Differential effects of social influence sources on self-reported music piracy

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Abstract:

The paper examines the effects of five major socialization agents—namely parents, peers, traditional media, the Internet, and music industry—on emerging adults' attitudes and behavior toward music piracy in the form of unauthorized downloading. Based upon self-reported behavior, our study shows that these socialization agents exert differential effects on music piracy. Specifically, peers and the Internet exert direct impact on both attitudes and behavior. Parents and music industry, however, only have indirect impact on emerging adults' piracy behavior through shaping their attitudes. The research further shows that the effects of socialization agents differ across consumer segments. A factor mixture modeling technique is first applied to disentangle the behavioral heterogeneity, and more observable factors such as demographic, social, and psychological variables are then utilized to profile members in each segment. From a managerial perspective, this research provides new avenues for managers and policy makers to design targeted prevention programs to curtail music piracy.

Keywords: music piracy | socialization | survey | partial least squares regression | latent class analysis

Article:

1. Introduction

Music piracy has been one of the most serious threats facing the music industry [42]. Some studies attributed the decline of album sales to the spread of music piracy accelerated by peer-to-peer (P2P) network services such as Napster, Gnutella, FastTrack, Kazaa, BitTorrent, and eDonkey [8], [15]. This argument was in part evidenced by the fact that, coincident to the inauguration of Napster, the first widely used P2P network, sales of music on physical media have declined 53%, from $14.6 billion to $7.0 billion in 2013 [68]. According to RIAA [68], about 30 billion songs were pirated through P2P networks. While different approaches have been proposed to change consumers' economic incentive to pirate music (for example, thematic-building [16], contract design [43], licensing structure [14]), the music industry has mostly taken legal measures to sue corporations and individuals that engaged in the piracy behavior [17]. It sued over 21,000 individuals (mostly university students) for piracy between 2003 and 2006 [80], and their legal activities directly resulted in the shutdown of Napster in 2001.

Although some people believe that the lawsuits brought by the music industry are successful [19], others suggest that legal threats have little effect on changing piracy behavior [17], [60], [74]. Despite the fact that the music industry has sued a good number of individuals, unauthorized music downloading is more popular than ever [60]. A major reason is that legally prosecuting and convicting those who downloaded music without copyright authorization becomes more and more difficult [18], [37]. In addition, Sinha and Mandel [74] report that legal threats can sometimes generate boomerang effects (i.e., increase music piracy rather than reduce it), especially for those university students who have a greater level of risk-taking tendency. Bhattacharjee et al. [17] argue that different individuals respond to legal threats differently and the availability of music files on peer-to-peer file-sharing networks remains substantial with the presence of legal threats. These findings suggest ineffectiveness and drawbacks of such 'pirate-oriented' prevention and intervention programs that focus on actively punishing the current copyright violators in order to deter future violations.

To advance our understanding about the boundary conditions of 'pirate-oriented' programs, this paper examines how social influence sources, such as the music industry, affect piracy behavior. Piracy by nature is a learned behavior [51], [54], [81]. Once are learned, such attitudes can be internalized and serve as a driving factor for piracy. In addition to shaping attitudes, social influences can also facilitate the growth of piracy communities, due to the fact that music piracy is a collaborative behavior [22]. The culture of music piracy is difficult to be changed through lawsuits alone because the social dynamics that drive the interest in music depend on word-of-mouth discussions, friend-to-friend sharing, and convenience in music access [30]. Hence, it is important to understand the key sources of social learning that can significantly impact individuals to form favorable attitudes toward music piracy. The thrust is that managers and public policy makers can benefit from the discovery by developing new intervention programs to target these sources (i.e., 'source-oriented' programs) as a supplementary tool to enhance the effectiveness of the conventional pirate-oriented programs.

Drawing from social learning theory [2], [3], [4] in criminology, a few studies [51], [54], [81] have explored how social learning occurs in the context of digital piracy. For example, Wang et al. [81] showed that both unauthorized obtaining and unauthorized sharing are shaped by the social learning environment, and different consumer groups present distinct patterns of social learning influences. Morris and Higgins [54] examined how demographic variables (i.e., region, age, gender, and race) affect individuals' degree of social learning, which in turn, influences their digital piracy behavior. Miller and Morris [51] argued that social learning from peers occur both offline and online. These studies have primarily focused on social learning from peers, while the important role of other socialization sources (e.g., parent, mass media, and music industry) in this social learning process is often neglected.

Our study extends prior research on music piracy in two important ways. First, drawing upon the consumer socialization framework [56] and social learning theory [4], we simultaneously examine the effects of five major social influence sources—parents, peers, mass media, the Internet, and music industry—on piracy behavior. When investigating the effects of parents and peers on piracy, prior studies [5], [29], [61] usually pile them together through the lens of subjective norms of friends and parents (termed as "important others" or "friends and family").

Little is known about how parents and peers may impact music piracy in a distinctive way. Our study considers friends and parents to be two distinct influence agents that exert different effects on one's piracy behavior. In addition, although impersonal agents such as mass media, the Internet, and music industry are recognized as important factors influencing one's piracy behavior [19], [50], their roles as influence agents and sources of learning are barely examined. Simultaneously modeling the effect of multiple influence sources helps us compare the relative importance of each on music piracy, and identify the primary source shaping the piracy behavior of different types of individuals.

Second, we are among the first to theorize and address unobserved heterogeneity in music piracy. Traditional approaches understanding the social learning literature usually rely on analysis at an aggregate level, which assumes that all individuals are homogeneous in the structure of relationships. However, consumers' responsiveness to an influence agent may vary with their demographic, social, and psychological variables [32], [49], [62]. The results based on an aggregate-level analysis can be hideously misleading if considerable variation exists with respect to the magnitude or pattern of the regression coefficients [11]. We therefore segment our sample based on the participants' responsiveness to the influence sources (i.e., the sign and magnitudes of the path coefficients), using a factor mixture modeling technique [45]. The analysis identifies several consumer segments in our sample and different segments possess different patterns of responsiveness to the social influence sources. A follow-up analysis further indicates that the segment membership can be predicted by such more observable variables as age, gender, computer usage, major, number of friends who engage in music piracy, and self-control. This is an important contribution as it not only ensures validity and rigorousness of the findings, but also provides theoretical foundation to explain why “pirate-oriented” intervention programs work for some people, but not for others. Armed with this information, managers and policy makers can develop customized, effective prevention programs to curtail music piracy.

In this study we focus on university students because this population accounts for a significant portion of music piracy [74]. Attending university may be one of the most important phases in one's life. A majority of university students can be considered as emerging adults who are in their late teens and early twenties. During their university life, those emerging adults not only acquire the necessary knowledge and skills, but also experience the culture and develop attitudes and behavior toward various things that may influence their later life phase [67]. Our study provides a unique angle to explore how social environment influences university students' attitudes and behavior toward music piracy in the form of unauthorized downloading. According to Pew Internet & American Life [64], more than two-thirds of all individuals engaging in music piracy over the Internet have attended university at some point in their lives. About 87% of students currently in college conduct some form of illegal copying [81]. On average, each college student has over 800 illegally downloaded songs on his/her digital music player [70].

