

Segregation Of Pakistani Car Brands Using Perceptual Mapping

Muhammad Farhan Mirza Muhammad Dawood Idrees; Arsalan Ansari, Abdul Sami

Abstract : This study aims at assessing the customer perceptions that are influencing the buying decisions while purchasing a car in Pakistan. This paper highlights the usage of perceptual maps, benefits of positioning and repositioning strategies and shows how the perceptual map is created with the help of data collection through surveys. A questionnaire containing six attributes among eight car brands were filled by 204 respondents across the country. Two dimensions that are After Sells Service (ASS) and price have been identified based on principal component analysis (PCA). The purpose of this research is to seek the attributes, that impact and the choice of consumers when particularly purchasing a car. The study targets to identify the gaps, current position and the repositioning opportunities to grow for the automobile brands in Pakistan. The findings would help prioritize different attributes and provide guidelines to improve and excel in the future.

Index Terms: Customer perception, After sells and service, principal component analysis, car branding, perceptual mapping,

1 INTRODUCTION

In the past couple of years, it has been witnessed that an exceptional amount of passenger cars have been on the roads. It has been endorsed by number of authors that innovation and technology in the automobile sector are helping in booming the GDP of nations around the world. It not only benefits the life of common people but has contributions to the economy of a country [1]. Pakistani automobile industry does not have a major chunk of domination in world's population. It has been expanding from decades[2], but with the passage of time the number of car assembling plants in Pakistan have been increased by some extent and it is keep progressing. It is confirmed by Pakistan Automotive Manufacturers Association (PAMA) that production and sells of passenger cars have been increased from 2016 to 2017 and this amount is significant in numbers. Further, it is depicting the fact that roads have been flourished with cars[2]. To excel in the business, consumers' perception and expectations are very important to meet. Creating a perception in customers mind is one the major task that companies need to worry about. With each passing day, customers perception about brand is changing rapidly and to stay in the market, companies tend to identify and visualize the consumer perceptions to have triumphant strategy[3]. Companies that are providing more quality and services may grab the customers attention and on the other hand, the individual feels more comfortable investing their money[4]. If the consumer is happy with the product quality then there is a tremendous chance of buying again, which will increase the company profits, and business[5].

Satisfaction and fulfillment is an accomplishment about desires, wants, needs of customers, and if they are satisfied with the product then they often do shopping with the same brand. When customers are satisfied with the overall process of purchasing before or after then they usually buy stuff[6]. Before buying the product, consumers add up all the information in his mind that is related to the products and then make their final decision on certain attributes, so the buying plan is utilized to observe the behavior of customers[7]. Perception is a blend of various things that are existing in the mind of customers and are likely to affect the buying decision, that factor could be a brand image of the company or how the customer perceives different attributes within his mind. So all the steps take into place by the marketing team to find out the factors that are causing to influence the consumers' percepti In the market segments, perceptual maps have a significant amount of value in managerial decisions for brand positioning and repositioning[11]. Usually perceptual mapping is used to depict a brands image or customer reactions towards product features[12]. The key role of marketing team is to make a connection with consumer/buyer, have a long sense of relationship with customers instead of a small sell[13]. In addition, consumer always opt for those market places which have a good set of values and are well established and have adequate preferences[14]. Product's position is a sort of trade in the minds of the targeted consumers' in robust challenging business conditions, while on the other hand, positioning is an activity of managers and decision-makers done by marketing to control the mind or thought of consumers, so it will help in obtaining an immeasurable spot in the mind of the targeted people[10, 15, 16]. Apart from that, positioning is one of the essential thoughts for service enterprise where it does have a competitive advantage among other products as attributes are connected with quality of service in the subconscious among consumers[17]. The ultimate goal of repositioning is to continue to push customers' old perceptions in the direction of a new brand with the help of marketing ideas and promotional means[3]. Similarly, the expansion and maturity of a business rely on their happy and satisfying shoppers. Perceptual mapping is very useful to depict the perception of customers related to quality attributes of service companies and it enables the identification of the directions of activities related to marketing that are responsible to catch more consumers based on the quality attributes that are identified with the help

