International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

An In-Depth Analysis of Customer Preferences in the Indian Automobile Market

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ABSTRACT

This research paper aims to provide an in-depth examination of customer preferences in the competitive Indian auto industry, with a focus on major players like Skoda, Mahindra, Volkswagen, Tata, and Honda. The automotive industry in India has seen significant growth and change as a result of economic expansion, changing consumer preferences, and technical breakthroughs. Recognizing the importance of knowledge-based customer options, the primary data collection method is conducting surveys to obtain direct perspectives from buyers. The findings provide valuable insights about their consumers and agencies, equipping them with informed decision-making capabilities and strategic changes to address the diverse and changing needs of Indian customers.

INTRODUCTION

The Indian automobile industry has had an important transformation over the years, driven by economic growth, evolving consumer demands, and technological advances. India, home to more than 1.42 billion people, is regarded as one of the world's most significant and active automobile markets. The industry has seen the establishment of a varied range of players, all fighting for a significant portion of this competitive and complex market. Among these, renowned names such as Skoda, Mahindra, Volkswagen, Tata, and Honda have consistently shaped market dynamics, contributing to the evolution of customer preferences.

Understanding buyer options is critical for automakers to customize their strategy and services to meet the ever-changing expectations of the Indian client. This study delves deeply into the complex web of factors affecting the customer preference in the Indian automobile market, with a focus on the major players: Skoda, Mahindra, Volkswagen, Tata, and Honda. Provide a detailed perspective on the processes influencing consumer choices by exploring elements like layout aesthetics, design, fuel efficiency safety and many more. This observation seeks to support ongoing changes within the automotive industry, encouraging creativity and informed decision-making. We set out on a journey to discover the complex interactions between consumer possibilities that determine the course of this dynamic industry's future as we explore the challenging subtleties of the Indian automobile industry.

OBJECTIVE

- To identify the key elements driving customer preferences in the Indian auto market.

- To determine whether socioeconomic, cultural, and demographic factors affect decisions about which vehicles to purchase.

- To determine how innovation and generation shape consumer possibilities.

- To evaluate the importance of sustainability and environmental issues during the decision-making process.

- To investigate customer satisfaction and pride levels with exceptional automakers.

- to determine which among the 5-automobile company is preferred by the Indian audience

LIMITATIONS OF THE STUDY

- There are just five players;

- The study is limited to India;

- There can be geographical biases may have an impact on the results

- Limited time

- Only a few numbers of responses

- Periodic shifts in client preferences over time

SCOPE OF THE STUDY

- An in-depth examination of consumer preferences in the Indian auto industry.

- An in-depth examination of the ways that Indian demographics affect decisions about purchasing cars.

- Research on how innovation and technology affect consumer choices in the automotive industry.

- An assessment of how important sustainability and environmental issues are in influencing consumers' decisions to purchase cars

KEY PLAYER IN THE INDIAN AUTOMOBILE INDUSTRY

1. **SKODA: Simply Clever**

History

Škoda Auto, formed in 1925, originated from Škoda Works, which was established in 1859 as a weapons manufacturer. After purchasing Laurian & Klement in 1925, Škoda began its automotive history and passed through many eras, including the communist one. It joined forces with Volkswagen (VW) in 1990, and in 2000 it became a fully-owned subsidiary. With VW's support, Škoda had a revolutionary phase that addressed image problems and brought pleasant advancements. The logo achieved significant sales milestones and generated huge profit margins with a global reach. In a short period of time in 2023, Škoda Auto India produced over a million cars, demonstrating its success and position in the market.

Mission

To deliver reliable, innovative, and value-for-money vehicles and services, with a strong focus on design and driving experience.

Vision

To be a leading European manufacturer in India, renowned for its emotional design, intelligent technology, and exceptional customer experience.

2. **Volkswagen: Das Auto**

History

Volkswagen was founded in 1937 in Germany with the intention of producing a "people's vehicle" at a lower cost."... Having been established during the Nazi era, the company rose to fame after World War II, particularly thanks to the legendary Volkswagen Beetle, which demonstrated tenacity and a commitment to technical brilliance.

Mission

To shape the future of mobility with sustainable and affordable solutions for all.

Vision

To be the world's leading and most trusted automotive brand, recognized for its technical excellence and social responsibility.

3. **Mahindra: Rise With Mahindra**

History

Established in 1945, Mahindra has grown into a global business known for its commitment to pleasant alternate and the driving motivation to assist people and communities "Rise." Mahindra has established itself as a brand identified with people-centric design, innovation, and dependability across a wide range of industries, including automotive, farm equipment, aerospace, and energy.

Mission

To drive positive change in the lives of stakeholders through mobility solutions and innovation.

Vision

To be a pioneer in providing future-ready mobility solutions, leading the way in clean energy and smart transportation.

4. **TATA Motors: Experience Drive**

History

TATA Motors, a member of the TATA Group, was founded in India in 1868 via the efforts of Jamsetji Tata. From TELCO (TATA Engineering and Locomotive Co. Ltd.), it developed into a well-known automobile brand on a global scale. Trust, dependability, and a dedication to social responsibility are all associated with the TATA brand. The firm shares the same values as its founder, who aimed to contribute to the growth of the country.

Mission

To build a better tomorrow through leadership in sustainable mobility solutions, empowering communities, and enriching lives.

Vision

To be a globally respected and admired automotive group, delivering world-class products and services.

5. **Honda: The Power of Dreams**

History

Honda started off as a motorcycle manufacturer when it was formed in 1948 by Soichiro Honda and Takeo Fujisawa. The organization quickly branched out into motor production and gained notoriety for its creative engineering and fuel-efficient cars. After making a successful debut in Formula One in the 1960s, Honda has gone on to become a major force in the global automobile industry. In order to position itself as a leader in technological innovation and environmentally friendly mobility solutions, Honda has expanded its product line over time to include automobiles, motorbikes, power equipment, and more.

Mission

To provide joy and value to customers through the creation of the most advanced and efficient machines.

Vision

To be a company that society wants to exist, leading the way in mobility and technology while serving people worldwide.

