie during the Covid-19 emergency due to more free-time availability and income reduction.

Books

Figure 23 summarizes habits changes related to illegal book acquisition and highlights blurred results as compared to the music and movie cases. In fact, while a significant percentage or did not change behaviour, in almost all the countries respondents indicate a significant increase in their illegal access with on average about 22% of the respondents starting to use such illegal channels (with some variability across countries that will be discussed later). This share of new users is the largest registered across different cultural good type. This figure indicates that the pandemic emergency has triggered the larger effect on attracting new users for unauthorised consumption, while coupled with more consumptions of already users of these channels.

Figure 23 Change in the use of piracy channels during the pandemic for accessing books

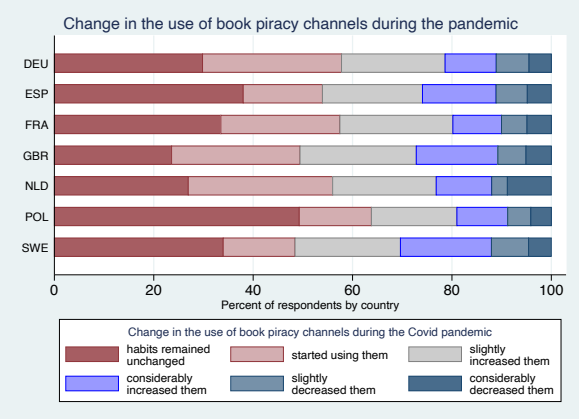

Figure 24 reports the share of users by categories of habits changes of piracy channels usage and by type of users.

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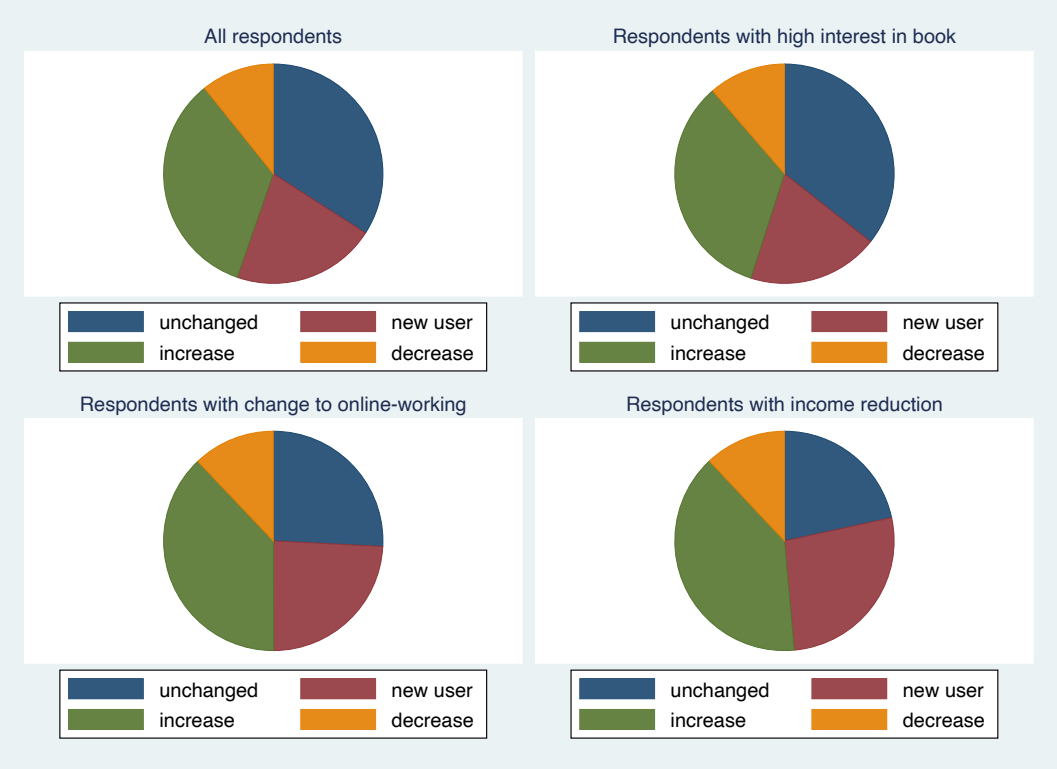
Figure 24 Change in the use of piracy channels during the pandemic for accessing books by respondent type



Note: The cathegory "unchange" includes respondents whose habits remain unchanged. The cathegory "new user" includes respondents who start using illegal channels. The cathegory "increase" includes respondents who slightly considerably increase the use of illegal channels. The cathegory "decrease" includes respondents who slightly decrease, and considerably decrease the use of illegal channels.

The majority (54.8%) of users experienced an increase of piracy channels and a similar share (53.5%) is found when we look at users with a particular interest in books. Within these groups, a large share of respondents are new users of illegal channels to access books with percentages equal to 21.6% and 20.6%. Consistent with the two previous cases, a specific interest in a cultural good is a very strong motivation to seek access to it illegally. Also, the patterns displayed by respondents experiencing change to online working/studying or income reduction during the pandemic are consistent with the music and movies cases. We find that between 60.9% and 63.5% of respondents significantly increase their illegal access during the Covid-19 pandemic, with new users accounting for the 24.4% and 26.5%. All in all, the increase in piracy consumption documented in Figure 22 and in the top-left pie of Figure 23 is driven by users who experienced income reduction and a relevant change from in-presence to online-working/studying. While just descriptive, this result might point to an increase of online piracy in accessing books due to more free-time availability and a lower income at disposal.

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Table 31 reports the same percentages disaggregated by countries, and minor differences emerge. Except Poland, the largest share of respondents increased their illegal access to books in all countries. This share is rather dispersed, ranging between 51% in Spain and 66% in the United Kingdom.

Table 31 Change in the use of piracy channels during the pandemic for accessing books by countries and consumers' group

		DEU	ESP	FRA	GBR	NLD	POL	SWE
All respondents	unchanged	30%	38%	33%	24%	27%	49%	34%
	increase, of which:	59%	51%	56%	66%	61%	42%	54%
	new user	28%	16%	24%	26%	29%	15%	14%
	already users	31%	35%	33%	40%	32%	27%	40%
	decrease	11%	11%	10%	11%	12%	9%	12%
Respondents with high interest in music	unchanged	34%	39%	37%	26%	24%	51%	34%
	increase, of which:	54%	51%	52%	62%	63%	39%	53%
	new user	24%	14%	23%	22%	30%	14%	14%
	already users	30%	37%	28%	40%	33%	25%	40%
	decrease	11%	10%	11%	12%	13%	11%	13%
Respondents with change to online working	unchanged	22%	27%	26%	18%	20%	40%	29%
	increase, of which:	66%	59%	62%	71%	66%	50%	59%
	new user	32%	19%	27%	27%	32%	16%	16%
	already users	34%	41%	35%	44%	34%	33%	43%
	decrease	12%	13%	12%	11%	14%	10%	12%
Respondents with income reduction	unchanged	17%	24%	23%	17%	14%	38%	22%
	increase, of which:	72%	63%	64%	73%	71%	52%	68%
	new user	37%	23%	30%	29%	35%	17%	17%
	already users	35%	40%	35%	43%	36%	35%	50%
	decrease	11%	14%	13%	11%	15%	10%	10%

Looking at different respondents' categories little differences emerges. Among respondents with high interest in books, we find that the largest share increases their illegal consumption except in Poland with shares of new users ranging between 14% in Sweden and Spain, and 30% in the Netherlands.

We find a common pattern across countries, when looking at respondents changing to online-working and experiencing income reduction. In all countries, the majority of users increases their use of illegal access to books, with the percentage of new users being around 16% and 37%. Overall, Table 31 broadly confirms the aggregated results Figure 24 suggesting that more free-time availability and a lowering of income increase books consumption through illegal channels during the pandemic.

Games

Figure 25 summarizes habits changes related to game acquisition and highlights, a significant increase in the use of pirate channels. Around 18% of respondents started using piracy channels, around 20% slightly increased, and around 12% significantly increased the use of these channels. Finally, only a minority of respondents decreased the use of piracy channels.

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Figure 25 Change in the use of piracy channels during the pandemic for accessing games

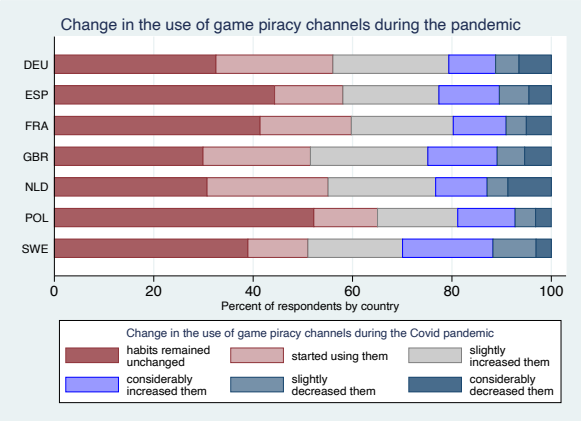
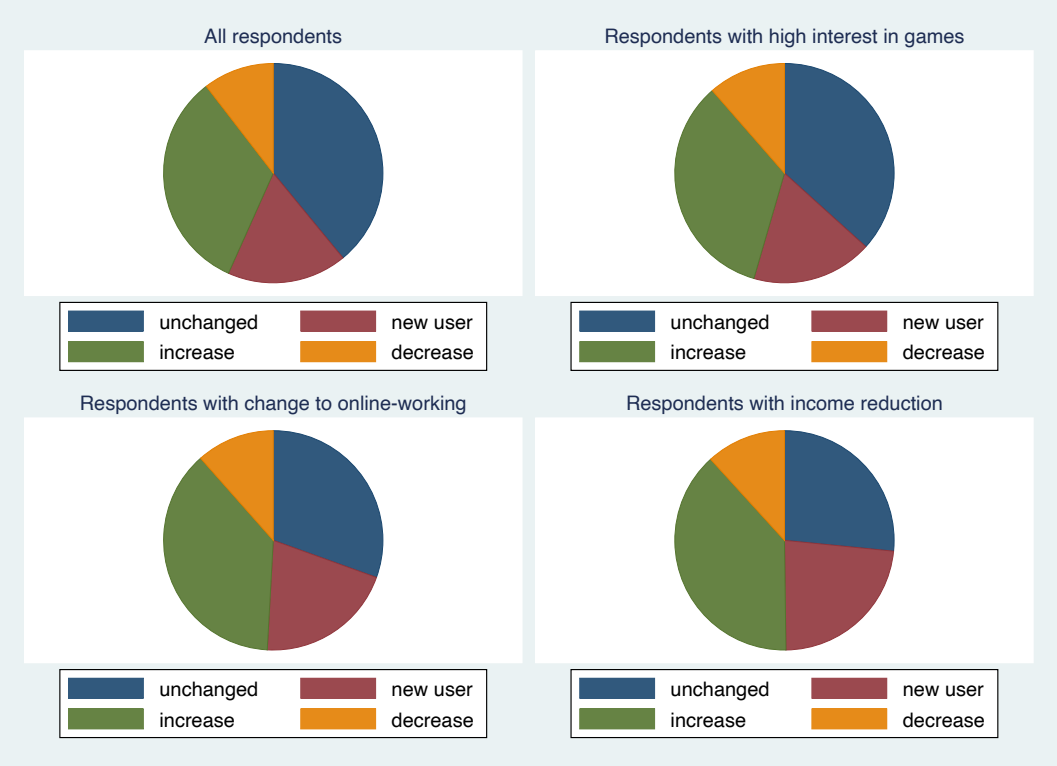