2. Theoretical Background And Hypotheses

2.1. Theoretical Background

Consumer socialization refers to “the processes by which young people acquire skills, knowledge, and attitudes relevant to their functioning as consumers in the market place” [82].

According to Moschis and Churchill's [56] consumer socialization framework, children's behavior is influenced directly and indirectly by social structural variables (e.g., social class, family size, and family structure) and age or life cycle position via socialization processes. Although social structural variables and children's age are specified as “antecedents” in the consumer socialization model, the primary research interest of most studies is on the role of consumer socialization processes in socialization outcomes, with these “antecedents” being treated as covariates in analysis (e.g., [24], [25], [56]). Consumer socialization processes encompass various socialization agent-learner relationships and modes of learning that affect socialization outcomes such as acquisition of consumer skills, consumption-related preferences, and consumption-related attitudes [47], [55].

2.1.1. Socialization Agents

Parents, peers, and mass media are the three most commonly studied consumer socialization agents in the literature [13], [55], [56], [71]. Among these three agents, parents are the most available from infancy through adolescence, supporting children's physical and psychological development. Parents may also be the most important socialization agent since in most cases they can affect the knowledge children acquire from other agents. For example, attachment theorists [1], [20] viewed the early parent-child interaction as an important prerequisite in shaping the child's early sense of self. Besides, parents may impact the child's peer orientation and selection both directly through parental monitoring and indirectly via parental modeling; as a result of such influence, the child may select peers that reflect the values, attitudes, and goals of the parent [85].

Although parents are widely viewed as an important socialization agent for younger children, researchers have diversified views regarding whether parents still exert significant influence on children after they grow up. While some researchers believe that parental influence still exists after children move to college campus [62], [71], [86], other researchers argue that peer and mass media influence replace parental influence at this stage of lifecycle [49], [88]. More recently, the Internet has become another important socialization agent, especially for university students. According to McKenna and Bargh [48], the influence of the Internet is so powerful that it even starts to erode the amount of human interactions among teenagers. In addition to these four major socialization agents, considering the context of music piracy, we include music industry as another agent playing an important role in shaping emerging adults' piracy attitudes and behavior through promoting anti-piracy messages. Simultaneously examining the effect of these influence sources helps us compare the relative importance of each on shaping the piracy behavior.

2.2. Mode of Learning

Imitation (or modeling) and reinforcement are the two main modes of learning that are pointed by both social learning theory [4] and consumer socialization framework [56] in shaping one's attitudes and influencing one's behavior. *Imitation (or modeling)* refers to the engagement in behavior after the direct or indirect (e.g., in media depictions) observation of similar behavior by others [3]. The characteristics of the models, the behavior observed, and the observed consequences of the behavior may affect the imitation of a behavior [10]. Imitation is more

important in the initial acquisition and performance of novel behavior than in the maintenance of behavioral patterns once established.

Reinforcement refers to the balance of rewards and punishments attached to a behavior [3]. Whether individuals will refrain from, or commit, a deviance depends on the balance of past, present, and anticipated future rewards and punishments for their actions. The more severe the punishment for deviant behavior is, the less likely the behavior will occur and be repeated. Reinforcers and punishers can be nonsocial (such as the direct physical effects of drugs and alcohol). Our focus in this paper is mainly on the social aspect of reinforcement, which includes the whole range of various rewards or punishments from society or subgroups. The balance of reinforcement may motivate individuals to commit deviant acts even in the face of their own definitions unfavorable to those acts.

2.3. Hypothesis development

Fig. 1 presents our research model of music piracy behavior, in which the five socialization agents—namely parents, peers, mass media, the Internet, and music industry—are specified as antecedents, and attitudes toward music piracy as the mediator. The socialization agents affect the downstream variables—music piracy attitudes and behavior—mainly through two leaning modes (i.e., imitation and reinforcement).

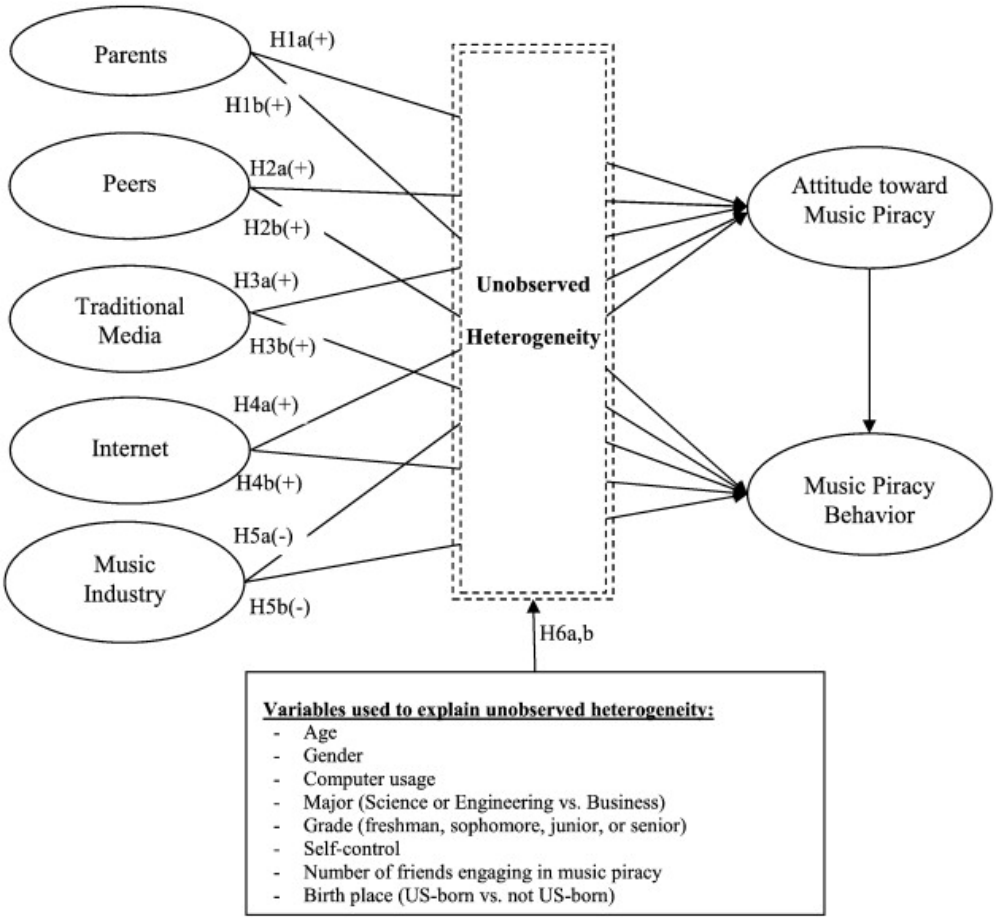


Fig. 1. Research model and hypotheses.

