

THE IMPACT OF SOUND LOGOS ON CONSUMER BRAND EVALUATION

Working paper by

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Abstract: Acoustic elements have recently gained in importance in the context of changing conditions for brand communication. In this context, short identifying acoustic elements, known as *sound logos*, are becoming an integral part of consistent acoustic brand management. We model the impact of perceived fit of a sound logo with a brand (*perceived fit*) and of consumer attitudes towards a sound logo (*consumer attitudes*) on consumer *brand evaluation*. To validate the model, we apply structural equation modeling to 340 responses from an online experiment. In doing so, we differentiate between sound logos and continuous background music in three industries. To obtain a realistic evaluation, the study took a new approach and used genuine sound logos (recently introduced or from foreign brands) in association with genuine ads and footage. We found support for the relationship between *consumer attitudes* and *brand evaluation*. However, the impact of *perceived fit* on *brand evaluation* was only supported for the background music condition. For sound logos, the impact of *perceived fit* on *brand evaluation* was fully mediated by *consumer attitudes* in all three industries. Thus, consumers respond to sound logos with a high degree of fit because the fit stimulates positive attitudes towards the sound logo. These results support the general assumption that sound logos may contribute to an integrated brand identity. For companies, the results indicate the wisdom of always considering *perceived fit* of a sound logo along with *consumer attitudes*.

Keywords: sound logo; brand evaluation; acoustic branding; online experiment

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1. INTRODUCTION

Acoustic elements have recently been gaining in importance within the context of changing conditions of brand communication (Spehr 2008). Interchangeable products and services in saturated markets tend to go hand in hand with consumer information overload, thus making it difficult to establish an unmistakable brand identity within the psyche of the consumer (e.g. Mitchell and Kearney 2002, Walsh, Hennig-Thurau, and Mitchell 2007). Against this backdrop, addressing the consumer solely by optical stimuli is no longer considered sufficient.

Widening awareness of the high importance of auditive identities is discussed under the generic term of "acoustic branding". This includes the structured process in which "the auditive" becomes an integral part of the brand and its identity. Specialists in acoustic branding claim that consistent acoustic brand management allows better brand differentiation, higher brand recognition, stronger emotionalization and thus an improved experience of the brand (e.g. Bronner 2008; Kilian 2008). Aside from learning and memory effects, sound logos are also thought to have an effect on the image of the advertised brand (e.g. Lepa 2004). Short sound logos, such as those which Intel or T-Mobile have been using for several years now, are becoming a common form of acoustic branding.

In direct contrast to marketing practice, the scientific investigation of sound logos, their contribution to an integrated brand identity and their impact on consumer brand evaluation has as yet been scarce. Consequently, we will investigate how sound logos impact consumer brand evaluation. In particular we model consumer evaluation of a brand as a result of *consumer attitudes towards a sound logo* (consumer attitudes) and the *perceived fit of a sound logo with the attached brand* (perceived fit). In order to validate the model, we apply structural equation mod-

eling to experimental data on sound logos versus background music. Finally, results will be discussed and implications presented.

2. KEY CONCEPTS: BRAND IDENTITY AND ACOUSTIC IDENTITY

2.1. Brand Identity

The challenge of effective brand communication lies in the composition of a brand message that is consistently focused on imparting the brand identity for all applied instruments of communication (e.g. Roberts and Cayla 2009). Integrated communication methods are seen as an effective way to raise awareness in the minds of consumers more efficiently, because the formal and content-related reconciliation enhances learning processes better than "fragmented" communication (O'Guinn, Allen, and Semenik 2008). In discussions of brand identities within marketing practice, multiple "personal" characteristics such as "reliable", "gentle", "strong" or "exciting" are attributed to a brand (e.g. LaTour and Rotfeld 1997; Aaker 1997). Based on this evaluation, a brand may correspond to particular products or to certain consumer groups. As a result, each and every characteristic may be present to a greater or lesser extent, and a brand evaluation is not good or bad *per se*. Nevertheless, 2 tendencies may be identified in empirical research (e.g. Kapferer 2008; Steenkamp, Batra, and Alden 2010). A distinct, clear cut identity is advantageous and likely to go hand-in-hand with business success. The stronger a brand evaluation is, the more unique it may be perceived and consequently the more advantageous the brand is.