Figure 26 reports the share of users by categories of habits changes of piracy channels usage and by type of users highlighting rather different patterns.

Figure 26 Change in the use of piracy channels during the pandemic for accessing games by respondent type



Note: The cathegory “unchange” includes respondents whose habits remain unchanged. The cathegory “new user” includes respondents who start using illegal channels. The cathegory “increase” includes respondents who slightly considerably increase the use of illegal channels. The cathegory “decrease” includes respondents who slightly decrease, and considerably decrease the use of illegal channels.

Similarly, to the music case, also for the case of gaming patterns of increased reliance on illegal channels are rather marked. 50.5% of all the respondents and 52.5% of the respondents with a specific interest in games

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experienced an increase of piracy channels, with the share of new users equal to 18.2% and 18.8%, respectively. When focusing on respondents with change to online working/studying and respondents with income reduction during the pandemic, these shares increase to 66.6% and 59.6, with new users being the 20.8% and 23% respectively.

Table 32 reports the same data disaggregated by countries and little heterogeneity emerges. Except for Poland, in all the countries the largest share of respondents increases their illegal access to games with share ranging between 45% in Spain and 59% in the United Kingdom. Among them the share of new users is between 12% in Sweden and 24% in Germany and the Netherlands.

Table 32 Change in the use of piracy channels during the pandemic for accessing games by countries and consumers' group

		DEU	ESP	FRA	GBR	NLD	POL	SWE
All respondents	unchanged	33%	44%	41%	30%	31%	52%	39%
	increase, of which:	56%	45%	50%	59%	56%	41%	49%
	new user	24%	14%	18%	22%	24%	13%	12%
	already users	33%	31%	31%	38%	32%	28%	37%
	decrease	11%	10%	9%	11%	13%	7%	12%
Respondents with high interest in music	unchanged	31%	40%	44%	29%	28%	48%	36%
	increase, of which:	57%	49%	47%	58%	57%	43%	52%
	new user	25%	14%	18%	18%	29%	15%	12%
	already users	32%	35%	30%	40%	28%	29%	40%
	decrease	12%	11%	9%	13%	15%	9%	12%
Respondents with change to online working	unchanged	24%	33%	31%	23%	24%	44%	33%
	increase, of which:	66%	54%	58%	65%	62%	47%	55%
	new user	29%	17%	21%	24%	26%	15%	13%
	already users	37%	38%	37%	41%	35%	32%	41%
	decrease	10%	12%	11%	12%	14%	8%	12%
Respondents with income reduction	unchanged	18%	34%	28%	20%	19%	42%	26%
	increase, of which:	71%	55%	62%	67%	66%	49%	61%
	new user	35%	17%	25%	26%	30%	18%	14%
	already users	36%	38%	37%	41%	36%	31%	48%
	decrease	11%	11%	10%	12%	15%	10%	13%

We find a similar pattern for respondents with high interest in gaming: they all increase their illegal consumption except in Poland where the largest share of respondents did not change their illegal consumption.

Finally, similarly to other cultural goods, we find consistent patterns across countries when looking at respondents with change to online-working or income reduction. In these cases, in all countries the large majority of respondents increase their access to games through illegal channels with peaks of new users of 48% in Sweden for respondents experiencing income reduction. Consistently with the music and movie cases, Table 32 confirms the aggregated results of Figure 26, pointing to an increase in online piracy to access games during the Covid-19 emergency due to more free-time availability and income reduction.

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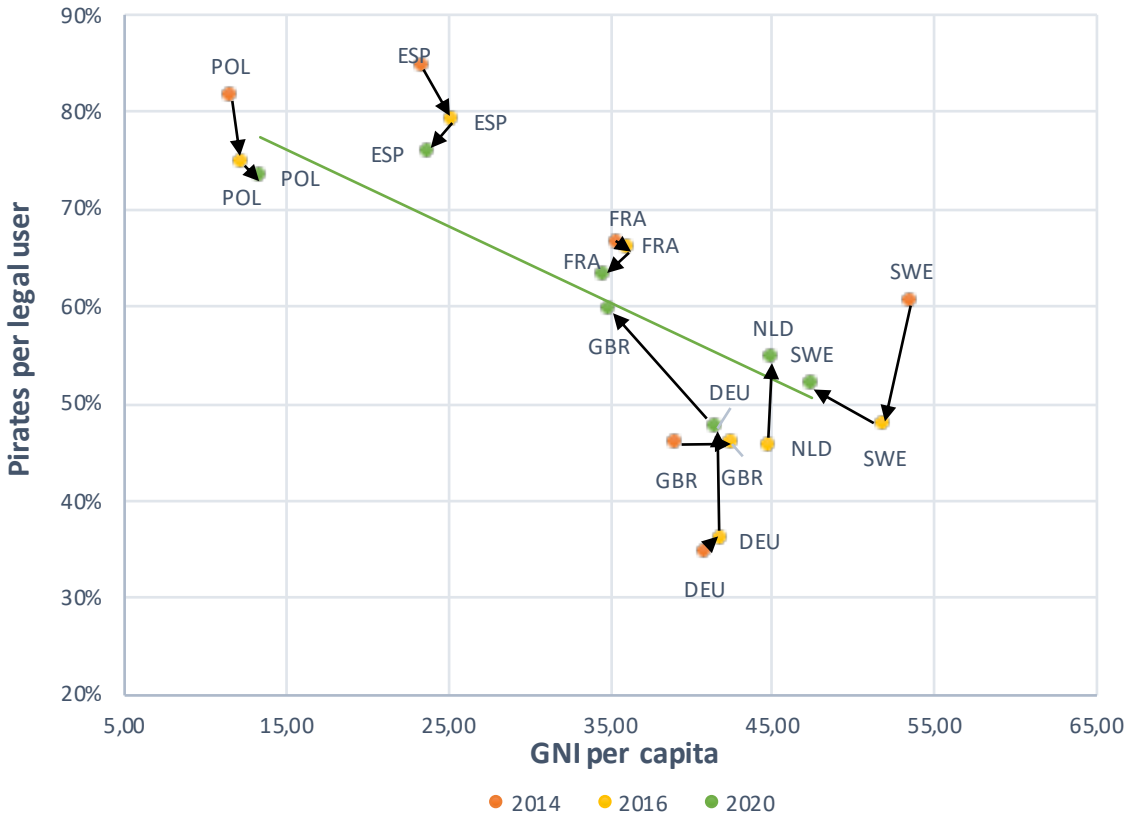
6 The relationship between income and piracy

The previous exercise (Poort, Quintais et al., 2018) has highlighted the time dynamics of the relation between the percentage of pirates per legal user against per capita income across countries[10]. In **Error! Reference source not found.** we "update" the results adding the results of this study's survey.

Figure 27 Pirates per legal content user vs. per capita income (in constant prices)



On the horizontal axis of Figure 27, we report the GNI per capita in 2014, 2016 and 2020[11], whereas, on the vertical axis we report the share of pirates over legal user. We define pirates as users accessing any content type via illegal channels (see the previous sections for the definition for each cultural goog). Figure 27 clearly shows that piracy strongly correlates with per capita income at the country level. Therefore, higher per capita income coincides with a lower share of pirates per legal user. Looking at the predicted line for 2020, we note that France, Netherlands, United Kingdom and Sweden are very close to the line. In Germany and Poland,

[10] See figure 5.42 in Poort, Quintais et al. (2018).

[11] To ensure comparability over time we express the 2014 and 2016 GNI values in constant 2020 prices, using the GDP deflator. Both GNI data and deflators are retrieved from the World Bank Database available at: https://databank.worldbank.org/source/world-development-indicators

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instead, the percentage of pirates is lower than what would be expected by the average income level. On the contrary, in Spain we observe a higher percentage of respondents using illegal sources compared to the predicted value.

The arrows display the change over time from 2014 and 2016. Overall, the movements have been toward the trend line. Notably, while Polish, Spanish and French users have reduced their illegal consumption, a relevant increase can be observed for German, Dutch and British consumers. Swedish users have first reduced in 2014 and then rise in 2016 their illegal accesses. This evidence is particularly relevant, because it stresses how piracy is strongly linked with a lack of purchasing power. Together with findings related to the change of behaviors during the pandemic emergency (Section 5), our results suggest that income levels play a key role in predicting the use of illegal channels to access different content type.

