

# The Ability of Moral Intensity to Predict Purchasing Rates of Online Music Consumers

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**Abstract**—A study involving 454 respondents gathered from a random sample of American adults using SurveyMonkey found that a single variable, which described moral intensity, was able to account for 26.4% of the variance in the purchasing rates for consumers who acquire music online. The predictive ability of moral intensity was found to be significantly higher than the corresponding rates for age, gender, education, income, disposable income, and fear of legal sanction.

**Keywords**—moral intensity, music piracy, piracy prediction

## I. Introduction

Software piracy is a well-known and much-researched problem that has been discussed in the literature since at least the mid-1970s [1][2]. Music piracy and software piracy are described as being similar in nature, in spite of many technical differences [3]. Models originally developed for software piracy studies are now being used to study music piracy [4], and the lessons learned from researching software piracy are commonly applied to music piracy.

As was the case with software piracy, online music piracy is described in the literature as being a significant problem. Both forms of piracy are considered to be complex behaviors because the purchase/pirate decision appears to be based on an interaction of several conflicting values, and cannot be clearly tied to any one condition or event [5]. Piracy is theorized to be affected by demographics, economics, culture, criminology, and risk tolerance [4][5][6]. However, the purchase/piracy decision has a weak and flexible relationship to these affect domains. Many consumers use a combination of purchasing and piracy to acquire music. One issue that piracy research must ultimately address is to identify how a consumer, who uses both purchasing and piracy to acquire digital music, decides which method of acquisition they will use to get the song that they currently desire.

The acquisition of both software and music are based at least in part on a system of trust. Even when deterrent systems such as Digital Rights Management or authentication are used to protect digital content from piracy, these protections can be easily circumvented [7], leaving consumers in large part to self-police their own activities.

Many music piracy studies attempt to predict piracy rates by using behavior intention models as conceptual frameworks [3][8]. These models typically use easily-determined consumer demographics such as age, income, gender, or education and may also include some other measures such as computer usage rates, computing expertise, and possession of a broadband connection as independent variables which are used to infer behavioral intention that results in a predicted purchase/pirate behavioral choice. A critique of this type of study was given by [9], who stated that quantitative piracy research tended to focus on measuring piracy rates rather than examining the decision-making process itself.

Other researchers, such as [3] and [10], included socio-psychological measures or ethical decision-making models along with demographics into their behavioral intention models to study piracy. A limited number of studies [10] have investigated the relationship between music piracy and ethical position, as defined by Forsyth's Ethical Ideologies. One problem associated with the use of Ethical Ideologies in software piracy studies is that for many consumers, the moral intensity of piracy was insufficient for the file sharing/piracy to be viewed as a moral issue [11]. In these instances, the researcher ends up attempting to predict a piracy rate based on the resolution of a moral dilemma that is not part of the respondent's decision-making process.

The purpose of this study was to determine whether moral intensity is an effective predictor of purchasing rates for online digital music. In addition, the predictive strength of moral intensity was compared against several other commonly-used variables found in music piracy studies. Finally, descriptive statistics for the lowest and highest moral intensity groups were compared to determine if moral intensity is better at predicting purchasing or piracy. While this study uses quantitative methodologies to determine the extent to which a measurement of moral intensity may be used to predict piracy, it also tested a variable commonly associated with the decision-making process, rather than using demographic data to predict purchasing rates. Thus, it shifts the focus of the discussion away from the piracy rates and towards factors that influence the decision to engage in piracy.

## II. Literature Review

### A. *The Theory of Reasoned Action*

Piracy studies commonly use behavior intention models as their theoretical frameworks [4]. A behavior intention model

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theorizes that behavioral intention is the probability that piracy (the behavior) is based in the respondent's attitude, beliefs, and opinions about the behavior [12]. Subjective norm represents the effect that the social environment and peer pressure have on behavioral intention. In this study, it is theorized that moral intensity describes/defines the attitudes and environment, which in turn are operationalized into the behavioral intention to either purchase or pirate music.

