Senior Project in Economics, School of Natural and Social Sciences

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The Consumer's Take on Online Piracy: A Survey

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Abstract

Since its inception, the internet has grown into many unforeseen things, including that of a platform for stealing and sharing digital copies of television and film. Online piracy and the role it plays in the artist's business has been a subject of economic study since it began. Using a survey, I seeked to find out how the consumer feels and behaves in regards to online piracy. By applying logistic regression analysis to the data from respondents, we were able to find several insights into the consumer and how they act in regards to purchasing/stealing content. I conclude that more than half of consumers that have pirated a television show, went on to purchase the same television show (DVD, subscription, etc.) later on. Additionally, I was able to find several insights into what leads a consumer to purchase content that they have pirated.

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1. Introduction

The robbery of creative content has been around for a very long time. As technology progresses, the way people steal content follows. Today, it is often done via the internet (i.e online piracy). The pirating of films has been around since silent films, starting in 1895. Legal renters of films would screen them for a longer duration than contracted to. Additionally, they would screen the rented films in other theaters they owned. In order to deter this, Hollywood hired employees to visit theaters and check if they were authorized to show the films. In 1910, mass production of illegally made "duped print" (i.e illegal negatives) became possible. Film companies would occasionally buy ad space to deter people from consuming the illegally printed negatives.

The 1960's brought camera recording of films to the piracy forefront. In the 1970's, VHS piracy began to popularize in both film and recording sectors. RCA/Columbia when as far as to put the words "If it isn't red, it isn't real" on the signature red spines of their VHS cassettes. The 1990's brought DVD and digital piracy to the forefront. [1]

In the past twenty years, there have been great changes to the market for entertainment. The internet has provided new ways to consume creative content. The seemingly endless growing popularity of the internet and stream-based content providers, the market is nearly unrecognizable. The music industry's global revenue alone has decreased by over ten billion since 1999.[2] This has inspired many economists to study many aspects of the entertainment market and how it has changed in regards to the internet.

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[1] Copyright Management Services Limited. "The Evolution of Movie Piracy." March 18, 2015. Accessed May 9, 2019.

[2] Mitchell, David M., C. Patrick Scott, and Keneth H. Brown. "Did the RIAA's Prosecution of Music Piracy Impact Music Sales?." *Atlantic Economic Journal* 46, no. 1 (2018): 59-71.

2. Literature Review

a. Music Piracy

Online copyright infringement has caused some firms to sustain great losses. Economist Stephen Siwek utilized survey data to find that U.S recording industries are sustaining a loss of $5.33 billion as a result of global piracy. He also cites a loss of $1.04 billion for U.S retailers. [3] Online piracy has been found to negatively impact CD sales. Economists Martin Peitz and Patrick WaelBroeck analyzed the impact of online music downloading on the downturn in CD sales that took place between 2001 and 2002. Using detailed survey data, the authors suggest that online piracy played a significant role in the decline of CD sales in 2001, but had little effect on the decline in 2002. [4] Economists have been able to analyze the losses taken in response to emergences of file-sharing sites. Economist Seung-Hyun Hong used a survey to quantify the change in household-level expenditures on recorded music in the United States after the emergence of the music sharing application Napster. The author, using survey results, was able to determine that 33% of the decrease in record sales in 2000 was in response to the introduction of Napster. [5]

The impact of piracy on the displacement of legal sales has been measured as well. Economist Stan J Liebowitz studied the impact that file sharing had on record sales. What separates his study from others is that all previous studies implied that file sharing was

[3] Siwek, Stephen E. "The true cost of sound recording piracy to the US economy." (2007).
[4] Peitz, Martin, and Patrick Waelbroeck. "The effect of internet piracy on CD sales: Cross-section evidence." (2004).
[5] Hong, Seung-Hyun. "The effect of Napster on recorded music sales: evidence from the consumer expenditure survey." *Stanford Institute for Economic Policy Research Working Paper* (2004): 03-18.

