

Understanding today's music acquisition mix:

A latent class analysis of consumers' combined use of music platforms

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Abstract In response to diversifying music delivery modes, consumers increasingly combine various music platforms, both online and offline, legal and illegal, free or paying. Based on survey data ($N = 685$), the current study segments consumers in terms of the combination of music delivery modes they use. We identify four latent classes based on their usage frequency of purchasing CD's, copying CD's, streaming music, streaming music videos, peer-to-peer file sharing, and purchased downloading. All-round users (9.9%) use most or all acquisition modes, but at a low frequency. Traditionalist (33.7%) typically make no use of any of the acquisition modes except buying CD's. Streamers-downloaders (20.7%) use several acquisition modes intensively, especially streaming (video and/or music only) and downloading (legal and illegal). Light users (35.6%) also use multiple acquisition modes, but less frequently. We draw theoretical and practical implications, discuss limitations, and suggest ideas for future research.

Keywords Music Consumption . Music Piracy . Latent Class Analysis . Consumer Behavior

1 Introduction

Consumers increasingly combine various music platforms. For example, some buy CD's and download legal MP3's, others combine streaming and peer-to-peer (P2P) file sharing (Weijters et al. 2014). This raises two questions. First, which platforms are used in combination and how prevalent are different platform combinations? Second, who is using certain combinations and why? In response, we identify the most common ways in which consumers combine multiple music platforms: purchasing CD's, copying CD's, buying downloads online, P2P file sharing, and streaming music (with or without video). We then relate those acquisition mode combinations to demographic and psychographic antecedents (including music involvement, price consciousness, and Internet expertise).

We contribute to the literature by using a latent class analysis of actual usage frequency of multiple music platforms, including streaming. In contrast to much of the previous literature, we do not focus a priori on a particular music acquisition mode (e.g., illegal downloading). Instead, we take the perspective of the consumer, who faces a myriad of music platforms and selects his/her own combination of platforms. In our view, championing this consumer-centric perspective is a key contribution of the current study. Researchers and music industry practitioners may tend to think of music piracy as a single variable of interest that can be explained and/or predicted by linking it to antecedent variables. In contrast, we conceptualize music consumption as inherently multi-modal (and hence multivariate). In medical and developmental research, such a multivariate approach using latent class analysis has generated important insights, for instance in better understanding unhealthy behaviors like drinking (or smoking), not as a single variable that is related to specific antecedents, but as part of a multivariate behavioral pattern (Bauer and Shanahan 2007; Sacco et al. 2009). Similarly, it is crucial to understand the multi-faceted nature of music consumption behaviors, as for some consumers illegal downloading may be the sole mode of music acquisition that

substitutes all other legal acquisition modes, whereas for others it may be just one mode of acquisition that is complementary to others. Our approach is in keeping with Bauer and Shanahan (2007), who propose the use of latent class analysis as a person-centered analysis to study multiple variables that are related in complex ways. It is also practically relevant, as we profile segments that combine specific music acquisition modes and formulate some viable targeting strategies for each segment.

2 Literature review

New music acquisition modes like streaming are being widely adopted. Previous research has especially focused on *illegal downloading or P2P file sharing*. Sinha and Mandel (2008), for example, found that increasing the perceived probability of getting caught has only a limited effect (if any) on willingness to pay for legal downloads, whereas positive incentives can significantly reduce illegal downloading. *Streaming* is increasingly proposed as an alternative to counter piracy (Verstreken et al. 2012). Academic research on streaming is still scarce, but initial research results suggest that younger consumers seem to appreciate the versatility of streaming, whereas older consumers are more likely to prefer the ownership of downloads (Weijters et al. 2014). Two types of streaming-based music acquisition modes can be distinguished: streaming music videos (e.g. YouTube, Vimeo) and streaming music only (e.g. Spotify) (Weijters et al. 2014). Despite the rise of (illegal) music downloading and streaming, traditional music acquisition modes such as *buying CD's* are still common. The rise of P2P file sharing has hurt record sales in the United States, even though P2P file sharing does not threaten the survival of top-ranked albums (Bhattacharjee et al. 2007).