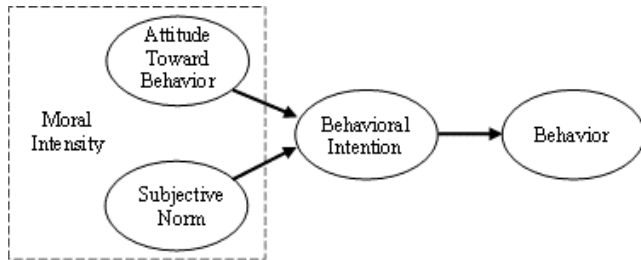


Figure 1. The Theory of Reasoned Action (behavioral intention model).

This study theorizes that there is a correlation between moral intensity and the purchasing rate of consumers for online music. This literature review provides the background necessary for an understanding of moral intensity and the measurement of ethics/morals.

**B. Ethical Measures**

The ability to use the Internet to copy and transfer music (or any file) an unlimited number of times at a cost that approaches zero creates an ethical dilemma for users of such networks. This dilemma is based in the conflict between teleological evaluation, which is the belief that an ethical decision provides the optimal outcome for all stakeholders, even if the decisions violates the law, versus deontological evaluation which is the belief that an ethical decision follows the law, even if the law leads to a less-than-optimal solution [13]. In an ethical decision-making process, deontological and teleological arguments are weighed by the decision maker, who then forms a behavioral intention. In the case of music piracy, the deontological position is that if the music is owned by someone else, then it must be either purchased or forgone. There are clear rules against the theft of property. The teleological position is less clear, as the consumer has to consider several factors and make a decision that optimizes the greater good. These considerations may include the cost of the music (i.e. whether the monopolist's price set by the recording industry is fair), how the pirated copy will be used (such as sampling before purchase) [14], whether digital content meets the legal definition of property (does the law apply), who actually owns the music (who is potentially being stolen from), and whether the file sharing is a violation of the law [15]. If the justifications for file sharing/piracy exceed the prohibition against, then the consumer's ethical evaluation generates a positive behavioral intention to pirate [13].

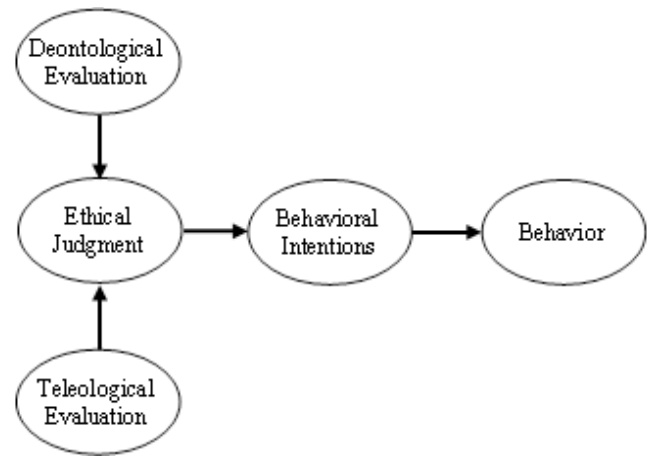


Figure 2. Generalized ethical decision-making model

Two well-known psychology theories that describe ethical decision-making are Kohlberg's Cognitive Moral Development (CMD) and Forsyth's Ethical Ideologies. Kohlberg's CMD describes a three-level moral decision-making process. Each level describes the main point of concern that drives the decision. Level I (pre-conventional) decisions maximize the gain of the individual, Level II (conventional) decisions maximize the gain of the small group, while Level III (post-conventional) decision-making maximizes the gain of the entire community [15]. In Kohlberg's CMD, deontological evaluation predominates at Level II while teleological evaluation is exercised at Level III [16]. In CMD, it is presumed that teleology's universal principles are more morally developed than deontology's social convention [16].

