



TO STUDY ON PREDICTIVE ANALYTICS FOR PERSONALIZED CUSTOMER EXPERIENCES IN TVS BRAKES INDIA

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Abstract:

Predictive analytics has emerged as an important tool for organizations looking to provide better customer experiences through data-driven decision-making. This paper aims to explore the importance of predictive analytics in delivering a personal experience to customers, specifically within the automotive component industry, as exemplified by TVS Brakes India. Predictive analytics is based on using historical data and statistical algorithms to analyze customer patterns and forecast future requirements. For businesses looking to improve customer experience through data-driven decision-making, predictive analytics has become a potent tool. With particular reference to TVS Brakes India, this study examines the function of predictive analytics in providing customized customer experiences in the automotive component industry. Predictive

analytics forecasts future needs and preferences by analyzing patterns in customer behavior using statistical algorithms, machine learning techniques, and historical data. Examining how predictive analytics can assist businesses in better understanding client needs, enhancing service quality, and creating tailored marketing and engagement plans is the aim of this study. Predictive models in the automotive industry allow businesses to examine market trends, customer purchase history, and service data in order to deliver tailored services, timely maintenance reminders, and targeted offers that increase customer satisfaction. The aim of this research is to identify how predictive analytics can help businesses understand customer needs, improve service quality, and create a marketing strategy that is personal to the customer. In the automotive industry, predictive analytics can help businesses analyze customer purchase history, service history, and market trends to offer their customers a personal and unique experience that is of high quality and satisfactory to the customer. This research aims to assess the impact of predictive analytics on customer experience in TVS Brakes India using both primary and secondary data. Predictive analytics can help businesses in the automotive industry create a positive impact on customer experience and gain a competitive advantage in the automotive industry. The results of this research identify the importance of integrating predictive analytics into



business strategies to create a personal and unique experience for customers and improve organizational performance in the automotive industry

KEYWORDS: Predictive Analytics, Personalized Customer Experience, Artificial Intelligence, Machine Learning, Customer Behavior Analysis, Data-Driven Marketing, Automotive Industry, Customer Engagement.

Introduction:

This study uses both primary and secondary data to evaluate the impact of predictive analytics on customer experience within TVS Brakes India. The research explores how data-driven insights can support better demand forecasting, customer segmentation, and proactive service delivery. By leveraging predictive analytics, companies can strengthen customer relationships, optimize operational efficiency, and gain a competitive advantage in the automotive industry. The findings of this study highlight the importance of integrating predictive analytics into business strategies to create personalized customer experiences and improve overall organizational performance in the modern automotive market.

Customer expectations have undergone a transformation with the fast-paced and data-centric business world of today. Contemporary consumers seek individualized experiences that reflect an awareness of their needs, behaviours,

and likes. Predictive analytics, a subset of data analytics, has emerged as a strong weapon that enables organizations to foresee customer requirements and deliver customized services. TVS Brakes India, a leading Indian automotive component company, is recognized for its quality braking systems and innovation. As competition increases and customer retention becomes more difficult, TVS Brakes India is coming up with new methods to differentiate itself. One method is to leverage data to enhance the customer experience.

This research discusses how TVS Brakes India leverages predictive analytics in order to craft bespoke customer experiences. Through the analysis of past customer data, buying habits, reviews, and behavioural information, predictive models can make predictions about future behaviour and choices. These learnings enable the company to offer tailored product suggestions, timely reminders for service, targeted marketing initiatives, and anticipatory assistance, which in turn increases customer satisfaction and retention. The purpose of this study is to evaluate the extent to which predictive analytics can be applied across TVS Brakes India's customer interaction initiatives.

The purpose of this study is to evaluate the extent to which predictive analytics can be applied across TVS Brakes India's customer interaction initiatives. It also aims to discover the potential advantages, challenges, and implications of such



initiatives on customer loyalty and business development.

This research tries to find a way to improve individualized customer experience through predictive analytics in TVS Brakes India. It explores possibilities, opportunities, and challenges in using predictive analytics in production. It also emphasizes how data-based personalization can contribute to business growth, customer loyalty, and competitive advantage in the automotive business

Objectives Of The Study:

Primary Objective:

To study how predictive analytics for personalized customer experiences in TVS brakes India.

Secondary Objectives

- To understand the relevance of using predictive analytics in the automobile component industry, specifically in handling customer experiences.
- To recognize sources of data pertaining to customers (sales, service, etc.), where predictive analytics can be applied.
- To track customer behaviors and recognize customer segments based on specific purchase and service histories.
- To recognize types of predictive analytics (demand prediction, churn prediction,

recommendation systems, etc.), which can be applied in decision-making processes.

Review Of Literature:

Parihar Suresh Dahake, (2024) The automobile industry has experienced a tectonic shift as a result of the proliferation of data and the implementation of predictive analytics, which have revolutionized the comprehension of consumer behaviour. This research, “Predictive Analytics in Automotive Consumer Behaviour: An Insight into Personal Use 4-Wheeler Purchase Decisions,” examines the transformative potential of predictive analytics in comprehending customer preferences and purchasing behaviours within the 4 -wheeler automobile industry. The research is motivated by the pressing necessity for automotive marketers and manufacturers to analyze extensive data sets in order to anticipate consumer preferences, enhance product alignment, and optimise sales strategi...

Maya Chhantyal 2024 One of the ways in which the research problem is addressed in a methodical manner is through research methodology. It assists them in their research in a legitimate and reliable manner. Below is a description of the research methodology that is being followed in this research. Description of the target population surveyed, survey method, questionnaire method, and finally, the demonstration and presentation of the results and conclusion are all examples of the data collection methods that are segregated into



primary and secondary data. Although it is a commonly held belief that research is conducted in science and technology, there are many areas of academic study in which research is conducted. Research in our economics, culture, and bus...

