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Book

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Selected personal related and brand related predictors of the success of audio branding

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Abstract

Although there is a numerous amount of literature on the effects of background music in advertising, we still lack empirical studies on the prerequisites and effects of audiobranding. The current paper deals with the question to which extent success of audio branding can be explained by several potential determinants. The success of audio branding is operationalised by measuring the level of aided and unaided recall of audio logos.

We distinguish between two categories of determinants: Firstly brand related predictors such as *fit between brand and audio logo.* Secondly, according to the logic of market segmentation´s criteria, we derive personal-related predictors such as age and consumer´s musicality (i.e. sociodemographic), involvement (psychographic) and media use (behavioural).

The survey examines the coherence of such criteria with the recall of eight famous brands´ audio logos. As a result, all brand-related and personal-related predictors show weak but significant correlations with the recall of audio logos.

In the second step a multiple logistic regression analysis is performed to measure the contribution of each explanatory variable. Five out of seven predictors prove to be relevant for the success of audio branding.

1 Audio branding

The key function of branding is to communicate differences between brands within the same product type to consumers (Keller 2003, p.13). Accordingly audio branding is a planned measure which strives to create an emotional connection between sender and receiver, builds up associative cues for recognition, communicates messages and transfers an image created by the usage of sound (Spehr 2009, p.32). Music not only supports visual brand icons and slogans in advertisement, it is an independent tool to emotionalise a brand effectively (Alpert/Alpert 1990). A consistent and permanent usage of a sound message should turn it

into an autonomous expression of the brand itself (Jackson 2003, p. 9). The acoustic message must be a sounding reflection of the brand identity and needs to meet the same constitutive criteria as visual logos or textual slogans. It is all about establishing an audible component of the brand (Krugman and Langeslag 2007).

Due to daily sensory overload many visual stimuli do not reach the customer. However, the ear cannot be turned away or switched off, it processes acoustic signals permanently (see Tomatis 1990). Acoustic signals do not need to be dealt with consciously by the consumer (Killian 2009, p.64), they operate as a "peripheral cue" and induce a mechanism of attitude below the level of cognitive processing (Petty, Cacioppo, Schumann 1983). Moreover, sound messages do not need certain codes of languages or terminology to be recalled (Park and Young 1986).

During the perception of acoustic stimuli an individual level of reference (Helson 1964) builds up so that the listener can get used to the sound exposed (Kohfeld 1968). This results in the fact that sudden silence can cause higher attention and increase the recall potential of an ad (Olson 1995).

Audio branding faces the challenge to catch the listeners´ activation and launch cognitive and emotional processes which result in long term memory effects within the consumer (Dagnoli 1989). Therefore it is of importance to know about the circumstances required to process auditive stimuli.

Music raises the emotional effects of advertising (Miller and Marks 1992) by changing the mood of the consumers and thus the perception of the brand message (Morris and Boone 1998). Due to long term adaptation over years recall and recognition of certain tunes happen quickly and instantly. Despite its theoretical importance and its widespread use in practical advertising, the empirical basis of audio branding is still weak. In many publications on corporate identity, branding and communications audio branding is not even mentioned.

2 Terminology in audio branding: jingle vs audio logo

In literature about audio branding, short sequences of 3 or 4 notes (Jackson 2003, p.9) or simple "atonal" sounds (see Pakditawan 2003, p.2) are often referred to as "audio logos" whereas melodic sequences or tunes containing text passages are called "jingles". Other definitions point out that a jingle puts a brand name or a slogan into music (Steiner 2009,

p.42f), so that an entire melodic phrase works as a cue for the recall of a verbal message (see Anzenbacher 2012, p.106).

Due to the richness of musical and textual design options the distinction between audio logo and jingle remains arbitrary. As an example, one of Germany´s most famous audio logos (owned by telephone network provider *Deutsche Telekom*) is a short staccato sequence of five notes lasting 0.8 seconds. Yet, the notes "c-c-c-e-c" can also be understood to mean "Deutsche-Te-le-kom". Accordingly, this audio logo works as a cue to memorise the brand name, i.e., as a jingle.

Since graphical logos and brand icons are not being classified by their mere seize either, length is not a useful distinctive criterion to separate audio logos from jingles. Henceforth in this paper, the term *audio logo* will be used regardless of its length (see Bartlett and Snelus 1980) and whether it has a textual base – be it a slogan or just the brand name. However, we distinguish audio logos from mere background music, which is played permanently during the spot to create a certain atmosphere.