Another approach to describing ethical decision-making is Forsyth's [17] Ethical Ideologies, which categorizes people into four groups based upon their relativism and idealism. Relativism describes the mix of deontological and teleological evaluation that is used to resolve ethical dilemmas, while idealism is the belief that the actions of one person should do no harm to others. Ethical Ideologies appears to be a more appropriate decision-making model for piracy studies because it treats deontological and teleological decision-making as being equally morally developed.

Forsyth operationalized the theory of Ethical Ideologies by creating a 20-question survey, named the Ethics Position Questionnaire (EPQ). The EPQ places respondents into one of four categories based upon the respondent having either a high or low score for both relativism and idealism. The survey used 10 questions to determine the strength of each ethical ideology. Each question was rated on a 9-point Likert scale and the average score over the 10 questions determined whether the respondent was low or high for that ideology. Forsyth recommended using the median score from the sample as the method to place respondents into either the low or high category, although other researchers such as [18] and [19], have used different methods to categorize respondents. While a fuller discussion of the EPQ is outside of the topic of this study, the sample used in this study showed clear differences

in purchasing rates for the four ethical positions (absolutist, situationist, exceptionist, and subjectivist).

High Idealism	Absolutists Best outcome: Follow the rules	Situationists Rejects absolutism, Individual analysis
	Exceptionists Rules guide behavior Open to exceptions	Subjectivists Use personal values, perspectives
Low	Deontological	Teleological
	Relativism	

Figure 3. [16] Taxonomy of Ethical Ideologies. Adapted from “A Taxonomy of Ethical Ideologies,” by D. R. Forsyth, 1980, *Journal of Personality and Social Psychology*, 39(1), p.176. Copyright 1980 by the American Psychological Association.

### C. Moral Intensity

The hypothesis investigated in this study is that increasing moral intensity for piracy is positively related to purchasing rates for online music. As such, a clear understanding of the nature of moral intensity is important to the outcome of this study. One concern with using ethical measures to predict behavior is that a respondent must be able to recognize that the situation faced is a moral dilemma, in order to allow moral reasoning to be applied to the situation [20]. A consumer who does not regard file sharing as theft, or attaches no importance to the fact that file sharing is theft, has no moral dilemma to resolve. If there is no moral dilemma, then moral reasoning is removed from the decision-making process. It has been theorized by many researchers [5] [11] that the magnitude of a moral dilemma can be measured by the level of moral intensity that is generated by the situation. Moral intensity as a theory is based on and extends the original theory of the [21] four-component model of ethical decision making.

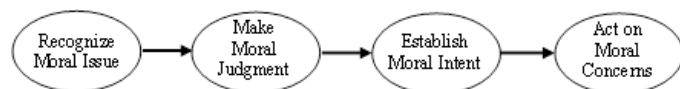


Figure 4. Rest’s four-component model of ethical decision making. Adapted from “Ethical decision making by individuals in organizations: An issue-contingent model” by T. Jones, 1991, *Academy of Management Review*, (16)2, p. 379. Copyright 1991 by the Academy of Management Review

Moral intensity describes how strongly a moral dilemma is felt. Jones [22] defined moral intensity as being made up of six dimensions: magnitude of consequences, social consensus, probability of effect, temporal immediacy, proximity, and concentration of effect. Magnitude of consequences describes the severity of harm that victims of an act may face. Social consequence defines the level of good or evil that the greater society believes the behavior will cause. Probability of effect is in effect the expected value of the behavior, or the sum of all possible outcomes of the behavior weighted by their likelihood of occurring. Temporal immediacy is the time differential between the act and the response to the act. Proximity is the degree of connection that exists between the actor and the people impacted by the actions. Finally, concentration of effect describes the number of people who are affected by the behavior.

Hill [14] described the moral intensity for piracy of digital goods as being low and [11] suggested that the EPQ’s effectiveness as a measure of ethical behavior could be bolstered by including moral intensity in the behavioral model.

