Psychological responses to recorded music as predictors of intentions to attend concerts: Emotions, liking, performance evaluations, and monetary value

Satoshi Kawase
Soai University, Japan

Satoshi Obata
The University of Electro-Communications, Japan

Abstract
The present study was designed to investigate how music listening affects intentions to attend concerts by employing both the music consumption model and the general consumer behavior model in service environments. We conducted a listening experiment using live recorded classical music. Participants responded to questionnaires after listening to pieces that represented different types of emotions. The items surveyed included felt emotion, liking, performance evaluation, and monetary value. The main findings were as follows: (1) strong emotions that were linked with happiness and tenderness/liking induced by music listening and performance evaluations were associated with intentions to attend concerts, and (2) the individual sense of the value of classical music also influenced the price that audience members were willing to pay to attend a concert when inspired to do so through music listening.

Keywords
concert attendance, hedonic consumption, liking, music listening, performance evaluation, strong emotional experience

Many studies have provided evidence of psychological responses induced by listening to music in daily life. However, few listening experiments have been conducted to explore whether such responses motivate a desire to re-experience those pieces at live concerts. Thus, the question arises: Does actual music listening affect concert attendance?

Corresponding author:
Satoshi Kawase, Department of Music, Soai University, 4-4-1 Nankonaka Suminoe-ku, Osaka-shi, Osaka 559-0033, Japan. Email: satoshikawase.psy@gmail.com
To clarify this question, employing the music consumption model and the consumer behavior model, our study used felt emotion, liking, and the evaluation of performance skills and sound quality (hereinafter described as performance evaluation) as predictors of intentions to attend concerts. Accordingly, a listening experiment was conducted to examine a hypothetical causal model showing correlations between the above-mentioned predictors. The present study can help to elucidate how psychological responses to listening to music in daily life motivate musical behaviors and thereby provide implications for concert marketing.

**Strong emotional experiences, liking, and music consumption**

The study focused on strong emotional experiences and liking, because these factors are important in both daily music listening and the music consumption.

The emotions and liking induced by listening to music have been observed to be associated with the anticipation of CD purchases (Lacher, 1989; Lacher & Mizerski, 1994). These findings are based on the concept of hedonic consumption (Hirschman & Holbrook, 1982). Lacher (1989) hypothesized that people who felt stronger emotions while listening to music were more likely to consume music. That study provided the following causal model: emotion induction through music, which is influenced by individual traits, exerts a positive impact on liking, whereas analytical responses exert a negative impact on liking. Lacher and Mizerski (1994) discovered a correlation between absorption in music while listening and the “desire to re-experience songs”. In that study, they also elucidated the salient correlation between purchase intentions and the need to re-experience songs, as well as the correlation between the desire to re-experience songs and experiential responses while listening to music.

On the other hand, strong experiences with music (Lamont, 2011; Sloboda, 1991), absorption, and flow have been observed during music listening (Diaz, 2013; Herbert, 2011; Sandstrom & Russo, 2013). Neurological studies also have demonstrated that emotions and the brain’s reward system are activated while listening to pleasurable music (e.g., Koelsch, 2010) and that dopamine release is associated with peak emotion induction during music listening (Salimpoor, Benovoy, Lacher, Dagher, & Zatorre, 2011). In light of these findings, such strong emotional experiences in response to recorded music may lead to hedonic consumption in concert attendance.

Specific types of emotions (e.g., happiness or sadness) induced by music also influence music listening. In the *Strong Experiences with Music* (SEM) project, the most frequently reported feelings were positive ones – in particular, joy, happiness, and bliss (Gabrielsson, 2010). In addition, music that induces happy emotions is more likely to be preferred (Ladinig & Schellenberg, 2012). On the other hand, audience members with specific attributes (e.g., openness to experiences and empathy) are inclined to enjoy sad music (Garrido & Schubert, 2011; Vuoskoski, Thompson, McIlwain, & Eerola, 2012). Accordingly, it is necessary to investigate what types of emotions facilitate the intention to attend concerts.

