The Impact of Source Effects on the Evaluation of Music for Advertising

Are there Differences in How Advertising Professionals and Consumers Judge Music?

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When choosing music for advertisements, professionals are influenced by a large number of factors that could impair their judgment. This research examined source effects in the evaluation of advertising music by professionals and nonprofessionals. Results showed that advertising professionals gave significantly more favorable evaluations— higher in quality, authenticity, and expected cost—when they thought the music was sourced from performing artists compared with less credible and attractive sources. In contrast, nonprofessionals were not affected by source cues at all. The interplay between professionals' and nonprofessionals' perceptions of advertising music and the potential financial impact for brands are discussed.

INTRODUCTION

Music in advertising is big business, with brands spending millions of dollars to procure music for use in marketing campaigns, television and radio commercials, social media, and experiential events. In 2018, revenue generated from synchronization (*i.e.*, the use of music in commercials, films, games, and television) totaled more than $400 million (International Federation of the Phonographic Industry, 2019), and music used in commercials aired during the Super Bowl alone were secured with licenses ranging in cost from $100,000 to more than $750,000 (Hamp, 2018).

Advertisers and marketers certainly are aware of the power of music to influence consumer perception and behavior. Advertising music can have a positive impact on consumers' mood, memory, purchase intentions, involvement, cognitive and affective processing, and attitudes toward brands (Allan, 2007; Hecker, 1984; MacInnis and Park,

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Management Slant

- Music choices can have profound effects on brand communications, but the process of evaluating music for advertising is understood poorly.
- Source effects were a significant factor in influencing professionals' evaluations of advertising music, but nonprofessionals were not affected by source cues at all.
- Advertising professionals consistently evaluated advertising music more favorably when they were told it was from "real" artists compared with less attractive and credible sources, such as generic libraries and commissioned music.
- The differential effects of music source in the two groups could prove costly for brands. Professionals may recommend that their clients pay a premium for music coming from performing artists, but brands may see little or no added benefit if the source of the music does not matter to the listening public.
- Potential solutions to mitigate source effects include increasing awareness among professionals and measuring the impact of advertising music and source on target consumers.

When choosing music for advertisements, professionals need to consider a complex interplay of four interconnected factors that influence consumers' responses to advertising music.

1991; North and Hargreaves, 2008; Shevy and Hung, 2013). It therefore is not surprising that music has played an important role in advertising since the first days of radio broadcasting in 1923 (Bullerjahn, 2006; Furnham, Abramsky, and Gunter, 1997; Hettinger, 1933; Kellaris, Cox, and Cox, 1993). A failure to use music and the associated extramusical elements adequately nevertheless can decrease communication effectiveness (Lantos and Craton, 2012), resulting in detrimental effects on attitudes toward the brand and purchase intentions (Allan, 2007). In selection of music for advertising, the use of efficient and reliable decision-making methods thus is indispensable to advertising practitioners and brands. This evaluative process, however, is complex, highly subjective, and poorly understood.

Choosing Music for Advertising

When choosing music for advertisements, professionals need to consider a complex interplay of four interconnected factors that influence consumers' responses to advertising music (Lantos and Craton, 2012):

- the music—its genre, style, and structural characteristics;
- the listener—his or her musical taste, age, personality, and culture;
- the listening situation— including ongoing activities and social context; and
- the listener's advertising processing strategy.

On top of that, this process becomes even more complex when one considers the wide variety of decision makers involved, which can include agency producers, creative directors, music supervisors, account teams, brand managers, and chief marketing officers (Passmann, 2017).

In spite of knowledge of the importance of music in advertising and an awareness of the highly subjective and complex nature of music evaluation, however, there has been a lack of empirical research examining the factors that can influence perceptions of advertising music. The authors' main motivation for the current study thus flows from a need to shed light on this issue by investigating key factors that influence professionals evaluating music for advertising purposes.

Source Effects

Among all possible influential factors, this study focused on source effects. The source of the message is a central factor in communication and persuasion (Pornpitakpan, 2004; Wilson and Sherrell, 1993), and it is one of the most critical variables that one can manipulate when designing a product or an advertising campaign. For more than five decades, research in marketing and consumer behavior consistently has shown that characteristics of the source either can improve or can diminish the potential of a message to influence behavior (Feng and MacGeorge, 2010; Pornpitakpan, 2004; Priester and Petty, 2003; Thompson and Malaviya, 2013; Wilson and Sherrell, 1993).

In particular, researchers have identified two source characteristics that are particularly important: credibility and attractiveness (Amos, Holmes, and Strutton, 2008; Erdogan, 1999; Ohanian, 1991). This body of research shows that credible and attractive sources are more persuasive and, in turn, have a greater potential to enhance advertising effectiveness and purchase intentions than less credible and attractive sources (Goldsmith, Lafferty, and Newell, 2000; Gotlieb and Sarel, 1991; Harmon and Coney, 1982; Hovland and Weiss, 1951; Thompson and Malaviya, 2013; Wu and Shaffer, 1987). Two dimensions traditionally have been considered to underlie source credibility (Dholakia and Sternthal, 1977; Erdogan, 1999; Hovland, Janis, and Kelley, 1953; Ohanian, 1991): expertise (*i.e.*, the source's ability to confer accurate and valid information) and trustworthiness (*i.e.*, the honesty, integrity, and believability of a source). Studies also show that the effectiveness of a message depends on the source's attractiveness (Erdogan, 1999; Ohanian, 1991), which refers to the source's familiarity, likability, and similarity to the message recipient.

HYPOTHESIS FORMULATION
The Source of the Music

When music is evaluated for advertising purposes, the different candidates normally are presented with contextual information, such as artist name, song title, and the source of the music. Information about the source of the music indicates where the music piece can be obtained or by whom it has been produced. It can be associated with central aspects in the evaluative process, such as cost, issues related to copyrights, authenticity, aesthetic properties, and potential associations with the artist's status or career. It is somewhat surprising, however, that the impact of source effects

on the evaluation of advertising music has been neglected in the literature so far.

The authors proposed that the music source may play an important role in the evaluation of advertising music, because some music sources may be perceived as more credible and attractive than others. Evidence from music psychology supports this idea, with findings showing that music performances attributed to highly prestigious (more attractive) and skillful (more credible) artists are evaluated significantly higher on aesthetic properties than music attributed to less attractive and credible sources (Anglada-Tort and Müllensiefen, 2017; Fischinger, Kaufmann, and Schlotz, 2018; Kroger and Margulis, 2016). To the best of the authors' knowledge, the only published work considering the source of the music in advertising is the theoretical model of consumer responses to advertising music (Lantos and Craton, 2012). This model suggests three possible sources for advertising music:

• Commissioned music: an original piece of music composed and produced specifically for the commercial
• Existing music: an existing piece of music that can be either copyrighted or available without cost, or stock music that is prerecorded for purchase or rental
• Altered music: an adapted piece of music from existing compositions that is modified to increase its distinctiveness, fit with the commercial and brand, or avoid royalty payments.