2.2. Acoustic Identity

In most cases, even today, acoustic brand elements are reduced to "jingles". These can be defined as mostly vocalized, set-to-music central brand messages. Keller defines them as "musical messages written around the brand" (2008: 164). However, acoustic branding consists of various other elements. These range from very short sound icons (e.g. a "fizzing" sound when opening a

bottle) to complete pieces of music such as brand songs or themes. Sound logos fall anywhere within this range and are increasingly gaining in importance, as was found in a study conducted in 2008 which examined 140 TV spots: 68 percent of the companies that had installed an acoustic identity had resorted to this kind of audible brand element (Audio Consulting Group 2009). We define a sound logo as an identifying acoustic element of a brand with a short running time (between 0.5 and 3 seconds). As ideal-typical basic forms, a distinction can be drawn between melodious, “noise-like”, and vocalized sound logos (Melan 2008). Furthermore, any combination of these 3 forms is possible. Often, sound logos are combined with a visual (animated) logo (Bronner 2008) which may even correspond with the sound logo, for example in terms of melody or rhythm (e.g. T-Mobile's sound and visual logo).

3. THE IMPACT OF ACOUSTIC PERCEPTIONS ON BRAND EVALUATION

In this section we will conceptualize the impact of acoustic elements on consumer brand evaluation. In particular we will consider the *perceived fit* and *consumer attitudes* as being determinants of consumer brand evaluation. Moreover, *perceived fit* is assumed to impact on *consumer attitudes* (figure 1). Study of these relationships will be developed in the following paragraphs.

Insert figure 1 about here

3.1 Consumer Attitudes Towards a Sound Logo

Consumer attitudes towards an acoustic element seem to be of relevance to the impact of advertising stimuli on consumer brand evaluation. We will consequently view *consumer attitudes* as the paralleling of the sound logo with consumers' existing subject preferences. Generally, one might assume that positive stimuli, e.g. acoustic elements which a consumer likes, help in posi-

tive branding. This is in line with several studies that have investigated the effects of music towards which consumers had positive or negative attitudes on the evaluation of a message source. Simpkins and Smith (1974) tested radio spots in 3 versions – with a verbal message only and with a verbal message and alternative types of background music. They found that messages accompanied by music towards which consumers had positive attitudes, have a positive impact on credibility ratings beyond that of the verbal-only. In contrast, Background music towards which consumers had negative attitudes, turned out to have an even stronger negative impact on the ratings. Moreover, the relationships of different types of acoustic backgrounds (music to which consumers have positive, negative or neutral attitudes) were investigated (Bozman, Muelling, and Pettit-O'Malley 1994). In each case attitudes towards a brand were more favorable when emotive cues were positive. Accordingly, we hypothesize:

H₁: The more positive consumer attitudes towards (a) a sound logo, (b) background music, the more positive the brand evaluation.

3.2 Perceived Fit of a Sound Logo with its Attached Brand

The question as to whether a sound logo is congruent with the advertised brand or not is expected to impact consumer brand evaluation. We are following MacInnis and Park (1991: 162), who used the concept of fit in their research on music in advertising, with their understanding of fit as the "subjective perceptions of the music's relevance or appropriateness to the central ad message". However, in using songs with lyrics, they set a focus on the examination of the verbal appropriateness of music within certain advertising spots (visual elements and brand claims). Furthermore, it has to be taken into account that when acoustic stimuli are used in advertising, they are experienced holistically, so the sound is interpreted along with the whole advertisement (Scott 1990; MacInnis and Park 1991; Kellaris, Cox, and Cox 1993). This leads to the emergence

of a new meaning based on multi-level rhetoric and cannot be understood as adding up to several meanings (Bode 2006). Hung (2000) examined the congruence of music with visuals in TV commercials and found that spots which played music that was incongruous with the visuals resulted in a negative evaluation of the product image. Lavack, Thakor, and Bottausci (2008) investigated the effects of high-cognition advertisements combined with either no background music at all, or background music that was either congruent or incongruent with the brand. Results suggested that brand image was significantly more positive in the congruent music conditions than in either the incongruent music conditions or the no-music conditions. We assume the related effects to be equally relevant for background music as for sound logos.

H₂: The better the perceived fit of (a) sound logo, (b) background music, the more positive the brand evaluation.

It was further found that spots containing music that was incongruent with the visuals made viewers feel uncomfortable (Hung 2000). One may assume that consumers transfer this discomfort back to the causing stimulus, resulting in a less favorable evaluation of the stimulus. Comparable effects for sound logos would thus lead to less favorable attitudes. Thus we hypothesize:

H₃: The better the perceived fit of (a) sound logo, (b) background music, the more positive consumer attitudes towards (a) the sound logo, (b) background music.

