

Evaluation of Aesthetic Parameters of Indian Car (Moderate Cost): A Case Study of North India - A Review

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Abstract: *Qualities of automotive parts have always been the most important parameter for automobile industries to gain competitiveness. In recent past aesthetic aspects and robustness of product have been explored to get attraction of consumer. Even though robustness is versatile strategy to gain long term market share of automobile, despite contemporarily no one can ignore the importance of aesthetic aspects of quality. A group of customers always have penchant towards aesthetics of automobiles especially cars. They can prefer cars which have good quality Interior design, Exterior design, Front and Rear design. Further they may prefer if a car having all of these aesthetic parameters of very good quality. In this paper attempt has been made by authors to quantify the aesthetic parameters among moderate cost cars to see which have higher quality in terms of aesthetic. One Way Analysis of variance has been used to evaluate the result.*

Keyword: Aesthetic, Form and Shape, Interior Design & Exterior design

1. Introduction

Aesthetic aspects of automotive (mainly cars and bikes) have not been major area of research in past that too particularly in India, however many authors [1] have explored the same in overseas. As consumer rich markets are dictating the market share in automotive industries gradually, it becomes essential to quantify the aesthetic aspect of automotive to ease the product designer. Product design has always been key area of research in the automotive market. It attracted the attention of many researchers in recent past [2].

Aesthetic aspect of the product is embedded feature of Product design. It was reported [3] that the product constitutes one of the classic four P's of the marketing mix, and the most fundamental characteristic of a product is its exterior form or design. Recently, the art of product design has experienced a renaissance. Since the 1930s has product design been more creatively and strategically employed to gain advantage in the global market place? In one survey of senior marketing managers, design was mentioned as the most important determinant of new product performance by 60% of respondents; only 17% considered price most important. Similarly, an analysis of the performance of 203 new products revealed that product design was the most important determinant of sales success (Cooper and Klein Schmidt 1987). The receipt of design awards is also positively associated with average profit margins and sales growth (Goodrich 1994; Roy 1994)[4].

Marketers charge designers with the task of developing products that have appealing forms. Yet, attempts to produce goods with attractive forms are nothing new. Nearly all civilizations have decorated functional objects such as pottery, weapons, and clothing (Becker 1978)[5]. In modern society, aesthetic sensibilities are relevant to all products, regardless between two products, equal in price and function, target consumers buy the one they consider to be more

attractive (Kotler and Rath 1984; Nussbaum 1988)[6].

The form or design of a product may contribute to its success in several ways. First, in cluttered markets, product form is one way to gain consumer notice (Berkowitz 1987; Dumaine 1991; Jones 1991). Yoplait yogurt successfully entered a competitive market by using a container that was narrower at the top than at the bottom, the opposite of every other yogurt package. Swatch used a variety of unusual product forms to successfully stand out in the mature market for wristwatches (Hollins and Pugh 1990). With new product offerings, a distinctive design can render older competitors immediately obsolete and make later competitors appear to be shallow copies (Midgley 1977). For example, the Ford Taurus, launched in 1986 with a unique rounded shape, soon became one of the nation's bestselling passenger cars (Goodrich 1994)[7].

Second, the form or exterior appearance of a product is important as a means of communicating information to consumers (Nussbaum 1993)[8]. Product form creates the initial impression and generates inferences regarding other product attributes in the same manner as does price (Berkowitz 1987). For example, the 1994 Dodge Ram pickup's front end resembled the cab on an 18-wheeler to suggest strength and power. The first Apple Macintosh possessed a compact, simple form to communicate ease of use and an almost anthropomorphic friendliness. Because product form also helps to develop corporate and brand identities, companies, such as Braun, Smith & Wesson, and Ralph Lauren, have distinctive design philosophies that help them develop and reinforce a recognizable corporate character (Forty 1986).

Third, in addition to managerial considerations, product form is also significant in a larger sense because it affects the quality of our lives. The perception and usage of beautifully designed products may provide sensory pleasure and stimulation. The era of globalization has influenced both product portfolio variety and the architecture of the

manufacturing systems producing these products. Product designers work to reduce the cost of their products while offering product characteristics demanded by a heterogeneous market.