2.3.1. Parents

Parents play an important role in the socialization of emerging adults [62], [71], [86]. Like preteens and teenagers, most university students are still in the process of establishing many of their consumption-related preferences and habits [67]. Yang and Schaninger [86] showed that parental smoking behaviors exert strong impact on teenagers' smoking development. The influence is mainly through imitation (e.g., obtaining the first-hand knowledge of smoking via observing parents' behavior, easy access to cigarettes at home), and through reinforcement (e.g., "smoking is a great way to relax oneself," "smoking is acceptable"). Translating these findings to the music piracy context, parents may serve as an important social influence source for their teenagers in music piracy. Positive socialization by parents includes pirating music themselves, sharing the knowledge about how to download and where to download unauthorized music files with their offspring, and/or holding favorable attitudes toward their children's piracy behavior. Such socialization activities from parents encourage children to internalize positive attitudes toward music piracy and engage in piracy behavior. Notably, the forgoing reasoning is in line with Al-Rafee and Cronan [5], who also suggested that the influence of significant others changes one's attitude toward digital piracy behavior. Therefore, we propose:

> **H1.** Imitation and reinforcement from parents positively impact university students': a) attitudes toward music piracy, and b) piracy behavior.

2.3.2. Peers

Social practices within peer groups and social interactions with friends predict many of the adolescent developmental aspects including music piracy. Associations with peers provide emotional support, opportunities for validation, acceptance, and clarifying interaction that facilitate self-definition [41]. Observing and imitating peers' piracy behavior, one can learn techniques of music piracy and identify reliable sources or communities to pirate. One's piracy behavior may also be driven by recognition from friends or facing peer pressure [34]. Peer encouragement to participate in piracy significantly leads to adolescents' piracy intention [22], [30], [37]. Peer groups may also alter individuals' definition of music piracy to be neutral (e.g., "Everyone else is pirating music") or even positive (e.g., "Music piracy is attractive") (cf. [2], [83]). Consistent with the above-discussions, Miller and Morris [51] argued that peer associations, whether they are virtual or traditional, play important roles in explaining one's deviant behavior. Therefore, we propose:

> **H2.** Imitation and reinforcement from peers positively impact university students': a) attitudes toward music piracy, and b) piracy behavior.

2.3.3. Mass media

According to Moschis [55], mass media include those based on visual images (e.g., television), and those based on verbal communication (e.g., magazines and newspapers). When reporting computer crimes, magazines and newspapers sometimes disclose detailed information about the techniques and tricks the pirates used to obtain unauthorized digital products, as well as where

they obtained the sources, and the supportive networks that facilitated the behavior. Such information may give emerging adults a chance to learn the knowledge of music piracy. In addition, it has also been concluded that television viewing may give consumers a distorted perception of the reality, in a way that the more they watch television the more they will come to view reality similar to the one portrayed in television episodes [59]. This may explain why the individuals being more frequently exposed to the news of piracy and digital crimes in TV programs or movies (e.g., hacking others' computers, stealing money from ATM machines, and credit card fraudulency) tend to overestimate the popularity of these behaviors and underestimate the risk of being sanctioned. Frequent exposure to piracy also makes people think more positively about such behavior (cf. [72]). Taken together, piracy behaviors exposed by mass media tend to serve as a source of learning for young adults, which can influence their attitudes and behavior related to music piracy. Therefore, we propose:

> **H3.** Imitation and reinforcement from mass media positively impact university students': a) attitudes toward music piracy, and b) piracy behavior.

2.3.4. Internet

Music piracy thrives with the introduction of the Internet and P2P networks because of easy access to a variety of music files [26]. More recent development of social network platforms, such as Facebook and Twitter, has changed the way emerging adults make friends and exchange information. Acknowledging the importance of the Internet, early studies mainly focus on how the characteristics of the technologies (such as connection speed, usefulness of a P2P network, and ease of use of a P2P network) affect music piracy behavior [6], [46]. However, the Internet as a socialization agent and source of learning is under-explored [73]. One of the most significant differences between the Internet and traditional mass media is the interactivity of Internet communication. The Internet facilitates the users to choose and respond to a particular piece of information of their liking [87]. Word-of-mouth discussions through online forums and blogs fertilize university students' learning of the techniques and have become a powerful drive source of imitation. The need to maintain online relationships and the recognition from online forums and virtual communities (e.g., online reputation) may directly reinforce one's piracy behavior. The Internet becomes an important source of learning that may shape university students' attitudes and behaviors toward piracy. Therefore, we propose:

> **H4.** Imitation and reinforcement from the Internet positively impact university students': a) attitudes toward music piracy, and b) piracy behavior.

2.3.5. Music industry

Due to piracy, sales of recorded music in the United States have fallen by an average of 7% every year since 1999 [31]. According to some music industry reports [75], music piracy has cost the United States $12.5 billion in economic output and dramatically hindered job growth, with an average of losing 71,060 job positions and $2.7 billion in earnings annually. To mitigate these damages, the music industry has been taking a number of actions with the purpose of stopping piracy. Various forms of anti-piracy messages are promoted and circulated in the forms of ads, YouTube clips, white papers, and billboards [21]. The music industry was also actively suing

individuals who engaged in music piracy. When a lawsuit was in action, the music industry publicized it, and used it as an intervention to warn other people who were engaging in similar behavior [81]. Publicizing these lawsuits and promoting anti-piracy messages may help correct the misconception about the nature of piracy, and consequently change the attitudes toward piracy and alter the piracy behavior. Therefore, we propose:

> **H5.** Imitation and reinforcement from music industry in the form of anti-piracy messages negatively impact university students': a) attitudes toward music piracy, and b) piracy behavior.

2.3.6. Mediating role of attitudes toward music piracy

We anticipate that attitudes toward music piracy will mediate the impact of socialization agents on music piracy behavior. Attitudes toward music piracy reflects the degree to which individuals define the commission of an act as relatively more right or wrong, good or bad, and acceptable or unacceptable [3]. Attitudes toward music piracy not only provide a mindset that makes an individual more cognitively willing to commit the act, but also serve as internal discriminative stimuli behaviorally affecting his/her commission of music piracy. In the meantime, attitudes toward music piracy are also affected by the degree of imitation and reinforcement from the socialization agents, as predicted in Hypotheses 1–5. Therefore,

> **H6.** Attitudes toward music piracy mediates the impact of socialization agents on music piracy behavior.

2.3.7. Heterogeneity in Responsiveness to Social Influence Sources

We further expect that university students are heterogeneous in their responses to the impact of social influence sources. Individuals learn continuously and learn different things at different times in their lives. Their responsiveness to influence agents may change with their demographic, social, and psychological variables. Peters [62], for example, found different relations exist between consumers and socialization agents for different age groups. During childhood parents may be the most important social influence source, while during adolescence, peer influence becomes significantly higher than before. And for adults, other agents such as media and family become more important than peer influence [32], [49]. Individuals' living status may also affect the impact of parental influence. The longer time spent at the university, the less influential parents are on college students' brand purchasing decision [32].

Researchers have also found that the influence of mass media on one's behavior may differ by social structural and life-cycle position variables. In a study comparing the influences of mass media on African Americans and that on Caucasians, Bush et al. [23] found that African-American college students tend to watch more TV, are more likely to use advertising as a source for information, and have more positive attitudes toward advertising. Examining the gender difference in media consumption, Mangleburg et al. [47] found that females consume more marketplace-related information from the mass media than males. Compared to their female counterparts, male adolescents have less positive attitudes toward advertising [56].

