

The Role of Car Aesthetics on Consumers' Decisions: An Example from Romania

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Abstract

Visual impact is essential when consumers are assessing car preferences. The purpose of this paper is to present a holistic model focusing on car aesthetic dimensions and its impact on consumers' purchase decisions. Our findings are based on a questionnaire completed by 388 participants and analyzed with SPSS and AMOS. The results show not only that the aesthetic dimensions such as color, shape and sound influence the processing stimuli, but also the significant and positive relationships established between the stimuli and the purchase decision. Also, this study can guide marketers when developing an effective marketing strategy. As our research focuses on the Romanian market, testing our framework in different cultures is strongly encouraged.

Keywords: aesthetics; consumer behavior; automotive market; visual perception; competitive advantage.

JEL classification: M31; M21.

1. INTRODUCTION

Differentiation among brands has increasingly become a battlefield of aesthetics. Car manufacturers have been increasingly aware that the consumers' visual perception is vital for the decision making process. Hence, the efforts of the marketing team should be focused on the appearance of cars. As Crilly et al. (2004) stated, the aesthetics could be "the star" concept for implementing a successful marketing strategy. Living in a multi-sensorial world, the consumers' initial evaluation of the product is successful or not in terms of aesthetics. This first experience is given by the holistic experience of color, shape, sound and texture

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(Lindstrom, 2009; Norman, 2005). Moreover, these attributes are also related to the sensory brand experience (Fenko et al., 2010; Hulten, 2011), which provide managers with supportive techniques for building brand equity (Hepola et al., 2017).

Whether focusing on color, shape, texture or sound, consumers need to establish direct “eye” contact with the product. The visual style of the car also could entail several dimensions for consumers: (1) a symbolic value (Muller, 2001; Schmitt and Simonson, 1997); (2) a utilitarian value (Bloch et al., 2003; Dawar and Parker, 1994; Franke and Schreier, 2008; Lageat et al., 2003); (3) an ergonomic value (March, 1994; Veryzer, 1995); (4) an attention grabber (Garber, 1995; Garber et al., 2000); (5) an instrument for categorization (Bloch, 1995; Garber, 1995; Veryzer, 1995); and (6) a communication tool (Creusen and Schoormans, 2005; McCracken and Macklin, 1998; Petkus et al., 2011; Schmitt and Simonson, 1997).

Recent findings that consumers prefer prototypical aesthetic designs call for further research because they contradict subjective evidence that consumers prefer attractive and differentiated product aesthetics (Liu et al., 2017). Overall, the visual impact is vital when consumers evaluate their preferences for cars (Hyun et al., 2017). Sensorial elements, in addition to aesthetics, include diverse attributes such as sound, texture, and temperature. We aim to analyze the impact of sensorial elements (i.e., visuals, sound and texture) on consumer perception (Page and Herr, 2002). Accordingly, this research seeks to shed some light into consumers preferences regarding car aesthetics.

2. THEORETICAL BACKGROUND

There is a plethora of studies on consumer perceptions focusing on aesthetics (Bloch et al., 2003; Creusen and Schoormans, 2005; Hoyer and Stokburger-Sauer, 2012; J. Landwehr et al., 2013; J. R. Landwehr et al., 2013; Veryzer and Hutchinson, 1998). Specifically, prior studies that focus on the consumer’s decision highlight the need for further research regarding the purchase process (Baisya and Das, 2008; Kreuzbauer and Malter, 2005; Malhotra et al., 2012; Ranscombe et al., 2012; Ridgway et al., 1990).

Aesthetics have received attention from researchers in determining the nature of the relationships that can be established between aesthetics and specific processing stimuli. Hoegg and Alba (2011) investigated consumer’s perception of performance and quality regarding aesthetics. Reimann et al. (2010) analyzed how aesthetic packaging design can accelerate reaction time, Orth et al. (2010) evaluated how aesthetic wine bottles affect price expectations, and Luchs et al. (2012) studied the ways in which the appearance of shoes and phones helps consumers in the process of categorization. Moreover, Creusen and Schoormans (2005) found out that an answering machine appearance also helped the categorization process, while Kreuzbauer and Malter (2005) concluded that the shape of motorcycles influenced brand perception and created a positive product image in consumer’s mind. Bloch et al. (2003), using examples of toasters and digital bathroom scales, showed the impact of product aesthetics upon an individual’s willingness to pay. However, none of these studies are analyzing each aesthetic dimension. They are either presenting aesthetics as a whole concept or they are considering only one of its dimensions (e.g., visual style).