The use of moral intensity in behavior prediction studies has been critiqued by several researchers. The results of studies by [23] and [24] into the effectiveness of moral intensity found that the variables for magnitude of consequences and social consensus were the most predictive components in moral intensity, that there was modest support for the predictive ability of temporal immediacy, and weak or slight support for the predictive ability of the remaining variables [25].

## III. Data Gathering and Analysis

The survey data used in this study was collected using SurveyMonkey between August 13, 2012 and August 21, 2012. A total of 3,271 invitations were sent to adult SurveyMonkey respondents living in the United States who had either downloaded music in the preceding 30 days or had used Internet radio. Due to ethical considerations, minors were excluded from this study. 536 respondents completed some portion of the survey and 460 respondents completed the entire survey. Six of those who completed the entire survey had neither purchased nor pirated any online music in the past year and were removed. The final sample size used in this study was 454 respondents ( $n=454$ ).

The sample was compared to the U.S. adult population, as reported in the 2010 U.S. Census [26] [27]. The sample was representative of the U.S. adult population in terms of (adult) age and geographic distribution, but appeared to have slightly higher levels of income and education. This sample’s demographics are consistent with other samples that have been generated using SurveyMonkey [28]. The age range of this sample was from 18 to 80 and the sample’s age representation was normally distributed, excepting the exclusion of minors from the study. The gender mix of the sample was 59% male and 41% female. The use of a random sample drawn from a national audience alleviated the common problems often associated with piracy studies that use a sample drawn from

populations of college students, such as sample skewing due to higher rates of piracy associated with college students [4], a compressed age range, and increased socio-economic statuses and educational levels in the sample than are found in the general population [10].

The survey used 43 questions to gather data on age, the number of songs purchased and pirated, demographic data, economic condition, moral intensity, and general opinions about piracy, plus the 20 questions of the Ethics Position Questionnaire. Almost all of the questions used in this study were scored using a 5-point Likert scale. The survey was field tested and a pilot study was used to determine the appropriateness of the survey questions. Due to the large sample size ( $n=454$ ), normalcy of data was assumed and bivariate linear regression was used to determine the predictive strength of each of the defined variables.

SPSS version 20 was used to perform the data analysis. The dependent variable in this study was the purchasing rate and all other variables used were independent variables. All data in this study was scale data except for the EPQ score, which was nominal data. The EPQ scores were converted into scale data by ranking the EPQ scores based on purchasing rate (highest to lowest). The ranking of absolutist, situationist, exceptionist, and subjectivist was then used as the basis for the bivariate analysis of EPQ.

Moral intensity was operationalized in this study by mean averaging the responses to two questions (typically using reverse wording and reverse scoring) that captured the values for each of the six components of moral intensity: magnitude of consequences, social consensus, probability of effect, temporal immediacy, proximity, concentration of effect [22]. A second test of moral intensity considered only the average score for the magnitude of consequences and social consensus variables which were identified as key components of moral intensity in the literature.

#### IV. Results

Based upon bivariate analysis of the survey data, it was determined that the 6-factor moral intensity composite score of a respondent accounted for 26.4% ( $R^2=0.264$ ) of the variability in their purchasing rates and had a significance of  $p<0.001$ . No other variation of moral intensity scores was as effective as the full 6-factor test. The two-factor test (magnitude of consequences and social consensus) accounted for 21% in the purchase rate's variance ( $R^2=0.210$ ,  $p<0.001$ ). The predictive strength of each component of moral intensity was as follows: magnitude of consequences ( $R^2=0.216$ ), social consequences ( $R^2=0.067$ ), probability of effect ( $R^2=0.228$ ), temporal immediacy ( $R^2=0.108$ ), proximity ( $R^2=0.091$ ), and concentration of effect ( $R^2=0.184$ ). Each individual variable within moral intensity had a significance of  $p<0.001$ . The least squares regression line between the 6-factor moral intensity score and the piracy rate was:  $\text{PiracyRate} = 104.35 + (-29.081 * \text{MI Score})$ .