**Service quality and consumption**

Given that strong performance skills and high sound quality are associated with positive evaluations of a concert (Minor, Wagner, Brewerton, & Hausman, 2004; Radbourne, Johanson, Glow, & White, 2009; Thompson, 2007), it is useful to consider consumer behavior models that examine service quality and consumption in general service environments.

Prior studies have suggested that evaluations of service indirectly or directly influence consumer behavior. By comparing many consumer behavior models, Cronin, Brady, and Hult (2000) proposed an optimal model wherein service quality – that is, how consumers perceive
service quality – triggers final behavioral intentions. In addition to direct links between service quality and behavioral intentions, there are two factors between these two elements: service value; that is, the valuation a consumer places on a service, and satisfaction; i.e., the consumer’s level of emotional or subjective contentment with a service. Taking the importance of performance evaluation in music consumption into account, these models that contain a service quality factor may be applicable when examining intentions to attend concerts.

Hypothetical causal model

On the basis of both the music consumption model and the general consumer behavior model in service environments, we assumed the hypothetical causal model displayed in Figure 1. These models incorporate flows as follows: 1) appraisal responses toward music emerge (Lacher, 1989); 2) appraisal responses affect behavioral intentions (such as intentions to purchase or re-experience the music), emotional responses, and liking (Cronin et al., 2000; Lacher & Mizerski, 1994); and 3) behavioral intentions are induced by emotion and/or liking (Lacher, 1989; Lacher & Mizerski, 1994).

Based on findings indicating that emotional responses emerge earlier than liking when listening to music, we hypothesized that emotional responses induced by music listening would affect music liking. For example, emotional responses occur more automatically than liking for music (Brattico & Jacobsen, 2009). Schäfer and Sedlmeier’s (2010) listening experiments revealed that cognitive responses, arousal, and activation serve as figurations of liking for music. Furthermore, brain activity during music listening demonstrated that the judgment of liking rose more slowly than the valuation of the musical stimuli (Brattico, Jacobsen, De Baene, Gleres, & Tervaniemi, 2010). Accordingly, we predicted a path from emotional response to liking.

Finally, payment for concert attendance might correlate with individual piece evaluations or individual economic circumstances (Borgonovi, 2004), as well as with intentions to attend concerts.

Method

Participants

Fifty-five students (39 male, 15 female, and 1 unknown) at Osaka University of Human Sciences and Morinomiya University of Medical Sciences voluntarily participated in this study. All of the

![Figure 1. Hypothetical model.](msx.sagepub.com)}
participants were non-music majors. The average age of the participants was 20.5 years ($SD = 2.1$). Participants were asked to declare the music genres they frequently listen to in daily life by selecting from 23 music genres or describing music genres in an open-ended space. Multiple answers were allowed. The highest number of participants responded that they listened to pop (34 participants); the second highest to rock (19 participants); the third highest to hip hop (17 participants); the fourth highest to R&B (13 participants); the fifth highest to jazz (8 participants), and the sixth highest to classical music (6 participants).

**Stimuli**

We used six recorded pieces as stimuli. To enable participants to imagine a concert, all of the pieces were live recordings. We selected stimuli based on the following criteria: (a) pieces used in prior studies (Krumhansl, 1997; Oode, Imai, Ando, & Taniguchi, 2009; Västfjäll, 2002; Yasuda & Nakamura, 2008), (b) instrumental pieces without lyrics, and (c) the same music genre, i.e., classical music. Because we could not find pieces whose target emotion was Tenderness, we used “Clair de Lune”, which we believed could evoke tenderness. The pieces and their intended emotions are presented in Table S1 in the Supplemental Material Online section. Due to our experiment duration and participant load, we used five emotions (happiness, tenderness, fear, sadness, and anger; Juslin and Timmers, 2010). We used 2-minute sound clips that began at the onset of each piece and ended by fading out within 1 second.

**Materials**

Participants rated the emotions they felt after listening to the stimuli and their perceived impressions of the pieces on a 7-point scale ranging from 1 (not true at all) to 7 (extremely true). After each piece was presented, participants were asked to rate their felt emotions, evaluations of the performances (sound quality and performance skills), strong emotional experiences, liking, intentions to attend concerts, and perceived impressions of each piece (happy, graceful, serene, dreamy, sad, dignified, vigorous, or exciting; see Appendix A in the Supplemental Material Online section).