- *Muhammad Farhan Mirza is student of Dawood University of Engineering and Technology, Karachi, Pakistan. PH-+923126689227, E-mail: farhanmirza538@yahoo.com*
- *Muhammad Dawood Idrees is currently working as Assistant Professor in Dawood University of Engineering and Technology, Karachi, Pakistan. PH-+923332545653, E-mail: muhammad.dawood@duet.edu.pk*
- *Arsalan Ansari is currently working as Assistant Professor in Dawood University of Engineering and Technology, Karachi, Pakistan. PH-+923435813424, E-mail: dr.arsalanansari@duet.edu.pk*
- *Abdul Sami is currently working as Assistant Professor in Dawood University of Engineering and Technology, Karachi, Pakistan. PH-+9232 18755091, E-mail: dr.abdulsami@duet.edu.pk*

of perceptual maps[17]. Perceptual maps help industries and organizations to attain the design in complicated data and envision the necessary and appropriate information. As a result companies can set their future activities related to marketing[3]. The paper describes the position where companies are lying in the perception of consumers and using that data, they can easily reposition themselves where there are fewer competitors and have more opportunities to expand and grow. Similarly, it provides an opportunity to improve their products and services that will increase the market share of the company. The main reason behind the usage of perceptual maps is to get the information related to product relationships and in various cases the association of traits to these associations[18, 19]. This paper highlights the main attributes that have an impact on the mind of consumer perception and that will influence their buying decision. There is no significant amount of study in the past about perceptual mapping of automobile brands in Pakistan and what exactly customer thinks about these brands when they are making a purchasing decisions.

2 METHODOLOGY

Pakistan is a developing country and the economy is not that much mature to hold a great number of car manufacturing companies within the country so usually there are very limited buying options available for the common consumers. Few Japanese car brands are dominating for a longer period of time but in recent times there has been significant addition to their competition. The author had excluded the brands that come under the domain of luxurious category are excluded because they are very limited in number and not truly representing the actual masses. Eight brands that are involved in this research i.e Toyota, FAW, Suzuki, KIA, Honda, United, Hyundai, and Prince. While making a perceptual map, when products have more than two attributes to distinguish between them, there are two methods that are suggested by literature, one is the Overall similarity method and the second is the Attribute rating method[10, 11]. Overall similarity procedure or method exists where there was ambiguity and sort of confusion among the different attributes of products because of similarity in nature and it can't be differentiated easily. In this research, the second approach i.e Attribute Rating method is used, where a suitable amount of characteristics / attributes are clear and simple to distinguish between them. Information that is generated is further analyzed statistically either with multiple discriminant analysis or factor analysis and it is very useful in preparing the perceptual maps that are bi dimensions[10]. Attribute rating method is utilized in this research, the initial step is to determine the influential attributes that are affecting the buying decision of consumers while purchasing a car in Pakistan. According to the literature, it can be done through qualitative research methods or group discussions[3]. Group discussion is adopted to finalize the attributes that are affecting the buying decision. After discussing it with other peers and colleagues and listening to their advices and suggestions, Authors came on a conclusion of six attributes that may have significant influence towards the shopping decision of a consumer. These attributes are after-sell service, price, brand image, Safety, Resell value, and Maintenance cost. In this regards, a survey was created which has two questions, Question one was designed in such aspect that people were requested to evaluate the influence of these attributes on a Likert type scale (1 Not much important - 5 Very

Important) while purchasing a car in Pakistan.

3 RESULTS

The next task was to make a two-dimensional perceptual map as shown in figure-1, with the help of six attributes among the eight brands. Same questionnaire has a question 2 that has a list of adequate attributes and asked from respondents to rate every brand on all attributes. The end values of Likert scale is given (1 Strongly Disagree - 5 Strongly Agree). Moving on, Factor analysis technique was used and remaining under the same domain, and the concept of principal component analysis was used for narrowing down attributes to make two-dimensional perceptual map. With minimal struggle, principal component analysis gives a way to find the hidden data that is buried and sometimes neglected. (Shlens, 2009).