METHODOLOGY

The study gathered primary data from 102 respondents from various regions of India to assess consumer preferences for Skoda, Mahindra, Volkswagen, Tata, and Honda in the Indian automobile market. By means of surveys, the research aims to offer a comprehensive understanding of factors impacting the customer preferences, also focus on buying habits, functionalities, and perceptions of logos, were distributed to a diverse group of car owners and to get an understanding of the current preference of the consumers in the Indian automotive industry

DATA ANALYSIS

HYPOTHESIS

H0 - There is no significant relationship between customer preferences and the perceived importance of automotive attributes

HA - There is a significant relationship between customer preferences and the perceived importance of automotive attributes
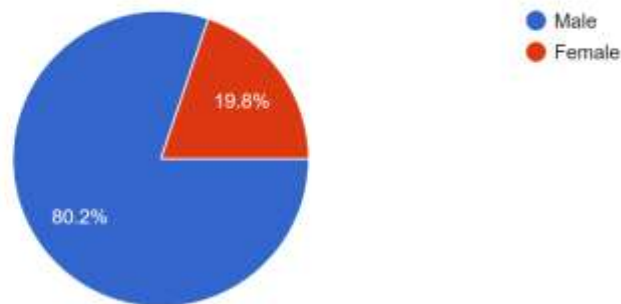
DEMOGRAPHIC

Age Group (102 response)

- I got 71 responses from the age group of 18 - 24 which is 69.6% of response from the survey
- 22 responses from 25-34 which is 21.6%
- 5 responses from 35- 44 which is 4.9 %
- 2 responses from 35 - 54 which is 8.8%
- Finally, 2 responses from 55 & above age group with a 2% of response from the survey.
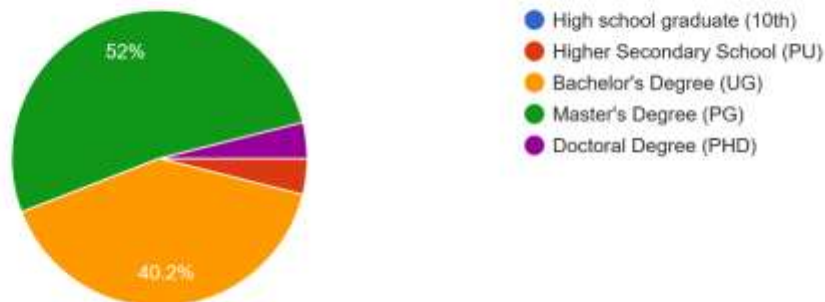
Gender
101 responses

Gender

81 responses from Male which is 80.2%

20 responses from Female which is 19.8%

Educational Qualification
102 responses

## Educational qualification (102 response)

As per the response I received from the survey,

- I got 4 responses with the educational qualification of Higher Secondary School which is 3.9% of response from the survey
- 41 responses from Bachelor's Degree which is 40.2%
- 53 responses from Master's Degree which is 52%
- Finally, 4 responses from Doctoral Degree with a 3.9 % of response from the survey
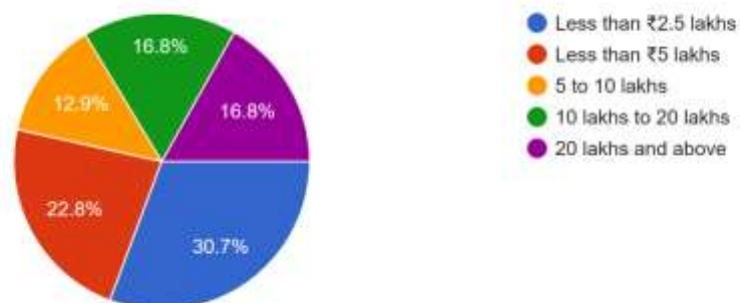
Occupation
101 responses
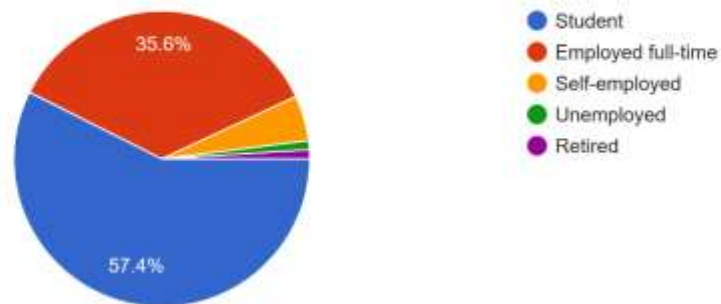
OCCUPATION

- I got 58 responses with occupation as Student which is 57.4% response from the survey

- 36 responses from Employed full time which is 35.6%

- 5 responses from self-employed which is 5%

- 1 response each for Unemployed and retired.

Annual Household Income
101 responses

Annual Household Income

- I got 31 responses with Annual Income Less than ₹2.5 lakhs which is 30.7%
- 23 responses with Annual Income Less than ₹5 lakhs which is 22.8%
- 13 responses with Annual Income 5 to 10 lakhs which is 12.9%
- 17 responses with Annual Income 10 lakhs to 20 lakhs which is 16.8%
- 17 responses with Annual Income 20 lakhs and above which is 16.8%

The above questionnaire was floated to people from different demographic groups, where there were age, education, gender, and annual income. The total number of responses that were collected were 102, which consists of people from different backgrounds. This helped me get wide range of people's thoughts on their preference in different automobile company.

General preference

The variables in the research questionnaire were as follows;

The statements that were to be answered by the respondents were given in the following format. They were supposed to answer it in a 5-point Likert scale(1 being strongly disagree and so on..)

There are 9 variables

Section 2: General Preferences

Please rate your preferences on a scale from 1 to 5, where 1 represents "Strongly Disagree" and 5 represents "Strongly Agree."