The current study focuses on the two first music sources (*i.e.*, commissioned music and existing music) and makes a further distinction within the category of existing music. That is, existing music either can come from generic music libraries (otherwise known as "stock music") or can be sourced from commercially successful artists or celebrities. This distinction was motivated by research on the use of celebrity endorsements in advertising (Amos *et al.*, 2008; Erdogan, 1999; Knoll and Matthes, 2017). Celebrity endorsement is a way of manipulating source credibility and attractiveness, with roughly 25 percent of U.S. advertisements using celebrity endorsers (Shimp, 2000). Although the use of celebrities in advertisements can have advantages, such as increasing attention and polishing image, this practice is also susceptible to risks, including overshadowing the brand or creating public controversies (Amos *et al.*, 2008; Erdogan, 1999). In this study, therefore, the authors experimentally manipulated the presence of the following three sources to examine source effects on the evaluation of advertising music.

Performing Artist Source. This category consists of existing music released commercially by performing artists. Music from performing artists typically is sourced from record labels or publishing companies. These music selections are licensed from the copyright holders and may require large fees for their use. Music coming from existing artists is expected to be perceived as more credible and attractive than music coming from other sources.

Generic Library Source. This category consists of existing music from generic music libraries or stock music. Music in this source is licensed from a generic music library, which often has hundreds, if not thousands, of recordings that can be licensed for commercial use. The licensing costs typically are significantly lower for these library tracks than for those licensed from artists or commissioned from a music production company. Music licenses from generic libraries normally are nonexclusive, which means that any brand can use the same track, with the potential result that music heard in a commercial for one brand also might be heard in a commercial for another. As a result, music obtained from these libraries is expected to be viewed as less credible and attractive than music from existing artists.

Commissioned Music Source. This category includes music specifically commissioned from production companies or composers in response to an advertising brief. Music obtained from this source typically consists of bespoke musical performances, commissioned specifically for use in the advertisement by an advertising agency or brand. Fees paid for these compositions often include the acquisition of the publishing and master recording rights. Commissioned music allows for better brand fit, because it often is scored and created to match specific creative criteria. The acquisition of the music copyrights saves licensing costs over time, which can be substantial. Commissioned music also is expected to be perceived as less credible and attractive than music sourced from performing artists.

H1:   The same advertising music will be evaluated more positively when its associated source is a performing artist compared with generic library or commissioned music.

H2:   Evaluations of the same advertising music will differ between generic library and commissioned music associated sources.

H1 and H2 are expected to hold regardless of the product category and to apply in the professional and nonprofessional groups. Note that the direction of H2 cannot be specified because of the lack of research on this topic, but commissioned music and music from generic libraries differ in several critical aspects, such as cost, copyrights, authenticity, and fit with the brand.

Professionals versus Nonprofessionals

With music playing such a consequential role in brand messaging and consumers' buying behavior, choices about what music to use and how much to pay for that use are incredibly important. Advertising professionals are entrusted by their clients to make decisions about music that affect not only the advertising message but also the cost associated with music procurement. The primary focus of the present study thus was on the evaluation of advertising music by advertising professionals.

To determine to what extent source effects are specific to this expert group and whether they may affect brands adversely, it is crucial to assess the degree to which source effects are also present in the nonprofessional population. If source effects influence advertising professionals and nonprofessionals equally, then being aware of source cues and choosing music on the basis of this information could prove advantageous for advertisers and marketers, even though those choices may result in higher costs paid for music licenses. In contrast, if the general public (nonprofessionals) is not influenced by source effects, then advertising professionals are biased in a way that is inconsistent with the perception of ordinary consumers. If this is the case, why should brands spend more money on licensed tracks from performing artists than on tracks procured from more economical sources? Brands could be served better by commissioning music specifically for the commercial, which allows for better brand fit, greater creative freedom, lower costs, and the opportunity to acquire the publishing and master recording rights.

There has been remarkably little research conducted on the differences between the general population and advertising practitioners. There is, however, evidence highlighting the differences between people working in advertising and the general public in a number of critical dimensions, such as age, personality, personal values, morality, and even the way they are influenced by cognitive biases (Tenzer and Murray, 2018, 2019). Moreover, advertising professionals often operate on a gut instinct about consumer preferences and beliefs that are disconnected from the empirical reality (Ruth & Spangardt, 2017; Tauchnitz, 1990).

H3: Source effects will have a stronger influence on evaluations by advertising professionals than by nonprofessionals.

In sum, the current study investigated source effects in the evaluation of advertising music by advertising professionals (Experiment 1). To explore whether source effects are limited to this expert group or whether they extend to the general population as a whole, the authors also assessed the extent to which source effects were present among a group of nonprofessionals (Experiment 2). By measuring the differential effects of source

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in these two groups, one could determine to what extent source effects in an advertising context are due to expertise and whether they may lead to a tangible financial impact for brands. The degree to which source effects exist and the interplay between professionals' and nonprofessionals' perceptions therefore can have major implications for how music creativity, quality, and cost are evaluated in the world of advertising.

EXPERIMENT 1: ADVERTISING AND MARKETING PROFESSIONALS

Methods

Participants. A total of 50 advertising professionals participated in the experiment (20 female, 30 male), ages 29–64 years (M = 40.74, SD = 6.99). Participants were professionals with an average of 15.69 (SD = 7.20) years of experience in synchronization revenues (64 percent in marketing and advertising and 26 percent in sectors related to media, television and film, production, and creative design). The majority of professionals (74 percent) reported that they worked in the Americas (including South and North America), whereas the remaining 26 percent worked in either Europe, both Europe and America, or other countries (one participant in Australia and one in Russia).

The group of professionals had an average amount of musical training, as measured by the Gold–MSI musical training score (M = 23.22, SD = 10.77), equivalent to the 38th–40th percentiles of the data norm reported in previous research (Müllensiefen, Gingras, Stewart, and Musil, 2014). Note that the Gold–MSI is a widely established self-report inventory to measure individual differences in musical sophistication (Müllensiefen *et al.*, 2014). It includes a factor to measure the formal musical training that an individual has received. Participants were recruited *via* e-mail from established New York City advertising agencies as well as through the Berlin School of Creative Leadership (an executive master of business administration program aimed toward midcareer creative professionals from around the world working in fields such as advertising, marketing, and media).