Furthermore, by imagining a concert in which the piece they listened to during the experiment would be played, participants were asked to declare the maximum price they would pay to attend it. After completing all of the listening experiences, participants responded to the following items: 1) frequency of live music attendance per year; 2) the total spending on music consumption per year (e.g., downloaded music, concert tickets); 3) the total spending on hobby-related items per year; and 4) the maximum price they would pay for tickets to the most amazing classical concert imaginable.

**Procedure**

We instructed participants in the experiment procedure. We indicated that the pieces to which they were going to listen were played in a concert. In doing so, we emphasized the difference between felt emotions and perceived emotions by explaining that, for example, feeling sad while listening to a piece differs from perceiving the piece to be a sad piece of music. After these instructions were given, we conducted a practice test using two pieces that we did not employ in the study, which was followed by the listening experiment. Each piece was presented once and in a random order. Participants completed questionnaires for each piece after finishing the listening experiment. The whole experiment took approximately 30 minutes.
Data analysis

Both *The Marriage of Figaro* and *Heroic Polonaise* caused participants to feel happy. We used *The Marriage of Figaro* as a piece that evokes happiness, because its happiness ratings were higher than those of *Heroic Polonaise* ($t(54) = 2.171, p = .034$). If we had employed more pieces that induced similar psychological responses, the results would have been biased. Consequently, the results of the correlations and structural equation modeling represent five pieces, excluding *Heroic Polonaise*.

To assess the correlation between the monetary values given by the participants after listening to the music and daily activities, we used the average of each participant’s responses to the five pieces.

We tested and modified the hypothetical model (Figure 1) via structural equation modeling using R 3.0.2 software. We determined the final model by eliminating insignificant items and paths, based on the results of either Chi-square tests or statistical indices of fitness, by taking account of the theoretical validity of the model.

Results

First, to examine whether the chosen pieces of music induced the expected emotions, we examined the average ratings of the items regarding the emotions induced by each piece (Figure S1 in the Supplemental Material Online section). Each piece induced the expected emotion, except for anger in Chopin’s *Revolutionary*. Participants’ perceived impressions are displayed in Appendix B in the Supplemental Material Online section.

Next, to assess the correlation among items, we calculated correlation coefficients (Table 1). We obtained a strong positive correlation between the intention to attend concerts and liking, and also between the intention to attend concerts and strong emotional experiences. We also obtained a strong positive correlation between strong emotional experiences and liking and between performance excellence/high sound quality and strong emotional experiences. We observed significant correlations between prices and intentions to attend concerts, liking, and strong emotional experiences. No correlation was observed between prices and performance evaluations. Regarding the specific emotions felt by participants, only “happiness” and

### Table 1. Correlation coefficients among item ratings.

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<tbody>
<tr>
<td>Intentions to attend concerts</td>
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<tr>
<td>Liking</td>
<td>.77**</td>
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<td>Strong emotional experience</td>
<td>.65**</td>
<td>.75**</td>
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<tr>
<td>Performance skills</td>
<td>.41**</td>
<td>.43**</td>
<td>.61**</td>
<td>–</td>
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<tr>
<td>Sound quality</td>
<td>.43**</td>
<td>.51**</td>
<td>.64**</td>
<td>.69**</td>
<td>–</td>
<td></td>
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<tr>
<td>Price</td>
<td>.36**</td>
<td>.32**</td>
<td>.21**</td>
<td>.09</td>
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<tr>
<td>Happiness</td>
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<td>Tenderness</td>
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<td>Sadness</td>
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<td>Fear</td>
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<td>Anger</td>
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Felt emotion