	Strongly Disagr...	Disagree	Neutral	Agree	Strongly Agree
Prefer cars tha...	○	○	○	○	○
Prefer cars wit...	○	○	○	○	○
Prioritize fuel e...	○	○	○	○	○
Prefer cars wit...	○	○	○	○	○
Consider brand...	○	○	○	○	○
Prioritize safet...	○	○	○	○	○
Prefer cars tha...	○	○	○	○	○
Prioritize the a...	○	○	○	○	○
Prefer cars wit...	○	○	○	○	○

Section 2: General Preferences
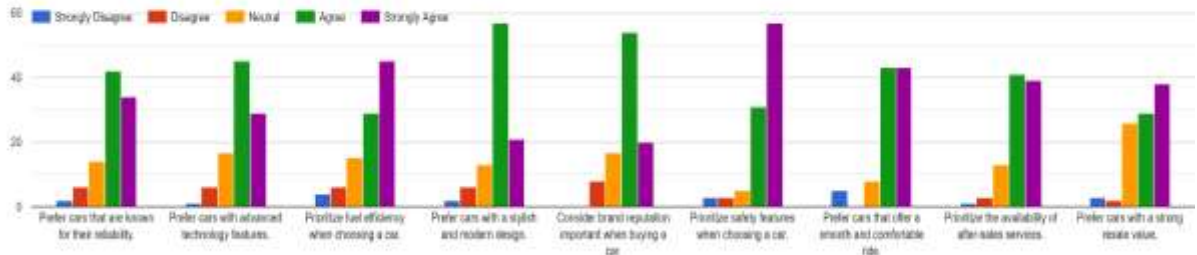
Descriptive statistics

Preferences	Strongly agree	agree	neutral	disagree	Strongly disagree
Reliability	34	42	14	6	2
Technology	29	45	17	6	1
Fuel efficiency	45	29	15	6	**4**
Design	21	57	13	6	2
Brand image	20	54	17	**8**	
Safety	**57**	31	5	3	3
Comfort	43	43	8		5
Service	39	41	13	3	1
Resale value	38	29	26	2	3

Factor Analysis

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
Section 2: General Preferences [Prefer cars that are known for their reliability.]	4.02	.944	102
Section 2: General Preferences [Prefer cars with advanced technology features.]	3.97	.884	102
Section 2: General Preferences [Prioritize fuel efficiency when choosing a car.]	4.06	1.088	102
Section 2: General Preferences [Prefer cars with a stylish and modern design.]	3.90	.862	102
Section 2: General Preferences [Consider brand reputation important when buying a car.]	3.87	.817	102
Section 2: General Preferences [Prioritize safety features when choosing a car.]	4.36	.931	102
Section 2: General Preferences [Prefer cars that offer a smooth and comfortable ride.]	4.18	.979	102
Section 2: General Preferences [Prioritize the availability of after-sales services.]	4.15	.861	102
Section 2: General Preferences [Prefer cars with a strong resale value.]	3.97	1.009	102

Correlation Matrix[a]

		Section 2: General Preferences [Prefer cars that are known for their reliability]	Section 2: General Preferences [Prefer cars with advanced technology features]	Section 2: General Preferences [Prioritize fuel efficiency when choosing a car]	Section 2: General Preferences [Prefer cars with a stylish and modern design]	Section 2: General Preferences [Consider brand reputation important when buying a car]	Section 2: General Preferences [Prioritize safety features when choosing a car]	Section 2: General Preferences [Prefer cars that offer a smooth and comfortable ride]	Section 2: General Preferences [Prioritize the availability of after-sales services]	Section 2: General Preferences [Prefer cars with a strong resale value]
Correlation	Section 2: General Preferences [Prefer cars that are known for their reliability]	1.000	.464	.500	.575	.504	.566	.596	.630	.468
	Section 2: General Preferences [Prefer cars with advanced technology features]	.464	1.000	.506	.646	.502	.542	.532	.448	.543
	Section 2: General Preferences [Prioritize fuel efficiency when choosing a car]	.500	.506	1.000	.597	.387	.545	.557	.456	.560
	Section 2: General Preferences [Prefer cars with a stylish and modern design]	.575	.646	.597	1.000	.615	.588	.607	.460	.520
	Section 2: General Preferences [Consider brand reputation important when buying a car]	.504	.502	.387	.615	1.000	.491	.462	.464	.632
	Section 2: General Preferences [Prioritize safety features when choosing a car]	.566	.542	.545	.588	.491	1.000	.733	.649	.559
	Section 2: General Preferences [Prefer cars that offer a smooth and comfortable ride]	.596	.532	.557	.607	.462	.733	1.000	.603	.476
	Section 2: General Preferences [Prioritize the availability of after-sales services]	.630	.448	.456	.460	.464	.649	.603	1.000	.598
	Section 2: General Preferences [Prefer cars with a strong resale value]	.468	.543	.560	.520	.632	.559	.476	.598	1.000

This table gives the correlation between all the independent variables which is necessary to know as only then we might be able to group them together.

As we can observe there are no perfect zeros in the matrix, which makes us reject the null hypothesis proving that the matrix is not an identity matrix. This also means it is a good data set.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.892
Bartlett's Test of Sphericity	Approx. Chi-Square	521.493
	df	36
	Sig.	<.001

The KMO test tells us if the factor analysis is accurate or not, the best value would be above 0.9 anything above 0.5 is acceptable. Also, the significance level is <0.001 which means the model is significant.

Communalities

	Initial	Extraction
Section 2: General Preferences [Prefer cars that are known for their reliability]	1.000	.584
Section 2: General Preferences [Prefer cars with advanced technology features.]	1.000	.555
Section 2: General Preferences [Prioritize fuel efficiency when choosing a car]	1.000	.539
Section 2: General Preferences [Prefer cars with a stylish and modern design]	1.000	.655
Section 2: General Preferences [Consider brand reputation important when buying a car]	1.000	.525
Section 2: General Preferences [Prioritize safety features when choosing a car]	1.000	.676
Section 2: General Preferences [Prefer cars that offer a smooth and comfortable ride]	1.000	.651
Section 2: General Preferences [Prioritize the availability of after-sales services]	1.000	.586
Section 2: General Preferences [Prefer cars with a strong resale value]	1.000	.591

Extraction Method: Principal Component Analysis

Here, all the values tell how much variance in variables are explained by the factors. Anything above 0.5 is acceptable.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.361	59.567	59.567	5.361	59.567	59.567
2	.765	8.499	68.067			
3	.669	7.430	75.496			
4	.556	6.178	81.674			
5	.488	5.418	87.092			
6	.420	4.671	91.763			
7	.269	2.994	94.757			
8	.251	2.792	97.548			
9	.221	2.452	100.000			

Extraction Method: Principal Component Analysis.