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7 Conclusions

Digitalisation has strongly affected how consumers access cultural goods such as music, films, series, books, and games in the last decades. While digitalisation and internet diffusion have facilitated the access to copyright-protected cultural goods through the *authorised* distribution of content (e.g., through platforms such as Netflix, Spotify, Amazon Prime), they have also facilitated access to copyright-protected cultural good through *unauthorised* online content distribution – commonly referred to as 'online piracy'. Consumers wanting to access digital cultural goods can often choose between a legal and illegal distribution and consumption of content as these various channels coexist.

This report documents the acquisition and consumption of music, films, series, books, and games through the various legal and illegal channels that exist nowadays in seven European countries (France, Germany, The Netherlands, Poland, Spain, Sweden, United Kingdom). The dataset collected through a consume survey includes nearly 12,901 respondents, including over 3,511 minors. The country selection allows to compare the results with two earlier studies performed by members of the consortium in 2014 (Van der Ende, Poort et al., 2015) and 2018 (Poort, Quintais et al., 2018).

The results presented in this report shed some lights on three aspects of authorised and unauthorised acquisition and consumption of these content types.

First, we provide information about the usage of legal and illegal channels of consumption both across countries and across four types of cultural goods (i.e., music, video, books, and games). We find that the share of legal users is always larger that the share of illegal users, with a larger heterogeneity at country level for illegal consumption. Across all the cultural goods, there is higher incidence of illegal use in Spain than in other countries. The exam of the motivation for illegal access indicates no clear patters, suggesting that, on average, there are several motivations at work ranging from prices to content availability and quality. Finally, we consistently find that the group of pirates and non-pirates overlap, indicating a strong complementarity between the two types of consumption. In particular, pirates consume a larger volume of cultural goods through legal channel than non-pirate.

Second, we investigate the consumer's characteristics of different access channels. Similarly, to previous studies we find that young males (even minor) tend to rely more on unauthorised channels. No other individual characteristics look salient in the choice between the two types of consumption channels. Looking at the relation between income and piracy, we find a strong negative correlation between them with some country variability.

Third, we assess how the pandemic emergency has changed the acquisition and consumption through unauthorised channels. In particular, while there are some differences in the magnitude, we find that all consumers experiencing either a transition to online work (or study) or a decrease in income increased their

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reliance on piracy. We also document the extent to which the pandemic emergency triggered the use of illegal channels for the first time. These results confirm previous findings indicating that income levels play a key role in predicting the use of illegal channels to access different content type.

While these results are mostly descriptive, they highlight interesting patterns on the relation between the use of unauthorized channels and individual characteristics such as income and the effect of the pandemic emergency.

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A. Appendix: Text of the survey

Q01 Nowadays, there are many ways to acquire or access music, films and series, books and games. The purpose of this questionnaire is to explore how the internet affects consumer choices and attitudes about them.
Your responses will only be used anonymously. No personal information will be distributed to any other unauthorized individual or third party. You are under no obligation whatsoever to take part in this research and you are free to withdraw from the study at any time without giving a reason, and/or to withdraw your information until the research findings are anonymized. However, we hope that you will agree to give us some of your time and complete this survey.
If you have a son or daughter in the age of 14-17 years, we kindly ask you if you are willing to invite him or her to complete part of this questionnaire.
Where opinions are asked, there is no "good" or "bad" answer – it is your opinion that counts. Whenever you do not know the exact answer, please give your best estimate. The survey will take around 15 minutes to complete.
If you need any further information, or to withdraw your consent, please write to: julia.mazzei@santannapisa.it

Q1 If you have a son or a daughter in the ages of 14-17 years, are you willing to allow he or she to take the survey?

- ○ Yes, I allow my son or daughter to take the survey (code 1)
- ○ I don't have a son or a daughter in this age range or I don't allow he or she to take the survey. I will take the survey myself (code 2)

Display Q02 if Q1 = code 1

Q02 If you have a son or daughter in the age of 14-17 years, we kindly ask you to answer only the following four questions regarding your working status and then invite him or her to complete the rest of this questionnaire.

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Q2 What's your work status? If multiple answers apply, please give the answer that applies for the largest number of hours per week

- ○ Employed (code 1)
- ○ Self-employed/Freelance (code 2)
- ○ Interning (code 3)
- ○ Unemployed- Looking for work (code 4)
- ○ Unemployed – Not looking for work (code 5)
- ○ Studying (code 6)
- ○ Retired (code 7)
- ○ Not able to work (code 8)
- ○ Other (code 9)

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Display Q3 if Q2: code 1, code 2, code 3

Q3 What is the main sector of your working activity?

- ○ Agriculture, Forestry and Fishing (code 1)
- ○ Mining and Quarrying (code 2)
- ○ Manufacturing (code 3)
- ○ Electricity, Gas, Steam and Air Conditioning Supply (code 4)
- ○ Water Supply; Sewerage, Waste Management and Remediation Activities (code 5)
- ○ Construction (code 6)
- ○ Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles (code 7)
- ○ Transportation and Storage (code 8)
- ○ Accommodation and Food Service Activities (code 9)
- ○ Information and Communication (code 10)
- ○ Financial and Insurance Activities (code 11)
- ○ Real Estate Activities (code 12)
- ○ Professional, Scientific and Technical Activities (code 13)
- ○ Administrative and Support Service Activities (code 14)
- ○ Public Administration and Defence; Compulsory Social Security (code 15)
- ○ Education (code 16)
- ○ Human Health and Social Work Activities (code 17)
- ○ Arts, Entertainment and Recreation (code 18)
- ○ Other Service Activities (code 19)
- ○ Activities of Households as Employers; Undifferentiated Goods and Services Producing Activities of Households for Own Use (code 20)
- ○ Activities of Extraterritorial Organisations and Bodies (code 21)

Q4 Have you experienced a reduction of your income due to the COVID-19 crisis?

- ○ Yes (code 1)
- ○ No (code 2)

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Display Q5 if Q4= code 1

Q5 Can you give us an estimate of your income reduction due to the COVID-19 crisis?

- ○ 10% or less (code 1)
- ○ between -10% and -25% (code 2)
- ○ between -25% and -50% (code 3)
- ○ more than 50% (code 4)

Display Q06 if Q1=code 1

Q06 If you are willing to allow your son or daughter in the ages of 14-17 to complete this questionnaire, please ask the youngest in this age range to proceed with the survey.

Display Q6 if Q1=code 2

Q6 What is your age?

- ○ Between 18 and 34 (code 2)
- ○ Between 35 and 54 (code 3)
- ○ Over 55 (code 4)

Q7 Which gender do you identify with?

- ○ Male (code 1)
- ○ Female (code 2)
- ○ Non-binary / third gender (code 3)
- ○ Prefer not to say (code 4)

Q8 What is the highest level of education or professional training you successfully completed?

- ○ Primary school or none (code 1)
- ○ Lower secondary education / intermediate qualification (code 2)
- ○ Upper secondary education / full maturity certificate (code 3)
- ○ Further education (diploma, certificate, etc.) (code 4)
- ○ Higher education (university bachelor, master, PhD) (code 5)

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Display Q9 if Q1=code 2

Q9 Have you experienced a significant change from in-presence to online-working due to the COVID-19 crisis?

- ○ Yes (code 1)
- ○ No (code 2)

Display Q10 if Q1=code 1

Q10 Have you experienced a significant change from in-presence to remote-learning or online-working due to the COVID-19 crisis?

- ○ Yes (code 1)
- ○ No (code 2)

Q11 How many inhabitants has the town/city where you live?

- ○ Less than 10,000 (code 1)
- ○ Between 10,000 and 50,000 (code 2)
- ○ Between 50,000 and 100,000 (code 3)
- ○ Between 100,000 and 500,000 (code 4)
- ○ More than 500,000 (code 5)

Q12 On average, how many hours per week do you access internet or online apps for private use? Please leave out time spent on emails

- ○ Less than 3 hours per week (code 1)
- ○ 3 to 5 hours per week (code 2)
- ○ 6 to 9 hours per week (code 3)
- ○ 10 to 14 hours per week (code 4)
- ○ 15 to 19 hours per week (code 5)
- ○ 20 to 29 hours per week (code 6)
- ○ 30 or more hours per week (code 7)

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Q13 How often do you search internet for information on:

	Every day (code 1)	At least each week (code 2)	At least each month (code 3)	Rarely or never (code 4)
a) Music	○	○	○	○
b) Films or TV series	○	○	○	○
c) Books	○	○	○	○
d) Computer games	○	○	○	○

Q14 Compared to other people, how would you describe your interest in:

	Much lower (code 1)	Lower (code 2)	Same (code 3)	Higher (code 4)	Much higher (code 5)
a) Music	○	○	○	○	○
b) Films or TV series	○	○	○	○	○
c) Books	○	○	○	○	○
d) Computer games	○	○	○	○	○

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Q15 Please indicate if you know what each of the following terms means in the context of internet:

	no (code 1)	not sure (code 2)	yes (code 3)
a) VPN	○	○	○
b) SSD	○	○	○
c) Peer-to-peer	○	○	○
d) Torrents	○	○	○
e) FTP	○	○	○
f) Port forwarding	○	○	○
g) Blockchain	○	○	○
h) Warez	○	○	○
i) Kodi / Kodi box	○	○	○
j) Raspberry Pi	○	○	○
k) TOR	○	○	○

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Q16 Do you own any of the following devices:

	no (code 1)	yes (code 2)
a) Universal media player/ media streamer/set-top box such as Roku, Chromecast, Apple TV?	○	○
b) Tablet	○	○
c) Smartphone	○	○
d) Smart TV	○	○
e) Beamer / projector	○	○
f) Digital cable or satelite TV decoder	○	○
g) E-reader	○	○
h) Game console, such as Xbox, Wii or PS4	○	○
i) Network Attached Storage (NAS), file server at home, such as Synology	○	○
j) PC, such as desktop or laptop	○	○

Q17 Please list your current subscriptions to access any content related to music, films or TV-series, books or audio-books, computer- and video-games.
Please include only those subscribed by members of your household.