4. METHOD

4.1 Approach

To test the model, an experiment was conducted that aimed to understand respondents' perceptions of sound logos and background music and their impact on brand evaluation. The centerpiece of the 2 different questionnaire versions was a short presentation of 3 advertisements related to an automotive brand of (car), a mobile phone network provider (phone), and an energy

provider (energy). After each advertisement, respondents were asked to give their evaluations of the presented brand. Questionnaire versions differed in the arrangement of brand presentations: in the first version participants were exposed to a sound logo at the beginning and the end of each advertisement. The second version used in the questionnaire used background music to accentuate the advertised products and services.

To avoid participants focusing on the acoustic stimuli under scrutiny, the study was carried out with the working title "Perception of New Brands" as a "cover story". To ensure that respondents could actually hear the sounds during the online presentation, they were required to answer an initial question about an optical-acoustic stimulus (a "baa-ing" dog) before being allowed to continue.

4.2 Experimental Manipulation

Prior studies which deal with the effect of music and sound in advertising can be categorized into 2 fundamental research designs. One group used the *advertising material of existing brands* for their survey (e.g. Lavack, Thakor, and Bottausci 2008) and was thus biased by prior brand experiences. These studies have been criticized because the long-term accumulated preferences and impressions of the test subjects are likely to be set in stone, so that it is very unlikely that they will be changed by a single stimuli contact. The other group deployed *self-designed advertising material of fictitious brands* (e.g. Meissner 1973; Simpkins and Smith 1974; Tauchnitz 1990) and thus used only fictitious material. The central point of criticism of these studies is the content and formal character of the self-made advertising material. Self-composed jingles or amateurish melodies in commercials do not convey the same impression of quality as the originals produced by advertising specialists. Respondents realize this – consciously or subconsciously. Hence, we

have developed an approach that combines the advantages of both approaches and equally avoids their disadvantages.

To obtain a realistic evaluation of the impact of sound logos on *consumer attitudes*, the study used *genuine* sound logos in association with *genuine* ads and footage. The intention was that the necessary professionalism relating to the artistic appearance and content integration should be ensured. To avoid bias through using known brands, we drew on material of new and small advertising campaigns for the car and energy samples. We replaced the brand names in the adverts, which could have been recognized, with fictional "association-free" brand names using image editing software. For the phone sample the stimuli were taken from a mobile phone network provider which was just launching its new brand in a neighboring country with the same language, about 500 miles from the survey region at that time. In this way a neutral initial situation was created regarding the 3 brands for all participants, because no pre-existing knowledge about a genuine brand needed to be taken into account. To ensure this, it was ascertained through pretests and investigation after the survey that the presented stimuli appeared professional and were not known to the respondents. Furthermore, results for the real-world material concerning the phone brand appeared to be consistent with the slightly adapted car stimuli and thus indicated that no relevant biases resulted from the experimental material.

4.3 Sample

To test the model, an online survey was distributed to students from a German state university. Respondents were asked to evaluate brands based on an advertisement which was presented with either background music or with a sound logo. A total of 340 respondents completed the online survey during a 10-day period in January and February 2008, taking 21 minutes on average. The sample consisted of 159 females and 181 males. The average age of respondents was 25.7 years.

174 respondents were exposed to the sound logo version of the questionnaire and 166 to the version with background music. No significant socio-demographic differences differentiated these 2 sub-samples.

4.4 Measurement Model

Following the suggestions by Bergkvist and Rossiter (2007) we operationalized the specific singular objects, *consumer attitudes* and *perceived fit*, as single-item measures. These were captured by the statements: “I like the sound logo of *brand name*” and “The sound logo of *brand name* fitted the brand” and or “I like the *brand name* music” and “The *brand name* music fitted the brand” respectively. In contrast, the brand evaluation construct was quantified by a multi-item scale, as superior measuring properties can be expected (e.g. Churchill 1979). Therefore items suggested by LaTour (LaTour and Henthorne 1994; LaTour, Snipes, and Bliss 1996; LaTour and Rotfeld 1997) and Aaker (1997), which represent the 3 dimensions of Excitement, Admiration, and Potential, were applied. Hence, brand evaluation was measured as a 2-level reflective construct with 5 items for Excitement (unique, interesting, unmistakable, innovative, surprising) and Potential (successful, reliable, intelligent, high class, trustworthy) and 3 items for the Admiration dimension (coherent, superior, good).