This tells us the accuracy of the factor analysis, here there are 9 variables and they have been reduced to 1 factor, but it is fair as the accuracy is 59.567%

Scree Plot
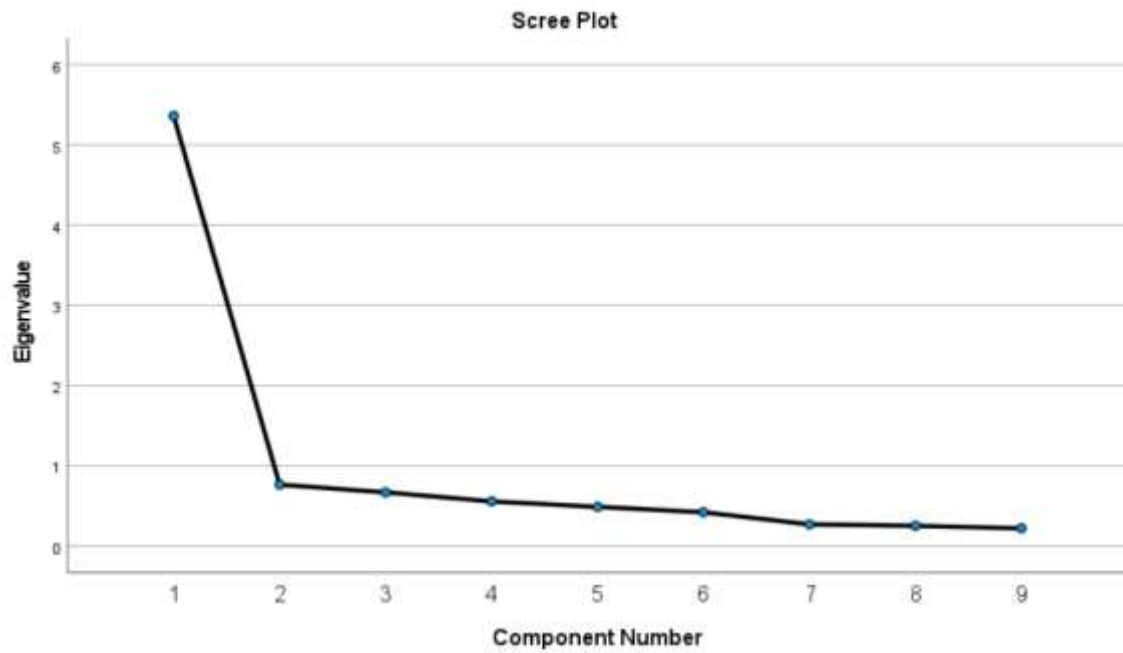
The screen plot represents of eigen values. The factors having eigen value above 1 are accepted. In this case out of 9 variables only 1 variable is eligible.

Component Matrix[a]

	Component 1
Section 2: General Preferences [Prefer cars that are known for their reliability.]	.764
Section 2: General Preferences [Prefer cars with advanced technology features.]	.745
Section 2: General Preferences [Prioritize fuel efficiency when choosing a car.]	.734
Section 2: General Preferences [Prefer cars with a stylish and modern design.]	.809
Section 2: General Preferences [Consider brand reputation important when buying a car.]	.724
Section 2: General Preferences [Prioritize safety features when choosing a car.]	.822
Section 2: General Preferences [Prefer cars that offer a smooth and comfortable ride.]	.807
Section 2: General Preferences [Prioritize the availability of after-sales services.]	.766
Section 2: General Preferences [Prefer cars with a strong resale value.]	.769

The Rotated component matrix only have one component. As per the component matrix "Prioritize safety features when choosing a car" has the highest value among all the 9 variables and through this we can understand that majority of the Indian consumers prefer cars which are safe rather than the other factors.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.913	.915	9

This value of 0.913 shows us how much can the factors be depended on 0 to1 being the standard range,anything about 0.5 is considered great.In the same way the depedency of all other factors can be evaluated. It can be concluded that factors do have a great impact on the variables.

Brand Specific Questions

3.1 Skoda

Section 3: Brand Specific Questions 3.1 Skoda
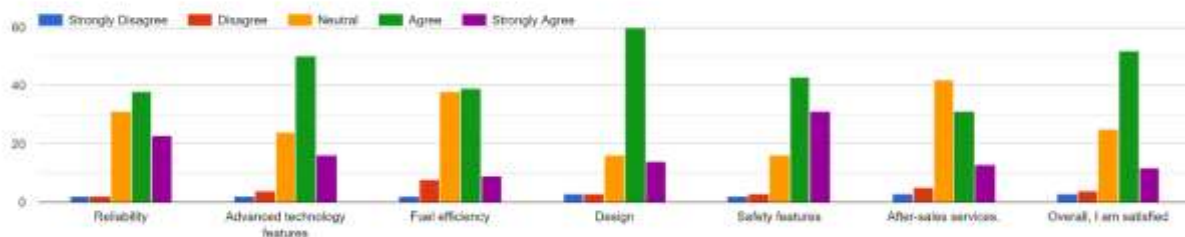
Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
					Change Statistics					
1	.638[a]	.407	.370	.679	.407	10.867	6	95	<.001	1.977

a. Predictors: (Constant), Section 3: Brand Specific Questions
   3.1 Skoda [After-sales services], Section 3: Brand Specific Questions
   3.1 Skoda [Design], Section 3: Brand Specific Questions
   3.1 Skoda [Fuel efficiency], Section 3: Brand Specific Questions
   3.1 Skoda [Advanced technology features], Section 3: Brand Specific Questions
   3.1 Skoda [Safety features], Section 3: Brand Specific Questions
   3.1 Skoda [Reliability]

b. Dependent Variable: Section 3: Brand Specific Questions
   3.1 Skoda [Overall, I am satisfied]

Model Summary

In this case, an R-square value of 0.407 indicates that approximately 40.7% of the variability in the dependent variable is explained by the independent variables in your model.

Durbin-Watson a value below 2 suggests the possibility of positive autocorrelation, while a value above 2 suggests the possibility of negative autocorrelation. In this case the value of 1.977 indicates that there may be a slight positive autocorrelation in the residuals.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.101	6	5.017	10.867	<.001[b]
	Residual	43.859	95	.462		
	Total	73.961	101			

a. Dependent Variable: Section 3: Brand Specific Questions
3.1 Skoda [Overall, I am satisfied]

b. Predictors: (Constant), Section 3: Brand Specific Questions
3.1 Skoda [After-sales services.], Section 3: Brand Specific Questions
3.1 Skoda [Design], Section 3: Brand Specific Questions
3.1 Skoda [Fuel efficiency], Section 3: Brand Specific Questions
3.1 Skoda [Advanced technology features], Section 3: Brand Specific Questions
3.1 Skoda [Safety features], Section 3: Brand Specific Questions
3.1 Skoda [Reliability]

The small p-value is less than 0.05 (0.01) showing the model is significant.