Please also list all your subscriptions before the Covid-19 pandemic to access any content related to music, films or TV-series, books or audio-books, computer- and video-games.
Please include only those subscribed by members of your household.

a) Current	b) Before the Covid-19 pandemic
_____ Amazon Luna (code 1)	_____ Amazon Luna (code 2)
_____Amazon Music (code 3)	_____Amazon Music (code 4)
_____ Amazon Prime Video (code 5)	_____ Amazon Prime Video (code 6)
_____ Apple Music (code 7)	_____ Apple Music (code 8)
_____ Apple TV (code 9)	_____ Apple TV (code 10)

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_____ Audible (code 11)

_____ CBS (code 13)

_____ DAZN (code 15)

_____ Deezer Premium (code 17)

_____ Disney+ (code 19)

_____ ESPN (code 21)

_____ Eurosport (code 23)

_____ Fox Now (code 25)
_____Ge Force Now (code 27)

_____ HBO Max (code 29)

_____ Ivi (code 31)

_____ Kobo Plus (code 33)
_____Mubi/The Auteurs (code 35)

_____ Netflix (code 37)

_____ NBC (code 39)
_____NOW TV (41)

_____ PlayStation Network (code 43)

_____ Sky (code 45)

_____ Spotify (code 47)
_____(Google) Stadia (code 49)

_____ Storytel (code 51)

_____ YouTube Premium (code 53)

_____ Other (Please Indicate) (code 55)

_____ Other (Please Indicate) (code 57)
_____ Other (Please Indicate) (code 59)
____I haven't subscribed to any of service (code 61)

_____ Audible (code 12)

_____ CBS (code 14)

_____ DAZN (code 16)

_____ Deezer Premium (code 18)

_____ Disney+ (code 20)

_____ ESPN (code 22)

_____ Eurosport (code 24)

_____ Fox Now (code 26)
_____Ge Force Now (code 28)

_____ HBO Max (code 30)

_____ Ivi (code 32)

_____ Kobo Plus (code 34)
____Mubi/The Auteurs (36)

_____ Netflix (code 38)

_____ NBC (code 40)
_____NOW TV (code 42)

_____ PlayStation Network (code 44)

_____ Sky (code 46)

_____ Spotify (code 48)
_____(Google) Stadia (code 50)

_____ Storytel (code 52)

_____ YouTube Premium (code 54)

_____ Other (Please Indicate) (code 56)

_____ Other (Please Indicate) (code 58)
_____ Other (Please Indicate) (code 60)
_____I haven't subscribed to any service (code 62)

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Display Q18 if Q17a = "code n" and Q17b ≠ "code n+1"

Q18 For those services subscribed to during the Covid-19 pandemic but not before, please indicate your scale of agreement with the following reasons for subscribing:

	Strongly disagree (code 1)	Disagree (code 2)	Somewhat disagree (code 3)	Neither agree nor disagree (code 4)	Somewhat agree (code 5)	Agree (code 6)	Strongly agree (code 7)
a) Attractive price	○	○	○	○	○	○	○
b) Quality of the service (e.g. speed or reliability)	○	○	○	○	○	○	○
c) Attractive content	○	○	○	○	○	○	○
d) The content I was looking for was not (or not yet) available before	○	○	○	○	○	○	○
e) I spend more time at home	○	○	○	○	○	○	○
f) No possibility to bypass the subscription and get free access to the service, as before (e.g. use someone's else subscription)	○	○	○	○	○	○	○

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Display Q19 if Q17b= "code n" and Q17a ≠ "code n-1"

Q19 If in Q6 the are items in the bottom box that are not present in the upper box: For those services subscribed to before the Covid-19 pandemic but not currently, please indicate your scale of agreement with the following reasons for cancelling your subscription:

	Strongly disagree (code 1)	Disagree (code 2)	Somewhat disagree (code 3)	Neither agree nor disagree (code 4)	Somewhat agree (code 5)	Agree (code 6)	Strongly agree (code 7)
a) The price	○	○	○	○	○	○	○
b) Quality of the service (e.g. speed or reliability)	○	○	○	○	○	○	○
c) Insufficiently attractive content	○	○	○	○	○	○	○
d) The content I was looking for was available through other channels	○	○	○	○	○	○	○
e) Less free time to access the service	○	○	○	○	○	○	○
f) Possibility to bypass the subscription and get free access to the service (e.g. use someone's else subscription)	○	○	○	○	○	○	○

Q20 In the past year, have you purchased, rented, downloaded or streamed music or visited a live concert?

○ yes (code 1)

○ no (code 2)

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Q21 In the past year, have you purchased, rented, downloaded or streamed films or TV-series or visited a cinema?

- ○ yes (code 1)
- ○ no (code 2)

Q22 In the past year, have you purchased, rented, downloaded or streamed books or audio-books or borrowed or e-borrowed any of these from a public library?

- ○ yes (code 1)
- ○ no (code 2)

Q23 In the past year, have you purchased, rented, downloaded or streamed computer/video games or played online games?

- ○ yes (code 1)
- ○ no (code 2)

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Display Q24 if Q20=code1

Q24 Please tell us when was the last time you did the following things:

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	Less than a week ago (code 1)	Between 1 week and 1 month ago (code 2)	Between 1 and 3 months ago (code 3)	Between 3 and 6 months ago (code 4)	Between 6 and 12 months ago (code 5)	More than a year ago (code 6)	Never (code 7)
a) Bought music on a new CD or vinyl record in a physical store or online, or borrowed a CD or record from a public library?	○	○	○	○	○	○	○
b) Downloaded music from services such as *for each country add list 1. here*, directly from the website of a band or musician, etc.?	○	○	○	○	○	○	○
c) Streamed music from services such as *for each country add list 2. here*, or directly from the website of a band or musician, etc.?	○	○	○	○	○	○	○
d) Downloaded music from file sharing sites or cyberlockers such as *for each country add list 3. here*, etc.?	○	○	○	○	○	○	○

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e) Streamed music from file sharing sites or cyberlockers such *for each country add list 4. here*, etc.?	○	○	○	○	○	○	○
f) Used kodi or plugins designed to bypass paywalls for listening to music for media players such as *for each country add list 6. here*, etc.?	○	○	○	○	○	○	○
g) Visited a live concert or a music festival?	○	○	○	○	○	○	○
h) Bought music related merchandise?	○	○	○	○	○	○	○

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Display Q25 if Q20=code1 AND if (Q24c=code 1,2,3,4,5,6 OR Q24e= code 1,2,3,4,5,6 OR Q24f= code 1,2,3,4,5,6)

Q25 Please tell us when was the last time you ...

	Less than a week ago (code 1)	Between 1 week and 1 month ago (code 2)	Between 1 and 3 months ago (code 3)	Between 3 and 6 months ago (code 4)	Between 6 and 12 months ago (code 5)	More than a year ago (code 6)	Never (code 7)
a) Used specific software tools or websites such as *for each country add list 5. here*, etc. to store music offline without a subscription to the service or website you were streaming from?	○	○	○	○	○	○	○

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Display Q26 if Q24a=code 4, 5 OR if Q24b=code 4, 5 OR if Q24c=code 4, 5 if Q24d=code 4, 5 OR if Q24e=code 4, 5 OR if Q24f=code 4, 5 OR if Q24g=code 4, 5

Q26 In the last 12 months, how many:

If you do not recall the exact number, please give your best estimate.

Display Q26a if Q24a=code 4, 5

○ a) New (first-hand) CDs or vinyl records did you buy in a physical store or online, or borrow from a public library? _____

Display Q26b if Q24b=code 4, 5

○ b) Music tracks and albums did you download from services such as *for each country add list 1. here* or directly from the website of a band or musician etc.? _____

Display Q26c if Q24c=code 4, 5

○ c) Hours did you stream from services such as *for each country add list 2. here*, or directly from the website of a band or musician, etc.? _____

Display q26d if Q24c=code 4, 5 AND Q25a=code 4, 5

○ d) Hours directly did you stream from services such as *for each country add list 2. here* or directly from the website of a band or musician, etc.? _____

Display Q26e if Q25a= code 4, 5

○ e) Hours did you stream using tools such as *for each country add list 5. here* to store music offline without a subscription to the service or website you were streaming from? _____

Display Q26f if Q24d=code 4, 5

○ f) Music tracks did you download from file sharing sites or cyberlockers such as *for each country add list 3. here*, etc.? _____

Display Q26g if Q24d=code 4,5

○ g) Albums did you download from file sharing sites or cyberlockers such as *for each country add list 3. here*, etc.? _____

Display Q26h if Q24e=code 4, 5

○ h) Hours did you stream from file sharing sites or cyberlockers such as *for each country add list 4. here*, etc.? _____

Display Q26i if Q24f= code 4, 5

○ i) Hours did you stream music using a kodi or plugins designed to bypass paywalls for media players such as *for each country add list 6. here*, etc.? _____

Display Q26l if Q24g=code 4,5

○ l) Live concert or music festivals did you visit? _____

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Display Q27 if Q24a=code 3 OR if Q24b=code 3 OR if Q24c=code 3 OR if Q24d=code 3 OR if Q24e=code 3 OR if Q24f=code 3 OR if Q24g=code 3

Q27 In the last 3 months, how many:
If you do not recall the exact number, please give your best estimate.