Differences in personal values [84] and in lifestyles [52] can also lead to behavioral heterogeneity in music piracy. For example, some individuals engage in music piracy because they have a lower level of self-control, as exhibited by more susceptible to peer influence and/or value social status in a group more than others. Besides, the individuals hanging around with a group of active music pirates have a greater chance to observe pirating behavior. Similarly, a heavy computer user may have more exposure to online discussions about music piracy than a light one, which may cause greater temptation to engage in music piracy. Therefore, we propose:

> **H7a.** Unobserved heterogeneity exists in the sample, reflecting differential effects of socialization agents.

> **H7b.** University students' sensitivity to socialization agents can be explained by some demographic, social and psychosocial variables, including age, gender, computer usage, major, number of friends who engage in music piracy, and self-control.

3. Research method and results

3.1. Sample and procedures

The sampling frame consisted of undergraduate students at a major university in the southern United States. The invitation to participate in our study was posted in public areas such as a cafeteria and a library, and distributed to over 2000 students who were taking course(s) at business, engineering, and science schools. Participants came to the designated classrooms at the scheduled time slots to fill out the survey. As an incentive for participation, we provided each participant a $6 gift certificate redeemable at any cafeteria/restaurant in the university. Because music piracy is a delicate topic, we took careful actions to ensure that respondents provided valid information about their behavior. We promised that all information they provide would remain strictly anonymous and confidential and that there was no way for us to relate the answers to any person or his/her friends. And the survey did not collect any information related to the participants' identity (such as name, ID, etc.). Respondents were also assured that there was no right or wrong answer, and that they should answer as honestly as possible. Survey approach has been widely used by previous researchers to understand the driving factors and influencers of digital piracy, including software piracy [35], [38], [39], [44], [53], [61] and music piracy [37], [81].

In total, 665 valid responses were collected. Using age as a screening factor, we excluded the participants older than 25 from analyses, yielding a useful sample of 582 students (M_{age} = 21.7, ranging from 18 to 25 years). Basic demographic information of the sample suggested that the sample was representative of the student population in terms of gender (57.9% males), age (72% between 21 and 25 years old), computer usage (94% spent at least 5 h on computer per week), and status (92.1% full-time students). About 69.4% of the participants were born in the United States.

3.2. Measurement items

All measurement items were adopted from existing measures, and adapted to fit with the music piracy context. We constructed an initial set of items by analyzing the literature and reflecting on the proposed theory. The survey protocol was pre-tested by a group of faculty members, Ph.D. students, undergraduate students, and university administrative staffs before the actual data collection. In addition to the pretest, a pilot study was carried out with 313 students who were taking an introduction to marketing course. The preliminary results of the pilot study were in support of the differential effects of socialization agents on music piracy proposed in the paper. Minor changes were made in the survey protocol following the feedback gathered from the pretest and the pilot study. In the survey instrument, music piracy was defined as downloading sound recordings with copyright authorization.

3.2.1. Independent variables

We modeled socialization in favor of music piracy by parents, peers, mass media, and the Internet as formative constructs with two underlying dimensions corresponding to the two modes of learning: imitation and reinforcement [4], [56]. The measurement items were adopted from Akers et al. [4]. Imitation from parent was measured by "How much knowledge about music piracy (e.g., where to download unauthorized music files, how to download) have you learned from your parents/caregivers?" (1 = *learned nothing*; 7 = *learned everything*). Reinforcement from parents was assessed by "Unauthorized downloading of music upsets my parents/caregivers" (reverse-coded; 1 = *strongly disagree*; 7 = *strongly agree*). Imitation from peers was measured by "How much knowledge about music piracy (e.g., where to download unauthorized music files, how to download) have you learned from your close friends?" (1 = *learned nothing*; 7 = *learned everything*). Reinforcement from peers was assessed by "Unauthorized downloading of music is discouraged by my close friends" (reverse-coded; 1 = *strongly disagree*; 7 = *strongly agree*).

Imitation from the mass media was gauged by "How much knowledge about music piracy (e.g., where to download unauthorized music files, how to download) have you learned from mass media, including newspapers, magazines, TV, and movies?" (1 = *learned nothing*; 7 = *learned everything*). Reinforcement from the mass media was assessed by two items (α = .63): Unauthorized downloading of music: 1) puts me at the risk of being sanctioned, and 2) makes me not look good in the public's opinion (reverse-coded; 1 = *strongly disagree*; 7 = *strongly agree*). Imitation from the Internet was measured by "How much knowledge about music piracy (e.g., where to download unauthorized music files, how to download) have you learned from the Internet, including forums, blogs, and websites?" (1 = *learned nothing*; 7 = *learned everything*). Reinforcement from the Internet was gauged by two items (α = .78), anchored at 1 = *strongly disagree*; 7 = *strongly agree*: Unauthorized downloading of music: 1) helps me fit into the online groups better, and 2) enhances my image in the virtual communities.

Following prior literature (e.g., [12], [40]), we operationalized imitation and reinforcement from music industry together as individuals' exposure to anti-piracy messages, indicated by "During the past 30 days, how many times did you hear or see anti-music piracy messages on the following media? (α = .86): 1) radio, 2) Internet, 3) TV or movies, 4) newspapers or magazines, and 5) billboards or outdoor signs" (1 = *none* and 7 = *more than once a day*).

3.2.2. Dependent variables

Attitude toward music piracy was measured by three items adopted from Peace et al. [61]: "To me, the act of unauthorized downloading of music is (α = .86): 1) unacceptable/acceptable, 2) bad/good, and 3) foolish/wise." Following prior studies [4], [53], piracy behavior was assessed by three items reflecting frequency, intensity, and amount of the behavior, respectively (α = .82): 1) How often do you download unauthorized digital music files from the Internet (for example, BitTorrent, Pirate Bay, Gnutella, and eDonkey)? (never, a few times a year, 2–3 times per month, once a week, 2–3 times per week, 4–5 times per week, every day), 2) On average, how many songs each time were involved in your downloading unauthorized digital music files from the Internet in the past year (for example, BitTorrent, Pirate Bay, Gnutella, and eDonkey)? (0 songs, 1–5 songs, 6–10 songs, 11–15 songs, 16–20 songs, 21–25 songs, more than 25 songs), and 3) In the past year, how many songs in total were you involved in your unauthorized digital music files from the Internet (for example, BitTorrent, Pirate Bay, Gnutella, and eDonkey)? (0 songs, 1–10 songs, 11–100 songs, 101–200 songs, 201–400 songs, 401–600 songs, more than 600 songs).

3.2.3. Demographic, social, and psychological variables used to predict segment memberships

Age, gender, computer usage, major (Science/Engineering vs. Business), grade (freshman, sophomore, junior, or senior), number of friends engaging in music piracy, birth place (US-born vs. non US-born), and self-control were measured in the study to predict segment memberships. Computer usage was measured by the following question: On average, how much time per week do you spend on computers (including browsing the Internet)? (less than 5 h, 5–10 h, 10–15 h, 15–20 h, and more than 20 h). Gender was a binary variable, with males coded as 0 and females as 1. Number of friends engaging in music piracy and self-control are included in the study because previous researchers [76] believe that they are primary drivers of computer crimes. The former was gauged by a 7-point scale anchored at 1 = *none of them* and 7 = *all of them* developed by Akers et al. [76], whereas the latter was measured with the 13-item self-control scale developed by Tangney et al. [78]. Following the original literature, the responses of these 13 items were summed up to get a composite score of self-control for each respondent.

