

Consumer Perception and Preference Analysis of Multiple Car Brands in the Indian Automotive Sector

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ABSTRACT

With over 3.99 million motor cars, India surpassed Germany in 2019 to become the fourth-largest auto market in both the passenger and commercial vehicle sectors. Due to a growing middle class and younger demography, the four-wheeler category is now leading the market in terms of production. India is a significant exporter of automobiles, and it anticipates that this trend will continue shortly. India solidified its position as a leader in the two-wheeler market by 2020, and its four-wheeler market continued to grow and adapt, showing promise, particularly in the EV segment. This survey illustrates the perception and preferences of consumers toward different automobile brands. The research was carried out in the Indian state of Tamil Nadu's city of Tiruchirappalli. A total of 3 months were taken by the researcher between September to November 2023 to complete the full process of the study. The sample size for the study was determined to be 400 using a multi-stage sampling technique, which was clearly explained in the research methodology area. To gather information from the consumers, a structured questionnaire was distributed. Additionally, some of the consumers receive them through social media platforms. Microsoft Excel and SPSS-26 software were used for the data analysis.

Keywords: Car brands, Car purchasing decisions, Consumer behavior, Customer perception, Price.

INTRODUCTION

Although price has always been an obstacle to buying a car, from here it indicates that people are becoming more prepared to spend more money on high-end automobiles with plenty of options. The Indian automotive sector has undergone a remarkable transformation in recent years, driven by a dynamic mix of technological advancements, evolving consumer preferences, and a steadfast commitment to sustainability. The industry, once dominated by a handful of global players, has diversified significantly, with the emergence of strong domestic manufacturers and a growing emphasis on electric vehicles (EVs) and hybrid technologies.

This development has been made possible in large part by the supply chain management strategies used by the Indian automobile sector. The entry of large international automakers has stimulated the domestic industry and resulted in the adoption of supply chain management best practices. (Bhattacharya, 2014) As a result, the Indian automobile industry is now much more

competitive, which has led to a massive increase in exports. The peculiar environment in which the Indian car sector functions, however, adds more difficulties to an already complex supply chain.

As such, there is an essential need to continuously research this industry's supply chain practices from the perspective of a modern practitioner. This will assist in determining the essential differentiators that can provide the sector a competitive edge, another important area of concern for the Indian automobile industry is supply chain management sustainability.

(Bhattacharya, 2014).

Marketing focuses heavily on the concept of buying behavior, which has been developing for a while. The purchasing habits of consumers have a significant effect on how things are bought. Since human desires are limitless and always evolving, automobile models are no exception to this pattern of behavior, delivered each month with fresh features to satisfy demand. The auto industry is a good site to research consumer behavior since it can tell us a lot about what people desire in a vehicle.

Review of literature

(Vyas, 2023) The rapid growth that India's car sector is seeing is a consequence of urban customers' increasing spending power and desire for high-end goods. In the last ten years, marketers have learned about consumers' anxieties and purchases. The success of the Indian market has been extremely evident. Some of the multinational automakers that formerly catered only to a certain customer group may now reach a larger audience with their products. Even domestic automobile producers are seeing an increase in their sales numbers.

(Rodrigues et al., 2023) Thus, just like in many other industries, the automobile industry is currently dealing with major obstacles that present chances for companies to differentiate themselves from the competition. Credibility allows brands to stand out from the competition, draw in new business, and most importantly, deepen relationships with existing customers to become their primary choice.

(S. Jafar Sathik, 2023) carried out a study that shows how customers perceive and prefer various auto brands. Research indicates that most Indians prioritize purchasing a car over purchasing a home. However, the availability of a wide range of brands from both domestic and foreign automakers has made it possible for Indians to buy a car and lead luxurious lives. Manufacturers are now focusing on what customers want, and marketing is increasingly customer-focused. Automakers decide how best to meet consumer demands through production.

(Akdoğan, 2021) The customer's decision-making process while choosing between competing products or services is referred to as the buyer's stage. There are several models for how consumers choose what to buy. The most well-known of these models is the Engel-Kollat-Miniard (EMK) model, which explains how consumers make purchasing choices. The process of defining needs,

getting data, examining possibilities, making decisions, and post-purchase evaluation are all included in the model. It sees consumers' purchasing choices as a process of resolving issues.