3 Research hypotheses

Due to empirical evidence, audio branding affects the consumer´s brand reception. Audio logos and jingles can work as a mnemonic device (Yalch 1991, Wallace 1991) to help remember the brand name. Hearing an instrumental version of an audio logo, can cause the listeners to sing or hum along the jingle internally and thus "reconstruct" the text if there is any (Roehm 2001).

Using music as an unconditioned stimulus connected with a certain brand or product shows controversal results: Gorn 1982 found a positive effect, whilst Pitt & Abratt 1988, Kellaris and Cox 1989, Vermeulen & Beukeboom 2016 could not back up this results.

Beyond a possible usage for conditioning the power of music to change the emotional settings of the listeners is also important to marketers. Sound designers tend to evoke certain emotions which correspond fittingly to the brand.

All means of corporate communication are supposed to fit together and match the brand. The same applies for the audio logo, since a good perceived fit between brand and audio logo results in better brand awareness (McInnis and Park 1991). Music genres evoke certain

associations: Classical music stands for prestige and seriousness, jazz stands for coolness and easiness etc. (Shuv-Amy, Shelleg 2005). Areni and Kim (1993) found that classical music played in a wine store increased the purchase of high quality products. Similarly, french songs played in a wine store enhanced the purchase of french wines (North, Hargreaves, McKendrick 1999). Based on such findings we have the following hypothesis:

H 1: The higher the perceived fit between brand and audio branding the better the recall of the brandname.

Personal traits define the consumer´s attitude, cognition and behaviour. Since consumers can be described by socio-demographic, psychographic and behavioral criteria (Steffenhagen 1994, Kapferer 2008), for each of these three groups of predictors the coherences with the recall of audio logos was tested.

Gorn et al. (1991) found a positive effect on attitude at people of a higher age, especially when factual information and music are being used. Looking at the elderly sample the influence of the factual information dominated the scene over the musical stimuli.

Assuming that recall is a prerequisite of any advertising effect it has to be examined to what extend audio logos will be "saved" in the mind of the consumer. Depending on age two effects are plausible: On the one hand older persons have had more contacts in the past with advertising which enhances recall, on the other hand older persons have a reduced interest in advertising and a decline of recall can be assumed. The current paper focusses on the second effect since current advertising commonly targets younger focus groups with content and placement. We thus expect:

H2.1: Increasing age leads to a decreasing recall of audio branding.

The consumer´s musicality is a virtually neglected psychographic criterion in literature of consumer behavior. Krishnan, Kellaris, Aurand (2014) report some empirical evidence and claim that musicality must be taken into account when analyzing effects of audio branding. We therefore propose the following hypothesis:

H2.2: A higher musicality of the listener results in a better recall of audio brandings.

High involvement empirically correlates with a profound knowledge about the product and an extended search for information (Mitchell 1979). Involvement moderates the influence of

music on brand attitude and buying intention (Park and Young 1986). Background music shows higher effects when cognitive involvement is low. The current paper deals with the coherence of involvement and the recall of audio logos. Since high involvement results in a high attention towards product information and in a high individual importance of a product type we assume that it also influences recall positively:

H2.3: The higher the involvement towards a product type the better the recall of the audio branding.

Long term tests show that recall towards a brand increases with a growing amount of contacts with auditory stimuli (Stewart, Farmer, Stannard 1990, Yalch 1991). Initially the audio message needs a certain time and several exposures until it will be associated with the product in the consumer´s mind. From that moment on the audio message remains present on quite a high level of awareness for a long time. Since advertising contacts result from the individual use of media, we conclude:

H2.4: Increasing use of media helps increase the recall of audio brandings.

4 Method

4.1 Subjects

The study was conducted in 2015 as an online survey within a time frame of eight weeks. Test persons were asked to make sure that their surrounding is apt to music being played and that their audio playing devices are activated. 208 subjects were picked as a convenience sample. Invitations to join the survey were sent through social media, thus reaching merely younger people. In addition to that test persons from the age group above the age of 40 were interviewed face to face, presenting the stimuli by using a laptop and portable loudspeakers.