For the sake of consistency, agreement scales with 7 categories were used throughout the questionnaire from 1 = “completely disagree” to 7 = “completely agree”. The 3 brand dimensions demonstrated good reliability for all industries ($\alpha=0.71$ for Brand Admiration in the Car sample, all others above 0.8) (Nunnally 1978). Furthermore, the attribution of the Excitement, Potential, and Admiration dimensions to the aggregate Brand Evaluation construct seemed to be reliable ($\alpha > 0.8$ for all industries) and extracted 78 per cent of the variance in the brand evalua-

tion across sub-samples. An acceptable goodness was achieved for the measurement model, reaching the 0.9 threshold for GFI, CFI, and NFI in all 3 sub-samples.

4.5 Analysis

The measurement properties were first assessed with explorative and confirmatory factor analysis as well as Cronbach's alpha using SPSS 17.0 and AMOS 17.0 (the 2-step approach as recommended by Anderson and Gerbing 1988). We then used the maximum likelihood algorithm (Bollen 1989) to perform the analyses. As Table 1 reveals, fit indices of the structural model exceed the threshold levels proposed in the literature, except for AGFI and RMR in the phone sub-sample which falls marginally below.

 Insert table 1 & 2 about here

5. RESULTS AND DISCUSSION

The proposed model (see figure 1 above) was estimated by applying structural equation modeling (SEM). The model evaluation (table 2) reveals support for most of our expectations.

First, *consumer attitudes* have an influence on the evaluation of the attached brands. With path coefficients exceeding 0.36 for the car stimulus and 0.50 for the phone stimulus, the results seem substantial, significant, and consistent across the sub-samples. However, regarding the energy stimulus, the path is significant and strong (0.42) for the sound logo sub-sample but weaker (0.16) for the background music sub-sample, where the results fall slightly below the 95 % confidence interval. Thus, while hypothesis H_{1a} is fully supported, hypothesis H_{1b} finds strong support but with a qualification for the energy stimulus.

Moreover, we hypothesized an influence from *perceived fit* on consumer brand evaluation (H₂).

The collected data provides support for H_{2b} as this relationship is significant over all 3 stimuli in the music background sub-sample. In the sound logo sub-sample, however, this path has only weak path coefficients of no more than 0.10 and remains insignificant. It is particularly noteworthy that this result is again consistent over all 3 stimuli. Additionally, with a confidence of less than 65 per cent, the deviations from the common significance thresholds are substantial. Thus, H_{2a} should be rejected.

Finally, within consumers' perceptions of an acoustic element, there is a strong relationship between *perceived fit* and *consumer attitudes*. With path coefficients between 0.38 and 0.65, this relationship finds substantial and highly significant support for both sound logos and background music in all 3 sub-samples. Consequently hypotheses H_{3a} and H_{3b} are fully supported by the data.

This suggests that the effect from *perceived fit* on consumer brand evaluation is completely mediated by *consumer attitudes*. The criteria suggested by Baron and Kenny (1986) were all fulfilled. Moreover, *Sobel test* results are highly significant in all 3 sub-samples (car: 3.44; phone: 4.82; energy: 3.96). Furthermore, total effect measures (table 2, bottom line) are substantial, ranging from 0.27 to 0.49 for the mediated path. It is further noteworthy that total effects for the car and phone stimuli differ only marginally between the sound logo and background music sub-samples.

R² values range from 0.17 to 0.36 (see table 3). Thus the investigated constructs of *consumer attitudes* and *perceived fit* explain a relevant part of the variance in the brand evaluation construct. This is particularly the case as other influences such as product performance, product involvement, and the impact of visual brand presentation (which was not varied in the given case) are

expected to strongly impact on consumer brand evaluation. The results support the general assumption that acoustic elements may be part of an integrated brand identity. The highest explanatory power for consumer brand evaluation is achieved for the phone stimulus; moreover it becomes apparent that background music better explains consumer brand evaluation than sound logos. This is to be expected considering the very short time of exposure to sound logos compared with the substantially longer exposure to background music.

Insert table 3 about here

6. IMPLICATIONS AND CONCLUSION

We investigated the impact of sound logos on consumer brand evaluation. First, we found that *perceived fit* of and *consumer attitudes* towards sound logos are both positively related to consumer brand evaluation. Compared to background music, the impacts were slightly weaker but still substantial. Thus companies would be wise to consider sound logos when managing their brand identities.