(Tausif & Haque, 2019) The automotive industry in Saudi Arabia is evolving. There is a research deficit in the automotive sector in Saudi Arabia. By examining the factors behind this change in consumer behavior, this study aims to close the gap. It takes into account six variables, including brand personality, emissions, resale value, and cost of maintenance. The study finds that only fuel efficiency and maintenance costs influence customer satisfaction in the car industry when utilizing the binary logistic regression technique. Thus, the study emphasizes that enhancing fuel efficiency and decreasing maintenance costs are crucial components of automobile performance.

(Ajzen, 1991) Regarding human behavior, there are many theories. The Theory of Planned Behavior (TPB) is one of the most extensively studied models for forecasting behavioral intentions. The goal of TPB, a significant social cognitive model, is to explain why customer behavior varies. It has been shown through several experiments to be effective in doing so.

(Rehman et al., 2017) Personal factors such as age, occupation, economic conditions, lifestyle, personality, and self-concept are incredible indicators of a business's uniqueness and its attraction influences how customers purchase. This is because every person is unique by nature and their characteristics significantly impact their purchasing behavior.

(Kotler, 2017) Social factors are among the most powerful determinants of consumer purchase behavior. Social factors involve a person's friends, family, and online social network. Word-of-mouth is one such social factor that affects consumer purchase decisions.

(Durmaz, 2014) Profitable companies understand how to maximize sales by using the different factors influencing consumers' decisions to buy. Four important factors frequently impact customers' purchasing decisions, according to research. These components include societal, cultural, psychological, and personal factors. A person's purchasing decision is influenced by a variety of psychological factors, including their attitudes, beliefs, learning, and motives.

METHODOLOGY

The main goal of the researcher was to get a precise picture of the automotive market environment. During the research, the researcher identified a variety of variables that influence consumers' purchasing behavior. The research work focuses on the population in the study area of Tiruchirappalli city, which has a total of 11 taluqs and is located in the central part of Tamilnadu, India. And it is unpredictable. Considering the huge size of the population of car users, the sample size was decided as recommended by the statisticians, The sampling technique used is non-probability with a multi-stage cluster sampling technique.

Based on a 95% confidence level with $\pm 5\%$ margin of error. As a result, 385 was determined as the sample size. Although the researcher planned to gather information from 450 sample respondents. Following the completion of the data collection, 13 unexpected errors and 17 incomplete questionnaires were found. As a result, the researcher took 400 final Sample respondents. Tiruchirappalli city has a total of 11 thaluks, from which 4 main thaluks namely Srirangam (north), Manapparai (south), Lalgudi (east), and Thuraiyur (west). Each thaluk was treated as a cluster and within each thaluk, the total sample size targeted was 400 respondents (100 from each of the 4 thaluks). These were fixed using a multi-stage cluster sampling technique. The researcher took a total of three months for the completion of the study. Both primary and secondary data were used. The primary data was collected from the respondents through the usage of a structured questionnaire through Google Forms and social media platforms such as WhatsApp, email, Telegram, Instagram, etc. Distributing printed forms helps include people who are more comfortable with or need to use paper forms instead of online methods. It ensures that everyone can participate in the survey, whether they prefer technology or not. The secondary data was gathered from published articles, books, magazines, etc. Descriptive statistics and regression analysis were performed in this study with the use of Microsoft Excel and SPSS 26 software.