A fixed-ratio schedule made sure that the sample contains sufficient test persons per age group and gender, resulting in 113 female (54.3%) and 95 male (45.7%) respondents. Since advertising focuses mainly on people between 20 and 50 years of age, participants of this age group take the lion´s share in the sample (median age= 25 years). In a pretest eight audio logos were picked from different brands varying in product types and fulfilling the claimed prerequisites of successful branding (see Steiner 2009, pp. 39-42, Kellaris et al.1993).

4.2 Stimuli

From these eight audio logos (see table 1) four were picked to test the unaided recall and the other four were used to test aided recall. Of course all audio logos were played in an instrumental version to not give any verbal hints about the brand name. The audio logos of following brands were used as stimuli for aided recall: RTL (TV broadcasting station), Deutsche Telekom (telephone company), Sparkasse (bank) Haribo (producer gummy bears). For the unaided recall we used the audio logos of Actimel (drink yoghurt), Mc Donald´s (fast food restaurant), Calgon (descaling agent), and Audi (automobile).

4.3 Measurements

The success of audio branding was measured by the recall of the audio logos by the consumer. Unaided recall and aided recall were examined differently. To measure aided recall, the listeners were asked to write down the brand name of four brand´s audio logos, which were played to them separately. After that the participants were informed about the brand names the audio logos belong to. The answers were checked and scaled as follows: 0 = no/incorrect memory, 1 = partially correct answer (e.g. product branch correct, but wrong brand), 2 = totally correct answer. For measuring unaided recall test persons were asked whether they remember the audio logo of four different brands. After eight seconds the audio logo was played and the listeners had to decide whether the audio logo fits the one they have had in mind. Possible answers were “yes” (coded 2) and no (coded 0). In our study, the means of aided recall (M = 1.63, SD = .76) and unaided recall (M = 1.15, M = .99) differ significantly ($t = -11.26$, $df = 1662$, $p < .0001$).

Aditionally, a *dual coded memory* variable was created with all correct answers (from both aided an unaided recall) coded 1 and all partially or fully incorrect answers coded 0. Thus, 1146 of 1664 answers (68,9 percent) are found to be fully correct (M = .69, SD = .463). This binary variable is used later for logistic regression in order to test the influence of several predictors on memory.

The item *fit between brand and audio branding* was measured on a six point scale by self evaluation, anchored 1 = the highest score, 6 = the lowest. This kind of grading is based on the German school marking system (mark 1 equals an A, mark 6 equals an F in American grading system). We used this scale in order to simplify the task for subjects, since everybody

is familiar with this type of ranking. To not falsely interpret results of the analysis of means it must be kept in mind that a smaller number represents actually a higher value and vice versa. Therefore we inverted all scales where fit was measured in order to get positive instead of negative correlations and thus avoiding misinterpretations.

In addition to that *product involvement* was measured by the single item "importance of product". A more elaborate measuring of involvement (see Zaichkowsky 1985) was renounced in order to keep the questionnaire short. Intentionally *brand* involvement was left out because positive involvement towards a product may be in conflict to single brands used in our study.

The personal traits like *musicality* and *intensities of media use* were measured in a self-evaluating way on a scale ranging from 1 to 10, 1 for the lowest and 10 for the highest value. An *overall intensity media use* index variable was created by computing the mean of the three intensities of TV, radio and online media use.

For further tests the dataset was restructured in that way that each of the eight brands is treated as a single observation. Thus the data matrix of 208 cases now yields 1664 observations. In order to split the dataset by brand or type of memory two new variables were added so that evaluations can be done according to brand and type of memory. Restructuring the dataset is based upon the plausible assumption that every test person has a different memory for each audio logo. The restructuring keeps the dataset´s variances of each audio logo, whereas computing of two sum indices over four brands would have equalised the variance of answers.

We performed several post tests to examine to which extent each of the eight brands contributes to the overall findings. The outcomes proved to consistent for all eight brands.

5 Results

H1 postulates a positive effect concerning the *fit between brand and audiobranding* and memory. The results support the hypothesis. Parametric correlation between *fit brand-audio logo* and overall memory is rho = .312, $p < .001$. Checking for both the types of memory separately we yield a rho = .290, $p < .001$ for the unaided and a rho = .312, $p < .001$ for the aided recall. Table 1 shows the mean of *fit brand-audio logo* for each brand.

