

# Evaluation of the Role played by Design for Emotions and Product Aesthetics when a Customer is buying a Product

Sharad Sharma<sup>1</sup>, N.M Suri<sup>2</sup>

<sup>1</sup> M.E student ,Industrial Design(Production), Punjab Engineering University, Chandigarh.,

<sup>2</sup>Associate Professor, Production Department, Punjab Engineering University, Chandigarh.,

## Abstract:

The appearance and design of the product have huge impact on the purchasing habits of the customers. Normally design of the product is attached with different emotions of the customers depending on the experience, purchasing habits and attractiveness of the product. Moreover aesthetics of the product plays a big role in purchasing of the product. Many researches have been proposed for checking behavior of customer purchasing. In this research, we have considered different customers from different domains to fetch the exact research analysis of customer purchasing behavior based on the emotion and design of the product. In this research we have designed questionnaires for customer purchasing behavior checking and have done three case studies also which support our research.

**Keywords:** *Product Design, Emotional Behavior, Product Appearance, Aesthetics.*

## 1. Introduction

Design for emotions & product aesthetics can greatly influence the success of a product & occupy a critical role in product design [1].

Emotions enrich, guide & enable life. They are vital in helping us understand and behave in our environment. In relation to design, you might say that every design is emotional. Any design will elicit

emotions from users, or convey emotions from its designers, whether or not the designer intends this or is even conscious of it [2]. To design for emotion is the practice to design a product or service with the intention to evoke predefined emotions, be it positive or negative. When a product meets all the requirements of the consumer, it will provoke emotion of satisfaction & perhaps enthusiasm.

Aesthetics (by definition) – a particular taste for, or approach to what is pleasing to the senses-specially sight. It is a branch of philosophy dealing with the nature of art & beauty. Aesthetics is an important element of industrial design. The concept of aesthetics in design is often related to the nice looking shape of a product, a trendy color scheme, or a pleasant surface texture. Aesthetics is more concerned with appearance [3]. Trying to design something which will not only be comfortable to use (ergonomic) but also pleasant to look at (aesthetic) often an in between result is settled for since something which may be very good looking might be very uncomfortable to use. When a design looks good and is said to be aesthetically pleasing the designer has achieved just the right combination of-shape, form, style & color. Product aesthetics can exert a significant influence on consumer behavior.

Enhanced product appearance can certainly be advantageous in a commercial sense, even for utilitarian products. Every product whether technical or non-technical gets established in the market due to its innovative design, the impression created by its looks or having some shocking value [4]. It is good to be simple but very difficult to be simple. This is the reason that simple design associated with some technical details which are innovative creates sensation & gets a foothold in the market overnight.

**2. Product Experience-** Basically Aesthetic response, Experience of Meaning and Emotional pleasure are considered three main types of Product Experience. All these three types of experience are inter-related.

1) Aesthetic Response -Aesthetically what gives pleasure to our senses whether looks of a product or novelty of the same gives this experience.

2) Experience of Meaning-This experience is through memory, association or what is interpreted by one. This experience is very important as far as symbolic importance of a product is concerned. It is connected with one's life style and comforts one expects in a product.

3) Emotional Experience-Emotions are connected with one's environment. This induces one to satisfy one's emotions in some object, product or service.

Subtle emotions decide about our choice and likes and dislikes. One's emotions are need based and decide what product is suitable and what is not. Different persons have different emotional setups and

their decisions are based upon their needs, demands and environment in which they live [4].

### **3. Captivating things attract more customers:-**

The appearance of a product influences consumer product choice in several ways e.g. Iphone, Radio Watches, Sony VAIO Laptops.

First look is always important. Love at first sight explains this. In case of products- we reach out for attractive things, we are always drawn to a good design. Many products appeal only due to their design and appearance. So appearance is equally important at the point of purchase [5] [6].

### **4. Aesthetics & Design for emotions triggering consumer response**

Aesthetics & design for emotions matters in consumer psychology. They have long been recognized as key determinants of marketing & sales success. In a market place where consumers often take product quality & competitive pricing for granted, aesthetics & emotions has become an important criterion by which consumers evaluate & differentiate between product & service offerings to make purchasing decisions [7].