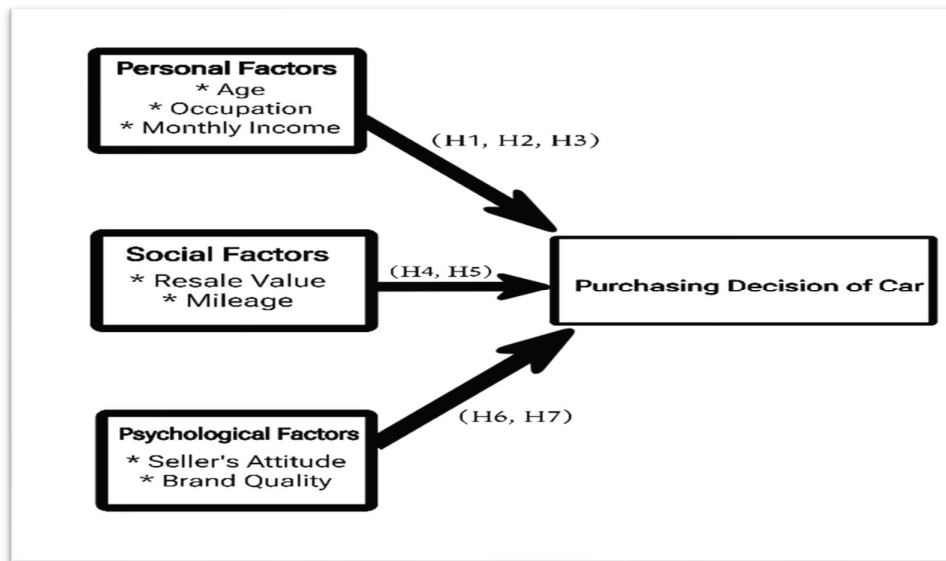
Objectives of the Study

- The primary purpose of this research is to evaluate how multiple car brands are perceived and preferred by consumers in Tiruchirappalli City, which is located in the central part of Tamil Nadu.
- To analyze the factors that affect consumers' perceptions of and preferences for different car brands.
- To analyze the buying behavior of Indian consumers.

Hypothesis

- **HY₁**: The purchasing decision of the car was dependent on the Age
- **HY₂**: The purchasing decision was dependent on Occupation
- **HY₃**: The purchasing decision was dependent on Monthly income
- **HY₄**: The purchasing decision was dependent on the Resale value
- **HY₅**: The purchasing decision was dependent on Mileage
- **HY₆**: The purchasing decision was dependent on the Seller's attitude
- **HY₇**: The purchasing decision was dependent on Brand quality

Fig 1: Conceptual model of factors that influence the purchasing decision of car



Source: Primary

RESULTS AND DISCUSSION

Table 1: Model Summary (Consumer Purchasing Decision Towards Cars)

Model no	R	R-sqr	Adj-R-sqr	Standard error	-Drbin-Watsn-
1	.747 ^a	.558	.550	.847	2.092
a. Predictors: (Constant), Brand quality, seller’s attitude, age, occupation, Resale value, Mileage, Income					
b. Dependent Variable: purchasing Decision of a car					

Source: Calculated by the author using SPSS

The R (multiple co-relation coefficient) value was 0.747, according to the model summary. It evaluates the degree to which brand quality, seller attitude, age, profession, resale value, mileage, and income are related to customer choice and expected value.

The value of the R-square, or coefficient of determination is 0.558. This suggests that variations in the independent factors (brand quality, seller's attitude, age, occupation, resale value, mileage, and income) account for around 56% of the variance in customer choice.

The R-square adjusted was 0.550. Depending on the number of independent variables in the model the statistic is adjusted were the desirable characteristic of goodness-of-fit statistics. It seems that there was no auto-correction in this term, as shown by the Durbin-Watson technique (2.092).

Table 2: ANOVA (Consumer Purchasing Decision Towards Cars)

Model		Sum of sqrs	Deg of fredm.	Mean Sqr	F	Sig
1	Regression	354.835	7	50.691	70.695	.000 ^b
	Residual	281.075	392	.717		
	Total	635.910	399			

Dependent Variable: purchasing Decision of a car
 Predictors: (Constant), Brand quality, seller’s attitude, age, occupation, Resale value, Mileage, Income

Source: Calculated by the author using SPSS

In accordance to the above table, the independent variables (age, occupation, monthly income, resale value, mileage, seller's attitude, and brand quality) are connected with the dependent one (overall satisfaction with a car purchase decision), as shown by the value of frequency that is (70.695), and the value of P, which is considered significant at the level of 1%. Therefore, here the rejection of the null hypothesis and the acceptance of the alternative hypothesis were considered.

Table 3: Coefficients (Consumer Purchasing Decision Towards Cars)

Model		Unstandrdized Co-efficients		Sandrdize d Co-efficient	T	.Sig
		B	Standard errors	Beta.		
(Constant)		.637	.185		3.437	.001
Personal factors	X ₁ Age	.164	.043	.141	3.855	.000
	X ₂ Occupation	-.317	.048	-.311	-6.538	.000
	X ₃ Monthly Income	.267	.048	.264	5.610	.000
Social factors	X ₄ Resale Value	.103	.044	.095	2.319	.021
	X ₅ Mileage	.141	.045	.132	3.128	.002
Psychological factors	X ₆ Seller’s Attitude	-.081	.039	-.086	-2.062	.040
	X ₇ Brand quality	.611	.036	.626	16.875	.000

a. Dependent Variable: Y= Purchasing Decision of a car
 b. Predictors [constant] X1=Age, X2= Occupation, X3=Monthly income, X4=Resale value, X5=Mileage, X6=Seller’s attitude, X7= Brand quality