Design. The present study used a 3 (music source) × 3 (product category) repeated-measures design. Music source (artist versus commissioned versus library) and product category (soft drink

Table 1 Latin Square Design Used to Counterbalance Song–Source Pairings

Song–Source Combination	1st Pair	2nd Pair	3rd Pair
Combination 1	Song 1 + Artist	Song 2 + Com.	Song 3 + Library
Combination 2	Song 1 + Artist	Song 2 + Library	Song 3 + Com.
Combination 3	Song 1 + Com.	Song 2 + Library	Song 3 + Artist
Combination 4	Song 1 + Com.	Song 2 + Artist	Song 3 + Library
Combination 5	Song 1 + Library	Song 2 + Com.	Song 3 + Artist
Combination 6	Song 1 + Library	Song 2 + Artist	Song 3 + Com.

Note: Participants were allocated randomly to one of the six combinations. The order of presentation of the three song excerpts for each combination was randomized for each participant. Com. = commissioned music.

Table 2 Descriptions of Music Source for Each Product Category

Product Category: Music Source	Description Presented with Song Excerpt
Soft drink: Artist	This track is by the U.K. band The Lulus, released on their second album, *Summer Again* (2016), and licensed for use.
Soft drink: Commissioned	This track was commissioned by an advertising agency and created by a music company specifically for a commercial.
Soft drink: Library	This track was obtained from the generic music library of Audio Network (London), and licensed for use.
Lifestyle: Artist	This track is by the Canadian band Mayfare, released on their debut album, *Between the Lines* (2014), and licensed for use.
Lifestyle: Commissioned	This track was commissioned by an advertising agency and created by a music company specifically for a commercial.
Lifestyle: Library	This track was obtained from the generic music library of Premium Beats (Montreal), and licensed for use.
Financial Services: Artist	This track is by the American artist Kris King, released on his debut album, *Smooth* (2015), and licensed for use.
Financial Services: Commissioned	This track was commissioned by an advertising agency and created by a music company specifically for a commercial.
Financial Services: Library	This track was obtained from the generic music library Killer Tracks (Santa Monica, CA), and licensed for use.

versus lifestyle versus financial services) were the two within-subject factors. The three music sources were paired with three excerpts of advertising music for each product category. The pairing between song excerpts and music sources was counterbalanced fully within each product category and across participants according to a Latin-square design (Berman and Fryer, 2014). This resulted in six possible source–song combinations for each product category (See Table 1).

Participants were allocated randomly to one of the six combinations at the start. All participants thus listened to nine song excerpts without repeating any of the excerpts or music sources. The order of presentation of the three product categories and the three song excerpts within each product category was randomized for each participant.

Music Stimuli. Three product categories were chosen from a list of the world's largest advertisers (AdAge, 2016): soft drink, lifestyle, and financial services. Music selections were matched to these categories by audio-branding experts with experience aligning brand attributes (*e.g.*, consumer demographics, tone of voice, brand personality) with musical elements (*e.g.*, music style, genre, tempo, timbre, pitch, lyrics). Each product category included three music selections, for a total of nine music excerpts of advertising music. All stimuli consisted of 30-second excerpts of music tracks commissioned specifically for television commercials but never publicly released. All excerpts contained vocals and were mastered to control for any differences in volume and dynamics among the samples. The music stimuli were provided by an audio-branding agency (iV, Nashville, TN).

Music Source Descriptions. Nine short descriptions were created to establish the source of the music to participants (See Table 2 for the descriptions used for each product category). The same three

source categories were assigned to each product category. To minimize familiarity effects and personal preferences with existing performing artists, fictitious information was used for artist and album names. To control for nationality bias or preference, the information regarding nationality was kept constant for each product category; each category only included one nationality across the three music descriptions, either the United Kingdom, Canada, or the United States. The source descriptions were presented on top of the audio player, indicated as "music descriptions."

Evaluation Form. The evaluation form consisted of five Likert rating scales. The following four rating scales were used to measure different aspects of music aesthetics and quality:

- Liking of the music, on a scale from 1 ("dislike extremely") to 6 ("like extremely")
- Music quality, from 1 ("very bad") to 6 ("very good")
- Authenticity of the music, from 1 ("not at all") to 6 ("very much")
- Musical fit with the product category, from 1 ("very bad") to 6 ("very good").

Additionally, the authors included a rating scale designed to measure the expected cost associated with the use of the music ("Based on your experience, how much would you expect to pay for a one-year 'all media' license to use this music in a commercial?"; 1 = "less than $1,000" to 7 = "$1,000,000 or more," with 8 = "I don't know"). At the end of the experiment, participants were provided with a question to measure the subjective awareness of source effects; it asked participants whether they thought that the track descriptions (source cues) affected their ratings of the music, on a scale from 1 ("not at all") to 6 ("very much").

Procedure. Participants were tested online with Qualtrics survey software (Provo, UT). They were told that the main purpose of the study was to evaluate how people perceive music in the field of marketing and audio branding. After consenting to participate in the experiment, participants were asked to fill out personal information regarding gender, age, and job characteristics. They then were instructed in wearing headphones and adjusting the volume of the music to a comfortable listening level when listening to the music samples. Participants were instructed to listen to each music selection and evaluate it as accurately as possible, using the evaluation form.

The experiment had three blocks with exactly the same procedure, one for each product category. In each block, participants were told the product category of the block (*e.g.*, "This is a financial services/bank brand") and asked to listen to the three song excerpts and evaluate them. The experiment was granted ethical clearance by the Ethics Committee of the Faculty V at the Technische Universität Berlin, Germany.

Statistical Analysis. To test the main hypothesis regarding the effects of music source, the authors used linear mixed-effects models, as implemented in the R packages *lme4* (Bates, Mächler, Bolker, and Walker, 2015). Separate analyses were conducted that used the five rating scales as dependent variables:

- Liking of the music,
- Music quality,
- Authenticity,
- Musical fit, and
- Expected cost.

In all analyses, the source of the music was the fixed-effect factor, whereas participant type, music excerpt, and product category were the random-effects factors. Effect coding (as opposed to the default treatment coding) and Type III Wald chi-square significance tests were employed. Corrections for pairwise comparisons were performed according to the method suggested by a previous researcher (Holm, 1979), which controls for family-wise error rate for multiple tests and holds under arbitrary assumptions. Effects sizes were calculated with the R package MuMIn (Barton, 2016), which calculates the marginal and conditional coefficient of determination for mixed-effect models. The marginal R^2 of the model (R_m^2) calculates the variance explained by the fixed factors, whereas the conditional R^2 of the model (R_c^2) calculates the variance explained by both fixed and random factors.