### **5. Significance and Objectives**

The purpose of this paper is to evaluate the significance of design for emotion and product aesthetics when a customer is buying a product. For this purpose various products, strategies of the

companies in connection with design and innovation have been studied. Potential customers have been approached and interacted and their views have been collected in the form of questionnaires about what emphasis or weightage they give to aesthetics and emotions for design while buying a product. Various outlets have been visited. Point of purchase (POP) materials and pamphlets were studied and strategies of the marketing staff noted. Inferences were recorded and are being used in the thesis.

## **6. Case Studies**

**Maruti Zen:-** The word Zen stands for Zero Engine Noise in English & means complete in Japanese. Maruti Zen a 5 door hatchback produced & sold in India by Suzuki's Indian subsidiary Maruti Suzuki was launched back in 1993. It was an instant hit among the customers & acquired significant popularity. The Maruti Zen has been one of the successful performers in the small car segment due to its contemporary design & engine performance. An upgraded version of the Maruti Suzuki 800, the refined packaging of the Zen with its attractive looks (aesthetic) was an appealing factor to the Indian buyer who could not have got anything better than this in the segment; it still is if one goes by sales figures. Add to it Maruti's extensive service network & the Zen was quite a winner. If Maruti 800 provided basic transportation for the middle-class Indian, the Zen did it in style. Maruti Zen had elegant spacious interiors with good finishing & quality. Zen was a smart & elegant car equipped with dazzling head & tail lamps, mono form design & two tone color scheme. The tail lamp cluster had been designed

artistically, making efficient use of curves, lines & space. Its five speed ultra-slick gearbox is one of best boxes in any Indian car giving the driver a good, positive feel with reliable braking (first small car which could be brought to a halt with vacuum – assisted brakes).

The design of the car was such that the vehicle created an emotion of pride & satisfaction for the owner of the vehicle that he owns such a beauty & developed envy & jealous feeling among his neighbours. It can be said undoubtedly that it clicked with its customers in terms of aesthetics & appealed emotionally to the masses seeing its sales figures. The Zen underwent its first facelift in 2003 & prior to that the vehicle looked mostly the same with minor changes to its interior & exterior. The diesel variant of the Zen (TUD5 engine from Peugeot) was introduced seeing competition & quickly climbed up the sports rankings chart of the country with its G10B-engine but the core of the car still remained the same. The design theme remained the same & the sales flourished. It was until the second generation Maruti Zen Estilo launched in Indian in 2006 that the Premium vehicle suffered remarkable drop in sales. Customers didn't find any resemblance of the vehicle with the old Zen rather it looked more like Maruti Wagon R (another product of Maruti in the same segment). Maruti Estilo got Wagon R's engine, chassis and Suzuki MR Wagon's shape. The vehicle failed to impress its customers in terms of design both aesthetically and emotionally as the new Zen just had the name from the original Zen rest was all gone. Feeling of envy was gone (in terms of design). So much so that customers preferred buying an old

Maruti Zen (second hand) that its new Zen Estilo variant. Maruti Zen Estilo was discontinued in 2009 and renamed as Maruti Estilo but that even couldn't end the doom story of a vehicle which was once the company's premium product.

**Hyundai Verna:-** Hyundai introduced a new generation Accent (MC) at the 2005 New York International Auto show. A new exterior, larger interior, & new engine were the notable features. It was introduced in India as Hyundai Verna in 2006 & positioned as a natural progression from the hugely successful Accent (difference pretty much the same as difference between Skoda Octavia and Skoda Laura. Laura is the next version of the Skoda Octavia). The car was a hit in the mid-size section and bagged some of the most prestigious awards starting with the title of "Car of the year 2007" by India's leading automotive publication – overdrive which stated its design as being innovative and mass appealing, the "Best mid size – Car of the year" award by the NDTV Profit C & B awards 2007, the "Best Value for Money Car" by the CNBC Autocar Auto awards & 'Performance Car of the Year 2007' from Business Standard Motoring. Pretty much like Maruti Zen, Hyundai India made a bad move when it decided to bring a change in the existing model in the form of Verna Transform. Like the name, the product transformed Verna's image only to bring the sales down drastically. The looks did not seem attractive with interior also simple & bland. On one hand Hyundai had i20 & i10 brilliantly designed cars & Verna Transform on the other. What was Hyundai doing? The customers of Verna could not accept it emotionally & aesthetically as it didn't appeal to them. Like wise the case of Maruti Zen, the loyal

customers of Verna preferred buying an old Hyundai Verna in comparison to its new Transform version.