In sum, past research has traditionally started from the perspective of a specific class of acquisition modes (e.g., illegal downloading) to study music acquisition behavior. But recent research has stressed the need to take a consumer rather than a platform perspective, because today's technological context facilitates combined use of different platforms. Papies

et al. (2011) and Weijters et al. (2014) have studied consumer utility of different music platforms by applying conjoint analysis: they presented respondents with fictitious music platforms defined by experimentally manipulated attributes (such as cost, delivery mode, etc.). To complement these studies, the current study questions consumers about their actual use of existing music platforms.

To explain consumers' combined use of music platforms, we relate it to variables concerning motivation (music involvement, price consciousness), ability (Internet experience) and demography (age, gender). *Music involvement* has shown positive correlations with music consumption in all formats (Styven 2010). *Price consciousness* may partly explain the use of illegal downloading (Papies et al. 2011). Higher levels of *Internet experience* have been related to downloading, including illegal downloading (Verstreken et al. 2012). *Age and gender* are relevant as young, male students tend to be more receptive to downloading music (Molteni and Ordanini 2003).

3 Method

We surveyed a Dutch speaking online sample from a Belgian panel ($N = 685$; age ranged between 18 and 60 years, $M = 39.3$; 57.7% were female). The constructs in the questionnaire were measured using the following five-point Likert items. Music involvement (Srinivasan and Ratchford 1991): "I have a strong interest in music," "A lot can be said about a person from the music they listen to," "I value music as an important part of my current lifestyle" ($\alpha = .83$). Price consciousness (Lichtenstein et al. 1993): "Clothing, furniture, appliances,... whatever I buy, I shop around to get the best prices," "I usually purchase the cheapest item," "I check the prices even for inexpensive items" ($\alpha = .74$). Internet experience (Flynn and Goldsmith 1999): "Among my circle of friends, I'm one of the experts on the Internet," "I know pretty much about the Internet," "I do not feel very knowledgeable about the Internet" (reversed), "Compared to other people, I know less about the Internet"

(reversed), “When it comes to the Internet, I really don’t know a lot” (reversed) ($\alpha = .84$). Respondents rated their use (“never,” “sometimes,” “regularly”) of six music acquisition modes (purchase CD’s, copy CD’s, download music from an online store, download music from the Internet without paying via peer-to-peer networks, stream music online, stream music videos online), and use of Spotify (a popular commercial streaming service): “do not know,” “know, but do not use,” “free user,” and “paying user”. Respondents then indicated in a list of 33 music styles which music style(s) they enjoy listening to. The questionnaire concluded with demographics (year of birth, gender, education level, occupational status, Internet usage in hours per week) and the 10-item Impression Management scale ($\alpha = .72$), a measure of Social Desirably Responding (Steenkamp et al. 2010).

4 Results

The usage frequencies of the six music acquisition modes were as follows (Regularly, Sometimes, never; modes listed in order of popularity): 10.1%, 55.5%, 34.5% for buying CD's; 20.9%, 42.5%, 36.6% for streaming video; 18.5%, 38.2%, 43.2% for streaming music; 10.2%, 26.3%, 63.5% for illegal downloads; 5.7%, 28.6%, 65.7%, for legal downloads; 3.6%, 27.2%, 69.2%, for copying CD's. These results show that buying CD's is still rather popular. Use of streaming (both music videos as well as music only) is widespread. Illegal downloading is an important music acquisition mode for many consumers, and it even seems to be slightly more popular than legal downloading. Copying CD's is currently not widespread.

We run a latent class analysis in Mplus with the music acquisition modes' frequency ratings as the classification variables and the following variables as class antecedents: music involvement, Internet experience, price consciousness, age and gender. To make the classification more tangible and actionable, we enter the remaining descriptive variables as auxiliary variables (these variables do not affect class membership or model fit, but we can

report each class' descriptive statistics). To control for socially desirable responding, the standardized Impression Management score is entered as a control variable of the class indicators (i.e., the six music acquisition mode variables). Based on the lowest BIC value and the interpretability of the estimates, we used the four-class model (entropy = .78).