Descriptive Statistics

	Mean	Std. Deviation	N
Section 3: Brand Specific Questions 3.1 Skoda [Overall, I am satisfied]	3.69	.856	102
Section 3: Brand Specific Questions 3.1 Skoda [Reliability]	3.80	.890	102
Section 3: Brand Specific Questions 3.1 Skoda [Advanced technology features]	3.76	.846	102
Section 3: Brand Specific Questions 3.1 Skoda [Fuel efficiency]	3.48	.853	102
Section 3: Brand Specific Questions 3.1 Skoda [Design]	3.83	.809	102
Section 3: Brand Specific Questions 3.1 Skoda [Safety features]	4.03	.873	102
Section 3: Brand Specific Questions 3.1 Skoda [After-sales services.]	3.53	.887	102

Most of the mean value are between 3 and 4, which as per the survey Please rate your preferences on a scale from 1 to 5, where 1 represents "Strongly Disagree" and 5 represents "Strongly Agree." This shows that the Skoda is accepted by the Indian consumers in all its aspects mainly in reliability, Design, Fuel efficiency and safety.

Correlations

		Section 3: Brand Specific Questions 3.1 Skoda [Overall, I am satisfied]	Section 3: Brand Specific Questions 3.1 Skoda [Reliability]	Section 3: Brand Specific Questions 3.1 Skoda [Advanced technology features]	Section 3: Brand Specific Questions 3.1 Skoda [Fuel efficiency]	Section 3: Brand Specific Questions 3.1 Skoda [Design]	Section 3: Brand Specific Questions 3.1 Skoda [Safety features]	Section 3: Brand Specific Questions 3.1 Skoda [After-sales services]
Pearson Correlation	Section 3: Brand Specific Questions 3.1 Skoda [Overall, I am satisfied]	1.000	.516	.403	.521	.424	.516	.534
	Section 3: Brand Specific Questions 3.1 Skoda [Reliability]	.516	1.000	.582	.608	.531	.619	.647
	Section 3: Brand Specific Questions 3.1 Skoda [Advanced technology features]	.403	.582	1.000	.501	.593	.586	.537
	Section 3: Brand Specific Questions 3.1 Skoda [Fuel efficiency]	.521	.608	.501	1.000	.447	.566	.538
	Section 3: Brand Specific Questions 3.1 Skoda [Design]	.424	.531	.593	.447	1.000	.554	.400
	Section 3: Brand Specific Questions 3.1 Skoda [Safety features]	.516	.619	.586	.566	.554	1.000	.543
	Section 3: Brand Specific Questions 3.1 Skoda [After-sales services]	.534	.647	.537	.538	.400	.543	1.000

As per analysis the correlation matrix Skoda as per Indian consumer are preferred and have a good correlation, because of its in reliability, Fuel efficiency and safety features.

3.2 MAHINDRA & MAHINDRA

3.2 Mahindra & Mahindra
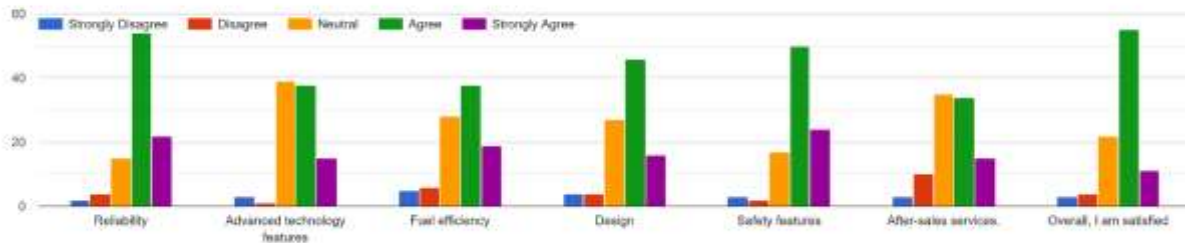
Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
					Change Statistics					
1	.831[a]	.691	.672	.481	.691	35.466	6	95	<.001	1.680

a. Predictors: (Constant), 3.2 Mahindra & Mahindra [After-sales services.], 3.2 Mahindra & Mahindra [Design], 3.2 Mahindra & Mahindra [Advanced technology features], 3.2 Mahindra & Mahindra [Fuel efficiency], 3.2 Mahindra & Mahindra [Reliability], 3.2 Mahindra & Mahindra [Safety features]

b. Dependent Variable: 3.2 Mahindra & Mahindra [Overall, I am satisfied]

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49.208	6	8.201	35.466	<.001[b]
	Residual	21.968	95	.231		
	Total	71.176	101			

a. Dependent Variable: 3.2 Mahindra & Mahindra [Overall, I am satisfied]

b. Predictors: (Constant), 3.2 Mahindra & Mahindra [After-sales services.], 3.2 Mahindra & Mahindra [Design], 3.2 Mahindra & Mahindra [Advanced technology features], 3.2 Mahindra & Mahindra [Fuel efficiency], 3.2 Mahindra & Mahindra [Reliability], 3.2 Mahindra & Mahindra [Safety features]

Model Summary

In this case, an R-square value of 0.691 indicates that approximately 69.1% of the variability in the dependent variable is explained by the independent variables in your model.

Durbin-Watson a value below 2 suggests the possibility of positive autocorrelation, while a value above 2 suggests the possibility of negative autocorrelation. In this case the value of 1.680 indicates that it is positive autocorrelation in the residuals.

ANOVA: The small p-value is less than 0.05 (0.01) showing the model is significant.

Descriptive Statistics

	Mean	Std. Deviation	N
3.2 Mahindra & Mahindra [Overall, I am satisfied]	3.71	.839	102
3.2 Mahindra & Mahindra [Reliability]	3.91	.857	102
3.2 Mahindra & Mahindra [Advanced technology features]	3.65	.863	102
3.2 Mahindra & Mahindra [Fuel efficiency]	3.63	1.024	102
3.2 Mahindra & Mahindra [Design]	3.70	.920	102
3.2 Mahindra & Mahindra [Safety features]	3.94	.865	102
3.2 Mahindra & Mahindra [After-sales services.]	3.52	.962	102

Most of the mean value are between 3 and 4, which as per the survey Please rate your preferences on a scale from 1 to 5, where 1 represents "Strongly Disagree" and 5 represents "Strongly Agree." This shows that the Mahindra is accepted by the Indian consumers in all its aspects mainly in reliability and safety.