Hyundai gave a complete facelift to the Verna in 2011, the car got Hyundai signature fluidic sculpture & two all new 1.6 litre gamma petrol & 1.6 lit U2 diesel motor. It seems the company worked on its mistakes (in terms of design for emotions and aesthetics) it did in case of Verna Transform. The car has been improved as far as designing is concerned & its cabin is easily one of the most comfortable cabins today. The latest Verna which looks nothing like its predecessor, was responsible for shoring up Hyundai's fortunes in a market that saw almost all car majors posting a steep decline in sales.

**Khaitan Fans:-** Khaitan Fans (P) Ltd Kolkata has another unit Khaitan Fans Ltd Faridabad. Khaitan Fans is a premium brand of fans in India now. But in 1977 it was a new brand. However it appealed to the consumer by offering a new idea to the user. It offered double ball bearing fans and 18 pole motor.

Its competitors like Orient and Usha were affected by this campaign and idea. Soon it became the hot selling fan in India by its innovative designs and appeal to aesthetics. Kolkata based company opened its new plants at Hyderabad and Faridabad and Mr. S.K. Khaitan gave personal guarantee of 5 yrs for the fans. For a company which was not even 5 yrs old it was a high point for the customers.

Soon it became the best selling fans of India. Slogan was Khaitan – The fans of India. Presently Khaitan Fans have come out with advertisement that they are using SKF Ball Bearings which are considered the best all over the world. The consumer needs innovative design, ideas and Faith in the product.

Khaitan Fans considered this point and satisfied the needs of the consumer while deciding about the brand when purchasing.

**7. Proposed Work**

We start our assumptions based on literature studied and after checking out the role design for emotions and product aesthetics play while a customer is buying a product. We consider the number of users from various locations and from various professions to fetch the exact analysis for the research.

After the collection of data, the collected data is processed and analyzed with the use of various existing statistical/graphical techniques.

The prepared structured questionnaire is tested for reliability and validity by applying various existing statistical tests as shown in figure 1 below.

These techniques are used to find out the reliability of the questionnaire. In this research Cronbach’s Alpha is used to check the reliability of questionnaire. SPSS tool is used for the reliability test with various attributes according to the results as shown in figure2.

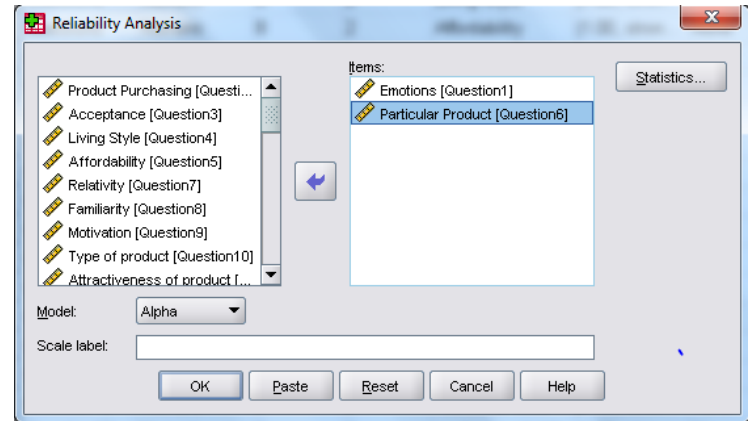


Figure 2: Selection of attributes for Reliability test preparation in SPSS

The validity and reliability of the questionnaire is measured through various available testing techniques that are used for checking the reliability of questionnaire.

The consistency of a score from a measurement scale is assessed with reliability test. There are some statistical methods available which are used to check the reliability. In this research for checking the reliability of questionnaire the Cronbach’s alpha is used. The value of Cronbach’s alpha lies between 0 and 1. A higher value of this shows the greater consistency in variance of the sample test score. Usually the value of Cronbach’s alpha more than 0.6 is considered to be reliable in survey research, but some statisticians considered 0.7 to be reliable.