The authors analyzed the five rating scales separately for two reasons: to capture different aspects of participants' responses to music, and to avoid potential issues related to face validity (*e.g.*, these five constructs are theoretically distinct and not typically combined in marketing and advertising literature). Despite these differences, however, the five rating scales correlated significantly (See Appendix A for a correlation table). A principal-components analysis thus was performed on the five items (See Appendix B for technical information regarding the principal-components analysis and component loadings). The principal-components analysis showed great sampling adequacy and a one-factor solution including four of the five rating scales—liking, quality, authenticity, and music fit—which explained 69.97 percent of the variance. The Cronbach's alpha was 0.84. Scores of the single-component solution were calculated (*z* scores), and this factor is referred to in the subsequent analysis as the "aesthetic evaluation factor."

Results

The data from one participant whose job was not related to synchronization revenues and three participants who did not complete the online experiment were excluded from the subsequent analysis.

The effect of music source on the five rating scales is shown below (See Figure 1). Overall, advertising professionals evaluated the same pieces of advertising music significantly more favorably (*i.e.*, music quality, authenticity, expected cost) when the music excerpts were presented as coming from "real" artists, as compared with commissioned music or, in the case of authenticity and cost evaluations, when presented as coming from generic music libraries. (See Appendix C for a summary table of the five linear mixed-effects models.)

After the authors corrected for multiple comparisons, the effect of music source was statistically significant in the rating scales measuring music quality ($p = 0.01$; $R_m^2 = 0.015$, $R_c^2 = 0.303$), authenticity ($p < 0.001$; $R_m^2 = 0.031$, $R_c^2 = 0.322$), and expected cost ($p < 0.001$; $R_m^2 = 0.017$, $R_c^2 = 0.775$). It was nonsignificant, by contrast, in the scales measuring liking ($p = 0.02$; $R_m^2 = 0.014$, $R_c^2 = 0.258$) and musical fit ($p = 0.46$; $R_m^2 = 0.002$, $R_c^2 = 0.475$). The strongest effect
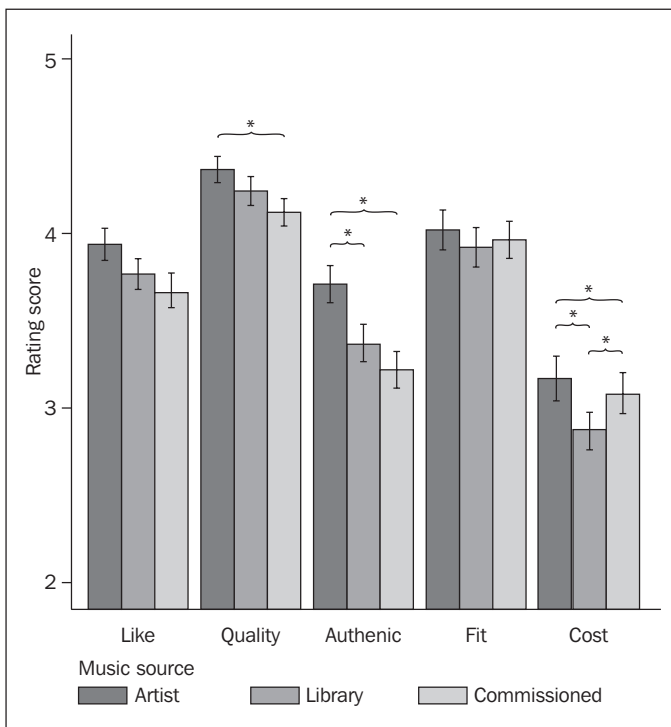
Figure 1 Effect of Music Source on the Five Rating Scales
— Ad Professionals

Note: Error bars represent the standard error. * Denotes pairwise significant
differences using Holm's method (1979). Rating scales as follows:
liking scale from 1 (dislike extremely) to 6 (like extremely), music quality
scale from 1 (very bad) to 6 (very good), authenticity scale from 1 (not at all)
to 6 (very much), musical fit scale from 1 (very bad) to 6 (very good),
expected cost scale from 1 (less than $1,000) to 7 ($1,000,000 or more).

of music source thus was observed when professionals evaluated
the authenticity of the music, followed by the expected cost and
the music quality.

The linear mixed-effect model using the aesthetic evaluation
factor (*i.e.*, the one-factor solution from the principal-components
analysis) confirmed the main significant effect of music source,
$\chi^2(2, N = 46) = 12.69$, $p = 0.002$, $R_m^2 = 0.020$, $R_c^2 = 0.370$. Pairwise com-
parisons indicated that when the music excerpts were presented
as coming from an artist ($M = 0.17$, $SD = 0.96$), professionals gave
significantly higher evaluations on the aesthetic evaluation factor
than when the music was presented as commissioned ($M = -0.13$,
$SD = 0.99$, $p = 0.001$) or as coming from a generic library ($M = -0.04$,
$SD = 1.03$, $p = 0.04$). There were no significant differences between
the commissioned music and generic library music ($p = 0.21$).

To test whether there were significant differences depending on
the product category and gender of the participants, the authors
repeated the analysis above, adding product category and gender
as fixed factors as well as specifying an interaction term with music
source. The effects of product category and participants' gender
were nonsignificant (all ps > 0.05).

EXPERIMENT 2: NONPROFESSIONALS
Methods

Participants. A total of 113 participants were part of the nonpro-
fessional group (78 female, 35 male), aged 20–60 years ($M = 43.37$,
$SD = 9.65$). The majority of participants (80 percent) were from the
Americas (including South and North America), with the remain-
ing 20 percent from Europe or other countries (*e.g.*, one participant
from Korea). Participants showed an average amount of musical
training ($M = 22.05$, $SD = 11.54$, in the Gold–MSI musical train-
ing factor), corresponding to the 36th–37th percentiles of the data
norm reported in previous research (Müllensiefen *et al.*, 2014).

Participants were recruited through SoundOut (www.soundout.
com), an online recruitment panel of more than 2.5 million people
that operates across the U.S., U.K., and European markets. There
was a monetary compensation of $1 to complete the survey, which
lasted approximately 15 minutes. Participants were selected to
match general demographic aspects of the professional group—
age range, gender, nationality, and level of musical training.

