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The influence of musical rhythms on consumer buyer behavior of retail gadget products

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Abstract

This research is focused on highlighting musical rhythm differences in gadget detail recognition after exposure to a visual presentation with a musical background and represents the second stage of a three part research study applied on the same participants. Method: Participants were 60 undergraduate students' age between 20 and 24 years old from the Faculty of Psychology and Educational Sciences, University of Bucharest. Materials were images and possible prices of eight gadget products. The instrument was a questionnaire investigating the prices related to each gadget product image. Results highlighted no musical rhythm differences in gadget detail recognition.

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Keywords: rapid musical rhythm, slow musical rhythm, gadget products, control group;

1. Theoretical framework

An important chain in consumer buyer behavior consists in understanding and perceiving the product. Marketing policies in our day are based on the psychological study of perception, decision, memory and emotions.

The reaction mechanism for a conditional evaluation of music is slightly different than classical conditioning. For instance, listening to a melody can provoke an emotional response even if the subject does not remember the experience that conditioned him in the first place (Field & Moore, 2005). De Houwer et al. (2005), showed that, if the subject becomes attentive and analyzes what he hears, the intensity of the conditioning will decrease. LeDoux (2002) has demonstrated that a conditional evaluation endures longer than classical conditioning. Moreover, Balleine & Killcross (2006) have shown that this

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type of conditioned response is influenced by unconscious, involuntary mental processes that take place in the cerebral subcortical regions, such as the amygdala or the cerebellum.

Juslin and Västfjäll (2008) highlighted the emotional contagion and explained it represents what happens when the subject receives the music's emotional message and then "imitates" this emotion, letting himself be driven by the composer's intent. For instance, a sorrowful melodic line (slow rhythm, grave tone) may sadden the listener, while a happy one (rapid rhythm, sprightly) may cheer him (Kallinen & Ravaja, 2006). But not all the criteria by which music is evaluated are strictly related to the composer's intent. Often enough, musical stimuli are appreciated by social standards, external to the individual, such as social norms or unanimously accepted cultural values. In these cases, the listener tends to emotionally react in accordance with the expectations of the group he is part of.

Conway & Rubin (1993) observed that listening to music that was popular during an individual's youth, more exactly between 16 and 25 years of age, causes more intense emotions than any subsequent melodies and that happens because the defining experiences for any individual occur during this time period. Schulkind et al. (1999) proved that adults show better recall abilities, have stronger emotional reactions and prefer music that they listened to in their youth.

2. Objectives and hypotheses

2.1. Objectives

- To evidence that a certain musical rhythm may relate a gadget product to a specific price.
- To establish which musical type, rapid musical rhythm or slow musical rhythm, is more efficient in determining a correct recall of the presented products.

2.2. Hypotheses

- Melodies with slow musical rhythm are more efficient than those with rapid rhythm for the online commercial medium, in the sense that they determine the subjects to memorize more information, by a statistically significant margin, about every product seen while listening to such music.

3. Method

3.1. Participants

Participants were 60 undergraduate students' aged between 20 and 24 years old, from the Faculty of Psychology and Educational Sciences, University of Bucharest.

3.2. Materials and instruments

Materials were the images and possible prices of gadget products. The instrument was a questionnaire investigating the prices related each gadget product.

3.3. Procedure

The participants were divided into three equal groups according to the music they would listen to: a rapid rhythm group, a slow rhythm group and the control group (no music). They were then shown a

slideshow containing pictures of the gadget products along with a brief description and an estimated price. After the viewing, the subjects were given the questionnaire.

3.4. Experimental design

The independent variable was the musical rhythm on two levels. The musical rhythms were: slow music and rapid musical rhythm. The control group was not exposed to music during the PowerPoint slides or while answering the questionnaire. The experimental groups were exposed to the two musical rhythms used.

4. Results

The Kolmogorov – Smirnov test was also applied for each of the three groups separately in order to obtain better precision. For the control group the results are presented in table 14, for the slow rhythm music group in table 15 and for the rapid rhythm music group in table 16.

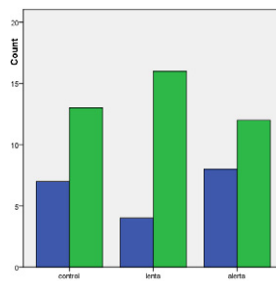


Figure 1. Bar chart with correct (green) and incorrect (blue) answers for all three groups

Analyzing the results for the first question, $p = 0.367 > 0.05$, it is concluded that the frequency of the correct answers within this group is not different by a statistically significant margin from the overall mean. Representing these results graphically (see figure 1), using green for the correct answers and blue for the incorrect ones, similar distributions between the groups can be observed, even though the slow rhythm group clearly has a large number of correct answers.

In the second question’s case, after applying the Chi-Square association test, no musical rhythm differences proved to be statistically significant ($p = 0.092 > 0.05$).