Social desirability was used as a control variable and assessed by a short version of the Marlowe-Crowne Social Desirability Scale developed and validated by Strahan and Gerbasi [77]. To test the potential threat of common method bias, we followed Podsakoff et al. [65] to include a theoretically irrelevant construct called "power" as a marker variable in the survey, which has eight items (e.g., "I can get people to listen to what I say") developed by Anderson and Galinsky [7].

3.3. Analysis and results

The measurement model and the full structural model were tested using partial least squares (PLS) regression through the smartPLS 2.0 software [69]. The bootstrap procedure was used to estimate the significance of the path coefficients. PLS can test complex relationships by avoiding inadmissible solutions and factor indeterminacy. It allows both reflective and formative latent constructs in the model, and provides the ability to model latent constructs with less restrictive

requirements in terms of sample size and data distribution than covariance-based Structural Equation Modeling [27]. One drawback of PLS is that it underestimates path coefficients and overestimates loadings. As a result, the significant results of a PLS analysis can be given more credence because of the test being more conservative [9].

Following Chin et al. [28], the formative high-order factors representing the effects of socialization agents were estimated through the repeated indicators method based on the hierarchical component model. We used a molecular approximation in which the low-order constructs are specified to lead to their corresponding high-order construct.

3.3.1. Assessment of measures

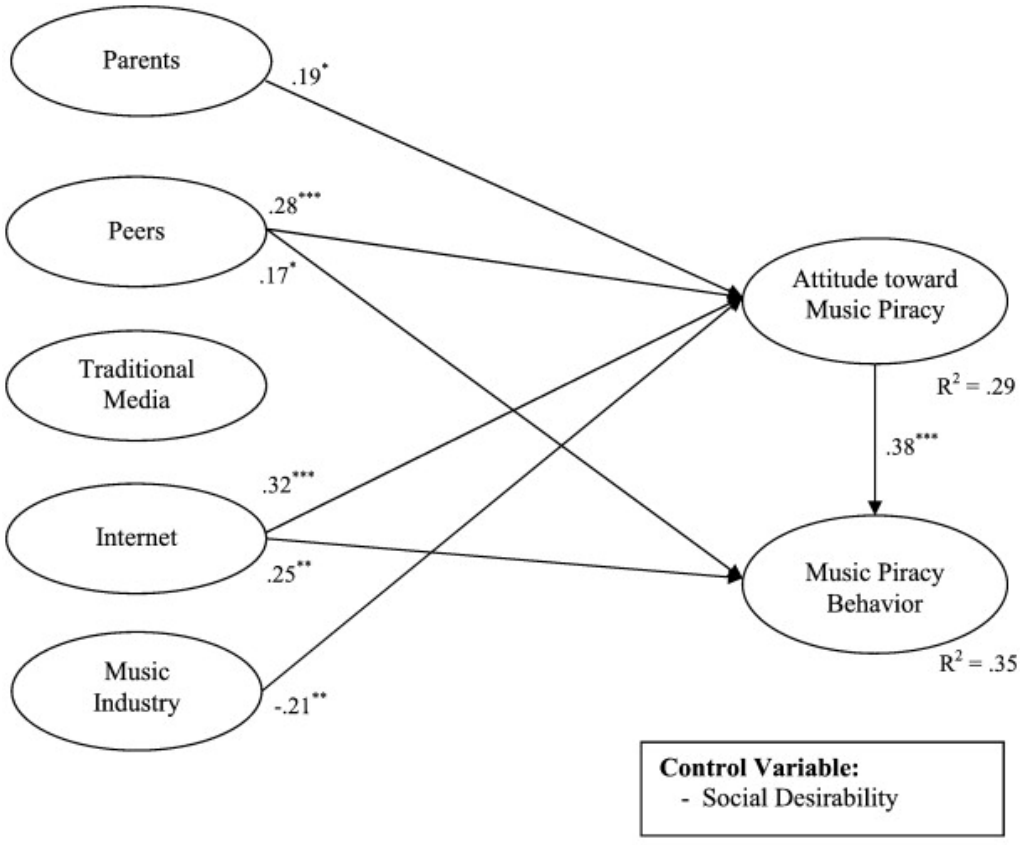
The indicators of mass media reinforcement, Internet reinforcement, anti-piracy messages, attitude toward music piracy, and music piracy behavior were submitted to a confirmatory factor analysis. The analysis yielded the predicted factors, which jointly explained 73.1% of the variance in our data. We assessed the reliability of the individual items by inspecting the loadings of the items on their corresponding construct and their internal consistency values [33]. Except for mass media reinforcement (α = .63), Cronbach's alphas for all first-order reflective constructs were at or above 0.78, exceeding the suggested threshold of 0.60, and composite reliabilities were all well above the suggested 0.70 level [57].

We used the following four methods to assess the convergent and discriminant validity of the multi-item measures in the model. First, the square root of the average variance extracted (AVE) of all constructs was much larger than all other cross-correlations. Second, all AVEs were well above 0.50, which suggests that the constructs captured much higher construct-related variance than error variance. Third, the correlations among all constructs were all well below the .90 threshold, which indicates that all the constructs were distinct from each other. Fourth, all the items loaded highest on their intended constructs with factor loadings greater than 0.50 (all t-values are significant). These findings suggest that these constructs had adequate convergent and discriminant validity.

The potential threat of common methods bias and multicollinearity among model factors was also evaluated. Following Podsakoff et al. [65], we incorporated a theoretically unrelated variable (aka “marker”) into our model. If common method bias exists in the data, we would expect the marker variable to be significantly related to other constructs in the model. In our analysis, we used the construct of power as the marker variable and examined structural parameters by comparing one model that contains the marker variable to the other that does not have the marker variable. The results showed that the marker variable was not statistically significant to any of the model constructs. In addition, adding the power construct did not alter any of the path coefficients, in terms of the sign, magnitude, or significance level. These results suggest that our data does not suffer from substantial common method bias. To assess the reliability of formative constructs (first-order or higher), we used multicollinearity assessments based on variance inflation factor (VIF). We found that VIFs for formative constructs (including both single- and multi-item measures) were all well below 3.3 [63], indicating that multicollinearity is not a threat to the validity of the study's findings. In addition, social desirability was not significantly related to self-reported music piracy ($p > .15$).