responsible for the entire decline in record sales after 2005. Liebowitz noted that it was not the sole factor in the decline and proceeded to do testing. Liebowitz found that prior to the introduction of streaming and subscription based services in the mid 2000's, the entire decline in record sales could be attributed to file-sharing. After the introduction and rise of streaming and subscription based services, the change was largely in part to the migration towards digital content.[6]

b. Film Piracy

Economists Rahul Telang and Joel Waldfogel examined the impact of copyright infringement in India. Specifically, they examined the introduction of the VCR and the growth of cable piracy in the early 90's. By using data regarding film revenues and movie production, they examined how piracy affects box office revenues as well as how many movies are produced. The authors found suggestive evidence that the impact of piracy reached as far as the supply of movies in India. They found that during the diffusion of the VCR and cable, that movie revenues dropped by a third to a half. During the same time period, they found that the number of new products released dropped substantially, suggesting a supply elasticity of 0.5 - 0.7.[7] Although this is the case for India, when comparing other countries and the impact of movie revenues losses sustained, the authors found that the impact of shocks to revenue depends on several other factors, including technological change and its effects on cost.[8] Economists Ashvini Ravi., Lekshmi R.S and Rajamani K. surveyed a sample of 200 people in Chennai City to analyze

[6] Liebowitz, Stan J. "How much of the decline in sound recording sales is due to file-sharing?." *Journal of Cultural Economics* 40, no. 1 (2016): 13-28.
[7] Telang, Rahul, and Joel Waldfogel. "Piracy and new product creation: A bollywood story." (2014).
[8] Telang, Rahul, and Joel Waldfogel. "Piracy and new product creation: A bollywood story." (2014).

ethics and volume of movie piracy in the area. The authors found that movie piracy ran rampant in the area. Many consumers had access to illegal pirated versions of films that were significantly cheaper in price than the legal versions. Economists Jordi McKenzie and W. David Walls studied the effect of P2P file-sharing on the Australian theatrical film industry. They used a vast data sample of torrent downloads found on three popular peer to peer networks. They concluded that there was a statistically significant displacement in sales, but it was very small.

Additionally, Economists Benedikt Herz and Kamil Kilijanski studied movie piracy and legal sales displacement. They used an online questionnaire with 30,000 respondents in six European countries. They found that unpaid movie viewings account for a 4.4% decrease in legal sales. [9] Two economists, Rafael Rob and Joel Waldfogel, used survey data on 500 University of Pennsylvania students to find out if unpaid consumption of movies displaces paid consumption. Their analysis indicated that unpaid consumption, which makes up 5.2 percent of movie viewing in the sample, reduced paid consumption in their sample by 3.5 percent. [10] Economists Jie Bai and Joel Waldfogel surveyed Chinese and American college students and were able to provide significant insight on the amount of unpaid consumption and the rate of displacement of legal sales for movies in China. They used two surveys about six months apart from each other. [11]

Economists Brett Danaher and Michael D. Smith analyzed the impact of the MegaUpload shutdown and its impacts on digital sales and rentals of movies. By utilizing cross-country variation in pre-shutdown usage of Megaupload, they found that the Megaupload shutdown caused a 6.5-8.5% increase in digital revenues for three major motion pictures studios. They used

[9] Herz, Benedikt, and Kamil Kiljański. "Movie piracy and displaced sales in Europe: Evidence from six countries." *Information Economics and Policy* 43 (2018): 12-22.
[10] Ravi, Ashvini, R. S. Lekshmi, and K. Rajamani. "A STUDY ON MOVIE PIRACY." (2018).
[11] Bai, Jie, and Joel Waldfogel. "Movie piracy and sales displacement in two samples of Chinese consumers." *Information Economics and Policy* 24, no. 3-4 (2012): 187-196.

a difference-in-difference model to test the impact. The results imply that consumers will choose a legal version when a large file sharing (like Megaupload) website is taken down. By extension, they concluded that illegal file sharing displaces digital movie sales. [12]

c. The Online Pirate

Economists have studied many aspects of the online pirate and their behavior. The influences that lead to piracy behavior, the demographics of the online pirate, and the incentives that influence piracy behavior, are a few aspects of the pirate that have been studied. Economist Hakan J. Holm seeked to find out if economic theory can explain piracy behavior. He compared his theories with survey results and found that economic theory can largely explain piracy behavior. The respondents ethical judgements had no statistical effect on piracy behavior. Behavior relied greatly on ability to obtain original copies (financially obtainable, reasonably obtainable).[13] Economists Joe Cox and Alan Collins used an online survey regarding online piracy to find the greatest incentives for piracy. They asked respondents to reveal the extent of which they download illegal files (movies and music) on the internet and what led them to pirate. The authors also asked respondents questions about demographic and social characteristics as well as questions regarding attitudes toward piracy. They found that financially related incentives have the greatest influence on online pirates and the extent to which they steal.[14]

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[12] Danaher, Brett, and Michael D. Smith. "Gone in 60 seconds: The impact of the Megaupload shutdown on movie sales." *International Journal of Industrial Organization* 33 (2014): 1-8.
[13] Holm, Håkan J. "Can economic theory explain piracy behavior?." *Topics in Economic Analysis & Policy* 3, no. 1 (2003).k,
[14] Cox, Joe, and Alan Collins. "Sailing in the same ship? Differences in factors motivating piracy of music and movie content." *Journal of Behavioral and Experimental Economics 50* (2014): 70-76.