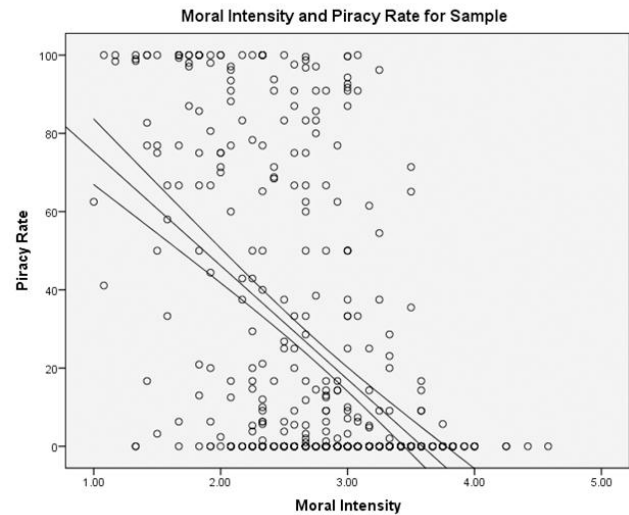


Figure 5. Piracy rates and their relationship to moral intensity

Other independent variables were also tested for their ability to explain the variability in purchasing rates for online music. The variable which captured the respondent's future plans for acquisition (from no purchasing to pure purchasing) was the most effective in predicting the variance of current purchasing rates, with an  $R^2=0.622$  and a significance of  $p<0.001$ . This finding implies that a consumer's future behavioral plan is in no small part predicated by their current behavior. The findings are shown below:

TABLE I. PREDICTIVE STRENGTHS AND SIGNIFICANCE OF THE INDEPENDENT VARIABLES

Variable	Predictive Strength ( $R^2$ )	Significance
Moral Intensity – 6 variables	0.264	<0.001
Moral Intensity – 2 variables	0.210	<0.001
Age	0.091	<0.001
Gender	0.002	0.396
Relativism	0.047	<0.001
Idealism	0.044	<0.001
EPQ	0.069	<0.001
Disposable income	0.025	0.001
Fair price (59 cents)	0.198	<0.001
By chosen fair price	0.099	<0.001
By maximum price	0.097	<0.001
Important song buy?	0.125	<0.001
Fear of legal sanction	0.010	<0.001
Social stigma	0.079	<0.001
Future plans	0.622	<0.001

The predictive strength of moral intensity was high compared to other variables typically used in piracy studies, but moral intensity and purchasing rates are weakly correlated by traditional measures. The descriptive statistics for the moral intensity score had a range from 1 to 5, a mean of 2.76, a median of 2.80 and a standard deviation of 0.6418. The overall frequency distribution of moral intensity scores was reasonably close to being normally distributed.

A test of moral intensity (MI) was performed to determine whether respondents with high and low levels of MI were different from each other. This test was performed by placing the 100 respondents with the lowest MI score in one group and the respondents with the highest MI score in a second group. The group size of 100 was arbitrary, but it divided the entire sample roughly into quarters. So that all respondents with the same MI score were treated equally, 2 respondents were added to the low group ( $n=102$ ) and 9 respondents were added to the high group ( $n=109$ ). The low group had a range of MI scores from 1.0 to 2.25, and the high group had a range of MI scores from 3.25 to 4.58. As can be seen in Figure 5, the low and high MI score group acquisition behaviors tended to be more homogeneous while the middle range behaviors ( $2.25 < MI < 3.25$ ) tended to be more heterogeneous.