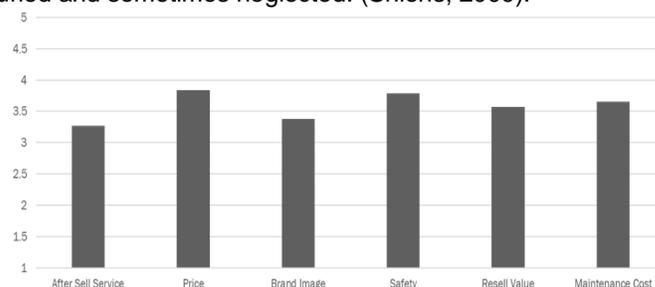


Figure-1. Attributes affecting the buying decision

Main objective and agenda of (PCA) is to change interrelated variables into unrelated linear sequences or combinations. This method was adopted by so many authors in the past to make the perceptual maps (Moore & Edgar, 1993). The data gathered after filling the second questionnaire by respondents are further analyzed with the help of SPSS and the software has a great variety of statistical analysis tools to confirm the sample to be principal component analysis (PCA) i.e Bartlett test and KMO test (SPSS, 1993). To further scrutinize the data samples, additionally two tests have been done as shown in table-1, KMO and Bartlett test. The value of the KMO test was 0.899 which was perfect, usually it should be less than 1 and greater than 0.6 so in this case, it was fine. And Sig value in the Bartlett test was 0.000 it means that it is equal to 0.001 but not exactly 0, in this case it was fine and indicating that the data was purely random and significant.

Table-1. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.899
Bartlett's Test of Sphericity	Approx. Chi-Square	7.6.992
	Df	15
	Sig.	0.000

Another way of interpreting and transform the data in a convenient way is to apply varimax rotation, it transforms the existing factors into new ones. As it can be clearly seen in the table-2, of Rotated Component Matrix that, after sell service and Price were the two features / attributes that were related with each the most and it will help in forming a group in naming the dimensions. These two attributes in combination would act as one dimension of the perceptual map and the rest of the attributes would combine together collectively as another dimension. It shows that the first two factors load notably to factor 1, moreover the rest of the remaining four attributes or variables load to factor 2.

Table-2. Rotated component Matrix

	Components	
	1	2
After Sell Service	0.266	0.933
Price	0.679	0.535
Brand Image	0.808	0.199
Safety	0.789	0.351
Resell Value	0.847	0.238
Maintenance cost	0.735	0.423

Extraction Method: Principal Component analysis

Rotation Method: Varimax with Kaiser Normalization

a. Rotation converged in 3 iterations.

After getting the Average Factor values of each car brand that has participated in the survey, these values would be the basis of the perceptual map. These values were the foundation on which each car brand would be differentiated from one another.

Table 3. Average Factor Values of Brands

Brands	Factor 1	Factor 2
Brand 1	0.73	0.38
Brand 2	0.74	0.45
Brand 3	0.75	0.20
Brand 4	0.76	0.14
Brand 5	0.82	0.05
Brand 6	0.81	-0.27
Brand 7	0.77	-0.47
Brand 8	0.79	-0.41

The average factor values of eight car brands are sorted into two factors that are the bases of the dimensions of the perceptual map as shown in figure-2, one attribute will be on X-axis and another attribute is on Y-axis. Lastly, the map that is the main objective of the paper was developed upon the outcome of the questionnaire to conceive the positioning of car brands.