Display Q27a if Q24a=code 3

○ a) New (first-hand) CDs or vinyl records did you buy in a physical store or online, or borrow from a public library? _____

Display Q27b if Q24b=code 3

○ b) Music tracks and albums did you download from services such as *for each country add list 1. here*, or directly from the website of a band or musician etc.? _____

Display Q27c if Q24c=code 3

○ c) Hours did you stream from services such as *for each country add list 2. here* or directly from the website of a band or musician, etc.? _____

Display Q27d if Q24c=code 3 AND Q25a=code 3

○ d) Hours directly did you stream from services such as *for each country add list 2. here* or directly from the website of a band or musician, etc.? _____

Display Q27e if Q25a=code 3

○ e) Hours did you stream using tools such as *for each country add list 5. here* to store music offline without a subscription to the service or website you were streaming from _____

Display Q27f if Q24d=code 3

○ f) Music tracks did you download from file sharing sites or cyberlockers such as *for each country add list 3. here*, etc.? _____

Display Q27g if Q24d=code 3

○ g) Albums did you download from file sharing sites or cyberlockers such as *for each country add list 3. here*, etc.? _____

Display Q27h if Q24e=code 3

○ h) Hours did you stream from file sharing sites or cyberlockers such as *for each country add list 4. here*, etc.? _____

Display Q27i if Q24f=code 3

○ i) Hours did you stream music using a kodi or plugins designed to bypass paywalls for media players such as *for each country add list 6. here*, etc.? _____

Display Q27j if Q24g=3

○ j) Live concert or music festivals did you visit? _____

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Display Q28 if Q24a=code 1,2 OR if Q24b=code 1,2 OR if Q24c=code 1,2 OR if Q24d=code 1,2 OR if Q24e=code 1,2 OR if Q24f=code 1,2 OR if Q24g=code 1,2

Q28 In the last month, how many:

If you do not recall the exact number, please give your best estimate.

Display Q28a if Q24a=code 1,2

○ a) New (first-hand) CDs or vinyl records did you buy in a physical store or online, or borrow from a public library? _____

Display Q28b if Q24b=code 1,2

○ b) Music tracks and albums did you download from services such as *for each country add list 1. here* or directly from the website of a band or musician etc.? _____

Display Q28c if Q24c=code 1,2

○ c) Hours did you stream from services such as *for each country add list 2. here* or directly from the website of a band or musician, etc.? _____

Display Q28d if Q24c=code 1,2 AND Q25a=code 1,2

○ d) Hours directly did you stream from services such as *for each country add list 2. here* or directly from the website of a band or musician, etc.? _____

Display Q28e if Q25a=code 1,2

○ e) Hours did you stream using tools such as *for each country add list 5. here* to store music offline without a subscription to the service or website you were streaming from (5) _____

Display Q28f if Q24d=code 1,2

○ f) Music tracks did you download from file sharing sites or cyberlockers such as *for each country add list 3. here*, etc.? _____

Display Q28g if Q24d=code 1,2

○ g) Albums did you download from file sharing sites or cyberlockers such as *for each country add list 3. here*, etc.? _____

Display Q28h if Q24e=code 1,2

○ h) Hours did you stream from file sharing sites or cyberlockers such as *for each country add list 4. here*, etc.? _____

Display Q28i if Q24f=code 1, 2

○ i) Hours did you stream music using a kodi or plugins designed to bypass paywalls for media players such as *for each country add list 6. here*, etc.? _____

Display Q28j if Q24g=code 1, 2

○ j) Live concert or music festivals did you visit? _____

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Display Q29 if Q24e=code 1,2,3,4,5 OR Q24f=code 1,2,3,4,5

Q29 For the last time that you streamed music from file sharing sites or cyberlockers such as *for each country add list 4. here* etc. or used kodi or plugins designed to bypass paywalls for media players such as *for each country add list 6. here* etc., please indicate your scale of agreement with the following reasons:

	Strongly disagree (code 1)	Disagree (code 2)	Somewhat disagree (code 3)	Neither agree nor disagree (code 4)	Somewhat agree (code 5)	Agree (code 6)	Strongly Agree (code 7)
a) The price	○	○	○	○	○	○	○
b) The ease of use (the service is convenient and handy to use)	○	○	○	○	○	○	○
c) Technical quality and speed	○	○	○	○	○	○	○
d) It was the first site I found	○	○	○	○	○	○	○
e) The music I was looking for was not (or not yet) available through other channels	○	○	○	○	○	○	○
f) It is unlikely to get caught	○	○	○	○	○	○	○

Display Q30 if Q24d=code 1,2,3,4,5 OR Q25a=code 1,2,3,4,5

Q30 For the last time that you downloaded music from file sharing sites or cyberlockers such as *for each country add list 3. here*, or used devices to store music streams such as *for each country add list 5. here*

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etc., please indicate your scale of agreement with the following reasons:

	Strongly disagree (code 1)	Disagree (code 2)	Somewhat disagree (code 3)	Neither agree nor disagree (code 4)	Somewhat agree (code 5)	Agree (code 6)	Strongly agree (code 7)
a) The price	○	○	○	○	○	○	○
b) The ease of use (the service is convenient and handy to use)	○	○	○	○	○	○	○
c)Technical quality and speed	○	○	○	○	○	○	○
d) It was the first site I found	○	○	○	○	○	○	○
e) The music I was looking for was not (or not yet) available through other channels	○	○	○	○	○	○	○
f) It is unlikely to get caught	○	○	○	○	○	○	○

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Display Q31 if Q24d=code 1,2,3,4,5,6 OR if Q24e=code 1,2,3,4,5,6 OR if Q24f=code 1,2,3,4,5,6 OR Q25a=1,2,3,4,5,6

Q31 Have you changed your habits during the Covid-19 pandemic with respect to streaming or downloading music from file sharing sites or cyberlockers, using kodi or plugins designed to bypass paywalls for media players or using devices to store music streams?

- ○ No, my habits have remained unchanged (code 1)
- ○ Yes, I started using these channels to access music (code 2)
- ○ Yes, I slightly increased the use of these channels to access music (code 3)
- ○ Yes, I considerably increased the use of these channels to access music (code 4)
- ○ Yes, I slightly decreased the use of these channels to access music (code 5)
- ○ Yes, I considerably decreased the use of these channels to access music (code 6)

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Display Q32 if Q21=code 1

Q32 Please tell us when was the last time you did the following things:

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	Less than a week ago (code 1)	Between 1 week and 1 month ago (code 2)	Between 1 and 3 months ago (code 3)	Between 3 and 6 months ago (code 4)	Between 6 and 12 months ago (code 5)	More than a year ago (code 6)	Never (code 7)
a) Bought a film or TV-series on a DVD or Blu-ray disk in a physical store or online?	○	○	○	○	○	○	○
b) Rented a film or TV-series on DVD or Blu-ray disk in a physical store or borrowed one from a public library?	○	○	○	○	○	○	○
c) Downloaded a film or TV-series from services such *for each country add list 7. here*, etc.?	○	○	○	○	○	○	○
d) Streamed a film or TV-series from services such as *for each country add list 8. here*, etc.?	○	○	○	○	○	○	○
e) Downloaded a film or TV-series from file sharing sites or cyberlockers such *for each country add list 9. here*, etc.?	○	○	○	○	○	○	○

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f) Streamed a film or TV-series from file sharing sites or cyberlockers such as *for each country add list 10. here*, etc.?	○	○	○	○	○	○	○
g) Watched a film or TV-series using kodi or plugins designed to bypass paywalls for media players such *for each country add list 12. here*, etc.?	○	○	○	○	○	○	○
h) Watched a film in a cinema?	○	○	○	○	○	○	○
i) Bought a film or TV-series related merchandise?	○	○	○	○	○	○	○

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Display Q33 if Q21=code 1 AND (Q32d=code 1,2,3,4,5, 6 OR Q32f=code 1,2,3,4,5,6 OR Q32g=code 1,2,3,4,5,6)

Q33 Please tell us when was the last time you ...

	Less than a week ago (code 1)	Between 1 week and 1 month ago (code 2)	Between 1 and 3 months ago (code 3)	Between 3 and 6 months ago (code 4)	Between 6 and 12 months ago (code 5)	More than a year ago (code 6)	Never (code 7)
a) Used specific software tools or websites such as *for each country add list 11. here* etc. to store films or TV-series offline without a subscription to the service or website you were streaming from?	○	○	○	○	○	○	○

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Display Q34 if Q32a=code 4, 5 OR if Q32b=code 4, 5 OR if Q32c=code 4, 5 if Q32d=code 4, 5 OR if Q32e=code 4, 5 OR if Q32f=code 4, 5 OR if Q32g=code 4, 5 OR Q32h=code 4, 5

Q34 In the last 12 months, how many:

If you do not recall the exact number, please give your best estimate.