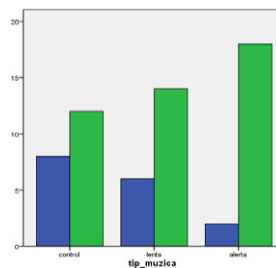


Figure 2. Bar chart with correct (green) and incorrect (blue) answers for question nr. 2 for all three groups

By analyzing the answers for the other six questions according to the musical rhythm differences, upon applying the Chi-Square test, no statistically significant differences were observed ($p > 0.05$), even though there are some differences between the number of correct and incorrect answers.

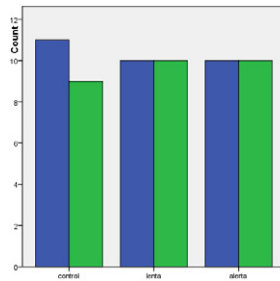


Figure 3. Bar chart with correct (green) and incorrect (blue) answers for question nr. 3 for all three groups

Question nr. 3 can be considered a special case, as the three groups had almost identical answers, which is illustrated by figure 29 and $p = 0.935 > 0.05$. As the p-value is nearly 1, the chance that the differences between the answers are not related to musical rhythm is very high.

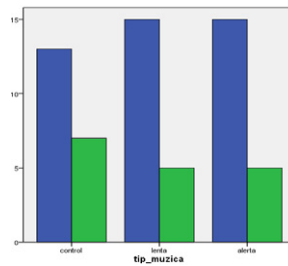


Figure 4. Bar chart with correct (green) and incorrect (blue) answers for question nr. 4 for all three groups

The p-value for the fourth question (figure 4) does not suggest any significant differences between the frequency of correct answers and the corresponding general mean value. The groups answered incorrectly in a uniform manner.

Table 1. Correct answers to question nr. 5

			How many of these products would you buy?				Total
			none	2 - 3	5 - 6	all	
control	obtained		4	13	2	1	20
	expected		1.3	15	1.3	2.3	20
musical type	slow	obtained	0	15	1	4	20
		expected	1.3	15	1.3	2.3	20
	rapid	obtained	0	17	1	2	20
		expected	1.3	15	1.3	2.3	20

Question nr. 5 does not have a correct answer, it instead illustrates the subject’s willingness to buy in order to compensate for the fact that this research took place within a laboratory , hence the participants could not actually express their desire purchase the products.

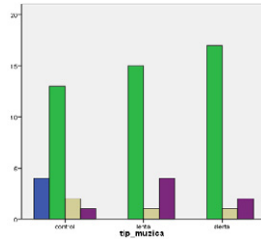


Figure 5. Bar chart with the 4 alternative answers to question nr.5 for all three groups

In order to obtain significant results for this question, the analysis implied a Chi-squared test that took into account all four possible answers. The majority of subjects from all groups chose the “2 - 3” option, represented with green in figure 5. The beige colour illustrates the “5 - 6” option, while purple represents the “all” option. An interesting observation is that the only group to choose the “none” option, represented in blue, was the control group, that did not listen to any music, no individual from the other two groups manifesting a clear rejection of all products.

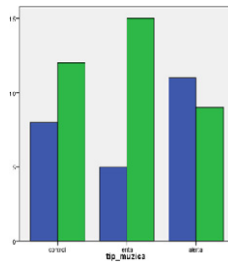


Figure 6. Bar chart with correct (green) and incorrect (blue) answers for question nr.6 for all three groups

The p-value for question nr. 6, $p = 0.153 > 0.05$, suggests that the frequency of the correct answer was not sufficiently enough different from the general mean value in order to be considered statistically significant. However, as can be seen in figure 6, the rapid musical rhythm group had more incorrect answers than correct ones, which differentiates it from the other two groups.

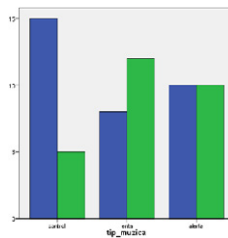


Figure 7. Bar chart with correct (green) and incorrect (blue) answers for question nr.7 for all three groups

The Chi-squared test data for question nr. 7, $p = 0.072 > 0.05$, shows that, although the frequency of correct answers is considerably different from the general mean value, the results cannot be considered statistically significant.

For the last question the p-value was $p = 0.817 > 0.05$ which suggests that the differences observed between the correct answers and the general mean value cannot be considered statistically significant because the number of correct answers does not sufficiently differ from the incorrect ones.

5. Conclusions

Producers and retail sellers should relate musical rhythms with various sorts of products and associate a certain price only after conducting a survey on potential customers regarding the products.

This research attempted to highlight a possible connection between background musical rhythm and consumer buying behavior in online shops by measuring gadget detail recognition after exposure to a visual presentation with a musical background and to establish which musical type, rapid musical rhythm or slow musical rhythm, is more efficient in determining a correct recall of the presented products. The obtained results reveal that there are no musical rhythm differences in gadget detail recognition. Yet, it could be taken into consideration the irrational behavior under music influence (Vasile, 2012). However, as the study had a very small number of subjects and the questionnaire had only 8 items, it is quite possible that a new study, based on a larger number of questions and applied a wider range of subjects, would have significantly different results.

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