It has been suggested that people become more likely to pirate when the need for pirated content is urgent in addition to the financial influence mentioned earlier. Economist Eric Kin-wai Lau tested several hypotheses with a survey of nearly 1000 respondents in Hong Kong. He found that the cost of original software is positively correlated with lenient attitudes to software piracy. He found that a sense of urgency in the need for computer software is positively correlated with lenient attitudes to software piracy.[15] Additionally, he found that the availability of original software is negatively correlated with lenient attitudes to software piracy. In addition to asking questions regarding these findings, the author asked about demographics and ethical attitude towards piracy. [16]

Economists Lydia L. Gan and Hian Chye Koh collected 500 survey responses from three universities in Singapore. They collected response from students and staff alike. They seeked to find out what people are most likely to pirate. They found that age was negatively related to software piracy and that students tended to pirate more often than staff. They found that computer usage and experience had an ambiguous relationship with software piracy. [17]

d. Government Policies against Piracy

Economist Jordi Mckenzie analyzed the impact that graduated response policies ("three-strike" policies) had on film-level theatrical box office revenues. The author explains

[15] Kin-wai Lau, Eric. "Interaction effects in software piracy." *Business Ethics: A European Review* 16, no. 1 (2007): 34-47.
[16] Kin-wai Lau, Eric. "Interaction effects in software piracy." *Business Ethics: A European Review* 16, no. 1 (2007): 34-47.
[17] Gan, Lydia L., and Hian Chye Koh. "An empirical study of software piracy among tertiary institutions in Singapore." *Information & Management* 43, no. 5 (2006): 640-649.

how governments of developed countries have been facing increasing pressure from owners of copyrighted content to enforce some sort of punishment to prevent the unauthorized reproduction of copyrighted products. With help from Internet Service Providers, several developed countries including France, New Zealand, South Korea, and Taiwan have taken initiative and introduced these "three-strike" policies. The author used a quasi-three-way effects difference-in-difference model to test the impact of these policies on revenue. No compelling evidence of increasing revenue was found in any of the markets considered. The author found that the efficacy of these graduated response policies should be questioned, especially if their main objective is to increase box office revenues. [18] In May of 2012, the United Kingdom enforced a blocking ordered directed at The Pirate Bay, a popular file-sharing website. The United Kingdom continued to block 19 more major piracy websites in October and November of 2013. Economists Brett Danaher, Michael D. Smith, and Rahul Telang examined the impact of these court ordered blocking events on consumer behavior. They found that the blocking of The Pirate Bay caused only a small reduction in total piracy because consumers seemed to either use other sites or dodge the block with a Virtual private Network (VPN). They found no increase in legal usage in response to the blocking of The Pirate Bay. However, when 19 major sites were blocked, there was a meaningful reduction in piracy and an increased usage of paid legal streaming sites like Netflix. Their results suggest that in order to change a consumer's piracy behavior meaningfully, several major piracy sites must be blocked at once. [19]

[18] McKenzie, Jordi. "Graduated response policies to digital piracy: Do they increase box office revenues of movies?." *Information Economics and Policy* 38 (2017): 1-11.
[19] Danaher, Brett, Michael D. Smith, and Rahul Telang. "The effect of piracy website blocking on consumer behavior." *Available at SSRN 2612063* (2018).