Correlations

		3.2 Mahindra & Mahindra [Overall, I am satisfied]	3.2 Mahindra & Mahindra [Reliability]	3.2 Mahindra & Mahindra [Advanced technology features]	3.2 Mahindra & Mahindra [Fuel efficiency]	3.2 Mahindra & Mahindra [Design]	3.2 Mahindra & Mahindra [Safety features]	3.2 Mahindra & Mahindra [After-sales services]
Pearson Correlation	3.2 Mahindra & Mahindra [Overall, I am satisfied]	1.000	.638	.675	.678	.601	.671	.620
	3.2 Mahindra & Mahindra [Reliability]	.638	1.000	.533	.583	.656	.620	.356
	3.2 Mahindra & Mahindra [Advanced technology features]	.675	.533	1.000	.578	.549	.634	.461
	3.2 Mahindra & Mahindra [Fuel efficiency]	.678	.583	.578	1.000	.572	.612	.480
	3.2 Mahindra & Mahindra [Design]	.601	.656	.549	.572	1.000	.586	.337
	3.2 Mahindra & Mahindra [Safety features]	.671	.620	.634	.612	.586	1.000	.572
	3.2 Mahindra & Mahindra [After-sales services]	.620	.356	.461	.480	.337	.572	1.000

As per analysis the correlation matrix Mahindra as per Indian consumer are preferred and have a good correlation, because of its in reliability, safety , design and technology.

3.3 VOLKSWAGEN

3.3 Volkswagen
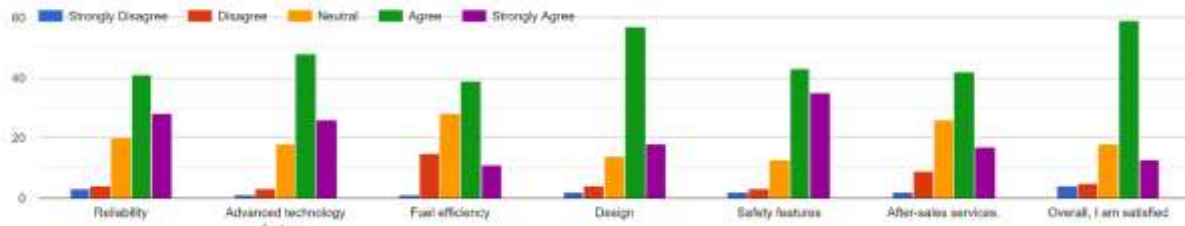
Model Summary[b]

					Change Statistics					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.732[a]	.535	.506	.625	.535	18.242	6	95	<.001	1.921

a. Predictors: (Constant), 3.3 Volkswagen [After-sales services], 3.3 Volkswagen [Design], 3.3 Volkswagen [Fuel efficiency], 3.3 Volkswagen [Reliability], 3.3 Volkswagen [Advanced technology features], 3.3 Volkswagen [Safety features]

b. Dependent Variable: 3.3 Volkswagen [Overall, I am satisfied]

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.749	6	7.125	18.242	<.001[b]
	Residual	37.104	95	.391		
	Total	79.853	101			

a. Dependent Variable: 3.3 Volkswagen [Overall, I am satisfied]

b. Predictors: (Constant), 3.3 Volkswagen [After-sales services], 3.3 Volkswagen [Design], 3.3 Volkswagen [Fuel efficiency], 3.3 Volkswagen [Reliability], 3.3 Volkswagen [Advanced technology features], 3.3 Volkswagen [Safety features]

Model Summary

In this case, an R-square value of 0.535 indicates that approximately 53.3% of the variability in the dependent variable is explained by the independent variables in your model.

Durbin-Watson a value below 2 suggests the possibility of positive autocorrelation, while a value above 2 suggests the possibility of negative autocorrelation. In this case the value of 1.921 indicates that it is positive autocorrelation in the residuals.

ANOVA: The small p-value is less than 0.05 (0.01) showing the model is significant.

Descriptive Statistics

	Mean	Std. Deviation	N
3.3 Volkswagen [Overall, I am satisfied]	3.74	.889	102
3.3 Volkswagen [Reliability]	3.89	.964	102
3.3 Volkswagen [Advanced technology features]	3.97	.826	102
3.3 Volkswagen [Fuel efficiency]	3.49	.920	102
3.3 Volkswagen [Design]	3.88	.824	102
3.3 Volkswagen [Safety features]	4.08	.898	102
3.3 Volkswagen [After-sales services.]	3.68	.924	102

Most of the mean value are between 3.5 and 4.5, which as per the survey Please rate your preferences on a scale from 1 to 5, where 1 represents "Strongly Disagree" and 5 represents "Strongly Agree." This shows that the VOLKSWAGEN is greatly accepted by the Indian consumers in all its aspects mainly in reliability, advance technology, Design, and mainly known for its safety.

Correlations

		3.3 Volkswagen [Overall, I am satisfied]	3.3 Volkswagen [Reliability]	3.3 Volkswagen [Advanced technology features]	3.3 Volkswagen [Fuel efficiency]	3.3 Volkswagen [Design]	3.3 Volkswagen [Safety features]	3.3 Volkswagen [After-sales services]
Pearson Correlation	3.3 Volkswagen [Overall, I am satisfied]	1.000	.602	.609	.414	.538	.647	.593
	3.3 Volkswagen [Reliability]	.602	1.000	.605	.507	.483	.674	.605
	3.3 Volkswagen [Advanced technology features]	.609	.605	1.000	.475	.679	.751	.506
	3.3 Volkswagen [Fuel efficiency]	.414	.507	.475	1.000	.508	.493	.572
	3.3 Volkswagen [Design]	.538	.483	.679	.508	1.000	.615	.456
	3.3 Volkswagen [Safety features]	.647	.674	.751	.493	.615	1.000	.592
	3.3 Volkswagen [After-sales services]	.593	.605	.506	.572	.456	.592	1.000

As per analysis the correlation matrix VW as per Indian consumer are preferred and have a good correlation, because of its in reliability, safety, design, and technology.