3.3.2. Testing hypotheses H1a to H5b

Hypotheses H1a through H5b specify the effects of five primary socialization agents on attitudes toward music piracy and piracy behavior. As shown in Fig. 2, socialization by parents in favor of music piracy is positively associated with attitudes toward music piracy ($b = .19$, $p < .05$), supporting H1a. Although the direct link from socialization by parents to piracy behavior is not statistically significant ($p > .05$), it indirectly affects behavior through affecting attitudes (parents → attitudes: $b = .19$, $p < .05$; attitudes → behavior: $b = .38$, $p < .001$). Therefore, H1b is partially supported. Substantiating H2a and H2b, socialization by peers in favor of music piracy is positively associated with both attitudes toward music piracy ($b = .28$, $p < .001$) and piracy behavior ($b = .17$, $p < .05$). Since socialization by traditional media is not significantly associated with either piracy attitudes or behavior, H3a and H3b are not supported by our data. Consistent with H4a and H4b, socialization by the Internet in favor of music piracy affects both piracy attitudes ($b = .32$, $p < .001$) and behavior ($b = .25$, $p < .01$). Music industry was found to be negatively associated with attitudes toward music piracy ($b = -.21$, $p < .01$), and indirectly linked to behavior through attitudes (music industry → attitudes: $b = -.21$, $p < .01$; attitudes → behavior: $b = .38$, $p < .001$). Therefore, our data fully supports H5a but partially supports H5b.



Note:
***, $p < .001$; **, $p < .01$; *, $p < .05$.
[a] All paths were estimated, but only significant paths in at least one study are displayed.

Fig. 2. PLS results.

3.3.3. Testing hypothesis H6

For the four socialization agents that show significant effects on piracy behavior, a further analysis on the total effects, indirect effects, and direct effects showed that 79.2% of parents' total effect on piracy behavior flows through attitudes toward music piracy (parents → attitudes → behavior: $b = .08$, $p < .01$). In addition, 39.8% of peers' total effect on piracy behavior was mediated by attitudes toward music piracy (peers → attitudes → behavior: $b = .11$, $p < .001$). Attitudes toward music piracy also mediated 32.9% of Internet's total effect (Internet → attitudes → behavior: $b = .12$, $p < .001$) and 79.6% of music industry's total effect (music industry → attitudes → behavior: $b = .08$, $p < .01$) on piracy behavior, respectively. These results support H6. Attitude toward music piracy is thus fundamental to understanding how socialization agents affect piracy behavior.

3.3.4. Testing hypotheses H7a and H7b

Latent class analysis was used to test H7a to extract the potential unobserved behavioral heterogeneity in the sample, based on the inferred relationships among socialization agents, attitudes toward music piracy, and piracy behavior. Latent class analysis deals with unobserved heterogeneity in the parameters of a certain model across the population by imposing a "mixing distribution" on the parameters of that model, which is different from conventional clustering methods that segment individuals based on observed attributes. The observations in a sample are assumed to arise from two or more groups that are mixed in unknown proportions. In this study, we used the latent class model introduced by Lubke and Muthén [45], which classifies the participants into segments with similar response patterns, and estimates the path coefficients within each segment simultaneously. The segments were formed on the basis of the proposed relationships among socialization variables and music piracy attitudes and behavior. Following Lubke and Muthén [45], we allowed path coefficients to vary across segments, while keeping other parameters (e.g., item loadings or weights) fixed in the analysis. H7a is supported if the data best fits with more than one segment.

We tried different numbers of segments as shown in Table 1. Prior studies (e.g., [58]) suggest sample-size-adjusted BIC as the best of the information criterion indices. As shown in Table 1, we had sample-size-adjusted BIC minimized for K = 4. The result suggests that four latent classes adequately describe the data. These four segments account for 40.1%, 32.8%, 16.3%, and 10.8% of the entire sample, respectively. Therefore, H7a is supported.

Table 1. Model selection.

Model	LogLikelihood	AIC	BIC	Adjusted BIC	EN
Aggregate (K = 1)	− 1916.4	3862.8	3931.7	3884.8	1.00
K = 2	− 1830.2	3718.4	3851.6	3759.5	.70
K = 3	− 1778.7	3643.5	3841.0	3704.4	.83
K = 4	− 1740.6	3595.2	3857.0[a]	3671.7[b]	.84
K = 5	− 1714.5	3571.0[c]	3897.1	3676.0	.80

[a] Minimum BIC.
[b] Minimum Sample-size-adjusted BIC.
[c] Minimum AIC.

To test H7b, the membership probability was calculated for each individual in each segment given K = 4. Following Ramaswamy et al.'s [66] approach, standardized posterior probability scores of each segment were used as the dependent variables, while participants' age, gender (0 = male, 1 = female), birth place (0 = born in USA, 1 = otherwise), computer usage (i.e., length of time participants spent on computer per week), stage at the college, major (0 = Business or Liberal Arts, 1 = Science or Engineering), number of friends who engage in music piracy, and self-control were introduced as independent variables. Theoretically, this approach gives the profile of each segment using more observable variables.

The results in Table 2 suggest that the first segment is more likely to be not-US born (b = .09, p < .05), older (b = .15, p < .001), female (b = .15, p < .001), light computer users (b = -.10, p < .05), with fewer friends engaging in music piracy (b = -.33, p < .001) and higher level of self-control (b = .09, p < .05). The second segment contains US-born (b = -.09, p < .05), engineering or science major (b = .11, p < .05) students. The third segment tends to be younger (b = -.16, p < .001), male (b = -.14, p < .001), business or liberal arts major (b = -.12, p < .01), heavy computer users (b = .10, p < .05), with more friends engaging in music piracy (b = .24, p < .001) and lower level of self-control (b = -.12, p < .01). The last segment is made up of younger (b = -.12, p < .01), male (b = -.13, p < .01), business or liberal arts major (b = -.10, p < .05), with more friends engaging in music piracy (b = .14, p < .001).

Table 2. Analysis of posterior probabilities.[a]

Psychosocial Variables	Not-US born, older, female, light computer users, with fewer friends engaging in music piracy and higher level of self-control (Segment 1)	US-born, engineering or science majors (Segment 2)	Younger, male, business or liberal arts major, heavy computer users, with more friends engaging in music piracy and lower level of self-control (Segment 3)	Younger, male, business or liberal arts major, with more friends engaging in music piracy (Segment 4)
Gender	.15***	.03	− .14***	− .13**
Age	.15***	.05	− .16***	− .12**
Stage at the college	.04	− .04	− .09*	.01
Computer usage	− .10**	− .01	.10*	.06
US-born	.09*	− .09*	− .03	.00
Science or Engineering major	.07	.11*	− .12**	− .10*
Number of friends who engage in music piracy	− .33***	.00	.24***	.14***
Self-control	.09*	.02	− .12**	− .03
R^2	26.4%	6.9%	17.1%	10.5%

[a] Significance levels are conservatively based on two-tailed tests.
*** p < .001. ** p < .01. * p < .05.

Table 3 presents the path coefficients for each of the four segments. For segment 1 (not- born in US, older, female, light computer users, with fewer friends engaging in music piracy and higher level of self-control), our proposed model accounts for 20.2% of the variance in music piracy behavior. The variances explained change to 60.3% for segment 2 (US-born, engineering or science majors), 63.7% for segment 3 (younger, male, business or liberal arts major, heavy computer users, with more friends engaging in music piracy and lower level of self-control), and

65.0% for segment 4 (younger, male, business or liberal arts major, with more friends engaging in music piracy).