H2.1 deals with the influence of individual age on memory. We found that age correlates negatively for both the types of memories (rho = -.169, $p < .001$), with unaided recall rho = -.123, $p < .001$ and aided recall rho = -.242, $p < .001$. Obviously decreasing interest and memory overcompensate the fact that older people had more chances to get in touch with advertising over time. As a result, the recall of audio logos slightly but significantly declines with increasing age. Therefore, the hypothesis must be accepted.

Furthermore an independent samples t-test was conducted to check for a possible effect of gender on memory of audio logos. We found that there is no significant difference in memory depending on gender (M_{male} = 1.36, SD = .93 and M_{female} = 1.41. SD = .90, t = -1.21, df = 1662, p = .228).

Tab. 1: means of recall and fit brand-audio logo by brand

Type of memory	Brand	Recall of audio logo		Fit brand – audio logo (recoded: 1 Min.; 6 Max.)	
		M	SD	M	SD
Aided	RTL	1.49	.84	**4.24**	**1.19**
	Telekom	1.78	.62	**4.66**	**1.17**
	Sparkasse	1.46	.87	**4.34**	**1.14**
	Haribo	1.80	.59	**4.99**	**1.17**
	Total aided	1.63	.76	**4.56**	**1.20**
Unaided	Actimel	.62	.93	**3.80**	**1.19**
	McDonald´s	1.33	.95	**4.29**	**1.29**
	Calgon	1.46	.89	**4.73**	**1.11**
	Audi	1.18	.99	**4.38**	**1.51**
	Total unaided	1.15	.99	**4.30**	**1.32**
Memory Total	Total	1.39	.91	**4.43**	**1.27**

H2.2 assumes that musicality can be seen as a personal relevant trait which correlates positively with the recall of the audio branding. In our study, the coherence between musicality and memory is rather weak though highly significant (rho = .081, $p < .001$). An R^2 below 0.01 shows that less than 1 percent of memory´s variance is explained by musicality. Weak correlations should not surprise us because there are plenty of other determinants of recall, as shown above. Significance could be found as well for unaided (rho = .069, $p < .05$) as for aided (rho = .104, $p < .01$) recall. Summing it up, H2.2 cannot be rejected.

Additional analyses found that age has no moderating role for the coherence between musicality and memory. Pearson´s r between musicality and age yields only .008, $p = .742$. It is also worth mentioning that the perceived *fit between brand-audio logo* does not show a coherence with musicality at all (r = .019, $p = .450$). Altogether, these findings indicate that consumer´s musicality is an autonomous though weak personal-related predictor for the recall of audio brandings.

H2.3 deals with the coherence between *product involvement* and recall of audio brandings. Again, we find weak but significant correlations between product involvement and both the types of recall: unaided (rho = .119, $p < .001$) and aided (rho = .157, $p < .001$). The results support the hypothesis, although it seems surprising that involvement which is considered a major construct in marketing research does not show higher relevance for the memorization of audio brandings.

H2.4 considers media use as an indicator of consumers´ real behavior. We assumed that with an increasing media use consumers will be given more chances to get in touch with audio logos which lets us thus expect better results in memory. Once again, coherence between media use and recall of the audio logo is weak but highly significant with rho = .165, $p < .001$ for aided and rho = .108, $p < .01$ for unaided recall, resulting in an overall rho = .127, $p < .001$ for both the types of memory. Since intensity of media usage depends on age (r = -.336, $p < .001$) a partial correlation between intensity of media usage and memory was conducted controlling for respondent´s age. Thus the correlation between media usage and recall of the audio logos decreases from r = .128 to r = .070, but still remains significant ($p < .01$), supporting our hypothesis.

Additionally to the above testing of single hypotheses it is of interest to examine the joint influence of all mentioned product-related and personal-related predictors on consumer´s memory of the audio logos. We computed a stepwise multiple logistic regression, using the *dual coded memory* variable as the dependent. Before that the five predictor variables were standardised using z-transformation to get more symmetric distributions of all indicators.

Four out of the five criteria used in this study were proven highly significant (p <.001) predictors for recall of audio logos and entered the equation during stepwise regression. To estimate the contribution of each item it makes sense to look at the regression coefficient Beta (see table 2). Based upon our survey data we find in step 4 of the analysis, that the predictor *fit brand-audio logo* shows the biggest influence (Beta = .592), followed by *product involvement* (Beta = .123), *musicality* (Beta = .084) and *age* (Beta = -.027). Once again, musicality proves itself a weak but significant predictor.