Design, Materials, and Procedure. The design, materials, and pro-
cedure were the same as used in Experiment 1, with the exception
of one difference in the evaluation form: the rating scale measuring
expected cost. Although assessing source effects on expected cost
is important from the perspective of professionals because these
costs can affect their client's budget, one cannot expect nonpro-
fessionals to have any experience attaching prices for music from
different sources. A choice nevertheless was made to include this
scale in the nonprofessionals group for consistency, although the
wording slightly was adapted to enable a better understanding.

To assess the impact of source effects on perceptions of brand
value and music in a nonprofessional sample using a more valid
approach, the authors designed three additional statements:
"Based on this music, I am interested in finding out more about
this brand," "I am likely to watch advertisements about this brand
if this music is used in the advertisement," and "I am interested
in owning a copy of this music." Participants were asked to indi-
cate how much they agreed with each of these statements, using
a Likert scale from 1 ("strongly disagree") to 6 ("strongly agree").

Statistical Analysis. To test the effects of source on nonprofes-
sionals' evaluations, the authors used the same statistical analy-
sis employed in Experiment 1. Again, because the rating scales
correlated significantly among them (See Appendix A for a cor-
relation table), the authors performed a principal-components
analysis on the five scales (See Appendix B for technical infor-
mation regarding the principal-components analysis and com-
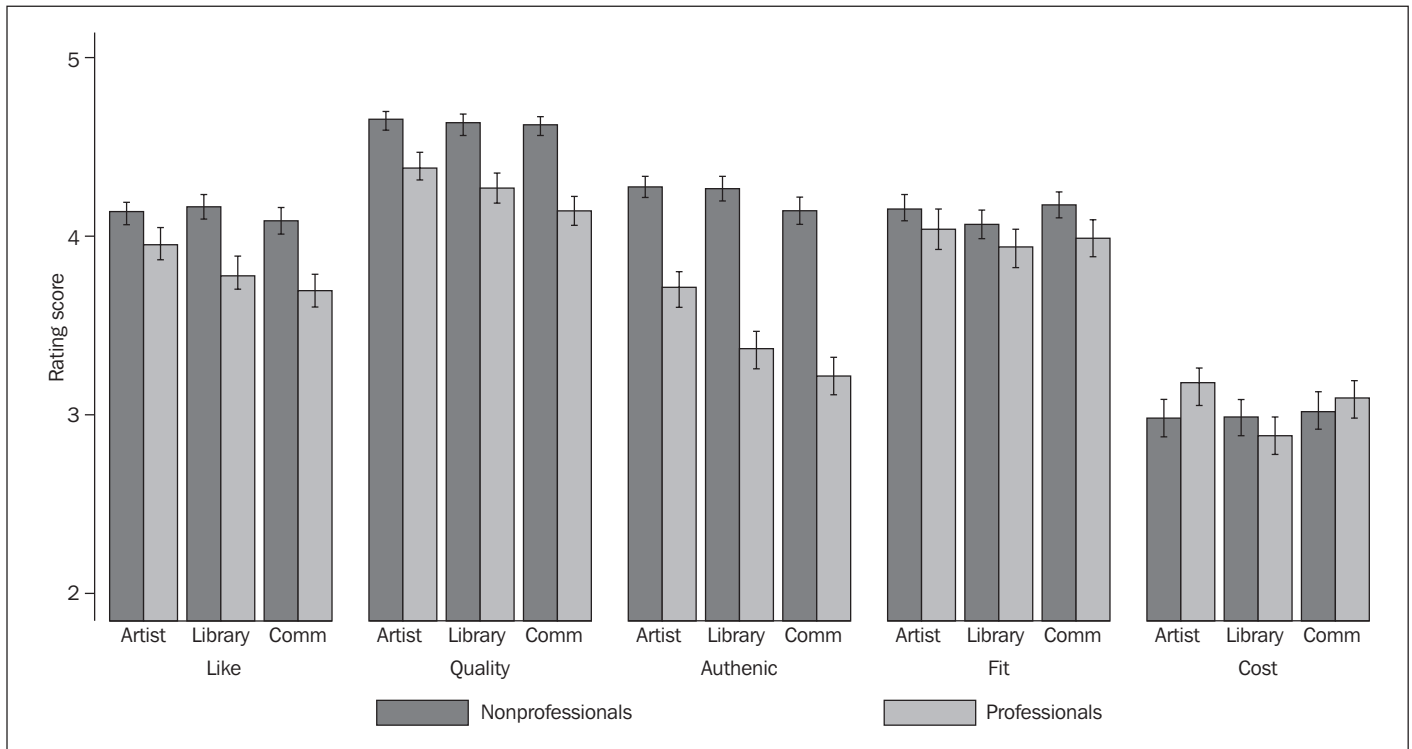ponent loadings). The principal-components analysis indicated

Figure 2 Effect of Music Source on the Evaluation of Advertising Music by Professionals and Nonprofessionals

Note: Error bars represent the standard error. Comm = Commissioned. Rating scales as follows: liking scale from 1 (dislike extremely) to 6 (like extremely), music quality scale from 1 (very bad) to 6 (very good), authenticity scale from 1 (not at all) to 6 (very much), musical fit scale from 1 (very bad) to 6 (very good), and expected cost scale from 1 (less than $1,000) to 7 ($1,000,000 or more).

great sampling adequacy and a one-factor solution with the same four rating scales—liking, quality, authenticity, and music fit—which explained 73.98 percent of the variance and is referred to in the text as "aesthetic evaluation factor." The Cronbach's alpha was 0.88. Principal-components analysis scores were calculated (z scores).

To test whether source effects had different strengths for the professional and nonprofessional groups, the authors used a model-based confidence interval approach. Ninety-five percent confidence intervals (CI) around the estimate of the fixed-effects coefficients thus were extracted from the linear mixed-effects models computed from the data of Experiment 1 (professionals) and Experiment 2 (nonprofessionals), according to the likelihood profile method. The model-based confidence intervals determined whether there were significant differences in the evaluations of professionals and nonprofessionals for the three levels of the independent variable (music source) as well as quantified the strength of the difference.

Treatment coding was used to code the contrasts between factor levels on the independent variable. "Artist" was used as the reference level for the comparisons of effect strengths with "library"

and "commissioned." "Library" was used as reference level for comparison with "commissioned." Note that the use of a fixed reference level focuses the statistical comparison on the differences between levels, regardless of the overall (absolute) level of evaluative ratings. This is useful because the absolute level of ratings can differ between the two samples on some dependent variables but is not a primary interest in this study (see, *e.g.*, "Authenticity" in Figure 2).

Results

The data of one participant who completed the survey in less than five minutes and one participant who gave the same scores on all rating scales for all songs were excluded.