TABLE II. MAKEUP OF EACH GROUP BY TYPE OF ACQUIRER

Group	Number in Group	Percentage Group	Number in Sample	Percentage Sample
Low MI Group:	102		454	
Pure Purchase	21	20.6	247	8.5
Pure Pirate	21	20.6	27	77.78
Mixed Acquire	60	58.8	180	33.3
High MI Group:	109		454	
Pure Purchase	92	84.4	247	37.2
Pure Pirate	0	0.0	27	0.0
Mixed Acquire	17	15.6	180	9.4

The number of pure purchasers (no reported piracy), pure pirates (no reported purchasing), and mixed acquirers (practices both purchasing and piracy) in the low and high moral intensity groups is shown in Table II. While the low MI group attracted a representative number of mixed acquirers, it has an over-representation of pure pirates and an under-representation of pure purchasers based upon the sample's makeup. The low MI group ( $MI < 2.26$ ) was made up of 20.6% pure purchasers and 79.4% mixed or pure pirates. This group attracted a much higher percentage of pure pirates (77.8%) than pure purchasers (8.5%), even though the number of pure purchasers and pure pirates in the group is the same. The high MI group ( $MI > 3.24$ ) is made up almost exclusively of pure purchasers (84.4%), and no pure pirates were found in this group. The theory that pirates tend to have low moral intensity appears to be supported by this table, though the case for purchasers having high moral intensity is not as clearly made.

TABLE III. ACQUISITION VOLUME OF PURE PURCHASERS AND PURE PIRATES

Group	Volume of Purchase	Volume of Piracy	Piracy Rate
Piracy:			
Low MI Group	6,810	25,457	78.9
High MI Group	9,648	594	5.8

Piracy rates and piracy volume sometimes tell different stories due to mixed acquirers and low-volume acquirers skewing percentage-based data. Table III shows the piracy rates for each MI group. The low MI group had a piracy rate of 78.9%, which is vastly different from the high MI group's

piracy rate of 5.8%. This drastic difference in the piracy rates certainly points out a clear connection between low moral intensity and the piracy behavior discussed by other researchers [5] [11], and again supports the case that pirates have low moral intensity for file sharing while purchasing happens in both the low and high MI groups.

The descriptive statistics for the sample also holds some interesting information about the music market. In this sample, the age range of the respondents was from 18 to 80, but the low number of respondents in the 69 to 80 age range makes it difficult to draw meaningful conclusions about this group. The descriptive statistics for the age of adult music acquirers found a mean of 37.4, a median of 35, a mode of 28, and a standard deviation of 14.4. Aside from a single outlier in both cases, an analysis of the sample that was grouped by incremental age determined that 18 year olds had the highest average purchasing volume of 167.24 songs as well as having the highest average piracy volume of 267.04 songs. The outlier for purchasing was 36 year olds and the outlier for piracy was 20 year olds. Both outlier ages had a very small number of respondents, which may be a reason for their unexpected performance. The trend line for purchasing rate by age showed that people in their early 60s were least likely to pirate, and those in the late teens were the most likely to pirate.

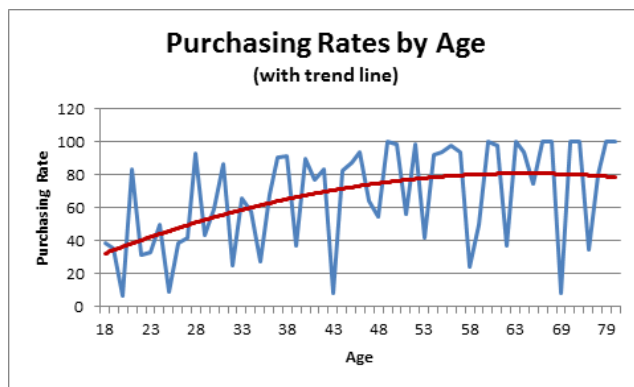


Figure 6. Purchase and piracy volume by age group (incremental)

Total acquisitions for this sample was 87,824, with 38,274 tracks purchased and 49,550 tracks pirated. Per respondent acquisition in the past year had mean averages of 84 songs purchased and 109 songs pirated, for a total of 193 songs acquired per respondent. The piracy rate for this sample was 56.4%, which is significantly lower than the 95% piracy rate cited by the International Federation of the Phonographic Industry (IFPI) [29]. The exclusion of minors from this sample, however, very likely impacted on the calculated piracy rate and this finding should be not be generalized to the entire music market or to minors acquiring online music.