	Name	Type	Width	Decimals	Label	Values	Missin
1	Question1	Numeric	8	2	Emotions	{1.00, stron...	None
2	Question2	Numeric	8	2	Product Purcha...	{1.00, stron...	None
3	Question3	Numeric	8	2	Acceptance	{1.00, stron...	None
4	Question4	Numeric	8	2	Living Style	{1.00, stron...	None
5	Question5	Numeric	8	2	Affordability	{1.00, stron...	None
6	Question6	Numeric	8	2	Particular Prod...	{1.00, stron...	None
7	Question7	Numeric	8	2	Relativity	{1.00, stron...	None
8	Question8	Numeric	8	2	Familiarity	{1.00, stron...	None
9	Question9	Numeric	8	2	Motivation	{1.00, stron...	None
10	Question10	Numeric	8	2	Type of product	{1.00, stron...	None
11	Question11	Numeric	8	2	Attractiveness ...	{1.00, stron...	None
12	Question12	Numeric	8	2	Purchasing on f...	{1.00, stron...	None
13	Question13	Numeric	8	2	Value of brand	{1.00, stron...	None
14	Question14	Numeric	8	2	Product popular...	{1.00, stron...	None
15	Question15	Numeric	8	2	Daily Usage	{1.00, stron...	None
16	Question16	Numeric	8	2	Specific product	{1.00, stron...	None
17	Question17	Numeric	8	2	Accuracy	{1.00, stron...	None
18	Question18	Numeric	8	2	Technical fitted ...	{1.00, stron...	None
19	Question19	Numeric	8	2	product availability	{1.00, stron...	None

Figure 1: Reliability test preparation with possibilities of questionnaires in SPSS

From the above test we find the Cronbach's alpha is .93 as shown in figure 3 below, which is more than 0.7 (.92>0.7). Hence we can say that the questionnaire formed is reliable.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.931	43

Figure 3: Reliability test in SPSS

Further after reliability testing, we have taken samples for our procedure from common people in society, some of them are businessman, some are working as employees and some are house housewives. They expressed their views in form of agree and disagree which haven't given us two possibilities to be tested. In starting we have taken a null hypothesis and one alternate hypothesis. We have tested both the hypothesis to see which one is possible according to our results from chi-square test.

Chi-square is a statistical test commonly used to compare observed data with data we would expect to obtain according to a specific hypothesis. For example, if, according to Mendel's laws, you expected 10 of 20 offspring from a cross to be male and the actual observed number was 8 males, then you might want to know about the "goodness to fit" between the observed and expected. Were the deviations (differences between observed and expected) the result of chance, or were they due to other factors. How much deviation can occur before

you, the investigator, must conclude that something other than chance is at work, causing the observed to differ from the expected value. The chi-square test is always testing what scientists call the null hypothesis, which states that there is no significant difference between the expected and observed result.

The formula for calculating chi-square is:

$$\text{Chi square} = \sum (o-e)^2/e$$

That is, chi-square is the sum of the squared difference between observed (*o*) and the expected (*e*) data (or the deviation, *d*), divided by the expected data in all possible categories.

**2 x 2 Contingency Table**

There are several types of chi square tests depending on the way the data was collected and the hypothesis being tested. We'll begin with the simplest case: a 2 x 2 contingency table. If we set the 2 x 2 table to the general notation shown below in Table 1, using the letters a, b, c, and d to denote the contents of the cells, then we would have the following table:

Table below: .General notation for a 2 x 2 contingency table.

Variable 2	Data type 1	Data type 2	Totals
Category 1	a	B	a + b
Category 2	c	D	c + d
Total	a + c	b + d	a + b + c + d = N

Figure 4: General notation for a 2 x 2 contingency table.

For a 2 x 2 contingency table the Chi Square statistic is calculated by the formula:

$$x^2 = \frac{(ad - bc)^2}{(a + b)(c + d)(b + d)(a + c)}$$

In our research we calculated all the agrees and disagrees of each users and then tested for a mean value by selecting users in a pair. We calculated the mean by formula which constitute finding difference between the product of number of agrees (user1) &no. of disagrees (user2) and no. of disagrees (user1)\* no. of agrees (user2) and then dividing them with the product of total of no. of agree and disagree (user1) , total number of agree and disagree (user2), total number of agrees(user1 and user 2), total number of disagrees ( user1user2). Then we tested our resulted mean on the table as our predetermined alpha level of significance (0.5), and our degrees of freedom (df = 1). Entering the Chi square distribution table with 1 degree of freedom and reading along the row we find our value of x<sup>2</sup> is less than value defined in table. That means that the p-value is above 0.5. Since a p-value is lesser than the conventionally accepted significance level of 0.5 (i.e. p > 0.05) we fail to reject the null hypothesis. We tested this for all the users in pairs and found that we are failed to reject null hypothesis which proved that people are buying products according to emotions linked with attractiveness, color and design of a product.