**Figure 2. Perceptual Map****4 CONCLUSION**

Perceptual map is truly showing the position of car brands among other competitors in the market and is accurately justifying the literature that it gives the opportunity to reposition them if they want to compete with other competitors in the market. This paper depicts the important attributes which influence the customers mind. Map showing amazingly that how close some of the car brands are in the market and they can go for a merger in the future to prosper. As there is much space and opportunity available to capture in the vacant

market, different competitors can avail this market share to gain a competitive advantage. The desired end result that is perceptual map is created with the help of total 204 respondents who have participated in the survey. This perceptual map is completely representing the opinion of these people, the author has nothing to do with maligning the data statistics. The perceptual map is showing the true values that have been collected in the survey. The author has hidden the names of car brands in the perceptual map because any of these car brands can easily get offended if they didn't like the outcomes. They would feel that the author is targeting them specifically and trying to defame their name in the market.

REFERENCES

- [1] Chang, W.-J., S.-H. Liao, and T.-T. Wu, Relationships among organizational culture, knowledge sharing, and innovation capability: a case of the automobile industry in Taiwan. *Knowledge Management Research & Practice*, 2017. 15(3): p. 471-490.
- [2] Amir, A. and M. Asad, Consumer's purchase intentions towards automobiles in Pakistan. *Open Journal of Business and Management*, 2018. 6(01): p. 202.
- [3] Gigauri, I., Applying Perceptual Mapping Method for Successful Positioning Strategy. *International Journal of Management*, 2019. 1(1): p. 14-23.
- [4] Hoffmann, A.O. and D. Ketteler, How experiences with trading a company's stock influence customer attitudes and purchasing behavior. *International Journal of Bank Marketing*, 2015.
- [5] Innis, D.E. and B.J. La Londe, Modelling the effects of customer service performance on purchase intentions in the channel. *Journal of Marketing Theory and Practice*, 1994. 2(2): p. 45-60.
- [6] Tulipa, D., S. Gunawan, and V.H. Supit, The influence of store atmosphere on emotional responses and re-purchase intentions. *Business Management and Strategy*, 2014. 5(2): p. 151-164.
- [7] Bhakar, S.S., S. Bhakar, and S. Bhakar, Relationship between country of origin, brand image and customer purchase intentions. *Far East Journal of Psychology and Business*, 2013. 10(2): p. 25-47.
- [8] Kotler, P., *Marketing management: A south Asian perspective*. 2009: Pearson Education India.
- [9] Chadha, S. and D. Kapoor, An attribute based perceptual mapping of the selected private life insurance companies: An empirical study in Ludhiana. *Vision*, 2008. 12(3): p. 53-60.
- [10] Rekettye, G. and J. Liu, Segmenting the Hungarian automobile market brand using perceptual and value mapping. *Journal of Targeting, Measurement and Analysis for Marketing*, 2001. 9(3): p. 241-253.
- [11] Dolan, R.J., *Perceptual mapping: a manager's guide*. Harvard Business Review, 1990.
- [12] Blake, B.F., S. Schulze, and J.M. Hughes, *Perceptual mapping by multidimensional scaling: A step by step primer*. Methodology Series, Cleveland State University, 2003.
- [13] Alreck, P.L. and R.B. Settle, *Strategies for building consumer brand preference*. Journal of product & brand management, 1999.
- [14] Christopher, M., From brand values to customer value. *Journal of Marketing Practice: applied marketing science*, 1996.

- [15] Helm, R., Marketing: strategische Analyse und marktorientierte Umsetzung. 8. Vol. 919. 2009: Lucius & Lucius.
- [16] Schweiger, G. and G. Schrattecker, Werbung: Eine Einführung (7., neu bearb. Aufl.). Stuttgart: Lucius & Lucius, 2009.
- [17] Dash, A., Quality-Based Perceptual Mapping of Leading Banks in India: An Empirical Study. IUP Journal of Management Research, 2015. 14(4): p. 61.
- [18] Lawless, H.T., N. Sheng, and S.S. Knoop, Multidimensional scaling of sorting data applied to cheese perception. Food quality and preference, 1995. 6(2): p. 91-98.
- [19] Nestrud, M.A. and H.T. Lawless, Perceptual mapping of citrus juices using projective mapping and profiling data from culinary professionals and consumers. Food quality and preference, 2008. 19(4): p. 431-438.