Some designers said that automotive design is specialized discipline in which designers are challenged to create a emotionally appealing design, from a practice perspective, this requires that designers apply their hermeneutic as well as reflective design thinking skills. however, due to the increasing in demand for new car models, it is not always possible to keep generating new car designs without some form of assistive means (shahriman bin zainal 2012)[9].

Although many authors reported about importance and feeling of aesthetic parameters of automotive, despite a gap has been observed to make this parameter quantified. Keeping these views authors made an attempt to quantify the aesthetic parameters through questionnaire and analysis of variance.

2. Problem Formulation and Methodology

In this paper moderate automotive (cars) has been selected for quantification of aesthetic parameters. A case study has been carried out in seven (7) cities of North India. A total six (6) number of cars have been studied to carry out the research. Further two (2) segments of high and low cost are selected for each car. Swift, Swift Dzire, Volkswagenpolo, Skodafabia, etiosliva, Hyundai i20 are selected for the case study .The parameters which are selected for aesthetic aspects as interior design, exterior design, back light, front light and mirror view. A total of seven number of samples have been taken with the size of each is 5. Questions were asked on 10 point scale. Each person i.e. individual item of each sample was asked question and accordingly he/she answer on 10 point scale. Sample mean and population mean were calculated after summing individual data within sample and average of all these sample means. Then one way Anova was applied for each parameter separately.

3. Results Discussion and Conclusion

Nomenclature for different vehicles:

It is to be mentioned that these symbols have notations respectively.

- h: hyundai i20
- t:Toyota etiosliva
- v: vovkswagon polo
- S1: skodafabia
- S2: swift dzire
- S3: swift

Table 1 has the data obtained on the basis of questionnaire from different persons from different region. This data consists of interior design as a parameter for moderate cost (lower version) car model.

Table1: Data for interior design for moderate cost (lower version) model

Vehicle	On 10 point scale							Avg
h	8.6	8.8	8.2	9.0	8.9	8.7	8.2	8.55
t	6.9	7.7	8.3	8.3	7.5	7.7	8.0	7.7
v	8.6	8.4	8.1	8.2	8.2	8.2	8.9	8.3
S1	9.0	9.1	7.3	8.2	8.0	8.9	9.1	8.5
S2	8.0	8.0	7.7	8.3	8.9	7.8	8.3	8.0
S3	8.0	8.1	8.3	8.6	8.7	8.6	9.3	8.5

The factor considered for this study is vehicle models (i.e h, t, v, S1, S2 andS3).

One way ANOVA results:

Source	DF	SS	MS	F	P
Factor	5	3.539	0.708	3.35	0.014
Error	36	7.597	0.211		
Total	41	11.136			

S = 0.4594 R- Sq = 31.78% R- Sq (adj) = 22.30%

This clearly indicates that interior design of model t somehow lacks customer expectations as far as aesthetic aspects are concerned. Similarly;

	Significant or not	Remarks
Exterior design	yes	lacks customer expectations
Rear light	yes	lacks customer expectations
Front light	no	-----
Mirror look	no	-----

For moderate cost (higher version) model:

	Significant or not	Remarks
Interior design	Yes	lacks customer expectations
Exterior design	no	-----
Rear light	no	-----
Front light	no	-----
Mirror look	no	-----

4. Conclusion

Aesthetic aspects of moderate cost cars have been considered for the study. Two versions of six different cars have been selected. Questionnaire have been prepared and further asked for different car users. The important aesthetic parameters like interior design, exterior design, rear light, front light and side view mirrors were considered for study. The different car type like i20, polo , fabia, dzire, swift, liva were considered as factor, however grand average of points given by customers for each factor as considered to be level. Grand average is averages of seven random samples of each sample of size five have been taken for each case. One way analysis of variance (ANOVA) was adopted to analyze, which factor are significant from the aesthetic aspects only. It was found that parameters like exterior design and rear light for lower version model lack customer satisfaction for one of the car, and same is true in case of higher version for interior design only.

5. Future Scope of this Work

This paper would attract researchers to focus on aesthetic aspects of cars. The questionnaire and Analysis of Variance approach may also be applied to SUVs and Luxuries cars for various aesthetic parameters. These all may be eye opener for manufacturer too.

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