3.4 TATA

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics						Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change		
1	.865[a]	.749	.733	.452	.749	47.254	6	95	<.001		1.898

a. Predictors: (Constant), 3.4 Tata [After-sales services], 3.4 Tata [Fuel efficiency], 3.4 Tata [Safety features], 3.4 Tata [Advanced technology features], 3.4 Tata [Reliability], 3.4 Tata [Design]

b. Dependent Variable: 3.4 Tata [Overall, I am satisfied]

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	57.932	6	9.655	47.254	<.001[b]
	Residual	19.411	95	.204		
	Total	77.343	101			

a. Dependent Variable: 3.4 Tata [Overall, I am satisfied]

b. Predictors: (Constant), 3.4 Tata [After-sales services], 3.4 Tata [Fuel efficiency], 3.4 Tata [Safety features], 3.4 Tata [Advanced technology features], 3.4 Tata [Reliability], 3.4 Tata [Design]

Model Summary

In this case, an R-square value of 0.749 indicates that approximately 74.9% of the variability in the dependent variable is explained by the independent variables in your model.

Durbin-Watson a value below 2 suggests the possibility of positive autocorrelation, while a value above 2 suggests the possibility of negative autocorrelation. In this case the value of 1.898 indicates that it is positive autocorrelation in the residuals.

ANOVA: The small p-value is less than 0.05 (0.01) showing the model is significant

Descriptive Statistics

	Mean	Std. Deviation	N
3.4 Tata [Overall, I am satisfied]	3.87	.875	102
3.4 Tata [Reliability]	4.04	.984	102
3.4 Tata [Advanced technology features]	3.93	.957	102
3.4 Tata [Fuel efficiency]	3.81	.876	102
3.4 Tata [Design]	3.83	.868	102
3.4 Tata [Safety features]	4.19	.931	102
3.4 Tata [After-sales services.]	3.81	.962	102

Most of the mean value are close and above than 4, which as per the survey Please rate your preferences on a scale from 1 to 5, where 1 represents "Strongly Disagree" and 5 represents "Strongly Agree." This shows that the TATA is greatly accepted by the Indian consumers in all its aspects mainly in, advance technology, fuel efficiency, service Design, and mainly known for its reliability and safety. So basically, it is widely accepted by the Indian audience in all the 6 factors.

Correlations

		3.4 Tata [Overall, I am satisfied]	3.4 Tata [Reliability]	3.4 Tata [Advanced technology features]	3.4 Tata [Fuel efficiency]	3.4 Tata [Design]	3.4 Tata [Safety features]	3.4 Tata [After-sales services]
Pearson Correlation	3.4 Tata [Overall, I am satisfied]	1.000	.719	.651	.679	.767	.747	.748
	3.4 Tata [Reliability]	.719	1.000	.665	.663	.691	.759	.625
	3.4 Tata [Advanced technology features]	.651	.665	1.000	.682	.748	.704	.610
	3.4 Tata [Fuel efficiency]	.679	.663	.682	1.000	.688	.650	.558
	3.4 Tata [Design]	.767	.691	.748	.688	1.000	.713	.674
	3.4 Tata [Safety features]	.747	.759	.704	.650	.713	1.000	.603
	3.4 Tata [After-sales services]	.748	.625	.610	.558	.674	.603	1.000

As per analysis the correlation matrix TATA as per Indian consumer are preferred and have a best correlation and is agreed upon all the 6 factors.

3.5 HONDA

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.840[a]	.706	.688	.406	.706	38.042	6	95	<.001	1.863

a. Predictors: (Constant), 3.5 Honda [After-sales services], 3.5 Honda [Fuel efficiency], 3.5 Honda [Reliability], 3.5 Honda [Safety features], 3.5 Honda [Advanced technology features], 3.5 Honda [Design]

b. Dependent Variable: 3.5 Honda [Overall, I am satisfied]

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.604	6	6.267	38.042	<.001[b]
	Residual	15.651	95	.165		
	Total	53.255	101			

a. Dependent Variable: 3.5 Honda [Overall, I am satisfied]

b. Predictors: (Constant), 3.5 Honda [After-sales services], 3.5 Honda [Fuel efficiency], 3.5 Honda [Reliability], 3.5 Honda [Safety features], 3.5 Honda [Advanced technology features], 3.5 Honda [Design]

Model Summary

In this case, an R-square value of 0.706 indicates that approximately 70.6% of the variability in the dependent variable is explained by the independent variables in your model.

Durbin-Watson a value below 2 suggests the possibility of positive autocorrelation, while a value above 2 suggests the possibility of negative autocorrelation. In this case the value of 1.863 indicates that it is positive autocorrelation in the residuals.

ANOVA: The small p-value is less than 0.05 (0.01) showing the model is significant

Descriptive Statistics

	Mean	Std. Deviation	N
3.5 Honda [Overall, I am satisfied.]	3.78	.726	102
3.5 Honda [Reliability]	3.78	.961	102
3.5 Honda [Advanced technology features]	3.81	.887	102
3.5 Honda [Fuel efficiency]	3.88	.915	102
3.5 Honda [Design]	3.75	.838	102
3.5 Honda [Safety features]	3.57	.896	102
3.5 Honda [After-sales services.]	3.81	.700	102

Most of the mean value are between 3 and 4, which as per the survey Please rate your preferences on a scale from 1 to 5, where 1 represents "Strongly Disagree" and 5 represents "Strongly Agree." This shows that the Honda is accepted by the Indian consumers in all its aspects mainly in, advance technology, fuel efficiency, service Design, reliability and safety.

Correlations

		3.5 Honda [Overall, I am satisfied.]	3.5 Honda [Reliability]	3.5 Honda [Advanced technology features]	3.5 Honda [Fuel efficiency]	3.5 Honda [Design]	3.5 Honda [Safety features]	3.5 Honda [After-sales services.]
Pearson Correlation	3.5 Honda [Overall, I am satisfied.]	1.000	.600	.721	.617	.759	.571	.739
	3.5 Honda [Reliability]	.600	1.000	.684	.466	.586	.535	.573
	3.5 Honda [Advanced technology features]	.721	.684	1.000	.546	.658	.558	.645
	3.5 Honda [Fuel efficiency]	.617	.466	.546	1.000	.621	.324	.568
	3.5 Honda [Design]	.759	.586	.658	.621	1.000	.663	.732
	3.5 Honda [Safety features]	.571	.535	.558	.324	.663	1.000	.660
	3.5 Honda [After-sales services.]	.739	.573	.645	.568	.732	.660	1.000

As per analysis the correlation matrix Honda as per Indian consumer are preferred and have a good correlation, because of its in reliability, fuel efficiency, safety, design, and technology.