Table 3. Disaggregated results for heterogeneous sample: a four-segment solution.[a]

Causal paths	Not-US born, older, female, light computer users, with fewer friends engaging in music piracy and higher level of self-control (Segment 1)	US-born, engineering or science majors (Segment 2)	Younger, male, business or liberal arts major, heavy computer users, with more friends engaging in music piracy and lower level of self-control (Segment 3)	Younger, male, business or liberal arts major, with more friends engaging in music piracy (Segment 4)
Parents → Piracy Attitudes	.04	.10*	.07	.01
Parents → Piracy Behavior	.03	.15***	.01	.37***
Peers → Piracy Attitudes	.23***	.13**	.33***	− .00
Peers → Piracy Behavior	.01	.14**	.36***	− .03
Media → Piracy Attitudes	.02	.04	.01	− .08
Media → Piracy Behavior	.00	.05	− .02	− .09
Internet → Piracy Attitudes	.07	.03	.09	.38***
Internet → Piracy Behavior	.11*	.15**	.29***	.11
Music Industry → Piracy Attitudes	− .26***	− .10*	− .08	− .47***
Music Industry → Piracy Behavior	.02	− .13**	− .21*	− .12
Piracy Attitudes → Piracy Behavior	.22***	.10*	.27**	.21*
R^2 in piracy behavior	20.2%	60.3%	63.7%	65.0%
Sample Percentage	40.1%	32.8%	16.3%	10.8%

[a] Significance levels are conservatively based on two-tailed tests.
*** $p < .001$. ** $p < .01$. * $p < .05$.

For segment 1, peers as a socialization agent influence individuals' piracy behavior primarily through affecting their piracy attitudes (peers → attitudes: $b = .23$, $p < .001$; attitudes → behavior: $b = .22$, $p < .001$). Therefore, H2a is fully supported and H2b is partially supported. Consistent with H4b, the Internet exerts a direct effect on piracy behavior ($b = .11$, $p < .05$). Music industry shapes individuals' piracy behavior through affecting their attitudes ($b = -.26$, $p < .001$). Therefore, H5a is fully supported, but H5b is partially supported for this segment. Since peers and music industry affected piracy behavior primarily through influencing attitudes, H6 is supported for this segment.

For segment 2, socialization by parents in favor of piracy is positively associated with both attitudes ($b = .10$, $p < .05$) and behavior ($b = .15$, $p < .001$), supporting H1a and H1b. Consistent with H2a and H2b, socialization by peers in favor of piracy is positively related to both attitudes ($b = .13$, $p < .01$) and behavior ($b = .14$, $p < .01$). Supporting H4b, the link between the Internet and piracy behavior is positive and significant ($b = .15$, $p < .01$). Music industry is negatively related to piracy attitudes ($b = -.10$, $p < .05$) and behavior ($b = -.13$, $p < .01$), substantiating H5a

and H5b. Given that attitudes toward music piracy mediated the effects of parents, peers, and music industry on piracy behavior, H6 is supported.

The piracy behavior for the individuals in segment 3 is directly affected by peers (b = .33, p < .001), the Internet (b = .29, p < .001), and music industry (b = -.21, p < .05), supporting for H2b, H4b, and H5b, respectively. The piracy behavior for this group is also indirectly affected by peers through attitudes (peers → attitudes: b = .33, p < .001; attitudes → behavior: b = .27, p < .001), supporting for H2a. Such results also substantiate H6.

For those in segment 4, piracy behavior is directly affected by parents (b = .37, p < .001) and indirectly affected by Internet through piracy attitudes (Internet → attitudes: b = .38, p < .001; attitudes → behavior: b = .21, p < .05). Similarly, music industry affects piracy behavior via attitudes (music industry → attitudes: b = -.47, p < .001). These results lend full support for H1b, H4a, and H5a, as well as partial support for H4b and H5b. Because attitudes toward music piracy mediated the effects of Internet and music piracy on behavior, H6 is also supported.

It is not surprising to see that traditional mass media do not exert significant impact on emerging adults' piracy attitudes and behavior, after controlling for the effects of other socialization agents. There are two plausible explanations. First, almost all major newspapers and magazines have an online presence. TV programs and movies are also accessible from the Internet. As a result, the effect of mass media may be overshadowed by that of the Internet. This is especially true for emerging adults, who are so immersed in the Internet that they rarely touch other media and even reduce human interactions [48]. Second, the focal behavior of this study, music piracy, is mainly an online behavior. P2P networks, electronic bulletin boards, and forums are often the primary sources of information regarding where and how to obtain unauthorized music files. From this perspective, the effect of mass media may be overshadowed not just by the Internet, but also by other socialization agents when all these five agents are modeled simultaneously in the same framework.

4. Discussion

The paper simultaneously examines the effect of five major socialization agents—namely parents, peers, traditional media, the Internet, and music industry—on emerging adults' music piracy attitudes and behavior. As summarized in Table 4, all socialization variables, except for traditional media, have significant impact on piracy attitudes and/or behavior. Specifically, peers and the Internet exert direct impact on both attitudes and behavior. Parents and music industry, however, only have indirect impact on emerging adults' piracy behavior through shaping their attitudes. More importantly, we found that the influences of socialization agents are not universally held. There are significant differences across different segments due to the unobserved behavioral heterogeneity in piracy. For segment 1 (not-US born, older, female, light computer users, with fewer friends engaging in music piracy and higher level of self-control), piracy behavior is directly influenced by the Internet, but indirectly affected by peers and music industry through shaping attitudes. For segment 2 (US-born, engineering or science majors), parents, peers, and music industry directly affect both attitudes and behavior, but the Internet exerts a direct effect only on piracy behavior. For segment 3 (younger, male, business or liberal arts major, heavy computer users, with more friends engaging in music piracy and lower level of

self-control), piracy behavior is directly affected by peers, Internet, and music industry, but indirectly affected by peers via attitudes. For segment 4 (younger, male, business or liberal arts major, with more friends engaging in music piracy), piracy behavior is directly affected only by parents, but indirectly affected by the Internet and music industry through influencing attitudes.

Table 4. Summary of the hypotheses and results.[a].

	Aggregate	Not-US born, older, female, light computer users, with fewer friends engaging in music piracy and higher level of self-control (Segment 1)	US-born, engineering or science majors (Segment 2)	Younger, male, business or liberal arts major, heavy computer users, with more friends engaging in music piracy and lower level of self-control (Segment 3)	Younger, male, business or liberal arts major, with more friends engaging in music piracy (Segment 4)
H1a	Supported	*Not supported*	Supported	*Not supported*	*Not supported*
H1b	Partially supported	*Not supported*	Supported	*Not supported*	Supported
H2a	Supported	Supported	Supported	Supported	*Not supported*
H2b	Supported	Partially supported	Supported	Supported	*Not supported*
H3a	*Not supported*	*Not supported*	*Not supported*	*Not supported*	*Not supported*
H3b	*Not supported*	*Not supported*	*Not supported*	*Not supported*	*Not supported*
H4a	Supported	*Not supported*	*Not supported*	*Not supported*	Supported
H4b	Supported	Supported	Supported	Supported	Partially supported
H5a	Supported	Supported	Supported	*Not Supported*	Supported
H5b	Partially supported	Partially supported	Supported	Supported	Partially supported
H6	Supported	Supported	Supported	Supported	Supported
H7a	Supported	–	–	–	–
H7b	Supported	–	–	–	–

Note: "Partially supported" refers to the fact that there is no direct link between the focal variable and piracy behavior. However, there exists an indirect link from the focal variable to attitudes toward music piracy, which in turn, affects piracy behavior.