Economists Michał Krawczyk, Joanna Tyrowicz, Anna Kukla-Gryz, and Wojciech Hardy point out that many studies investigating online piracy rely greatly on student based samples. It has been argued that the student based samples might be weak due to the lax ethical norms regarding piracy behavior that younger people seem to possess. They investigate the possible limited external validity of studies relying solely on these student samples. Their survey has a group of students and a group of people that are openly against piracy behavior. Responders were asked to provide an ethical judgment on different forms of unauthorized acquisition of film entertainment. They found that the ethical judgements between the two differing groups were actually the same. [20]

Economist Fukugawa Nobuya examined how familiar video game console owners are with pirating games on the internet and if they are capable. Using a survey, Nobuya found that approximately 40% of video game console owners knew how to pirate games for free but, a much smaller percentage actually follow through with the act. [21]

It has been found that the impact piracy has on artists depends on the artist and their content. Economists Maya Bacache, Marc Bourreau, and François Moreau, hypothesized that the impact copyright infringement has on an artist depends largely on where their revenue streams from (royalties from record companies, revenues from live concerts, etc). They tested their hypothesis by surveying 710 French musicians. Their model accurately predicted that online piray had a negative effect on artist's revenues who did not perform live often and a positive effect on those artists who do perform live often. [22] Economists David Mitchell and Patrick Scott,

[20] Krawczyk, Michał, Joanna Tyrowicz, Anna Kukla-Gryz, and Wojciech Hardy. ""Piracy is not theft!" Is it just students who think so?." *Journal of Behavioral and Experimental Economics 54* (2015): 32-39.
[21] Fukagawa, Nobuya. "How Serious is Piracy in the Videogame Industry?." (2011).
[22] Bacache-Beauvallet, Maya, Marc Bourreau, and François Moreau. "Piracy and creation: The case of the music industry." *European Journal of Law and Economics* 39, no. 2 (2015): 245-262.

used RIAA sales data with LimeWire and Napster P2P servers to analyze the impact that online piracy had on music sales. They concluded that online piracy had no statistically significant effect on music sales.

3. Data and Method

The survey was conducted in March of 2019. Two separate data samples were used. One sample of data used was collected using SurveyMonkey, an online service that provides survey responses from participants across the United States. This allowed for a broad range of demographics amongst participants. Table 1 demonstrates this range. The majority of the respondents were over the age of 45 (61%) and female (56.94%). The second sample was collected locally at SUNY Purchase during classes. The population of the second sample is entirely students, which limits the scope of the second data sample. The responses from the college are limited in their demographics; for the most part, they are ages 18-24 and full-time college students. More than two-thirds of the college respondents are male. The majority of the college responses have pirated content online whereas, less than a third of the SurveyMonkey respondents have pirated any content.

In order to test my hypothesis, I developed an anonymous survey consisting of 27 questions that ask the participants about their online piracy behavior and usage. Using SurveyMonkey (an online survey creator), I was able to collect 144 responses from a diverse range of participants from all over the U.S. In addition to the responses from SurveyMonkey, I was able to collect 33 responses from students at my college.

Table 1: Sample 1 Descriptive Statistics

Age	Percentage of sample (1)
18-24	13.19%
25-34	12.50%
35-44	9.72%
45-54	20.14%
55-64	20.83%
65+	20.14%
Gender	
Male	40.28%
Female	56.94%
Other	0.69%
Prefer not to say	2.08%
Income	
$25,000-$49,999	14.58%
$50,000-$74,999	17.36%
$75,000-$99,999	10.42%
$100,000-$124,999	11.11%
$125,000-$149,999	4.86%
Piracy	
Pirated a television show	11.11%
Purchased a television show originally pirated	15.28%
Pirated a movie	20.14%
Purchased a movie originally pirated	12.5%

Table 2: Sample 2 Descriptive Statistics

Age	Percentage of sample (2)
18-24	84.84%
25-34	15.15%
Gender	
Male	69.69%
Female	30.30%
Other	0.00%
Prefer not to say	0.00%
Income	
Prefer not to say	12.12%
Under $15,000	12.12%
Between $15,000 and $29,999	3.03%
Between $30,000 and $49,999	12.12%
Between $50,000 and $74,999	15.15%
Between $75,000 and $99,999	6.06%
Between $100,000 and $150,000	6.06%
Over $150,000	15.15%
Piracy	
Pirated a television show	51.51%
Purchase a television show originally pirated	30.30%
Pirated a movie	72.72%
Purchased a movie originally pirated	24.24%

4. Data Analysis

In support of my hypothesis, I found that 62.5% of the SurveyMonkey and 58.9% of the college respondents that reported to have pirated a television show also reported that they had purchased a television show that they had originally pirated. Unfortunately, when it comes to movies and full-length films, respondents rarely purchase content that they have already pirated (this is likely due to the nature of the product, being a one-time use in most situations). In the second sample of data, I found a correlation coefficient of 0.64 between respondents that had pirated a television show and purchased a television show that they had originally pirated. This is sensical because without pirating a television show, you cannot purchase one that your originally pirated. In the first sample, the same correlation coefficient weakens to 0.45. This could be due to a larger sample size.