Visual appeal helps products gaining recognition (Bloch, 1995; Schmitt and Simonson, 1997). Chattaraman et al. (2016) give insights on how aesthetics impact purchase decision

by “arousing” emotions. Bloch (1995) found that form relates to behavioral responses. Reimann et al. (2010) emphasized that an aesthetic design increases the reaction time when taking the buying decision. Similarly, Townsend and Shu (2010) showed the robust impact of aesthetics in the decision making process. In addition, Orth et al. (2010) identifies the need of analyzing the nature of the relationship that can be established between price expectation and decision making.

Research conducted about consumer perception is analyzing both the objective and subjective form of this concept (Charters, 2006; Gronow, 1997; Hoyer and Stokburger-Sauer, 2012; Wang et al., 2013; Zeithaml, 1988). Moreover, as this approach is based on the consumer’s aesthetic preferences and experience, researchers have developed tools and indicators that measure the consumer’s aesthetic preferences, such as: Centrality of Visual Product Aesthetics (CVPA) (Bloch et al., 2003), Meier Art Tests, Visual Aesthetic Sensitivity Test, Aesthetic Judgment Ability Test (Hoyer and Stokburger-Sauer, 2012), Thomdike’s Test for Aesthetic Appreciation, and the Child Test of Esthetic Sensitivity (Bloch et al., 2003). However, it is a well-established fact in the literature that consumers perceive aesthetics as an important criteria when choosing between alternatives.

In the existing literature, there are three essential models to measure the impact of aesthetics. First, “A Model of Consumer Responses to Product Form” (Bloch et al., 2003), emphasizes how the shape of a product can impact consumers’ behavioral and psychological responses. Second, “Aesthetic Evaluation Model” (Ward, 2010) uses the model established by Bloch et al. (2003) as a starting reference and investigates the elements that consumers consider when making an aesthetic evaluation and how the evaluations are created. Third, “The Effects of Aesthetic Stimuli” created by Wang et al. (2013) is founded on the SOR model. Based on these three models, Tarta et al. (2015) created an overarching theoretical model for evaluating aesthetics in the automotive industry. This model uses an innovative approach on both cognitive and affective ways of processing the stimuli. In this paper we seek to empirically test the aforementioned model in the Romanian context. Moreover, we also aim to analyze the relation between each stimuli and the subsequent buying decision.

Yadav et al. (2013) studied the prioritization of aesthetics attributes of cars. They analyzed twelve aesthetics attributes and found four of them to be more salient (i.e., elegant, family-feeling, modern, youthful). In comparison with Bloch et al. (2003), Ward (2010), Wang et al. (2013), and Yadav et al. (2013) models, Tarta et al. (2015) model includes all the processing stimuli identified in the literature (Bloch et al., 2003; Creusen and Schoormans, 2005; Hoegg and Alba, 2011; Kreuzbauer and Malter, 2005; Luchs et al., 2012; Orth et al., 2010; Reimann et al., 2010). Accordingly, the model addresses both the buying response and the processing stimuli of consumers. Additionally, other unique aspects of this new model are emphasized next: (1) splitting aesthetics by its dimensions, adding other aesthetic items, specific to the automotive industry, and validating them through qualitative research based on interviews (Tarta and Plaias, 2015); (2) the processing stage was analyzed in-depth, by evaluating each stimuli encountered in literature and tested until now for other fields outside of the automotive market and also identifying if there is or not a grouping of all the stimuli in different dimensions. All these factors could provide pertinent insights on how the aesthetics of a car can influence consumer buying decisions.

We believe that, by integrating previous models on aesthetics and grouping them in one model, we contribute significantly to the literature. Our research is exploratory and it is based on the theoretical model developed by Tarta et al. (2015). This model will help

companies to better understand consumers preferences regarding car aesthetics, thus developing a more efficient marketing strategy.