Overall, the results of this second experiment showed that non-professionals were not influenced significantly by source cues when evaluating advertising music on any of the measured parameters. The results from linear mixed-effect models revealed nonsignificant effects of music source in all models (See Appendix C for a summary table of the five linear mixed-effects models): liking ($p = 0.42$; $R_m^2 = 0.001$, $R_c^2 = 0.341$), music quality ($p = 0.76$; $R_m^2 = 0.000$, $R_c^2 = 0.360$), authenticity ($p = 0.08$; $R_m^2 = 0.003$, $R_c^2 = 0.366$), musical

fit ($p = 0.48$; $R_m^2 = 0.000$, $R_c^2 = 0.323$), and expected cost ($p = 0.78$; $R_m^2 = 0.001$, $R_c^2 = 0.678$). The linear mixed-effect model with the principal-components analysis single-solution factor (*i.e.*, aesthetic evaluation) as dependent variable confirmed that the main effect of music source was nonsignificant, $\chi^2(2, N = 111) = 1.46$, $p = 0.48$, $R_m^2 = 0.001$, $R_c^2 = 0.392$.

In an effort to study further whether music source affected nonprofessionals' perceptions of brand value and music, the authors conducted three linear mixed-effects analyses using the three additional agreement scales. The effect of music source was nonsignificant for all three:

- "I am interested in finding out more about this brand," $\chi^2(2, N = 111) = 2.48$, $p = 0.29$;
- "I am likely to watch advertisements about this brand if this music is used in the advertisement," $\chi^2(2, N = 111) = 1.20$, $p = 0.55$; and
- "I am interested in owning a copy of this music," $\chi^2(2, N = 111) = 2.28$, $p = 0.32$.

To test whether there were significant differences depending on the product category and participants' gender, the authors repeated the analysis, adding product category and gender as fixed factors as well as specifying an interaction term with music source. The effects of product category and participants' gender were non-significant (all ps > 0.05).

PROFESSIONALS VERSUS NONPROFESSIONALS
The authors plotted the outcome of the linear mixed-effect models for each dependent variable comparing the two groups of participants (See Figure 2). The model-based CI approach is presented below, showing the estimates of the fixed-effects coefficients from the mixed-effects models in brackets and the 95 percent CI around them in squared brackets. Overall, the results indicate that professionals' evaluations of quality, authenticity, and expected cost were significantly different from nonprofessionals' evaluations. In particular, when participants evaluated the quality of the music, the difference on coefficient estimates between artists and commissioned music were significantly larger in the professional group (−0.28 [−0.47, −0.09]) than in the nonprofessional group (−0.05 [−0.17, 0.08]). There were no significant differences in the other comparisons—artists versus library and commissioned versus library.

When the authors evaluated authenticity, the difference on coefficient estimates between artists and library was significantly larger in the professional group (−0.34 [−0.58, −0.10]) than in the nonprofessional group (−0.01 [−0.16, 0.13]). Similarly, the
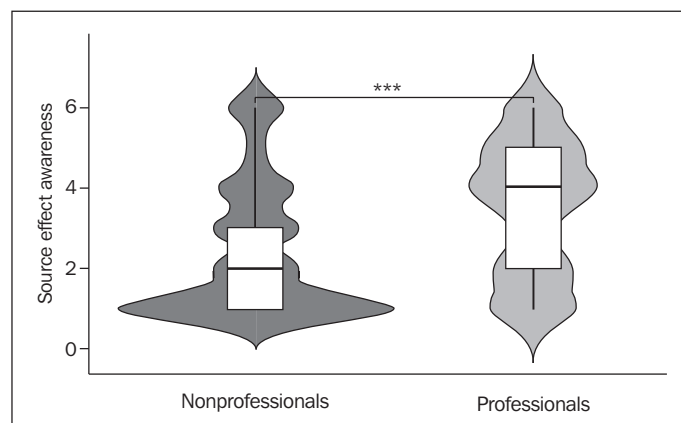

Figure 3 Awareness of Source Effects in Nonprofessionals And Professionals

Note: Violin plots are used in addition to box plots to show the probability density of the data at different values (smoothed using a kernel density estimator). *** Denotes that the difference between groups is highly significant, as indicated by an independent *t*-test.

difference between artists and commissioned music was also significantly larger in the professional group (−0.52 [−0.77, −0.28]), compared with the nonprofessional group (−0.15 [−0.30, −0.01]). There were no significant differences between commissioned and library music.

Finally, when the authors evaluated the expected cost for music use, the differences on coefficient estimates between artist and library music (−0.40 [0.56, −0.24]) and between artist and commissioned music (0.2 [−0.36, −0.04]) in the professional group were both significantly larger than those in the nonprofessional group (artist versus library music, 0.04 [−0.12, 0.20]; artist versus commissioned music, 0.05 [−0.10, 0.21]). There were no significant differences between commissioned and library music. These results quantify the strength of source effects in the two groups, indicating that the impact of the effects was significantly larger in the professional group than in the nonprofessional group when participants gave evaluations of quality, authenticity, and expected cost. The impact of source effects on the nonprofessional group was almost nonexistent.

The authors also compared the subjective awareness of source effects in the two groups. This was measured with a rating scale at the end of the experiment that asked participants whether they thought that the track descriptions (source cues) influenced their ratings of the music, on a scale from 1 ("not at all") to 6 ("very much"). The authors charted the distribution of responses to this question in the two groups (See Figure 3). An independent *t* test confirmed that advertising professionals were significantly more aware of source effects ($M = 3.49$, $SD = 1.64$) than nonprofessionals ($M = 2.37$, $SD = 1.64$), $t(700) = −10.0$, $p < 0.001$.

GENERAL DISCUSSION

The results from two experiments show that considering the source of the music had a significant impact on professionals' evaluations of advertising music, whereas a group of nonprofessionals was not affected by source cues at all. These findings were robust across the three product categories examined in this study, which were chosen on the basis of a list of the world's largest advertisers (AdAge, 2016). The authors' initial hypotheses regarding source effects on both professionals and nonprofessionals thus only partially can be confirmed. The differential effects of music source in the two groups, however, raised important questions that may help advertisers and marketers improve their methods to select music for advertisements (*e.g.*, by avoiding unnecessary costs for brands).

When it comes to brand messaging, music is a powerful tool in the advertiser's toolbox. Music choices have a direct impact on brand marketing, not only creatively but economically as well. It seems reasonable to expect that, when making judgments about aesthetics and costs for music used in advertising and marketing, experts in these fields would make more objective decisions than novices because they can take relevant information and experience into account. Results from this study suggest the opposite, however (See Figure 2): Whereas advertising experts were affected by source cues, nonexperts were not.