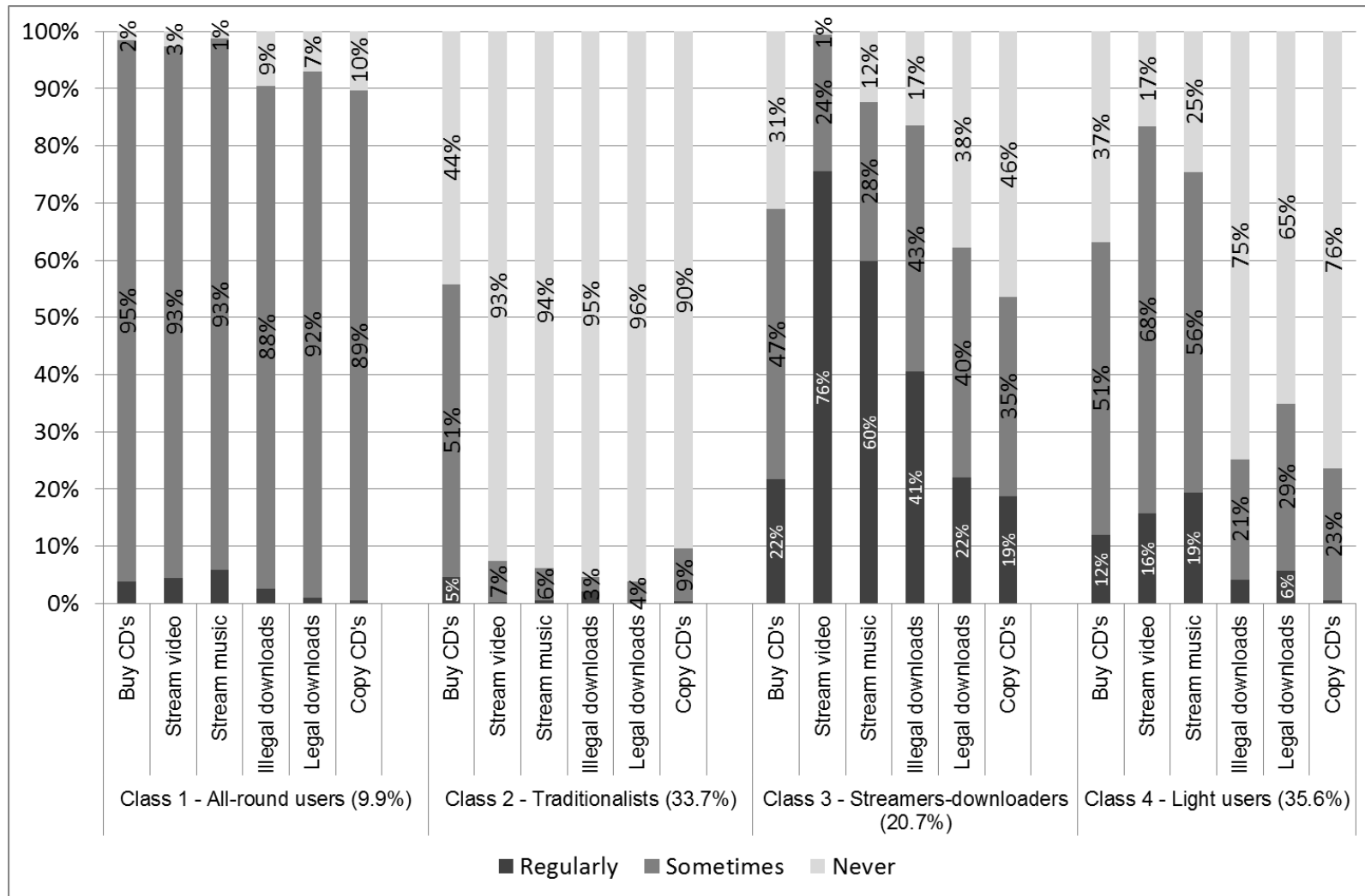
Impression management shows a significant effect on purchasing CD's (Standardized $B = .20$, $SE = .08$, $p = .014$) and illegal downloading (Standardized $B = -.32$, $SE = .13$, $p = .017$). We therefore correct the class-specific music acquisition mode frequencies for impression management in what follows (differences in percentages with or without correction were all $< 3.5\%$). Figure 1 displays the model implied frequencies with which the classes use the modes of music acquisition (based on the most likely latent class membership and corrected for Impression Management). Table 1 displays the background variables by class (class antecedents and auxiliary variables).