3. METHODOLOGY

A quantitative approach was used to our exploratory research. A questionnaire was given to both online (80%) and offline (20%) participants. To complete the questionnaire, the respondents had to meet one criterion – they had to have purchased at least one car in the last 5 years. Although this might seem a long period of time, cars could be considered durable goods. The size of the sample was chosen based on studies conducted by other researchers that have analyzed this topic (e.g., [Creusen and Schoormans, 2005](#); [Hoegg and Alba, 2011](#); [Luchs et al., 2012](#); [Malhotra et al., 2012](#); [Orth et al., 2010](#); [Reimann et al., 2010](#)). Initially, 415 responses were collected, but only 388 were considered valid. Through the collecting process, we tried to maintain homogeneity on gender; accordingly, after eliminating the questionnaires that were not 100% accurate, we were left with the responses of 195 women and 193 men. The sample of Romanians was characterized according to the following demographics: 68% aged between 26-35 years old, 17% between 18 and 25 years old and for the other 3 categories (older than 35 years) the percent was less than 10%. The standard deviation was 0.809. Moreover, the respondents varied by education level, income and marital status. Lastly, we asked how our respondents valued aesthetics when purchasing a vehicle. Consistent with the existing literature (e.g., [Baisya and Das, 2008](#); [Malhotra et al., 2012](#)), the questionnaire participants ranked the importance of aesthetics second place after utility.

As this was the first time the model was tested with this configuration, we evaluated what methods the researchers above chose to use in their studies. Accordingly, the overview reflects the following measures: 1-5, 1-7, 0-10, and 0-100 scales. As the literature shows, the recommendation is to have just one scale in the questionnaire (as it is easier for the participants). Therefore, we used the 5-point Likert scale. We based our choice on [Baisya and Das \(2008\)](#) and [Malhotra et al. \(2012\)](#) previous works, which played a major influence in developing our model; Also, a 1-5 point Likert scale would be best tailored to the consumer comparison from a statistical point of view, as opposed to a broader scale that would complicate the evaluation and eventually lead to more errors ([Krosnick and Presser, 2010](#); [Revilla et al., 2014](#)).

4. RESULTS

The statistical packages used to test and validate the hypotheses were IBM SPSS 20 and AMOS 24. As the proposed model was never tested previously in this form, the questions had to be adapted. First, we checked the reliability of the scales used in the questionnaire. Accordingly, we analyzed Cronbach's Alpha index and "Corrected Item – Total Correlation" values for each item. These types of tests were run for the following two concepts: aesthetics and processing stimuli. Moreover, as they were composed of many items, we carried out a factor analysis.

The aesthetics concept included the following factors: exterior color of the car, interior color of the car, color of the board, color of the chairs, color of the rims, shape of the car, shape of the rims, shape of the lights, shape of the steering wheel, shape of the chairs, shape of the gear stick, texture of the chairs, texture of the board, texture of the rims, sound of the

engine, sound of the doors, and the sound of the audio system. For all of these factors, the Cronbach's Alpha index was 0.902. The next step was to check the KMO coefficient to see if we could run a factor analysis. The value was 0.887, which allowed for a continuation of the analysis. By using a Varimax rotation – chosen based on the [Field \(2009\)](#) and [Hair et al. \(2010\)](#) recommendations –, we end up with 5 final variables which were labeled: "Color," "Shape of the exterior," "Shape of the interior", "Sound" and "Texture" based on the grouping used by [Schmitt and Simonson \(2002\)](#), which scored a final Cronbach's Alpha of 0.893. These five newly formed components include the following items: (1) Color: exterior color of the car, interior color of the car, color of the board, color of the chairs; (2) Shape of the exterior: shape of the car, shape of the rims, shape of the lights; (3) Shape of the interior: shape of the steering wheel, shape of the chairs, shape of the gear stick; (4) Sound: sound of the engine, sound of the doors and sound of the audio system; and (5) Texture: texture of the chairs, texture of the board, texture of the rims.

Starting with [Bloch \(1995\)](#) study, in which he is grouping 'perception of quality' and 'perception of performance' in one dimension, we considered important to check if a grouping can be identify also in this case. Accordingly, the same statistical procedure as for aesthetics was followed for the concept of processing stimuli. Cronbach's Alpha value was 0.863, while all the values that resulted from the "Communalities Matrix" were higher than 0.61 and the KMO value was 0.867. None of the initial items were excluded. After running the factor analysis, three dimensions were created: (1) Time_Price: price expectations, higher prices paid, instant desire, reaction time; (2) Image: positive image, brand, alternatives; and (3) Characteristics: perception of quality, perception of performance.

The next step was validating the measurement model (in AMOS). For this purpose, we evaluate the CR and AVE coefficients provided by the tool offered by [Gaskin \(2012\)](#). The first results are presented in [Table no. 1](#). Here, the AVE loading for preferences is too low.