Purchasing as a behavior was much more evenly distributed over the sample than piracy. Respondents who acquired music exclusively by purchase made up 54.4% of the sample and generated 60% of the total purchases. Pure pirates made up only 5.9% of the sample, and were responsible for 37% of the total piracy. 39.6% of the respondents used a mixed strategy to acquire music. Mixed acquirers made 40% of the purchases and generated 63% of the sample's piracy. 318 of the 454 respondents had purchasing rates that were 75% or higher, while 10% of the sample (45 respondents) performed 85.7% of the piracy.

## v. Discussion and Future Work

The findings of the study indicate that tests of moral position and the most commonly-used demographics in piracy research are, in themselves, not very predictive of purchasing (or piracy) rates. The best indicator of the current likelihood of purchasing or pirating online music discussed in this study was planned future behavior. The respondent's moral intensity had the second-highest ability to predict purchasing rates. Closely following moral intensity's predictive ability was the extent to which a respondent believed that 59 cents per song represented a fair purchase price. In the study, data using the price points (in cents) of 19, 39, 59, 79, and 99, as well as \$1.29 per song were all compared to the purchasing percentage of the respondent. The 59 cent price data had the highest predictive ability with  $R^2=0.198$  and a significance of  $p<0.001$ . Of the demographic data, age was the most effective at predicting purchasing rates, with gender, education, and disposable income all performing very poorly.

One potential issue with using moral intensity to predict purchasing or piracy rates is that moral intensity only measures the likelihood that ethical decision-making will be included as part of the overall decision to purchase or pirate. It is not a proxy for beliefs about the appropriateness of file sharing. Having low moral intensity towards piracy simply means that a deontological/teleological evaluation is less likely to be used in the decision-making process. Instead, the likely deciding factors may include economic and social factors. The literature is in agreement that many non-ethical factors favor the piracy decision [30][31], so the removal of ethical decision-making should at least in theory lead to increased piracy rates. Respondents having higher moral intensity are more likely to view the decision as having a moral dilemma and incorporate an ethical evaluation into their decision-making process. However, this does not necessarily mean that deontological evaluation will dominate, and it is possible that a respondent will use teleological evaluation to justify piracy, rather than following the law.

Moral intensity in this study was captured as a single score for the overall behavior. A second issue with moral intensity is that overall moral intensity may very be temporarily modified or overridden by the respondent due to current circumstances. Researchers [32] [33] have pointed out that music piracy is not a consistent phenomenon. Music piracy varies by musical genre, the type of message the music delivers, the persona of the front man, and the persona of the band [34]. This impact in

turn implies that different songs in different genres by different acts may all have differing levels of moral intensity attached to them by the same consumer.

The variable for legal sanction is somewhat interesting in that between 2003-2006, the Recording Industry Association of America sued approximately 17,500 people accused of file sharing. The literature written at the time suggested that these lawsuits had a pronounced impact on piracy volume [14], but many researchers have since described the impact of these lawsuits on piracy volume as being minimal at best [35]. One lasting impact the piracy lawsuits may have accomplished was that they helped re-define file sharing, which had been seen as a legal or morally ambiguous act before the lawsuits, into the illegal act of piracy [35]. The data in this study suggests that consumers who pirate today have little fear of legal action and that legal considerations are an inconsequential part of the purchase/pirate decision ( $R^2 = 0.010$ ). Any potential shame at being detected pirating music is much more likely to mitigate piracy than the extremely unlikely threat of a lawsuit.

While the recording industry could control the demographics of their market by selling a different genre of music than they currently market, their desire to sell youth-driven, anti-authority content (which makes up a majority of their market) causes many of the problems they face. For the recording industry, this study points out the need to increase the moral intensity associated with piracy and exploit the potential of peer pressure and social stigma to achieve their aims.

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