4.1. Theoretical contributions

Music piracy is a learned behavior and emerging adults can acquire the attitudes and behavior of music piracy through imitation and reinforcement. In the process, techniques of music piracy are learned and reliable sources or communities are identified for the purposes of piracy. Prior studies [51], [54], [81] have mainly investigated the impact of peer environment that one is directly associated with. Yet, how individuals learn from other reference groups or sources and what source is the most salient are barely explored. Our research contributes to the literature through an investigation into five main "sources of learning" of music piracy. Emerging adults not only acquire the initial necessary knowledge, but also experience the culture and learn the attitudes toward music piracy from different sources. Once the behavior is learned, it may be reinforced by the consequences it generates. Despite the important roles that various socialization agents play in affecting individuals' piracy attitudes and behavior, little research has examined music piracy from a socialization perspective. This research represents the first attempt to use the consumer socialization model to examine music piracy and simultaneously examine the effect of the five major socialization agents on piracy attitudes and behavior. Our study suggests that important sources of learning on music piracy for university students include parents, peers, the Internet, and the anti-piracy messages promoted by the music industry.

The present research also extends the consumer socialization literature in a significant way. Moschis and Churchill's [56] consumer socialization framework points out key socialization agents and modes of learning. However, it misses one important element: the effects of socialization agents may be different for different groups of people. To our knowledge, this is the first study to theorize and test behavioral heterogeneity within the framework of consumer socialization. Theoretically, our research adds a segmentation component into the original model, which advances our understanding about consumer socialization to another level of depth. Our approach also helps explain some mixed findings in the literature. For example, some researchers find that parental influence still exists after children move to college campus [62], [71], [86], whereas other researchers do not support that view [49], [88]. Our findings suggest that whether parents have influence or not depends on the psychosocial characteristics of emerging adults. Similarly, our results also indicate that anti-piracy efforts made by the music industry are effective for some people but not for others, which may help reconcile the ongoing debate regarding whether perceived sanction risk reduces music piracy [29] or not [74].

4.2. Managerial implications

From a managerial perspective, our findings suggest that except for mass media, other four socialization agents all exert substantial impact on emerging adults' attitudes toward music piracy and piracy behavior. As indicated earlier, previous researchers are indecisive with respect to parental influence on emerging adults' consumption-related attitudes and behavior. Our findings suggest that parents still serve as an important socialization agent on their children's attitudes and behavior at least in the music piracy context, even after they leave home for college. Notably, our results are in line with the recent finding that parental smoking and peer smoking are the two most important factors that affect teen smoking initiation and progression [86]. According to Yang and Schaninger [86], a core mechanism underlying such effects is that parents and close friends serve as role models and/or reinforcers for substance use. Such an effect is long-lasting rather than temporary and affects a child's smoking trajectory over a wide range of developmental periods (over a course of eight years in Yang and Schaninger's article). Armed with this information, prevention programs on music piracy should not only target emerging adults themselves, as all the programs do, but also directly target parents, regarding how parental behavior on music piracy may significantly affect their offspring's piracy attitudes and behavior. Although we have not seen these programs yet, the important role that parental behavior plays in adolescent consumption-related behaviors has been widely acknowledged by marketing researchers and practitioners. Tobacco Free Kids, for example, has started to develop advertisements to educate parents to be more responsive to their children as a preventive approach to curtail teen smoking [86]. Similarly, social workers have used advertising to encourage parents to communicate with their teenagers about sex as a way to prevent teens from engaging in risky sexual behavior [79].

Given the importance of peers as a socialization agent, social marketers need to use teen interventions to generate resistance to group pressure for digital piracy, like the ones used for curtailing drug and alcohol use [36]. Teen targeted advertising to de-normalize or make those peers who engage in piracy less attractive is another tool. Marketers can also set up good examples among college students for them to follow. Exemplar figures can be established through advertising in college websites and newspapers to show that a good citizen on campus is

the one who keeps away from unauthorized file downloading or sharing. Another strategy is to take specific measures to break individuals' association with piracy peers. For example, successful counseling and intervention strategies should be developed to prevent students from associating with music piracy groups.

Our findings also support the view that anti-piracy messages initiated by the music industry are effective for emerging adults. However, we would suggest that fear appeals highlighting legal sanction may not be the best approach for them, as indicated by previous researchers [60], [74]. Instead of threatening them, we suggest developing effective educational programs to change their attitudes toward music piracy, shape their conceptions of morality and legitimacy regarding music piracy, and successively create a normative culture among groups where each person feels individually and socially bound to abide by those legal standards. Through such programs, we may remove excuses and induce guilt and shame for engaging in music piracy. Furthermore, policy makers and managers could devise more cost-effective business models so that the perceived benefits of music piracy are reduced, and user-friendly shopping experience for music could be offered to enhance the benefit of "not pirating."

All these piracy-combating strategies need to be developed in combination with effective segmentation approaches to enhance its effectiveness. For those not born in US, older, female, light computer users, with fewer friends engaging in music piracy and higher level of self-control, peers and music industry play a more important role than others in affecting their piracy attitudes. As a result, anti-piracy campaigns and good examples from peers may be more effective for this group. For US-born, engineering or science majors, parental influence and the Internet seem to be effective. Therefore, parent-targeted prevention programs should focus on recognizing the detrimental effect of music piracy and parents' responsibility in this battle. In the meantime, educational intervention programs should be designed to create a normative culture on the Internet, so that the emerging adults in this group feel individually and socially obliged to abide by the legal standards. The piracy attitudes and behavior of younger, male, business or liberal arts major, heavy computer users, with more friends engaging in music piracy and lower level of self-control are more likely affected by peers. Consequently, prevention programs that focus on effectively dealing with peer influence tend to be effective for this group. For those who are younger, male, business or liberal arts major, with more friends engaging in music piracy, parents and music industry are important influencers. Therefore, anti-piracy messages, combined with parent-targeted programs to encourage parents to have open discussion with their teens about the detrimental effects of music piracy, may be effective for this group.

4.3. Limitations and future research

The results have to be interpreted in the context of the study limitations. First, all measures in our model are self-reported without actual behavioral data. Although common method bias and social desirability was not found to be a threat to the internal validity of our findings, we could use some behavioral measures in future research to provide more rigorous test on our model. Second, though survey has been used as a major research methodology to apply the consumer socialization model for understanding various consumption-related behavior, such a method may not be able to fully capture the complex and dynamic interactions of the socialization agents. Third, we only examined music piracy in this paper. The same framework can also be tested for

other types of digital products that face a piracy environment, such as motion pictures and video games. Moreover, a deeper understanding of the underlying socialization mechanism may also be a fruitful direction for future research.

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