Based on the analysis, four different segments of music consumers can be distinguished. Respondents in the first segment, the 'all round users' (9.9 % of respondents), typically use many music acquisition modes, albeit infrequently. All-round users are predominantly male music consumers with an average age of 34 years, mostly with no higher education, and mostly working full-time. Compared to the other segments, they have an average music involvement but are least price sensitive. Their Internet use is comparable to most other segments (around 17 hours per week), but they report relatively low Internet expertise. Of all the consumer segments identified, all-round users are most likely to use Spotify free. Their most frequently selected music styles are pop and rock (a detailed table of preferred music styles by segment is available on request from the first author).

Table 1 Background variables (demographics and psychographics) by class

Variable	Scale/categories	1 All-round users (9.9%)	2 Traditionalists (33.7%)	3 Streamers-downloaders (20.7%)	4 Light users (35.6%)
Gender	Male	60.3% _a	33.3% _b	50.7% _{a,c}	41.0% _{b,c}
	Female	39.7% _a	66.7% _b	49.3% _{a,c}	59.0% _{b,c}
Education level	No higher education	55.9% _{a,b}	64.1% _a	45.1% _b	47.5% _{b,c}
	Higher education	44.1% _{a,b}	35.9% _a	54.9% _b	52.5% _{b,c}
Occupational status	Student	5.9% _{a,c}	1.7% _a	21.8% _b	5.7% _c
	Homemaker	7.4% _{a,b}	10.4% _a	2.8% _b	5.3% _{b,c}
	Unemployed	13.2% _a	7.8% _{a,b}	3.5% _b	7.8% _{a,b}
	Retired	1.5% _{a,b}	7.4% _a	2.1% _b	2.0% _{b,c}
	Working full-time	63.2% _a	46.3% _b	55.6% _{a,b}	58.2% _a
	Working part-time	7.4% _{a,b}	16.9% _a	9.2% _b	13.9% _{a,b}
	Other	1.5% _a	9.5% _b	4.9% _{a,b}	7.0% _{a,b}
Spotify user status	Do not know	19.1% _a	60.2% _b	8.5% _c	18.0% _a
	Know, but do not use	33.8% _a	35.5% _a	54.2% _b	59.4% _b
	Free use/trial	45.6% _a	3.9% _b	30.3% _c	20.5% _d
	Paying user	1.5% _{a,c,d}	0.4% _{a,b}	7.0% _c	2.0% _{b,d}
Age	Years	33.8 _a	46.2 _b	30.1 _c	39.6 _d
Internet use	Hours per week	17.3 _a	16.1 _a	23.7 _b	17.4 _a
Music involvement	Mean Likert score 1-5	3.34 _{a,c}	3.27 _a	4.17 _b	3.53 _c
Price sensitivity	Mean Likert score 1-5	3.25 _a	3.53 _b	3.54 _b	3.51 _b
Internet expertise	Mean Likert score 1-5	3.16 _a	2.87 _b	3.65 _c	3.48 _d
Number of modes	# modes used at least sometimes	5.69 _a	1.00 _b	4.33 _c	3.01 _d

Note: Values in the same row not sharing the same subscript are significantly different at $p < .05$

Fig. 1 Class profiles in terms of their frequency distributions of the music acquisition modes

‘Traditionalists’ (33.7% of respondents surveyed) tend to use only one acquisition mode and typically restrict their music acquisition to buying CD’s. Most respondents in this group never stream (video/music), download (il)legally or copy CD’s. A majority of consumers in this group are female and most did not enjoy higher education. Their average age is 46 years. Compared to the other segments, more respondents in the traditionalists segment are working part-time or are homemakers. This group has the lowest Internet use, Internet expertise and music involvement of all groups identified. Respondents in this group are least likely to use Spotify. Their most preferred music styles respectively are 80’ies, pop and 70’ies music.

The streamers-downloaders segment (20.7% of respondents) prefer streaming (with or without video) and (il)legally downloading music. They also use other modes like buying and copying CD’s. On average, they use more than four different modes of music acquisition. This segment has the largest student subgroup (nearly 22%) and the lowest average age (30 years). The group scores highest on music involvement, Internet use and Internet expertise. The streamers-downloaders are most knowledgeable of Spotify and have the highest percentage of paying users. Streamers-downloaders have a diverse taste with a preference for pop music, as well as 90’ies, rock, dance and hip hop.