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<tbody>
<tr>
<td>Happiness</td>
<td>.42**</td>
<td>.44**</td>
<td>.29**</td>
<td>.09</td>
<td>.21**</td>
<td>.25**</td>
</tr>
<tr>
<td>Tenderness</td>
<td>.35**</td>
<td>.41**</td>
<td>.37**</td>
<td>.10</td>
<td>.34**</td>
<td>.15*</td>
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<tr>
<td>Sadness</td>
<td>−.08</td>
<td>−.12</td>
<td>.08</td>
<td>.10</td>
<td>.07</td>
<td>−.05</td>
</tr>
<tr>
<td>Fear</td>
<td>−.08</td>
<td>−.12</td>
<td>−.06</td>
<td>.01</td>
<td>−.09</td>
<td>−.03</td>
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<tr>
<td>Anger</td>
<td>−.08</td>
<td>−.11</td>
<td>−.06</td>
<td>.00</td>
<td>−.07</td>
<td>.04</td>
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Note. *p < .05. **p < .01.
“tenderness” were positively correlated with the intention to attend concerts, liking, strong emotional experiences, prices, and evaluations.

To examine the factors other than emotions that influence the amount people are willing to pay, the correlations between the average cost of attending concerts and other factors, such as the amount that participants spent on hobbies, were calculated (Table 2). The results yielded a positive correlation between the average of the amount people are willing to pay and the maximum price that participants would pay for an excellent classical music concert, and a positive correlation between the maximum price that participants would pay for an excellent classical music concert and the amount that participants spend on their hobbies.

Finally, we analyzed the hypothetical model, which represents the correlation between intention to attend concerts and music listening. When we applied the structural equation model to the hypothetical model, it displayed a good fit ($\chi^2(5, N = 273) = 7.807, p = .167; \text{GFI} = .991, \text{CFI} = .997, \text{RMSEA} = .045, \text{AIC} = 39.807$). After modifying the assumed model, we obtained the model depicted in Figure 2 ($\chi^2(8, N = 273) = 9.886, p = .273; \text{GFI} = .988, \text{CFI} = .998, \text{RMSEA} = .029, \text{AIC} = 35.886$). The $R^2$ value of intention to attend concerts was .61, while the $R^2$ value of intention to pay for concerts was .13.

**Discussion and conclusions**

Our main findings are as follows: (1) strong emotions/liking induced by music listening and performance evaluations were associated with intentions to attend concerts; (2) such strong emotions correlated with happiness and tenderness; (3) our model demonstrated that psychological responses induced intentions to attend concerts; and (4) the individual senses of the

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**Table 2.** Correlation coefficients between the prices of music listening and daily activities.

<table>
<thead>
<tr>
<th></th>
<th>1. Mean price</th>
<th>2. Maximum price for an excellent classical music</th>
<th>3. Total spending on hobby-related items per year</th>
<th>4. Frequency of live music attendance</th>
<th>5. Total spending on music consumption per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mean price</td>
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<tr>
<td>2. Maximum price</td>
<td>.31*</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Total spending</td>
<td>.24</td>
<td>.31*</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. Frequency of live</td>
<td>-.10</td>
<td>.07</td>
<td>-.06</td>
<td></td>
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<tr>
<td>5. Total spending</td>
<td>-.09</td>
<td>.13</td>
<td>.18</td>
<td>.31*</td>
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Note. *$p < .05$. 

**Figure 2.** Model of intention for concert attendance and music listening. 
Note. **$p < .01$. 

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value of classical music also influenced the price that audience members were willing to pay to attend a concert when inspired to do so through music listening.

First, the listening experiment revealed that psychological responses motivated a desire to re-experience pieces at live concerts. Liking and strong emotional experiences exerted a significant influence on the intention to attend concerts. This result is consistent with Lacher and Mizerski’s (1994) finding that experiential responses affect the purchase of rock music CDs. The effect size ($r$) of the correlation between liking and intentions to attend concerts was larger than that of strong emotional experiences. This result supports Lacher’s (1989) model, in which liking affects purchase intentions in terms of intentions related to music consumption. Accordingly, the present results suggest that strong emotions and liking caused by listening to music (Diaz, 2013; Herbert, 2011; Koelsch, 2010; Lamont, 2011; Sandstrom & Russo, 2013) affect intentions to attend concerts.

Second, “happiness” and “tenderness” specifically correlated with intentions to attend concerts. These two emotions are classified into positive valence (Juslin & Timmers, 2010). This result is in accordance with findings that the characteristics of strong emotional experiences are mainly positive emotions (Gabrielsson, 2010). Thus, the present results suggest that positive emotions induced by music listening may affect intentions to attend concerts.