Table 2: Influence of predictors on recall of audio logo, stepwise logistic regression

Steps and variables in the equation		Regression coefficient Beta	standard error	Wald	df	sig.	Exp (B)
1	Fit brand-audio logo	.670	.057	140.140	1	.000	1.953
	Constant	.863	.057	232,946	1	.000	2.370
2	Fit brand – audio logo	.613	.058	112.716	1	.000	1.845
	Product involvement	.122	.019	40.128	1	.000	1.130
	Constant	,179	.119	2.257	1	.133	1.196
3	Fit brand-audio logo	.585	.058	100.107	1	.000	1.794
	Product involvement	.124	.020	40.003	1	.000	1.132
	Age	-.027	.005	34.888	1	.000	.973
	Constant	.972	.180	29.196	1	.000	2.643
4	Fit brand-audio logo	.592	.059	102.239	1	.000	1.808
	Product involvement	.123	.020	39.514	1	.000	1.131
	Age	-.027	.005	35.277	1	.000	.973
	Musicality	.084	.023	12.795	1	.000	1.087
	Constant	.460	.228	4.061	1	.044	1.584

The total model shows four predictors contributing relevantly to the dependent variable *recall*, with Cox & Snell´s R^2 = .136 and Nagelkerke´s Pseudo R^2 = .191 respectively (see table 3). Whereas the variable *fit brand-audio logo* seems to be the most important predictor of recall, it can be observed that adding the item *product involvement* in step 2 leads to the relatively biggest further increase in R^2. Other analyses (not reported here) confirm these findings to be stable within our data set.

Table 3: Logistic regression stepwise, model summary
Dependend: Recall of audio logo (dual coded memory)

Step	-2 Log-Likelihood	Cox & Snell statistics		Nagelkerke statistics	
		R^2	Increase of R^2	R^2	Increase of R^2
1	1909.756 [a]	.088		.124	
2	1868.969 [a]	.110	+ .022	.155	+ .031
3	1833.791 [a]	.129	+ .019	.182	+ .027
4	1820.976 [a]	.136	+ .007	.191	+ .009

[a] Estimation terminated after iteration no. 4

6 Discussion

Our data support some common hypotheses on influencing factors of the success of audio branding, measured in our paper by recall of audio logos. Examining single hypotheses for the brand-related predictors we find that the *fit brand-audio logo* correlates on a highly significant level with recall and shows the strongest influence in the regression model. *Product involvement*, which calls for attention in both fields of research and applied marketing, weakly but significantly fosters the recall of the audio logo. It seems surprising that product involvement does not account for a bigger share of memory´s variance, but one has to bear in mind that we intentionally measured product involvement instead of the more specific brand involvement. Still, looking at the results of the multiple regression analysis we find that product involvement has the second highest predictive contribution of all retained components

for the recall. Referring to the influences of individual predispositions towards the recall of audio branding, the study used sociodemographic (age, musicality), psychographic (product involvement, fit between brand and audio logo) and behavioral traits (usage of media) as independent variables.

All single correlations between the five predictors tested and the consumer´s memory are weak but highly significant and consistent over the eight brands examined.

A logistic regression analysis reveals that, ranked by their importance, mainly the *fit between brand-audio logo* is significantly correlated with the recall, followed by *product involvement, musicality* and *consumer´s age.* The media usage does not play a significant role in this regression model.

Our study is based upon the perception and memorization of the audio logos of eight well-known brands. The stimuli were chosen carefully to meet the needs for a catchy audio logo. It can be assumed that audio logos which do not fulfill these requirements will cause less significant effects. Although the effects on the eight audio logos from this study are consistent, we believe that the results of audio brandings´ effects depend heavily on the way of musical implementation. Situational effects caused by actual musical design could not be put to the test in our study. Nonetheless, it is worth noting that consumer´s musicality proved to be slightly relevant for the memorization of an audio logo. Such personal-related traits have only been marginally considered so far. Further research is needed to investigate potential effects of other sociodemographic, psychographic and behavioral traits of the consumer on the memory of audio logos.

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