**8. Results**

To fulfill require experimentation we have done experimentation with Chi-square testing. Assumptions 7 rates the highest priority and 1 rates as lowest. If Mean value lies in between 8 to 60 then the Customers are buying product based on emotions with design and aesthetics of the product, otherwise Customers are not buying product based on emotions

with design and aesthetics of the product.. Zero response is invalid and cannot be considered as part of validation.

Options	Frequency	OF	Total
1 Strongly Disagree	0	0*1	0
2 Disagree	2	2*2	4
3 Disagree Somewhat	2	2*3	6
4 Undecided	4	4*4	16
5 Agree Somewhat	8	8*5	40
6 Agree	12	12 *6	72
7 Strongly Agree	15	15*7	105
<b>TOTAL</b>			<b>243</b>

Figure 5: Calculation for Questionnaires.

Add the total (0+4+6+16+40+72+105) = 243

Divide the total with total number of respondents (F):

- 1) 243/0 =
- 2) 243/4 = 60.8
- 3) 243/6 = 40.5
- 4) 243/16 = 15.2
- 5) 243/40 = 6.1
- 6) 243/72 = 3.4
- 7) 243/105 = 2.3

Therefore the weighted mean is 18.32

After fetching similar analysis as described above, we have average mean as described below:

$$\begin{aligned} \text{Average Mean} &= 18.32+ 45.45+ 10.42+ 49.17+ \\ &53.51+ 16.32+ 52.83+27.98+53.24+ 39.82+ \\ &20.68+17.31+27.99+26.48+13.61+13.42+25.52+ \\ &20.78 \\ &=532.85/18 \\ &= 29.60(\text{approx}) \end{aligned}$$

**Test of hypothesis:**

For checking whether Customers are buying or not buying product based on emotions with design and aesthetics of the product hypothesis is set. In this study chi-square test is used to check the acceptance of hypothesis.

In chi- square test we use the highest value from strongly agree, agree, and agree somewhat for buying approach and, highest value from disagree somewhat, disagree and strongly disagree is used for not buying approach.

The hypothesis used in this study is given below:

H(0): Customers are buying product based on emotions with design and aesthetics of the product.

H(1): Customers are not buying product based on emotions with design and aesthetics of the product.

Variable	buying	Not buying	Total
User 1	35	4	39
User 2	31	8	39
Total	66	12	78

Figure 5: Hypothesis validation through chi-Square testing

Chi-Square calculations:

$$78[35*8-4*31]^2/ 39*39*66*12$$

$$=78[280-124]^2/ 1204632$$

$$=1898208/1204632$$

$$X^2 = 1.57$$

$$Df = (2-1)*(2-1) = 1$$

Alpha level of significance: 0.05

We now have our chi square statistic ( $x^2 = 1.57$ ), our

predetermined alpha level of significance (0.05), and our degrees of freedom ( $df = 1$ ). Entering the Chi square distribution table with 1 degree of freedom and reading along the row we find our value of  $x^2$  (1.57) lies between 0.455 and 2.706. The corresponding probability is between 0.5 and 0.10 probability levels. That means the p-value is above 0.05. Since a p-value is greater than the conventionally accepted significance level of 0.05 (i.e.  $p > 0.05$ ) we fail to reject the null hypothesis. In other words, Customers are buying product based on emotions with design and aesthetics of the product.

probability level (alpha)

Df	0.5	0.10	0.05	0.02	0.01	0.001
1	0.455	2.706	3.841	5.412	6.635	10.827
2	1.386	4.605	5.991	7.824	9.210	13.815
3	2.366	6.251	7.815	9.837	11.345	16.268
4	3.357	7.779	9.488	11.668	13.277	18.465
5	4.351	9.236	11.070	13.388	15.086	20.517

Figure 6: Chi-Square Probability table

**9. Conclusion**

Form the chi test analysis we came to the conclusion that our most users are emotionally linked to the buying of new products whether these are automobiles or other daily usable products. Color and design of a product is having a great impact on the mind of buyer and it makes them buy the product. Moreover attractiveness and trademark of a product is also having role in making the customers more interested towards a product. According to our research most of the users are agree that their



emotional behavior is linked to their buying of products. Some, but very least users disagreed to some points as compared to overall users that means their behavior is lesser linked to emotionally buying a product as compared to others, but somewhat they are also in the same category of the Customers buying product based on emotions with design and aesthetics of the product.

Similar to above Chi-Square testing, other nine hypothesis testes have been done. Null hypothesis has been accepted in all cases.

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