When we bring both data samples together, the coefficient becomes 0.52. When we calculate the R squared value for both samples of data compiled, it equals 0.27. This indicates that only 27% of the variability in the sample is explained by the independent variable (response to purchasing a television show originally pirated). The correlation coefficient that varies the most between the two samples is that which measures responses to piracy and the degree of harm it causes with measurements of television show piracy ("Do you think piracy is harmful?/Have you ever pirated a television show?). In the first sample, the correlation coefficient amounts to a positive 0.54, indicating a positive relationship between how harmful piracy is perceived to be and television show piracy. This is sensical because many respondents in the first sample who have pirated television shows might find that piracy is "a little" or "moderately" harmful because

there is a broad range of demographics. In the second sample, the correlation coefficient is -0.34 indicating a negative relationship between the two responses. This is likely caused by respondents in the second sample who more commonly share the perception "not harmful at all" in regards to piracy. After compiling all of the data and calculating the R squared value, I found that less than one percent of the variability in the sample is explained by the independent variable (response to pirated a television show).

Table 3 shows the results of a logistic regression. The dependent variable is the respondents' answer to the question: "Have you ever purchased a television show that you have originally pirated?". The independent variables tested include the respondents answers to how likely they are to be punished for piracy, how interested they are in film and television, if they have ever used popular pirating services, how harmful they think piracy is, if they are a student, and demographic questions about gender and age. The strongest relationship between the variables is found in the responses to "Have you ever used popular pirating services". The P-value is a statistically significant 0, allowing us to reject the null hypothesis. The results imply that respondent's answer to "Have you ever used popular pirating services" is strongly related to responses to the dependent variable ("Have you ever purchased a television show that you originally pirated").

This is sensical because consumers who have used popular pirating services are more likely to have purchased a television show that they originally pirated because it is more likely that they have pirated any content at all. Other respondents, who might never pirated any content, would respond negatively to both questions, creating a strong relationship between the two responses. The second strongest relationship is found between the dependent variable and the

independent variable, “How harmful do you think piracy is”. The P-value is 0.04, indicating a statistically significant relationship between the variables. This can be explained by considering how respondents who find piracy very harmful are more likely to purchase content that they have ever pirated. A consumer who finds piracy to be harmless might pirate content endlessly and never purchase anything. The last variable to discuss in Table 3 is “How likely are you to be punished for piracy?”. Unfortunately, the P-value is 0.076, which is considered statistically insignificant at our confidence interval. However, it is so close to being significant (less than 0.05) that it is still worthy of discussion. The relationship between the two variables is strong, likely because consumer who think they are very likely to be punished, are likely to purchase content that they have pirated, rather than continuing to pirate content endlessly. Consumers who find piracy to be harmless, are less likely to purchase content because they think they are doing no harm when they continue to pirate content.

Table 4 runs a logistical regression with the same independent variables on a different dependent variable, “Have you ever purchased a movie you originally pirated”. Considering the outcomes, we can again discuss the variable regarding the use of popular pirating services. The P-value is 0, again, indicating a statistically significant relationship and allowing us to reject the null hypothesis. Once again, these variables are likely strongly related because consumers who have used popular pirating services are more likely to purchase something that they originally pirated because they are more likely to have pirated content in the first place. Unfortunately, the other variables in Table 4 did not provide us with any statistically significant insights.

Table 3: Logistic Regression (Television)

Purchased a Television Show originally pirated	Coef.	Std. Err.	z	P>z	[95% Conf	Interval]
HowLikelyYouAreToBePunishedForPiracy (0-4)	0.477671	0.268756	1.78	0.076	-0.04908	1.004423
HowInterestedYouAreInFilm (0-4)	0.070242	0.269487	0.26	0.794	-0.45794	0.598427
HaveYouUsedPopularPiratingServices	2.761019	0.575821	4.79	0	1.63243	3.889608
HowHarmfulIsPiracy (0-4)	-0.45109	0.220062	-2.05	0.04	-0.8824	-0.01977
Gender	-0.37203	0.499778	-0.74	0.457	-1.35158	0.607515
Age	0.340246	0.222894	1.53	0.127	-0.09662	0.777109
Student	1.066916	0.708042	1.51	0.132	-0.32082	2.454652
_cons	-3.27104	1.14973	-2.85	0.004	-5.52447	-1.01761