Second, in our study, *consumer attitudes* fully mediated the impact of the *perceived fit* of sound logos on brand evaluation. While fit with established corporate brand identities seems to be given priority in current business practice, this finding implies that *perceived fit* of a sound logo should always be considered alongside *consumer attitudes*, and that *consumer attitudes* should possibly be regarded as of even greater importance than *perceived fit* for short stimuli. We further suggest that these results might also apply to other brand elements to which consumers are only exposed for a short time. For instance, one might rethink the design of outdoor advertising and hypothesize positive *consumer attitudes* to the poster to be more important than

perceived fit with the brand. Together with the impact of consumers' short exposure to traditional advertising material, we would consider repeated stimuli exposure of sound logos as an area that requires further sound investigation. Our experimental setting investigated the effects of a one-time exposure to a sound logo compared with background music. In contrast, a real life setting would cover the repeated exposure to a brand's visual and acoustic identity over multiple weeks in different settings.

Third, we found that the positive relationship between *perceived fit* and *consumer attitudes* is higher for sound logos than for background music. This result becomes particularly influential when assuming that *consumer attitudes* are more likely than *perceived fit* to trigger indirect positive brand influences (e.g. word of mouth). In this context, the strong *fit-attitudes* link would further increase the importance of sound logos' brand fit. Hence, the creative process for sound logos should include some special attention to *perceived fit*. For future research, we thus suggest investigating the impact of sound logos on a broader range of brand effects, such as loyalty or word of mouth. Moreover, future investigations should integrate aspects like product performance, visual brand presentation, and product involvement. The case for further studies around product involvement is especially compelling, as it has been shown that highly-involved consumers may respond to a strong perception of negative fit through increased brand evaluation (Bozman, Muelling, and Pettit-O'Malley 1994).

Overall, the study has shown that sound logos are important to corporate branding, and that their design process should integrate both *perceived fit* and *consumer attitudes*.