Conversely, this result suggested that sadness induced by listening to music does not facilitate concert attendance. In light of prior studies that suggested that audience members with specific attributes were inclined to enjoy sad music (Garrido & Schubert, 2011; Vuoskoski et al., 2012), further research is needed to investigate the pleasurable feelings induced by listening to sad music that can motivate listeners to attend concerts.

Liking is positively connected with strong experiences. This result is in accordance with prior findings that strong emotional experiences induce liking (Brattico & Jacobsen, 2009; Brattico et al., 2010; Schäfer & Sedlmeier, 2010).

Performance evaluations also affected intentions to attend concerts. The present results are consistent with the finding that performance evaluations influence concertgoers (Minor et al., 2004; Radbourne et al., 2009; Thompson, 2007). The results also confirmed findings regarding consumer behavior in which the quality of service or appraisals affected consumers’ behavioral intentions (e.g., Cronin et al., 2000).

Third, our final model demonstrated that psychological responses induced by music listening affected intentions to attend concerts. The structural equation modeling results supported our first hypothetical model (Figure 1). We later refined that model and created a more sophisticated one (Figure 2). The characteristics of this model are as follows: performance evaluation → emotion induction → liking → intention to attend concert. Given that the $R$-squared of intentions to attend concerts was high, this model is likely able to explain intentions to attend concerts based on music listening.

If we align performance evaluations with service quality, induction of emotions with service value, and liking with satisfaction, our results are likely to be consistent with previously described consumer behavior models (e.g., Cronin et al., 2000). As their models regarded satisfaction as a positive emotional response induced by service, the element of liking in our model may share substantial attributes with their element of satisfaction.

Nonetheless, performance evaluations had less of an influence on intentions to attend concerts than strong experiences or liking, given that the correlation between intentions to attend concerts and performance valuations was smaller than the correlation between intentions to attend concerts and liking and the correlation between intentions to attend concerts and emotions.

The results of the present study also suggest that even unfamiliar music genres evoke intentions for concert attendance when such genres evoke a strong emotional experience or liking.
Although many participants (approximately 89%) did not often listen to classical music in daily life, they wanted to attend concerts in which the classical music pieces they listened to in the experiment would be played. This finding differs from prior studies of CD purchases, because those studies used pop/rock music that was popular among young participants (e.g., Lacher & Mizerski, 1994). Accordingly, this finding can be applied to the new development of potential young audiences for concerts in unfamiliar genres of music.

Finally, the monetary value of concerts as rated by listeners corresponded with intentions to attend concerts. The maximum price that audience members were willing to pay to attend an excellent classical concert was also linked with the average ticket price given by participants while listening to music. This result suggests that when audience members regard a classical concert as highly valued, they are willing to spend more money to attend it. Namely, individual differences in evaluations by musical genre (e.g., Rentfrow & McDonald, 2010) and knowledge of classical music (Borgonovi, 2004) may be associated with actual concert attendance.

However, these results suggest a disparity between behavioral intentions and the actual prices that audience members would like to pay. With regard to the prices audience members were willing to pay, the correlation coefficients and R-squared were relatively smaller than for behavioral intention. The correlation between intentions to attend concerts and prices given by participants was smaller than the correlation between intentions to attend concerts and liking. Furthermore, the R-squared was low in the model. This can be supported by the significant correlation between participants’ opinions of classical music and the average ticket prices they gave. In addition, in real concerts, perceived monetary value can be influenced by multiple factors, such as timetables or seating locations, which affect actual concert attendance (e.g., Kawase, 2013), and interactions between performers and audience members or among audience members (Burland & Pitts, 2014). Therefore, further studies are needed to explore holistic perspectives on concert consumption.

One limitation of the present study is that it remains unclear whether intentions to attend concerts correspond with actual concert attendance. This tendency may derive from individual economic circumstances (Borgonovi, 2004). In future studies, in light of the multiple findings regarding the correlations between sociological factors and concert attendance (e.g., reviewed in Seaman, 2005), individual attributes, backgrounds, and musical tastes of participants should also be explored.

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Supplementary Material
Supplemental online material is available from http://msx.sagepub.com/supplemental

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