Table 4: Logistic Regression (Film)

Purchased a Movie originally pirated	Coef.	Std. Err.	z	P>z	[95% Conf	Interval]
HowLikelyYouAreToBePunishedForPiracy (0-4)	0.2443	0.27023	0.9	0.366	-0.28534	0.77394
HowInterestedYouAreInFilm (0-4)	0.228994	0.272676	0.84	0.401	-0.30544	0.763429
HaveYouUsedPopularPiratingServices	2.585006	0.608254	4.25	0	1.392849	3.777162
HowHarmfulIsPiracy (0-4)	0.232512	0.240562	0.97	0.334	-0.23898	0.704005
Gender	-0.18631	0.50316	-0.37	0.711	-1.17249	0.799863
Age	-0.13184	0.222657	-0.59	0.554	-0.56824	0.304558
Student	-0.00295	0.715648	0	0.997	-1.40559	1.399698
_cons	-3.93368	1.244562	-3.16	0.002	-6.37298	-1.49439

5. Discussion

The results imply that more than half of consumers that pirated television shows online follow up by purchasing the same television shows (via DVD, subscription etc.) legally. The consumer responses show that when television shows are pirated, the legal content is subsequently advertised to the user. In the cases when the user is satisfied or finds utility in the content, they go on to purchase the content or related content. Collecting a consumer's response regarding the quality and level of satisfaction received in regards to the pirated television would have created a conclusion that is more clear. Many of the consumers who did not purchase content that they had already pirated might have not enjoyed the content they pirated.

Additionally, a consumer's response to their behavior regarding purchasing merchandise related to television would have provided a better insight. A consumer's response to their behavior regarding the purchasing of merchandise related to pirated movies would have brought great insight due to the fact that the majority of respondents do not continue to buy a movie that they had originally pirated. Many television shows and films have "spin-offs" where a character is reused in a different setting. Questions that revealed cases where the "spin-off" was consumed legally after the original show or film was pirated would have also been helpful in creating better insight.

To create a stronger portrayal of piracy and its effect on consumers of creative content, I would ask more questions about music, streaming, and music piracy. This survey sheds little light on the impact piracy has on musicians, which I regret greatly. Additionally, I would like to ask the respondents about their behavior regarding purchasing tickets and merchandise from artists. I would also like to ask about movie ticket purchases (i.e if they are purchased after a

movie has already been watched via pirated means). Economists Michał Krawczyk, Joanna Tyrowicz, Anna Kukla-Gryz, and Wojciech Hardy hypothesis that students have laxer views on the ethics of online piracy seems to be accurate in this set. A much higher percentage of the student based sample reported to have pirated content (film or television. The small size of the student-based sample may have led us to this finding. There are additional variables to consider, such as the student-based sample being largely comprised of students studying economics. An academic discipline, such as Economics, may have an impact on the ethical views that the students within the discipline possess. Additionally, it could have an impact on the amount of which have pirated content, considering that pirated content is often shared amongst communities and friends.

The findings in this study are subject to all of the usual caveats found in studies that use surveys. By comparing the results to the findings of economists Benedikt Herz and Kamil Kilijanski, we can find similarities between the study (which was done with a questionnaire) and mine. They found that unpaid movie viewings account for a 4.4% decrease in legal sales, which is seemingly consistent with what I found, considering that people who pirate movies tend to not ever purchase the same movie legally. [23] A similar study, by Rafael Rob and Joel Waldfogel, used survey data on 500 University of Pennsylvania students and found that unpaid consumption, which makes up 5.2 percent of movie viewing in the sample, reduced paid consumption in their sample by 3.5 percent. [24] These findings support the idea that people, when pirating full-length films, tend to not follow up by purchasing a legal version afterward. Economists Lydia L. Gan

[23] Herz, Benedikt, and Kamil Kiljański. "Movie piracy and displaced sales in Europe: Evidence from six countries." *Information Economics and Policy* 43 (2018): 12-22.
[24] Ravi, Ashvini, R. S. Lekshmi, and K. Rajamani. "A STUDY ON MOVIE PIRACY." (2018).

and Hian Chye Koh, who surveyed a university, found that students tended to pirate more often than staff. They found that computer usage and experience had an ambiguous relationship with software piracy. [25] My findings show that students are more likely to have engaged in piracy-related behavior, more likely to find it harmless, etc.