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FIGURE 1

Model of acoustic perceptions and their impact on consumer brand evaluation

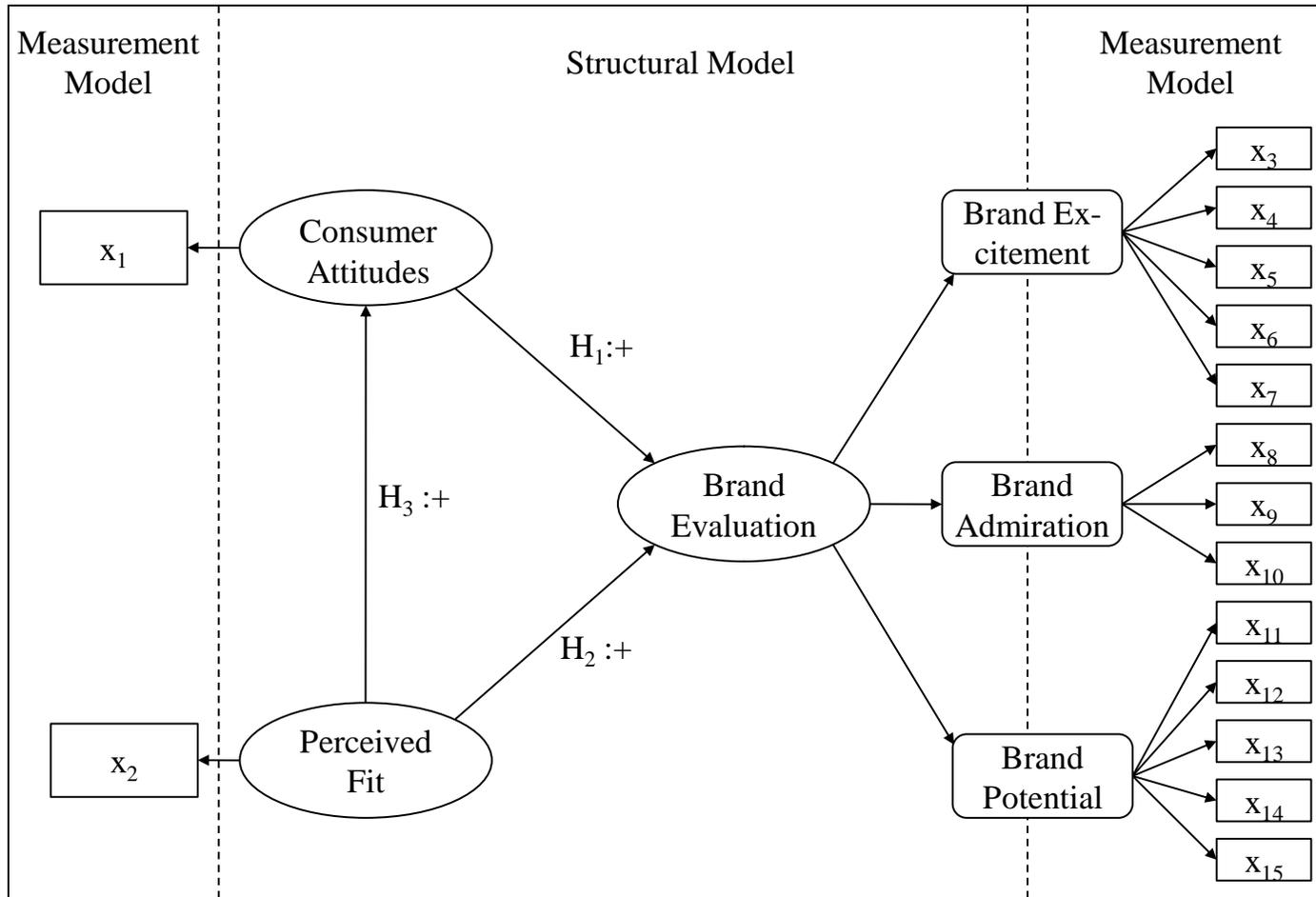


TABLE 1**Goodness of the Overall Model Fit**

| | Goodness of the Overall Model | | | Suggested threshold | Source of suggested threshold |
|-------|-------------------------------|-------|--------|------------------------|-------------------------------|
| | Car | Phone | Energy | | |
| CFI | 1.0 | 0.98 | 0.99 | ≥ 0.9 | Hair et al. (1998) |
| NFI | 0.99 | 0.97 | 0.98 | ≥ 0.9 | Bagozzi and Yi (1988) |
| GFI | 0.996 | 0.97 | 0.99 | ≥ 0.9 | Joereskog and Soerbom (1996) |
| AGFI | 0.99 | 0.89 | 0.95 | ≥ 0.9 | Bagozzi and Yi (1988) |
| RMR | 0.028 | 0.085 | 0.032 | $\leq .05$ | Byrne (1998) |
| RMSEA | < 0.01 | 0.08 | 0.04 | ≤ 0.08 | MacCallum et al. (1996) |

CFI: comparative fit index; NFI: normed fit index; (A)GFI: (adjusted) goodness-of-fit index;

RMR: root mean square residual index; RMSEA: root mean square error of approximation

TABLE 2

Path coefficients and significances based on the AMOS structural equation modeling

| Hypothesis / Model path | Car | | | | Phone | | | | Energy | | | |
|--|-------------|------|-------------|------|-------------|------|-------------|------|-------------|-------|-------------|------|
| | Sound logo | | Music | | Sound logo | | Music | | Sound logo | | Music | |
| | α | t | α | t |
| H ₁ : Consumer Attitudes > Brand evaluation | 0.36 | 3.62 | 0.37 | 4.26 | 0.53 | 5.51 | 0.50 | 5.95 | 0.42 | 4.21 | 0.16 | 1.95 |
| H ₂ : Perceived Fit > Brand evaluation | 0.10 | 1.04 | 0.23 | 2.80 | 0.06 | 0.76 | 0.19 | 2.54 | 0.00 | -0.04 | 0.42 | 4.92 |
| H ₃ : Perceived Fit > Consumer Attitudes | 0.63 | 10.7 | 0.38 | 5.28 | 0.59 | 9.64 | 0.40 | 5.59 | 0.65 | 11.2 | 0.44 | 6.29 |
| total effect: Perceived Fit > Brand Evaluation | 0.33 | | 0.37 | | 0.37 | | 0.39 | | 0.27 | | 0.49 | |

Note: Significant path coefficient at $p < 0.05$ set bold.

TABLE 3

R² values based on the AMOS structural equation modeling

| | Car | | Phone | | Energy | |
|--------------------|------------|-------|------------|-------|------------|-------|
| | Sound logo | Music | Sound logo | Music | Sound logo | Music |
| Consumer Attitudes | 0.40 | 0.14 | 0.35 | 0.16 | 0.42 | 0.19 |
| Brand evaluation | 0.18 | 0.26 | 0.32 | 0.36 | 0.17 | 0.26 |