Table no. 1 – Measurement Model – CR & AVE indices (1)

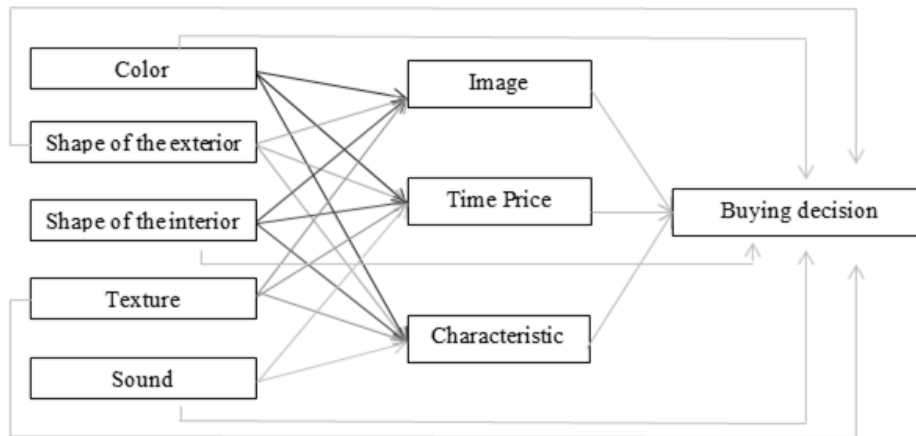
	CR	AVE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Time_price	0.804	0.509	0.713							
(2) Color	0.882	0.654	0.237	0.809						
(3) Shape of exterior	0.776	0.541	0.351	0.624	0.736					
(4) Shape of interior	0.844	0.643	0.349	0.660	0.659	0.802				
(5) Texture	0.801	0.574	0.291	0.619	0.677	0.742	0.757			
(6) Sound	0.836	0.630	0.271	0.085	0.182	0.362	0.404	0.794		
(7) Characteristics	0.701	0.511	0.639	0.153	0.282	0.326	0.295	0.507	0.715	
(8) Image	0.828	0.616	0.747	0.325	0.438	0.314	0.280	0.179	0.570	0.785

Therefore, all the items that form this component were analyzed individually and those with small values were excluded. Moreover, the square root of "Time Price" is less than "Image" with which there is a direct correlation. This leads to an independent factor analysis for only these 2 linked variables, which resulted with excluding the "higher payed price" item. These steps validated the measurement model (see [Table no. 2](#)).

Table no. 2 – Measurement Model – CR & AVE indices (2)

	CR	AVE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Image	0.828	0.616	0.785							
(2) Color	0.882	0.653	0.325	0.808						
(3) Shape of exterior	0.776	0.542	0.434	0.624	0.736					
(4) Shape of interior	0.844	0.644	0.323	0.660	0.658	0.802				
(5) Texture	0.801	0.574	0.281	0.619	0.677	0.742	0.757			
(6) Sound	0.836	0.630	0.179	0.085	0.182	0.363	0.404	0.794		
(7) Characteristics	0.701	0.511	0.571	0.154	0.282	0.326	0.295	0.507	0.715	
(8) Time_Price	0.777	0.541	0.731	0.217	0.325	0.326	0.262	0.254	0.638	0.736

Before testing the linearity and multicollinearity, the analysis for the processing stimuli was tested again because during validation of the measurement model we excluded some items. The grouping resulted in the same number of factors and the same items, but without the variables excluded. Regarding the linearity, we analyzed the F Factor and for multicollinearity, the VIF coefficient. For all the relations tested, the F Factor was the highest for the linear equation and $VIF < 3$. Accordingly, the conditions for linearity and multicollinearity were achieved. All of the above steps allow us to test the structural model (see Figure no. 1).

**Figure no. 1 – Structural model**

To accept or reject a model, we had to analyze the following indicators: χ^2/df (Byrne, 2010; Gaskin, 2012), NFI, CFI, PRATIO, PNFI and PCFI (Byrne, 2010; Kaplan, 2009), and RMSEA (Byrne, 2010; Gaskin, 2012; Kaplan, 2009).

After excluding the dimension “Texture”, because the relations set between it and the other components of the model were not significant, the proposed model scored 1.548 for $\chi^2/df < 3$, so according to Byrne (2010) and Gaskin (2012) the model was accepted. NFI = 0.947, RFI = 0.835, PRATIO = 0.321, PNFI = 0.304, PCFI = 0.315, values were between (0;1), so the model was representative (Byrne, 2010; Kaplan, 2009). Last but not least, for a good fit, the RMSEA indicator had to be < 0.08 (Byrne, 2010; Gaskin, 2012; Kaplan, 2009). The presented model had 0.038. Accordingly, the model was accepted (see Figure no. 2).