Display Q34a if Q32a=code 4, 5

○ a) Films did you buy on new (first-hand) DVD or Blu-ray disk in a physical store or online? _____

Display Q34b if Q32a=code 4, 5

○ b) TV-series did you buy on new (first-hand) DVD or Blu-ray disk in a physical store or online? _____

Display Q34c if Q32b=code 4, 5

○ c) Films did you rent on DVD or Blu-ray disk in a physical store, or borrow from a public library? _____

Display Q34d if Q32b=code 4, 5

○ d) TV-series did you rent on DVD or Blu-ray disk in a physical store, or borrow from a public library? _____

Display Q34e if Q32c=code 4,5

○ e) Films did you download from services such as *for each country add list 7. here*, etc.? _____

Display Q34f if Q32c=code 4,5

○ f) TV-series episodes did you download from services such as *for each country add list 7. here*, etc.? _____

Display Q34g if Q32d=code 4,5

○ g) Films did you stream from services such as *for each country add list 8. here*, paid cable/satellite-tv, catch-up services, etc.? _____

Display Q34h if Q32d=code 4,5 AND Q33a=code 4,5

○ h) Films did you stream directly from services such as *for each country add list 8. here*, paid cable/satellite-tv, catch-up services, etc.? _____

Display Q34i if Q32d=code 4,5

○ i) TV-series episodes did you stream from services such as *for each country add list 8. here*, catch-up services, etc.? _____

Display Q34j if Q32d=code 4,5 AND Q33a= code 4,5

○ j) TV-series episodes did you stream directly from services such as *for each country add list 8. here*, paid cable/satellite-tv, catch-up services, etc.? _____

Display Q34k if Q33a=4,5

○ k) Films did you stream using tools such as *for each country add list 11. here*, etc. to store them for later views? _____

Display Q34l if Q33a=code 4,5

○ l) TV-series did you stream using tools such as *for each country add list 11. here*, etc. to store them for later views? _____

Display Q34m if Q32e= code 4,5

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○ m) Films did you download from file sharing sites or cyberlockers such as *for each country add list 9. here*, etc.? _____

Display Q34n if Q32e=code 4,5

○ n) TV-series episodes did you download from file sharing sites or cyberlockers such as *for each country add list 9. here*, etc.? _____

Display Q34o if Q32f= code 4,5

○ o) Films did you stream from file sharing sites or cyberlockers such as *for each country add list 10. here*, etc.? _____

Display Q34p if Q32f=code 4,5

○ p) TV-series episodes did you stream from file sharing sites or cyberlockers such as *for each country add list 10. here*, etc.? _____

Display Q34q if Q32g=code 4,5

○ q) Films did you watch using a kodi or plugins designed to bypass paywalls for media players such as *for each country add list 12. here*, etc.? _____

Display Q34r if Q32g=code 4,5

○ r) TV-series did you watch using a kodi or plugins designed to bypass paywalls for media players such as *for each country add list 12. here*, etc.? _____

Display Q34s if Q32h=code 4,5

○ s) Films did you see in the cinema? _____

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Display Q35 if Q32a=code 3 OR if Q32b=code 3 OR if Q32c=code 3 if Q32d=code 3 OR if Q32e=code 3 OR if Q32f=code 3 OR if Q32g=code 3 OR Q32h=code 3

Q35 In the last 3 months, how many:

If you do not recall the exact number, please give your best estimate.

Display Q35a if Q32a=code 3

○ a) Films did you buy on new (first-hand) DVD or Blu-ray disk in a physical store or online? _____

Display Q35b if Q32a=code 3

○ b) TV-series did you buy on new (first-hand) DVD or Blu-ray disk in a physical store or online? _____

Display Q35c if Q32b=code 3

○ c) Films did you rent on DVD or Blu-ray disk in a physical store, or borrow from a public library? _____

Display Q35d if Q32b=code 3

○ d) TV-series did you rent on DVD or Blu-ray disk in a physical store, or borrow from a public library? _____

Display Q35e if Q32c=code 3

○ e) Films did you download from services such as *for each country add list 7. here*, etc.? _____

Display Q35f if Q32c=code 3

○ f) TV-series episodes did you download from services such as *for each country add list 7. here*, etc.? _____

Display Q35g if Q32d=code 3

○ g) Films did you stream from services such as *for each country add list 8. here*, etc.? _____

Display Q35h if Q32d=code 3 AND Q33a=3

○ h) Films did you stream directly from services such as *for each country add list 8. here*, etc., paid cable/satellite-tv, catch-up services, etc.? _____

Display Q35i if Q32d=code 3

○ i) TV-series episodes did you stream from services such as *for each country add list 8. here*, paid cable/satellite-tv, catch-up services, etc.? _____

Display Q35j if Q32d=code 3 AND Q33a=3

○ j) TV-series episodes did you stream directly from services such as *for each country add list 8. here*, paid cable/satellite-tv, catch-up services, etc.? _____

Display Q35k if Q33a=3

○ k) Films did you stream using tools such as *for each country add list 11. here*, etc. to store them for later views? _____

Display Q35l if Q33a=3

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○ l) TV-series did you stream using tools such as *for each country add list 11. here*, etc. to store them for later views? _____

Display Q35m if Q32e=3

○ m) TV-series episodes did you download from file sharing sites or cyberlockers such as *for each country add list 9. here*, etc.? _____

Display Q35n if Q32e=3

○ n) Films did you download from file sharing sites or cyberlockers such as *for each country add list 9. here*, etc.? _____

Display Q35o if Q32f=3

○ o) Films did you stream from file sharing sites or cyberlockers such as *for each country add list 10. here*, etc.? _____

Display Q35p if Q32f=3

○ p) TV-series episodes did you stream from file sharing sites or cyberlockers such as *for each country add list 10. here*, etc.? _____

Display Q35q if Q32g=3

○ q) Films did you watch using a kodi or plugins designed to bypass paywalls for media players such as *for each country add list 12. here*, etc.? _____

Display Q35r if Q32g=3

○ r) TV-series did you watch using a kodi or plugins designed to bypass paywalls for media players such as *for each country add list 12. here*, etc.? _____

Display Q35s if Q32h=3

○ s) Films did you see in the cinema? _____

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Display Q36 if Q32a=code 1,2 OR if Q32b=code 1,2 OR if Q32c=code 1,2 if Q32d=code 1,2 OR if Q32e=code 1,2 OR if Q32f=code 1,2 OR if Q32g=code 1,2 OR Q32h=code 1,2

Q36 In the last month, how many:

If you do not recall the exact number, please give your best estimate.

Display Q36a if Q32a=code 1,2

○ a) Films did you buy on new (first-hand) DVD or Blu-ray disk in a physical store or online? _____

Display Q36b if Q32a=code 1,2

○ b) TV-series did you buy on new (first-hand) DVD or Blu-ray disk in a physical store or online? _____

Display Q36c if Q32b=code 1,2

○ c) Films did you rent on DVD or Blu-ray disk in a physical store, or borrow from a public library? _____

Display Q36d if Q32b=code 1,2

○ d) TV-series did you rent on DVD or Blu-ray disk in a physical store, or borrow from a public library? _____

Display Q36e if Q32c=code 1,2

○ e) Films did you download from services such as *for each country add list 7. here*, etc.? _____

Display Q36f if Q32c=code 1,2

○ f) TV-series episodes did you download from services such as *for each country add list 7. here*, etc.? _____

Display Q36g if Q32d=code 1,2

○ g) Films did you stream from services such as *for each country add list 8. here*, etc., paid cable/satellite-tv, catch-up services, etc.? _____

Display Q36h if Q32d=code 1,2 AND Q33a=1,2

○ h) Films did you stream directly from services such as *for each country add list 8. here*, etc., paid cable/satellite-tv, catch-up services, etc.? _____

Display Q36i if Q32d=code 1,2

○ i) TV-series episodes did you stream from services such as *for each country add list 8. here*, etc., paid cable/satellite-tv, catch-up services, etc.? _____

Display Q36j if Q32d=code 1,2 AND Q33a=1,2

○ j) TV-series episodes did you stream directly from services such as *for each country add list 8. here*, paid cable/satellite-tv, catch-up services, etc.? _____

Display Q36k if Q33a=1,2

○ k) Films did you stream using tools such as *for each country add list 11. here* to store them for later views? _____

Display Q36l if Q33a=1,2

○ l) TV-series did you stream using tools such as *for each country add list 11. here* to store them for later views? _____

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Display Q36m if Q32e=code 1,2

○ m) TV-series episodes did you download from file sharing sites or cyberlockers such as *for each country add list 9. here*, etc.? _____

Display Q36n if Q32e=code 1,2

○ n) Films did you download from file sharing sites or cyberlockers such as *for each country add list 9. here*, etc.?_____

Display Q36o if Q32f=code 1,2

○ o) Films did you stream from file sharing sites or cyberlockers such as *for each country add list 10. here*, etc.?_____

Display Q36p if Q32f=code 1,2

○ p) TV-series episodes did you stream from file sharing sites or cyberlockers such as *for each country add list 10. here*, etc.?_____

Display Q36q if Q32g=code 1,2

○ q) Films did you watch using a kodi or plugins designed to bypass paywalls for media players such as *for each country add list 12. here*, etc.? _____

Display Q36r if Q32g=code 1,2

○ r) TV-series did you watch using a kodi or plugins designed to bypass paywalls for media players such as *for each country add list 12. here*, etc.? _____

Display Q36s if Q32h=code 1,2

○ s) Films did you see in the cinema? _____

Display Q37 if Q32g=code 1,2,3,4,5 OR Q32f=code 1,2,3,4,5

Q37 For the last time that you streamed films or TV-series from file sharing sites or cyberlockers such as *for each country add list 10. here* etc., or used kodi or plugins designed to bypass paywalls for media players

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such as *for each country add list 12. here* etc., please indicate your scale of agreement with the following reasons:

	Strongly disagree (code 1)	Disagree (code 2)	Somewhat disagree (code 3)	Neither agree nor disagree (code 4)	Somewhat agree (code 5)	Agree (code 6)	Strongly agree (code 7)
a) The price	○	○	○	○	○	○	○
b) The ease of use (the service is convenient and handy to use)	○	○	○	○	○	○	○
c)Technical quality and speed	○	○	○	○	○	○	○
d) It was the first site I found	○	○	○	○	○	○	○
e) The films or TV-series I was looking for were not (or not yet) available through other channels	○	○	○	○	○	○	○
f) It is unlikely to get caught	○	○	○	○	○	○	○

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Display Q38 if Q32e=code 1,2,3,4,5 OR Q33a=code 1,2,3,4,5

Q38 For the last time that you downloaded films or TV-series from file sharing sites or cyberlockers such as *for each country add list 9. here* etc., or used devices to store films or TV-series offline such as *for each country add list 11. here* etc., please indicate your scale of agreement with the following reasons:

	Strongly disagree (code 1)	Disagree (code 2)	Somewhat disagree (code 3)	Neither agree nor disagree (code 4)	Somewhat agree (code 5)	Agree (code 6)	Strongly agree (code 7)
a) The price	○	○	○	○	○	○	○
b) The ease of use (the service is convenient and handy to use)	○	○	○	○	○	○	○
c) Technical quality and speed	○	○	○	○	○	○	○
d) It was the first site I found	○	○	○	○	○	○	○
e) The films or TV-series I was looking for were not (or not yet) available through other channels	○	○	○	○	○	○	○
f) It is unlikely to get caught	○	○	○	○	○	○	○

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Display Q39 if Q32e=code 1,2,3,4,5,6 OR Q33a=code 1,2,3,4,5,6 OR if Q32g=code 1,2,3,4,5,6 OR Q32f=code 1,2,3,4,5,6

Q39 Have you changed your habits during the Covid-19 pandemic with respect to streaming or downloading films or TV-series from file sharing sites or cyberlockers, using kodi or plugins designed to bypass paywalls for media players or using devices to store films or TV-series offline?