Source: Calculated by the author using SPSS

Estimated equation of (Multiple Regression)

$$Y = 0.637 + 0.164 X_1 - 0.317 X_2 + 0.267 X_3 + 0.103 X_4 + 0.141 X_5 - 0.081 X_6 + 0.611 X_7$$

The below contents which indicating shown as follows,

(X₁) = Age

(X₂) = Occupation

(X₃) = Monthly income

(X₄) = Resale value

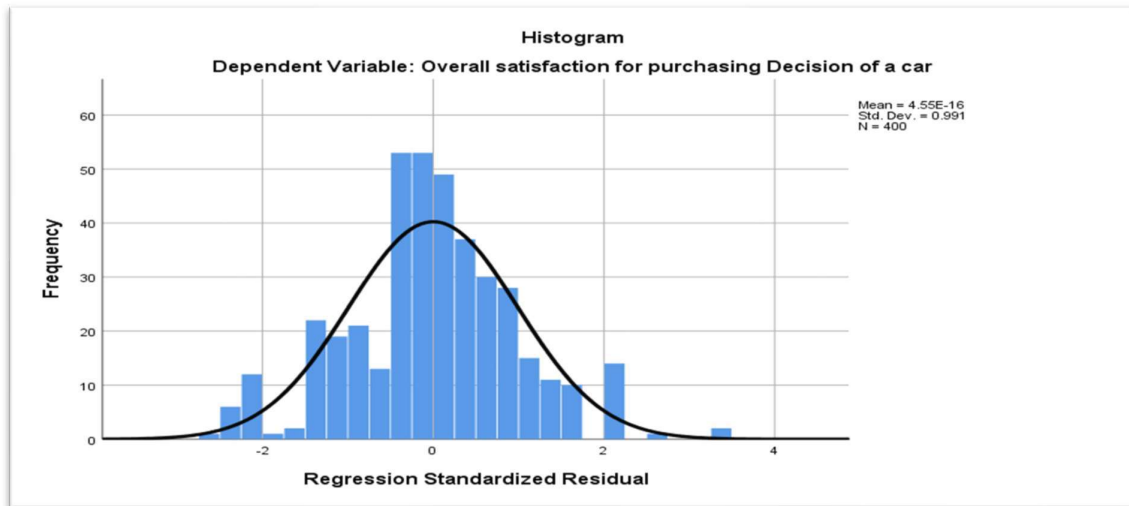
(X₅) = Mileage

(X₆) = Seller's attitude

(X₇) = Brand quality

- When all other factors are maintained constant, the coefficient of (X₁) demonstrates that a 1 unit increase in age would result in 0.164 which is approximately (16.4%) increase in consumer preference. The age-related t-statistics also accounted for a considerable positive variation in the dependent variable, which is customers' decision to purchase a car, and this coefficient value is significant at a 1% level.
- The coefficient of (X₂) demonstrates that a 1 unit increase in occupation would result in 0.317 which is approximately (31.7%) decrease in consumer preference. When all the other factors are maintained constant, Occupation-related t-statistics also accounted for a considerable negative variation in the dependent variable, and coefficient value is significant at 1% level.
- The coefficient of (X₃) demonstrates that a 1 unit increase in income would result in 0.267 which is approximately (26.7%) increase in consumer preference. Monthly income-related t-statistics also accounted for a considerable positive variation in the dependent variable, and the coefficient value is significant at a 1% level.
- The coefficient of (X₄) demonstrates that a 1 unit increase in resale value would result in 0.103 which is approximately (a 10.3%) increase in consumer preference. When all the other factors are maintained constant, Resale value-related t-statistics also accounted for a considerable positive variation in the dependent variable, and coefficient value is significant at 1% level.
- The coefficient of (X₅) demonstrates that a 1 unit increase in mileage would result in 0.141 which is approximately (a 14.1%) increase in consumer preference. Mileage-related t-statistics also accounted for a considerable positive variation in the dependent variable, and the coefficient value is significant at a 1% level.
- The coefficient of (X₆) demonstrates that a 1 unit increase in seller's attitude would result in 0.081 a decrease in consumer preference. When all the other factors are maintained constant, Seller's attitude-related t-statistics also accounted for a considerable negative variation in the dependent variable, coefficient value is significant at 1% level.
- The coefficient of (X₇) demonstrates that a 1 unit increase in brand quality would result in 0.611 which is approximately (61.1%) increase in consumer preference. Brand quality-related t-statistics also accounted for a considerable positive variation in the dependent variable, coefficient value is significant at a 1% level.