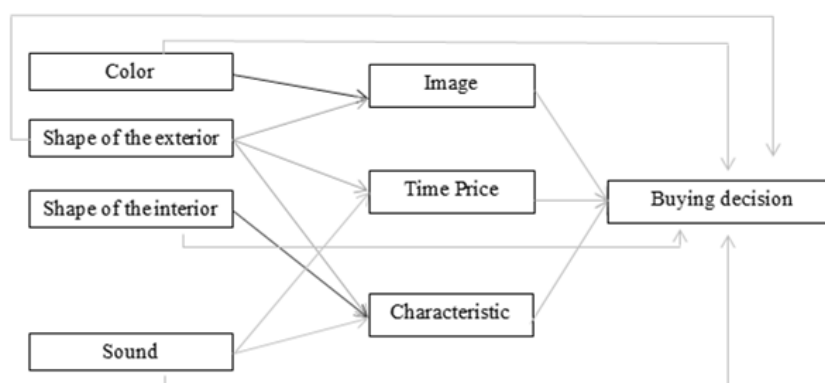


Figure no. 2 – Final accepted model

5. DISCUSSION

Consistent with the literature (Baisya and Das, 2008; Bloch *et al.*, 2003; Wang *et al.*, 2013), our study revealed that aesthetic properties influence consumer's car buying decision. The results also show that aesthetic elements determine consumer behavior through the processing stimuli, an aspect that can assist companies in developing a strategy to evoke a certain reaction from their target consumers.

Moreover, this research showed that visual elements are more influential than the texture or the sound. Color, which is analyzed for its role as an attention grabber and effective method of communication, was found to create a positive brand image and product placement in the consumers' mind. The exterior shape of the car was the aesthetic element with the most influence on consumer behavior. In regard to cars, the shape is correlated with the aerodynamicity, which, in turn, relates to performance. Accordingly, its impact was shown in all processing stimuli: perception of quality, perception about performance, time of response, desire to own the product, price expectations, brand and product categorization and positive brand identity. The interior shape and sound of the car impacts the perception of quality and performance. Also, the sound of the car influences the response time and the price.

As mentioned above, color and shape lead to a positive brand identity, which determine the consumer in making the buying decision. Consistent with this is Zhu *et al.* (2017)'s study, who found that the four factors affecting liking a logo are a sense of contemporaneity, a sense of aesthetics, a feeling of interest and a sense of style. Two out of four factors are related to the way aesthetics are perceived. Accordingly, using aesthetics is effective for both: liking the brand and buying a car based on the way the consumer's perceive the brand through aesthetics. Our findings are also in line with Hekkert *et al.* (2003) study, who found people prefer novel designs as long as the novelty does not affect typicality.

In addition to influencing a consumer's desire to spend outside of their budget, aesthetics play a leading part of all processing stimuli when formulating the decision to purchase a car. Image aesthetic pleasure was found to be related to image visual complexity (Chassy *et al.*, 2015). Accordingly, a marketing strategy based on the aesthetics of a car would contribute to successful sales volume. The efficient use of this strategy requires knowledge of which aesthetic elements to focus on and the desired results.

This study is not without limitations. First, the questionnaire used in this study was self-administered for the online and offline environment, which addressed the concept of aesthetics, which was tested using 17 factors individually. For future studies, we suggest that each category (color, shape, texture, sound) be tested separately. Another limitation is that this study was conducted in Romania. Cross-cultural studies are definitely encouraged, as car manufacturers should use the culture of the country as a value system and as an inspirational background (Bluntzer et al., 2015). Moreover, aesthetics could act as an emotional trigger that would influence consumer's trust (Martinez and Zeelenberg, 2015). As such, as a future study, it would be interesting to learn if car aesthetics could have an effect on consumer's trust regarding car brand manufacturers.

6. CONCLUSION

In conclusion, this paper identifies a new model to show how the aesthetics of a car influence the consumer's buying decision and it also identifies issues that arise with new research approaches. Studies in this area can progress and produce more conclusive results by analyzing each aesthetic element and the extent to which they adapt to different cultures and products. Also, based on the importance of each aesthetic element, marketers could use these results as a starting point for further improvements in brand strategy. We believe the importance of each individual aesthetic element is a topic for future research, as here the main objective is to generate discussion on the global impact of car aesthetics in consumer decision making. Moreover, the results provide understanding that aesthetic dimensions should be used as a differentiation tool and as a brand creator (cf. Liu et al., 2017), due to the fact that they influence the processing stimuli in a favorable way, which results in the consumer's buying decision.

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