- ○ No, my habits have remained unchanged (code 1)
- ○ Yes, I started using these channels to access films or TV-series (code 2)
- ○ Yes, I slightly increased the use of these channels to access films or TV-series (code 3)
- ○ Yes, I considerably increased the use of these channels to access films or TV-series (code 4)
- ○ Yes, I slightly decreased the use of these channels to access films or TV-series (code 5)
- ○ Yes, I considerably decreased the use of these channels to access films or TV-series (code 6)

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Display Q40 if Q22=code1

Q40 Please tell us when was the last time you did the following things:

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	Less than a week ago (code 1)	Between 1 week and 1 month ago (code 2)	Between 1 and 3 months ago (code 3)	Between 3 and 6 months ago (code 4)	Between 6 and 12 months ago (code 5)	More than a year ago (code 6)	Never (code 7)
a) Bought a printed book, e-book or audio-book in a physical store or online?	○	○	○	○	○	○	○
b) Borrowed a printed book, e-book or audio-book from a public library?	○	○	○	○	○	○	○
c) Downloaded e-books or audio-books from services such as *for each country add list 13. here* etc.?	○	○	○	○	○	○	○
d) Read a book online or listened to an audio-book from services such as *for each country add list 14. here*, etc., the website of an e-book seller, publisher, author, etc.?	○	○	○	○	○	○	○

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e) Downloaded an e-book or audio book from file sharing sites or cyberlockers such as *for each country add list 15. here* etc.?	○	○	○	○	○	○	○

Display Q41 if Q40a= code 4,5 OR Q40b= code 4,5 OR Q40c= code 4,5 OR Q40d= code 4,5 OR Q40e= code 4,5

Q41 In the last 12 months, how many:

If you do not recall the exact number, please give your best estimate.

Display Q41a if Q40a=code 4,5

○ a) New (first-hand) printed books, e-books or audio books did you buy in a physical store or online? _____

Display Q41b if Q40b=code 4,5

○ b) Printed books or audio books or e-book did you borrow from a physical library? _____

Display Q41c if Q40c=code 4,5

○ c) E-books or audio books did you download from services such as *for each country add list 13. here* etc.? _____

Display Q41d if Q40d=code 4,5

○ d) E-books or audio books did you stream or e-borrow from a public library or services such as *for each country add list 14. here* etc.?_____

Display Q41e if Q40e=code 4,5

○ e) E-books or audio books did you download from file sharing sites or cyberlockers such as *for each country add list 15. here* etc.? _____

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Display Q42 if Q40a= code 3 OR Q40b= code 3 OR Q40c= code 3 OR Q40d= code 3 OR Q40e= code 3

Q42 In the last 3 months, how many:
If you do not recall the exact number, please give your best estimate.

Display Q42a if Q40a= code 3

○ a) New (first-hand) printed books, e-books or audio books did you buy in a physical store or online? _____

Display Q42b if Q40b= code 3

○ b) Printed books, e-books or audio books did you borrow from a physical library? _____

Display Q42c if Q40c= code 3

○ c) E-books or audio books did you download from services such *for each country add list 13. here* etc., the website of an e-book seller, publisher, author, etc.? _____

Display Q42d if Q40d= code 3

○ d) E-books or audio books did you stream or e-borrow from a public library or services such as *for each country add list 14. here* etc., the website of an e-book seller, publisher, author, etc.? _____

Display Q42e if Q40e= code 3

○ e) E-books or audio books did you download from file sharing sites or cyberlockers such as *for each country add list 15. here* etc.? _____

Display Q43 if Q40a= code 1,2 OR Q40b= code 1,2 OR Q40c= code 1,2 OR Q40d= code 1,2 OR Q40e= code 1,2

Q43 In the last month, how many:
If you do not recall the exact number, please give your best estimate.

Display Q43a if Q40a= code 1,2

○ a) New (first-hand) printed books, e-books or audio books did you buy in a physical store or online? _____

Display Q43b if Q40b= code 1,2

○ b) Printed books, e-books or audio books did you borrow from a physical library? _____

Display Q43c if Q40c= code 1,2

○ c) E-books or audio books did you download from services such as *for each country add list 13. here* etc.? _____

Display Q43d if Q40d= code 1,2

○ d) E-books or audio books did you stream or e-borrow from a public library or services such as *for each country add list 14. here* etc.? _____

Display Q43e if Q40e= code 1,2

○ e) E-books or audio books did you download from file sharing sites or cyberlockers such as *for each country add list 15. here* etc.? _____

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Display Q44 if Q40e=code 1,2,3,4,5

Q44 For the last time that you downloaded books or audiobooks from file sharing sites or cyberlockers such *for each country add list 15. here* etc., please indicate your scale of agreement with the following reasons:

	Strongly disagree (code 1)	Disagree (code 2)	Somewhat disagree (code 3)	Neither agree nor disagree (code 4)	Somewhat agree (code 5)	Agree (code 6)	Strongly agree (code 7)
a) The price	○	○	○	○	○	○	○
b) The ease of use (the service is convenient and handy to use)	○	○	○	○	○	○	○
c) Technical quality and speed	○	○	○	○	○	○	○
d) It was the first site I found	○	○	○	○	○	○	○
e) The file format / compatibility with my hardware	○	○	○	○	○	○	○
f) The number of available books	○	○	○	○	○	○	○
g) The availability of non-mainstream books	○	○	○	○	○	○	○
h) It is unlikely to get caught	○	○	○	○	○	○	○

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Display Q45 if Q40e=code 1,2,3,4,5,6

Q45 Have you changed your habits during the Covid-19 pandemic with respect to downloading books or audiobooks from file sharing sites or cyberlockers such as *for each country add list 15. here* etc.?

- ○ No, my habits have remained unchanged (code 1)
- ○ Yes, I started using these channels to access books or audiobooks (code 2)
- ○ Yes, I slightly increased the use of these channels to access books or audiobooks (code 3)
- ○ Yes, I considerably increased the use of these channels to access books or audiobooks (code 4)
- ○ Yes, I slightly decreased the use of these channels to access books or audiobooks (code 5)
- ○ Yes, I considerably decreased the use of these channels to access books or audiobooks (code 6)

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Display Q46 if Q23=code1

Q46 Please tell us when was the last time you did the following things:

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	Less than a week ago (code 1)	Between 1 week and 1 month ago (code 2)	Between 1 and 3 months ago (code 3)	Between 3 and 6 months ago (code 4)	Between 6 and 12 months ago (code 5)	More than a year ago (code 6)	Never (code 7)
a) Bought a game on a CD, DVD, Blu-ray disk, or memory card in a physical store or online?	○	○	○	○	○	○	○
b) Downloaded a game from services such as *for each country add list 16. here* etc.?	○	○	○	○	○	○	○
c) Played a paid-for game online from services such as *for each country add list 17. here* etc.?	○	○	○	○	○	○	○
d) Played a new free online game from for example Funnygames, Facebook, etc. *for each country add list 18. here* etc.?	○	○	○	○	○	○	○
e) Downloaded a game from file sharing sites or cyberlockers such as *for each country add list 19. here* etc.?	○	○	○	○	○	○	○

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f) Played a game <u>for free</u> on a chipped, modded, or flashed console?	○	○	○	○	○	○	○
g) Used kodi or plugins designed to <u>bypass paywalls</u> for playing a game on media players such as *for each country add list 20. here* etc.?	○	○	○	○	○	○	○
h) Bought video games related merchandise?	○	○	○	○	○	○	○

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Display Q47 if Q46a=code 4,5 OR Q46b=code 4,5 OR Q46c=code 4,5 OR Q46d=code 4,5 OR Q46e=code 4,5 OR Q46f=code 4,5 OR Q46g=code 4,5

Q47 In the last 12 months, how many: Please include games for PC/laptop/console only and exclude games for smartphones/tablets. If you do not recall the exact number, please give your best estimate.

Display Q47a if Q46a=code 4,5

○ a) Games did you buy on a new (first-hand) CD, DVD, Blu-ray disk, or memory card in a physical store or online? _____

Display Q47b if Q46b=code 4,5

○ b) Games did you download from services such as *for each country add list 16. here* etc.? _____

Display Q47c if Q46c=code 4,5

○ c) Games did you play on paid-for services such as *for each country add list 17. here* etc.? _____

Display Q47d if Q46d=code 4,5

○ d) Games did you play for free on sites such as *for each country add list 18. here* etc.? _____

Display Q47e if Q46e=code 4,5

○ e) Games did you download (or stream) from file sharing sites or cyberlockers such as *for each country add list 19. here* etc.? _____

Display Q47f if Q46f=code 4,5

○ f) Games did you play for free on a chipped, modded or flashed console? _____

Display Q47g if Q46g=code 4,5

○ g) Games did you play using a kodi or plugins designed to bypass paywalls for media players such as *for each country add list 20. here* etc.? _____

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Display Q48 if Q46a=code 3 OR Q46b=code 3 OR Q46c=code 3 OR Q46d=code 3 OR Q46e=code 3 OR Q46f=code 3 OR Q46g=code 3

Q48 In the last 3 months, how many:

Please include games for PC/laptop/console only and exclude games for smartphones/tablets. If you do not recall the exact number, please give your best estimate.