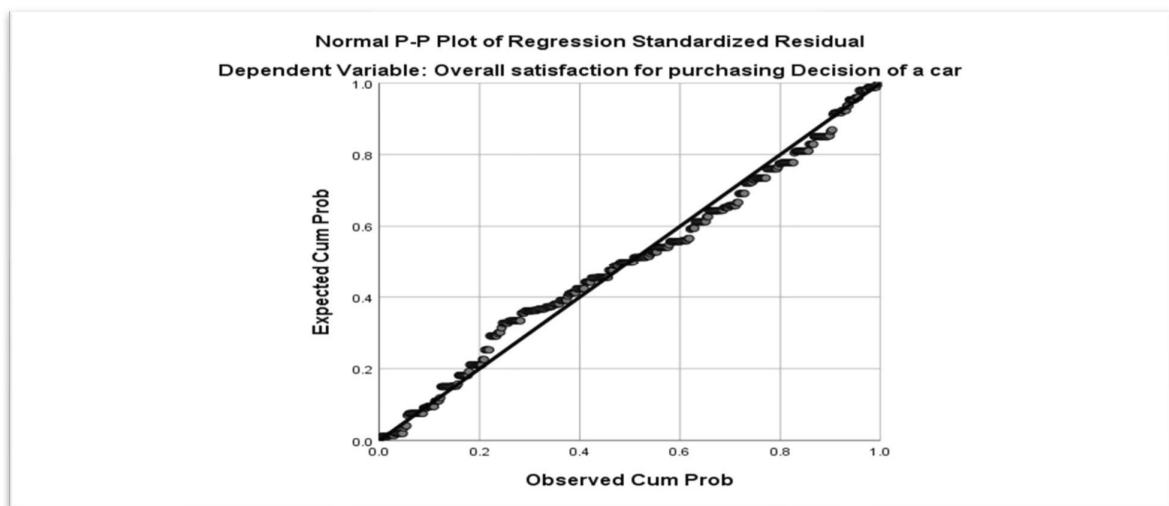
Fig 2: Histogram (Consumer Purchasing Decision towards cars)



Source: Compiled by the author

It was determined from the histogram in fig-2 above that the dependent variable was clearly depicted as a bell curve and that it was normally distributed.

Fig 3: Graph (Consumer Purchasing Decision towards cars)



Source: Compiled by the author

The dependent variable (overall satisfaction with the purchase decision of an automobile), which has been drawn as a straight line and has a perfect linear connection, was determined from the aforementioned Fig.

Conclusion

Automobile models follow the same pattern of behavior as human wants, which are endless and always changing and are released each month with new features to meet demand. Since it can provide

us with a wealth of information about what consumers want in a car, the auto industry is an excellent place to study consumer behavior. In future years, it is expected that more vehicles will be bought, as the need for an automobile will be acknowledged more and more. To tailor products and services to the needs and desires of consumers, it is essential to comprehend their needs and preferences given the growing number of brands and companies entering the market. Customers may be able to purchase goods swiftly and easily as a result, allowing companies and brands to make the most of their resources. It is possible to claim that several factors influence people's decision to purchase a car, such as the availability of parking spaces, family usage, well-known brands, ads with better offers, and comfort, to name a few. The impacts of technology (e.g., autonomous features, electric cars), environmental concerns (e.g., sustainability), cultural influences, economic factors (e.g., interest rates), brand perception, loyalty dynamics, the digitalization of car sales, shifts in mobility trends brought on by pandemics, and predictive analytics for consumer insights could all be explored in future research in the automotive industry. These avenues hold the potential to enhance comprehension of consumer behavior, including purchasing journeys, decision-making procedures, regional variances, and growing market dynamics. This expertise is crucial for coordinating automobile products with changing customer needs and attaining long-term market success.

The conclusion says that the attitude of the seller and the quality of the brand, age, occupation, monthly income, resale value, and mileage are the major sources of factors that are all highly influencing the consumer's decision to purchase the car. So, the automobile sector should maintain a good act in all of these factors for the peak of success of every individual firm.

Implication

The automobile sector in India has experienced a notable transformation in past several years, adjusting to constantly shifting market conditions, technical breakthroughs, and changing consumer inclinations. The sector used to be dominated by a small number of companies, but now a more diverse field exists, with global manufacturers making significant inroads into the nation. The fast infrastructure and economic growth in India, which has increased demand for cars across a range of market groups, has been one of the main forces behind this evolution (Bharadwaj, 2018). As a result, international businesses are fighting for a piece of this lucrative market, finding the Indian market to be increasingly attractive.

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