[25] Gan, Lydia L., and Hian Chye Koh. "An empirical study of software piracy among tertiary institutions in Singapore." *Information & Management* 43, no. 5 (2006): 640-649.

6. Conclusion

The aim of this paper was to analyze the behaviors of consumers who pirate content online in regards to their behaviors purchasing legal content. The approach was to collect responses directly from the consumers themselves and identify characteristics regarding the consumer and the online pirate. The main results imply that the majority of people who pirate content online end up purchasing the same content later on. This provides great insight for upcoming artists.

Pricing content at zero increases demand, allowing more consumers to view/use the product and ultimately more consumers to become satisfied by the product. The satisfied consumers go on to seek out the same or similar content and purchase it. Having a price on content provides a barrier that many consumers may not overcome. Additionally, we can interpret this finding in the way that the pirated content provides information to the consumer. The lack of information about a product, with the coexistence of a barrier to information (a price above zero), shys many consumers away.

By removing the barrier, we allow consumers to collect information about the product and allow them to decide if the content is worth purchasing or not. The results imply that consumers who are afraid of being punished by law in regards to piracy are likely to purchase content that they have pirated in the past. Additionally, the results imply that consumers who find piracy to be harmful are likely to purchase content that they have pirated in the past. Ultimately, this implies that many consumers go on to purchase content that they have already pirated because of their views regarding piracy. The impact that online piracy has on artists and

creators of creative content is largely unclear and it is unreasonable to assume that it can only hurt the artist.

Works Cited

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Appendix

Survey Questionnaire:

Senior Project

This is an anonymous survey I am using to collect data for my senior project.

How many years have you been using the computer?

1-2 years
2-4 years
4-6 years
6-8 years
10+ years

Do you own a personal computer?

Yes
No

Do you own a smartphone?

Yes
No

Do you own a tablet?

Yes
No

How many hours a day do you use a computer?

1-2 hour(s)
2-4 hours
4-6 hours
6+ hours

Where do you use the computer most often?

Home
Work
School
Other (fill-in)

Do you think piracy is harmful?

A great deal
A lot
A moderate amount
A little
None at all

Do you think you are likely to be punished for online piracy (pay fee or face prison time)?

Definitely would
Probably would
Probably would not
Definitely would not

Are you generally interested in film and/or music?

Extremely interested
Very interested
Somewhat interested
Not so interested
Not at all interested

Do you find it more convenient to buy physical copies than to pirate (download/stream illegally) online?

Yes
No

Do you find it more convenient to stream media from popular services (Netflix, Hulu, Spotify etc.) than to pirate online?

Yes
No
Sometimes

In your lifetime, how many files have you downloaded or streamed online illegally (or unsure of legality)?

0
5-10
10-20
20+

Do you prefer an original copy over a pirated copy?

Yes
No

Have you ever pirated a television show?

Yes
No

If so, how many episodes or seasons did you pirate?

(Fill-in)

Have you ever purchased a television show (DVD, subscription), that you originally pirated?

Yes
No

If so, how many episodes/ seasons did you subsequently watch?

(Fill-in)

Have you ever pirated a movie?

Yes
No

Have you ever purchased a movie that you originally pirated?

Yes
No

Do you use popular file-sharing services like PirateBay, MegaUpload, or MediaFire?

Yes
No

Do you have an account with a major film streaming service like Netflix, Hulu, Amazon Prime, or HBO?

Yes
No

Do you have an account with a major music streaming service like Spotify, Apple Music, or Amazon Prime?

Yes
No

Please specify your household income

Under $15,000
Between $15,000 and $29,999
Between $30,000 and $49,999
Between $50,000 and $74,999
Between $75,000 and $99,999
Between $100,000 and $150,000
Over $150,000
Prefer not to say

Please specify your age
18-24
25-34
35-44
45-54
55-64
65+

Please specify your gender

Male
Female
Other (fill-in)
Prefer not to say

Please specify your current state of employment

Employed collecting wages
Self-employed
Unable to work
Out of work but looking for work
Out of look (not looking)

Are you a student at a college or university?
Yes (full-time)
Yes (part-time)
No