Display Q48a if Q46a=code 3

○ a) Games did you buy on a new (first-hand) CD, DVD, Blu-ray disk, or memory card in a physical store or online? _____

Display Q48b if Q46b=code 3

○ b) Games did you download from services such as *for each country add list 16. here* etc.? _____

Display Q48c if Q46c=code 3

○ c) Games did you play on paid-for services such as *for each country add list 17. here* etc.? _____

Display Q48d if Q46d=code 3

○ d) Games did you play for free on sites such as *for each country add list 18. here* etc.? _____

Display Q48e if Q46e=code 3

○ e) Games did you download (or stream) from file sharing sites or cyberlockers such as *for each country add list 19. here* etc.? _____

Display Q48f if Q46f=code 3

○ f) Games did you play for free on a chipped, modded or flashed console? _____

Display Q48g if Q46g=code 3

○ g) Games did you play using a kodi or plugins designed to bypass paywalls for media players such as *for each country add list 20. here* etc.? _____

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Display Q49 if Q46a=code 1,2 OR Q46b=code 1,2 OR Q46c=code 1,2 OR Q46d=code 1,2 OR Q46e=code 1,2 OR Q46f=code 1,2 OR Q46g=code 1,2

Q49 In the last month, how many:
Please include games for PC/laptop/console only and exclude games for smartphones/tablet.
If you do not recall the exact number, please give your best estimate.

Display Q49a if Q46a=code 1,2

○ a) Games did you buy on a new (first-hand) CD, DVD, Blu-ray disk, or memory card in a physical store or online? _____

Display Q49b if Q46b=code 1,2

○ b) Games did you download from services such as *for each country add list 16. here* etc.? _____

Display Q49c if Q46c=code 1,2

○ c) Games did you play on paid-for services such as *for each country add list 17. here* etc.? _____

Display Q49d if Q46d=code 1,2

○ d) Games did you play for free on sites such as *for each country add list 18. here* etc.? _____

Display Q49e if Q46e=code 1,2

○ e) Games did you download (or stream) from file sharing sites or cyberlockers such as *for each country add list 19. here* etc.? _____

Display Q49f if Q46f=code 1,2

○ f) Games did you play for free on a chipped, modded or flashed console? _____

Display Q49g if Q46g=code 1,2

○ g) Games did you play using a kodi or plugins designed to bypass paywalls for media players such as *for each country add list 20. here* etc.? _____

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Display Q50 if Q46e=code 1,2,3,4,5

Q50 For the last time that you downloaded or streamed games from file sharing sites or cyberlockers such as *for each country add list 19. here* etc., please indicate your scale of agreement with the following reasons:

	Strongly disagree (code 1)	Disagree (code 2)	Somewhat disagree (code 3)	Neither agree nor disagree (code 4)	Somewhat agree (code 5)	Agree (code 6)	Strongly agree (code 7)
a) The price	○	○	○	○	○	○	○
b) The ease of use (the service is convenient and handy to use)	○	○	○	○	○	○	○
c) Technical quality and speed	○	○	○	○	○	○	○
d) It was the first site I found	○	○	○	○	○	○	○
e) The games I was looking for were not (or not yet) available through other channels	○	○	○	○	○	○	○
f) Possibility of in-game cheats	○	○	○	○	○	○	○
g) It is unlikely to get caught	○	○	○	○	○	○	○

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Display Q51 if Q46f=code 1,2,3,4,5 OR if Q46g=code 1,2,3,4,5

Q51 For the last time that you played a game for free on a chipped, modded or flashed console or used a kodi or plugins to bypass paywalls for media players such as *for each country add list 20. here* etc., please indicate your scale of agreement with the following reasons:

	Strongly disagree (code 1)	Disagree (code 2)	Somewhat disagree (code 3)	Neither agree nor disagree (code 4)	Somewhat agree (code 5)	Agree (code 6)	Strongly agree (code 7)
a) The price	○	○	○	○	○	○	○
b) The ease of use (the service is convenient and handy to use)	○	○	○	○	○	○	○
c) Technical quality and speed	○	○	○	○	○	○	○
d) It was the first site I found	○	○	○	○	○	○	○
e) The games I was looking for were not (or not yet) available through other channels	○	○	○	○	○	○	○
f) Possibility of in-game cheats	○	○	○	○	○	○	○
g) It is unlikely to get caught	○	○	○	○	○	○	○

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Display Q52 if Q46e=1,2,3,4,5,6 OR if Q46f=1,2,3,4,5,6 OR if Q46g=1,2,3,4,5,6

Q52 Have you changed your habits during the Covid-19 pandemic with respect to downloading or streaming games from file sharing sites or cyberlockers, playing a game for free on a chipped, modded or flashed console or using a kodi or plugins to bypass paywalls for media players?

- ○ No, my habits have remained unchanged (code 1)
- ○ Yes, I started using these channels to access games (code 2)
- ○ Yes, I slightly increased the use of these channels to access games (code 3)
- ○ Yes, I considerably increased the use of these channels to access games (code 4)
- ○ Yes, I slightly decreased the use of these channels to access games (code 5)
- ○ Yes, I considerably decreased the use of these channels to access games (code 6)

Q53 How often do you use internet to read news from:

	Every day (code 1)	At least each week (code 2)	At leat each month (code 3)	Rarely or never (code 4)
a) National newspaper or magazines	○	○	○	○
b) Local newspapers	○	○	○	○
c) Google News or Yahoo News	○	○	○	○
d) Website or TV channels	○	○	○	○
e) Blogs	○	○	○	○
f) Other internet news providers	○	○	○	○

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Q54 If no one else is around, do you consider the following behaviors acceptable:

	Totally not (code 1)	Mostly not (code 2)	Slightly not (code 3)	Undecided (code 4)	Slightly yes (code 5)	Mostly yes (code 6)	Totally yes (code 7)
a) Jaywalking	○	○	○	○	○	○	○
b) Travelling in public transportation without a fare	○	○	○	○	○	○	○
c) Exceeding the highway speed limit	○	○	○	○	○	○	○
d) Photographing with flashlight in a museum where that is not allowed	○	○	○	○	○	○	○
e) Having a plumber work for cash without invoicing	○	○	○	○	○	○	○
f) Not declaring a small gift from a business relation	○	○	○	○	○	○	○
g) Forgetting a promise to do community work	○	○	○	○	○	○	○

End of Block: Consumer survey on music, films and series, books and games

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B. Appendix: Data sources for weighting and weight factors

The weight factors for respondents are calculated as the Internet using population share divided by the sample share per gender, age group and country. The sample share per gender and age group in a specific country is calculated as the share of the number of persons that responded to the questionnaire in the total number of respondents per country. The Internet using population share per gender and age group in a specific country is calculated as the number of Internet using people per gender and age group divided by the total number of Internet using people aged between 14 and 74. We retrieved data on internet usage and population from the Eurostat website[12].

Table B1 presents the data on internet usage in the seven examined European countries, indicating that age is the determining factor for Internet use, while gender differences are negligible.

Table B1 - Internet use for European countries by age and gender in 2021 (%)

Age group	FRA	DEU	NLD	POL	ESP	SWE	GBR[e]
15 or less	89[b]	97[d]	100[c]	79[a]	x	x	x
16-24, in particular:	98	98	96	98	100	100	100
Males	98	98	96	99	100	100	100
Females	97	98	95	98	100	100	100
25-34	97	97	96	99	99	99	100
35-44	97	97	96	98	99	99	10
45-54	96	96	96	93	98	98	100
55-64	90	90	95	79	92	96	95
65-74	77	75	91	52	75	91	91
12-54, in particular:	97	97	96	97	99	99	100
Males	96	97	95	97	99	99	100
Females	97	97	97	97	99	99	100
TOTAL	93	92	95	87	94	97	98

Sources: Eurostat, table isoc_ci_ifp_iu

Note: x means that no data available; (a) Data for 2005; (b) Data for 2006; (c) Data for 2011; (d) Data for 2012; (e) Data for 2020.

The question about respondent's age (see Q6 in the previous section) asked to indicate the age cohort among three choices. These ranges are:

1. Between 18 and 34;
2. Between 35 and 54;

[12] We use the EUROSTAT tables isoc_ci_ifp_iu (individuals using the internet during the last 12 months) and demo_pjan (population by age and sex) respectively.

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3. Over 55

Furthermore, we know if the respondent is a minor and therefore her age is below 18. Therefore, the weights we need to calculate are by country, gender, and these four age groups. The percentage of Internet users by country, gender, and age provided by EUROSTAT gives the data using different age cohorts, so we made some assumptions. In particular, we assign percentages of Internet users by country and gender to each (yearly) age looking at the available aggregated percentages. We then exploit the EUROSTAT data on population by gender and age to calculate the number of internet users by country, gender, and age. Finally, we aggregate these figures to the survey age cohort to calculate the corresponding shares of internet users.

The resulting weighting factors are presented in Table B2.

Table B2 - Weight factors for Europe

GENDER	AGE GROUP	FRA	DEU	NLD	POL	ESP	SWE	GBR
Female	less than 18	0.121	0.105	0.133	0.114	0.134	0.135	0.110
Female	between 18 and 34	1.492	1.672	1.589	1.250	1.533	1.274	1.405
Female	between 35 and 54	1.392	1.448	1.295	1.732	1.568	1.572	1.457
Female	over 55	1.097	0.977	1.155	0.957	0.994	1.207	1.097
Male	less than 18	0.148	0.089	0.104	0.093	0.092	0.113	0.116
Male	between 18 and 34	1.501	1.771	1.612	1.294	1.490	1.353	1.522
Male	between 35 and 54	1.429	1.484	1.280	1.705	1.519	1.589	1.406
Male	over 55	1.198	1.164	1.321	1.100	1.093	1.124	1.190

Note: All weights are calculated using 2021 data, except the GBR for which 2020 data are used.

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