The largest group of respondents (35.6%) are classified as light users. On average, they use three music acquisition modes, with a focus on streaming (video or music only) and buying CD’s. Downloading music legally or illegally, and copying CD’s is also used to a lesser extent. Light users are mainly female, a slight majority has enjoyed higher education, and their average age is close to 40 years. The large majority of this segment is working (full-time or part-time). Internet use and price sensitivity is comparable to most other segments, whereas Internet expertise and music involvement are relatively high. This group is also

knowledgeable of Spotify, although actual use is not as high as among all-round users and streamers-downloaders. Light users prefer pop music, 80'ies, 90'ies and rock music.

5 Discussion

To add to the ongoing debate on the future of the music industry, this paper discusses the typical combinations of music acquisition modes that different classes of consumers use (Fig. 1) and the psychographic and demographic characteristics of these different consumer classes (Table 1). At an academic level we contribute to the literature by mapping the portfolio of platforms that consumers use (rather than focusing on one particular type of acquisition mode like P2P sharing). This way we obtain a comprehensive understanding of who uses what combination of music platforms. While previous research for example shows that young male students are more likely to engage in music piracy (Sinha and Mandel 2008), our findings add nuance by showing that streamers-sharers (the segment with the highest proportion of men, young people and students) are also highly involved with music and are heavy users of streaming as well as (illegal) downloading. This observation supports the likely viability of countering music piracy by providing streaming services.

For companies active in the music industry, we suggest the following specific marketing approaches for the four segments we identified. An online, 'free with advertising' business model may be the best approach for the 'all-round users' segment as they are highly familiar with online music consumption, they have experience with illegal and free modes of music acquisition, and they show only moderate music involvement. As close to one in five all-round users do not know mainstream streaming services like Spotify, simply raising awareness of existing platforms may present a first viable marketing tactic.

Traditional CD sales is still the best strategy to target the 'traditionalists' segment, as users in this segment tend to be unaware of online music acquisition alternatives. Given their price sensitivity and in line with a typical end-of-product-lifecycle approach, discount pricing

is advisable (and compatible with a focus on less recent records, suiting their music preferences). This segment has the highest average age, and new generations are highly aware of online alternatives, which limits the segment's business attractiveness.

The 'streamers-downloaders' segment may be open to paid streaming and/or paid downloading services, despite their use of illegal online acquisition modes. Given the high involvement / high expertise profile of the streamers-downloaders, they may be prepared to pay for superior value in terms of catalogue breadth and depth, and extra's such as extensive and up-to-date information (including breaking news on artists, new releases, concerts, etc.). Importantly, a majority of streamers-downloaders (still) buy CD's sometimes or regularly. So for now it may also be a viable strategy to enable these consumers to order CD's of artists they like (based on their streaming/downloading behavior) in a convenient way.

Light users, finally, are likely to find what they are looking for in the offerings geared towards streamers-downloaders. But as they tend to be less involved, their need for convenient, low-threshold offerings may be higher than for the streamers-downloaders segment. As they are also less likely to engage in illegal downloading (and copying), they may more readily choose a legal alternative over illegal options. As for the all-round users segment, there may also be growth potential by simply raising awareness for certain services that are not yet fully known by the light users segment.

Although our study focused on music, the proposed approach is likely to be relevant in other consumption contexts. It is plausible that some of the consumption patterns we observed would also show up in other copyrighted content industries, like film, books, and software. It is not unlikely, for instance, that the book market has a traditionalist segment who buy books only, as well as a segment analogous to the Streamers-downloaders primarily using newer platforms (like e-books, podcasts, audio-books, printing downloads of pdf-files, ...) and/or a segment of light users who are not committed to a particular platform and use many of them

at a lower frequency. Further research is needed to test these analogies and to verify whether our marketing recommendations can be translated to these other contexts.

Some limitations of the current study offer routes for future research. First, despite the high Internet penetration in the country under study, it would be useful to cross-validate the current findings with offline data. Further, the findings demonstrate that despite the presence of legal downloading and streaming alternatives, illegal downloading is still pervasive. The motivations and beliefs underlying illegal downloading behavior in the current market where convenient legal alternatives are available, is an area that certainly deserves further research attention, in particular from an ethical perspective.

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