These results are consistent with literature on the "expert problem" (*e.g.*, Hall, Ariss, and Todorov, 2007; Reyna, Chick, Corbin, and Hsia, 2014; Taleb, 2007), which shows that more knowledge can reduce accuracy and consistency while increasing confidence in wrong decisions in a number of disciplines, such as clinical psychology and finance. This also includes advertising and marketing (Tenzer and Murray, 2018, 2019). In the current study, the only group of participants assumed to be highly familiar with the music sources was the professional group. It is important to note that advertising professionals also were more aware of the influence of source information than the group of nonprofessionals (See Figure 3). This finding is a clear illustration that source effects can influence professional judgment even though individuals are aware of the existence of such influence. For domain experts in advertising, therefore, it may be difficult to build up effective cognitive defenses against source effects.

In the sample of professionals collected for this study, it was possible to gain significantly more favorable evaluations of music quality, authenticity, and expected cost by simply changing the attribution of the source (*i.e.*, when the music was presented as coming from "real" artists). With respect to assessing the expected cost of music use, this may not be surprising, given that music recorded and released by performing artists typically is licensed at a premium. Rights for both the publishing (for the

Considering the source of the music had a significant impact on professionals' evaluations of advertising music, whereas a group of nonprofessionals was not affected by source cues at all.

music composition) and the master (the recorded version of the music) must be negotiated and secured, which creates an expectation that artist performances are of higher value, both aesthetically and monetarily.

Why, however, did professionals also evaluate music sourced from performing artists as more authentic and having greater quality than the other sources? This finding could be due to the associations of this source with higher levels of credibility and attractiveness compared with the other sources used in this study (*i.e.*, commissioned music and generic libraries). Advertising research consistently has shown that credible and attractive sources have a positive impact on attitudes and behavior (Goldsmith *et al.*, 2000; Gotlieb and Sarel, 1991; Harmon and Coney, 1982; Wu and Shaffer, 1987). Studies on music performance evaluation confirm that presenting the same piece of music with attractive and credible sources influences its aesthetic evaluation positively (Anglada-Tort and Müllensiefen, 2017; Fischinger *et al.*, 2018; Kroger and Margulis, 2016).

It is interesting to note that when the advertising music was presented as commissioned music, it received significantly lower ratings in quality and authenticity compared with music sourced in generic libraries. This finding is counterintuitive, because commissioned music can offer a better fit with both the brand and the commercial. Commissioned music can be created to match predetermined creative criteria specifically. By contrast, music from generic libraries is accessible to anyone and therefore does not provide any unique aesthetic equity that could be owned by a brand. Future research is needed to better understand the differences between these two types of sources.

It is worth noting, however, that this pattern of results was different when advertising professionals evaluated the expected cost of music use. In this case, music coming from generic libraries received the lowest ratings, which suggests that advertising professionals are aware that sourcing music in generic libraries is

cheaper than licensing tracks from performing artists or commissioning tracks from music agencies.

Limitations

The present study has three limitations. First, the experimental control of potential confounding variables might have forced an artificial situation for participants. Participants were asked to evaluate music as being suitable for commercials in general product categories (*i.e.*, soft drink, fashion, and financial services), without knowing the exact brands and products that were being evaluated.

What's more, participants did not have access to information typically available in this kind of evaluative process, including the target audience, the brand profile and personality, the visual content of the commercial, the communication strategy, and the marketing goals. In this regard, models of persuasion, such as the Elaboration Likelihood Model (Petty and Cacioppo, 1986; Petty, Wheeler, and Tormala, 2003) and the Heuristic–Systematic Model (Chaiken, Liberman, and Eagly, 1989), suggest that the potential of source factors to persuade people depend on their involvement when processing a message. When people are unmotivated or unable to process the message, for instance, source variables tend to be used as a simple cue or heuristic to assess the content, which makes source effects more likely to enhance persuasion, regardless of message quality.

It thus is possible that in a real-world situation, professionals are more involved in the evaluative process of choosing music for brands and, in turn, less influenced by source cues. To avoid confounding effects (*e.g.*, individual preferences, familiarity for brands and specific products, and conflict of interest), however, the authors decided to use generic product categories. They hence encourage future research to investigate source effects in the real world as well as a larger range of brand categories, products, and music stimuli.

Second, nonprofessionals were presented with source cues just like the group of advertising professionals, although it was not possible to know how these semantic frames were perceived by nonprofessionals. The third limitation concerns the comparison between the sample of professionals and nonprofessionals. In an ideal situation, these two groups would be matched perfectly in relevant demographics, such as age, gender, nationality, and level of musical training. In this study, however, there was a gender imbalance in the two groups. Although there were more men than women in the professional group, this pattern was the opposite in the nonprofessional group. This imbalance in gender was a by-product of the recruitment strategies used in the two experiments. Additional analyses nevertheless indicated that participants' gender did not have a significant effect on music evaluations, nor did it interact with the effects of the music source.

> # Advertisers should reconsider the conventional wisdom that these kinds of associations build stronger ties with consumers and generate greater sales.

Practical Implications

Many advertisers believe there are benefits that come from associating their brands with celebrities and music artists. Are these benefits real? Do consumers perceive advertising music sourced from artists as having more quality and authenticity than advertising music commissioned by music agencies or sourced from generic music libraries?

The findings from this study suggest that they do not. This adds to the body of research showing that advertisers should reconsider the conventional wisdom that these kinds of associations build stronger ties with consumers and generate greater sales (Ace Metrix, 2014). Advertisements using celebrities during the last five years of the Super Bowl, for example, underperformed those without celebrity endorsers (Taylor, 2016). Despite this fact, there was a considerable increase in celebrity endorsers in 2016's Super Bowl (Poggi, 2016; Taylor, 2016). The findings observed in this study are in line with previous research highlighting the risks of using celebrities in advertisements (Amos *et al.*, 2008; Erdogan, 1999; Knoll and Matthes, 2017).

In the current study, all the music samples were produced by composers who were commissioned to write music specifically for a commercial. When the music was played for advertising professionals, it was possible to significantly improve the subjective evaluation of these samples by simply changing the attribution of the music source. Perhaps more important for brands monitoring advertising costs, it also was possible to change the cost expectations through source manipulation. An advertising professional would have paid more money for the same track when told that it was coming from an artist as compared with commissioned music or music sourced from a generic music library.