Overall Brand Preference

Please rank your overall preference for the car brands from 1 to 5, where 1 is your most preferred and 5 is your least preferred.

Section 4: Overall Brand Preference
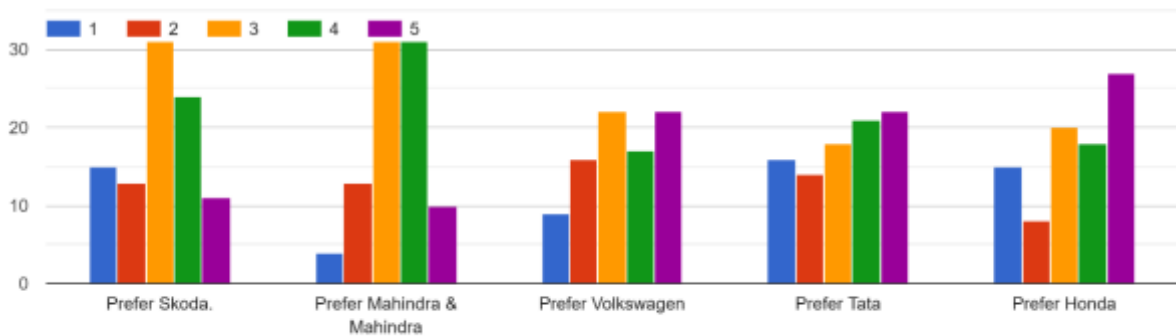
On the scale of 1 to 5, 1 being the highest as per the above response output

BRAND PREFERENCES	1	2	3	4	5
Skoda	15	13	**31**	24	11
Mahindra	4	13	31	**31**	10
VW	9	**16**	22	17	22
Tata	**16**	14	18	21	22
Honda	15	8	18	18	**27**

FINAL DISCUSSION

General Preferences

Based on the provided data, customer preferences reveal distinct priorities. Reliability, safety and fuel efficiency are notable focal points, with a substantial consensus among respondents. Resale value and service also hold importance, as a significant portion expresses agreement with their significance. Technology and design elicit mixed opinions, showcasing diverse preferences among consumers. Brand image, though generally considered important, has a notable percentage in disagreement. Remarkably, resale value and service, alongside reliability and fuel efficiency, stand out as key considerations for consumers. In contrast, design appears to be the least emphasized factor, with a considerable number expressing disagreement. Understanding these nuanced preferences is crucial for businesses to tailor their products and services effectively, addressing the priorities that resonate most with their target audience. Looking forward, adapting strategies to align with these discerning consumer preferences is essential for future success in the market.

As per the factor analysis, the descriptive statistics shows, other than technology, design, brand reputation and resale value are between 3 and 4 but very close to 4, while the rest od them is agreed upon all the Indian consumers, especially safety which is highest and mostly preferred. As per the correlation the model is a good fit. The KMO test signifies that the factor analysis so accurate or not in this case the value we got is .892 which is close to 0.9, so it can be considered as a best value and the significances is less than 0.01 which is less than 0.05 the model is significant, also rejecting the null hypothesis and accepting the alternative hypothesis that "There is a significant relationship between customer preferences and the perceived importance of automotive attributes". As per the, total variable explained, screen plot and component matrix "Prioritize safety features when choosing a car" has the highest value among all the 9 variables. As per my understanding majority of the Indian consumers prefer cars which are safe rather than the other factors. Finally as per the reliability statistics value of 0.913 shows us how much can the factors be depended on 0 to1 being the standard range,anything about 0.5 is considered great. In this case our output is higly correlated with each other and realibile.

The analysis of customer preferences across Skoda, Mahindra, Volkswagen (VW), Tata, and Honda provides valuable insights into the distinct priorities of Indian consumers in the automotive market. Reliability, safety, and fuel efficiency emerge as key focal points across all brands, with strong consensus among respondents. Notably, Skoda, Mahindra, and Volkswagen exhibit significant acceptance and positive correlations in various aspects such as

reliability, safety, design, and technology. In certain areas for improvement are identified. For instance, in the case of Skoda, fuel efficiency is perceived less favourably compared to other attributes. Mahindra could focus on enhancing after-sales services, as indicated by its relatively lower mean value in this category. Volkswagen stands out for its strong appeal in reliability, advanced technology, design, and safety, but fuel efficiency seems to be an area for potential enhancement. Tata receives high acceptance across all factors, yet there's room for improvement in fuel efficiency and after-sales services. Honda, while well-received in technology and fuel efficiency, might consider addressing safety concerns indicated by a lower mean value. In the general discussion, it is evident that consumers highly prioritize specific attributes, and companies can capitalize on this by tailoring their strategies to enhance these aspects further. Continuous efforts to improve fuel efficiency and after-sales services are key recommendations, given their identified importance across brands. Understanding and responding to these nuanced preferences will be crucial for the automotive companies to stay competitive and meet evolving consumer expectations in the future market.

CONCLUSION

In conclusion, this research paper extensively explored customer preferences in the dynamic Indian automobile market, focusing on key players such as Skoda, Mahindra, Volkswagen, Tata, and Honda. The industry's growth and transformation, driven by economic development and technological advancements, necessitate a keen understanding of consumer priorities. The findings underscore that reliability, safety, and fuel efficiency are paramount for Indian consumers, while resale value and service also hold significance. Notably, areas for improvement include fuel efficiency for Skoda, after-sales services for Mahindra, and potential enhancements in fuel efficiency for Volkswagen. The study emphasizes the importance of aligning strategies with these consumer preferences for sustained competitiveness in the market. It also highlights the predominant preference for safety features among Indian consumers. As the industry continues to transform, the key takeaway is the importance of staying attuned to consumer needs, ensuring that the future of automobiles resonates seamlessly with the desires of the Indian market.