In 2017, Spotify found itself roiled in a "fake artist" controversy when it offered playlists of songs that came from production music houses and music libraries that were operating under pseudonyms, making them appear like independent artists or bona fide acts (Gensler and Christman, 2017). This knowledge should give pause to brands and agencies when they are engaged in music searches. What if publishing companies were to employ their songwriters under a series of pseudonyms, offering tracks to advertising

agencies and brands as if these recordings were coming from a working artist or band? The music itself might have been tailored for specific commercial usage, but source effects may contribute to advertising professionals having a more favorable opinion of the aesthetic qualities of the music and, with it, a willingness to pay higher costs. In such a scenario, the advertiser pays a premium, even though they may see little or no added benefit from a consumer perspective.

Having identified the impact of source effects on advertising professionals, the inevitable question is how to mitigate this bias when making choices regarding music used in an advertising context. Making professionals aware of source effects certainly is one step toward mitigating the effects of source bias, because there is some evidence that awareness of bias can bring about change (Pope, Price, and Wolfers, 2013). Another effective intervention could rely on testing the music selections and their respective sources to measure their impact on target consumers, on the basis of criteria designed to quantify the perceptual and behavioral outcomes desired by the advertisers and clients.

In the case of consumers, such effects might work for or against the advertiser. Attaching a key performance indicator as a decision driver and then testing to see which music selection offers the best probable outcome could help professionals and brands make more effective choices and avoid potential negative impacts. Such an approach also could help address questions regarding music cost and return on investment.

On the one hand, if using music sourced from performing artists or celebrities has a generally positive impact, then the higher costs for the music would be justified. On the other hand, if music from another source, such as commissioned music or a music library, performs as well as or better than higher cost options, then advertisers could make cost decisions accordingly. Although a more methodical approach to music selection might add more time to the decision-making process, it certainly would benefit both advertising professionals and their clients, helping them offset source effects while potentially improving advertising costs and effectiveness in the process. **JAR**

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Appendix A

Pearson Correlations among the Five Rating Scales
(Experiment 1: Professionals)

Scale	Like	Quality	Authentic	Fit	Cost
Liking	—	0.73	0.69	0.55	0.14
Quality	0.73	—	0.61	0.54	0.20
Authentic	0.69	0.61	—	0.40	0.10
Fit	0.55	0.54	0.40	—	0.21
Cost	0.14	0.20	0.10	0.21	—

Pearson Correlations among the Five Rating Scales
(Experiment 2: Nonprofessionals)

Scale	Like	Quality	Authentic	Fit	Cost
Liking	—	0.73	0.70	0.67	0.30
Quality	0.73	—	0.67	0.60	0.33
Authentic	0.70	0.67	—	0.57	0.28
Fit	0.67	0.60	0.57	—	0.34
Cost	0.30	0.33	0.28	0.34	—

Appendix B Summary of Principal-Components Analyses

EXPERIMENT 1: PROFESSIONALS

The five rating scales showed great sampling adequacy (Kaiser-Meyer-Olkin (KMO) measure, = 0.79), and all KMO values for the individual scales were greater than 0.75; Bartlett's test of sphericity, $\chi^2(10, N = 46) = 623.650, p < 0.001$. A single component had an eigenvalue of 2.83 and explained 56.66 percent of the variance. Four rating scales had similar component loadings of greater than 0.73 (*i.e.*, liking, musical quality, authenticity, and musical fit), but the item measuring expected cost had a lower loading of 0.29.

The principal-components analysis thus was repeated with only the four rating scales with similar loadings (KMO = 0.80), and all KMO values for the four rating scales were greater than 0.74; Bartlett's test of sphericity was significant, $\chi^2(6, N = 46) = 728.84, p < 0.001$. A single component had an eigenvalue of 2.76 and explained 69.07 percent of the variance. Also, the Cronbach's alpha of the scale formed by the five individual items was 0.76, indicating good reliability, but the reliability improved to 0.84 when the item measuring expected cost was excluded from the analysis.

EXPERIMENT 2: NONPROFESSIONALS

The five rating scales showed great sampling adequacy (KMO = 0.84), and all KMO values for the individual scales were greater than 0.80; Bartlett's test of sphericity, $\chi^2(10, N = 111) = 1,952.08, p < 0.001$. A single component had an eigenvalue of 3.15 and explained 62.99 percent of the variance. Four rating scales had similar component loadings of greater than 0.81 (*i.e.*, liking, musical quality, authenticity, and musical fit), but the item measuring expected cost had a lower loading of 0.45.

The principal-components analysis was repeated with only the four rating scales with similar loadings (KMO = 0.83), and all KMO values for the four rating scales were greater than 0.79; Bartlett's test of sphericity was significant, $\chi^2(6, N = 111) = 2,162.07, p < 0.001$. A single component had an eigenvalue of 2.96 and explained 73.98 percent of the variance. The Cronbach's alpha of the five rating scales was 0.82, indicating good reliability. The reliability improved to 0.88 when the item measuring expected cost was excluded, however.

Table B1 Component Loadings: Experiment 1 (Professionals)

Rating Scale	PCA with Five Items	PCA with Four Items
How much did you like the music track?	0.89	0.90
How would you rate the musical quality of the track?	0.87	0.86
How "authentic" was the music track?	0.81	0.81
How well does the music track fit with the brand?	0.73	0.74
Expected cost	0.29	
Eigenvalues	2.83	2.76
% of variance	56.66	69.07

Note: PCA = principal-components analysis.

Table B2 Component Loadings: Experiment 2 (Nonprofessionals)

Rating Scale	PCA with Five Items	PCA with Four Items
How much did you like the music track?	0.89	0.89
How would you rate the musical quality of the track?	0.87	0.87
How "authentic" was the music track?	0.84	0.85
How well does the music track fit with the brand?	0.82	0.81
Expected cost	0.50	
Eigenvalues	3.15	2.96
% of variance	62.99	73.98

Note: PCA = principal-components analysis.

Appendix C

Table C1. Experiment 1: Professionals

Rating Scale	χ^2	df	p
Liking	7.38	2	0.02
Musical quality	8.96	2	0.01*
Authenticity	18.2	2	<0.001*
Musical fit	1.54	2	0.46
Expected cost	24.7	2	<0.001*

Note: Significance levels were adjusted for multiple comparisons with the Bonferroni method. *Significant effects.

Table C2. Experiment 2: Nonprofessionals

Rating Scale	χ^2	df	p
Liking	1.74	2	0.42
Musical quality	0.54	2	0.76
Authenticity	5.17	2	0.08
Musical fit	1.45	2	0.48
Expected cost	0.49	2	0.78