Paolo Aversa 2024 The paper aims to offer an extensive outlook on the origin and evolution of the two-wheeler industry in Italy, Japan, and India based on secondary data. The paper shows how technological, design, and manufacturing capabilities, along with specific economic and social characteristics of each context, have influenced the determination of specific paths in the evolution of each national industry. The trends related to digital transformation, electric vehicles, and connected driving are also presented. Three major findings can be derived from this paper. The first is related to the importance of local capabilities in influencing the origin and progression of the technology and industry. The second is related to the fact that the two-wheeler industry follows similar patterns and paths as the automotive industry and can be considered as an extension of it to understand and forecast its past, present, and future. The third is related to the fact that the two-wheeler industry has been influenced by other related industries, which has made it more complex and effective and has introduced new elements to the international market related to two-wheelers

RESEARCH MODEL:

INDEPENDENT VARIABLE

DEPENDENT VARIABLE



Research Design:

Type of Research: Descriptive and exploratory research methods would be used to understand customer behavior and identify patterns to build a predictive model.

Approach: Mixed research methods would be adopted to gain an exhaustive understanding of customer behavior through interactions and sales data.

Sample Size:

The sample size for this survey is 115 respondents.

Statistical Tools:

Correlation

Regression

Chi square

Correlation

Null Hypothesis: There is no significant relationship between age and receiving



reminders or alerts for brake maintenance from TVS.

Alternative Hypothesis: There is a significant relationship between age and receiving reminders or alerts for brake maintenance from TVS.

Correlation is significant at the 0.01

Decision Rule:

- If $p \leq 0.05$, reject the null hypothesis (H_0).
- If $p > 0.05$, fail to reject the null hypothesis (H_0).

Since the p-value = 0.000 < 0.01, we reject the null hypothesis (H_0)

Correlations			
2. Age		2. Age	10. Have you received reminders or alerts for brake maintenance from TVS?
	Pearson Correlation	1	.126
	Sig. (2-tailed)		.180
	N	115	115
10. Have you received reminders or alerts for brake maintenance from TVS?	Pearson Correlation	.126	1
	Sig. (2-tailed)	.180	
	N	115	115

Interpretation:

The Pearson correlation between respondents' age and receiving brake maintenance reminders

from TVS was found to be $r = 0.126$, $p = 0.180$ ($N = 115$). This indicates a very weak positive relationship, which is not statistically significant at the 0.05 level.

Therefore, it can be concluded that age has no significant association with whether customers receive maintenance reminders from TVS.

Regression

Null-Hypothesis(H_0): There is no significant impact of preference for personalized service reminders (based on vehicle usage) on age.

Alternative-Hypothesis(H_1): There is a significant impact of preference for personalized service reminders (based on vehicle usage) on age.

- If **Sig. < 0.05**, reject $H_0 \rightarrow$ There is a significant relationship between age and preference for personalized reminders.
- If **Sig. > 0.05**, accept $H_0 \rightarrow$ There is no significant relationship between them.

The regression model is significant overall, meaning preference for personalized reminders has a significant effect on age.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.263 ^a	.069	.061	9.133	.069	8.427	1	113	.004



. Predictors: (Constant), 11.Would you prefer personalized service reminders based on your vehicle usage?

The **unstandardized coefficient (B = 5.833)** means that for each **unit increase in reminder preference**, the **age increases by about 5.83 years** on average.

The **p-value (0.004)** is **< 0.05**, so this relationship is **statistically significant**. The **Beta value (0.263)** indicates a **weak but positive effect**

Coefficients					
Model	Unstandardized Coefficients			t	Sig.
	B	Std. Error	Beta		
1 (Constant)	18.519	2.623		7.060	.000
11.Would you prefer personalized service reminders based on your vehicle usage?	5.833	2.009	.263	2.903	.004

a. Dependent Variable: 2. Age

Interpretation:

A simple linear regression analysis was carried out to determine the impact of personalized service reminder preference on the age of respondents. The analysis showed that the model was statistically significant ($F(1,113) = 8.427$, $p = 0.004$), indicating that the independent variable significantly predicts the dependent variable. The R Square value (0.069) implies that approximately 6.9% of the variation in age is explained by the respondents' preference for

personalized service reminders based on vehicle usage.

Decision Based on rules:

- p-value (Sig.) = 0.518
- Level of significance (α) = 0.05

Since $p > 0.05$, we fail to reject the null hypothesis (H_0).

Chi Square

Null-Hypothesis(H_0): There is no significant relationship between the duration of TVS brake usage and the level of satisfaction with current brake performance.

Alternative-Hypothesis(H_1): There is a significant relationship between the duration of TVS brake usage and the level of satisfaction with current brake performance

- If the Sig. value (p-value) < 0.05 , reject $H_0 \rightarrow$ There **is** a significant relationship between duration of use and satisfaction.

If the Sig. value (p-value) > 0.05 , accept $H_0 \rightarrow$ There **is** no significant relationship between them



			9. How 4 are you with your current brake performance?					Total
			1.	3.	4.	5.	Un4	
7.How long have you been using TVS brakes?	1-3 years	Count	1	15	37	7	0	60
		Expected	2.1	15.1	29.7	9.4	3.7	60.0
		Count						
	3-5 years	Count	0	4	5	1	2	12
		Expected	.4	3.0	5.9	1.9	.7	12.0
		Count						
	5+ years	Count	2	1	2	2	0	7
		Expected	.2	1.8	3.5	1.1	.4	7.0
		Count						
	Less than 1 year	Count	1	9	13	8	5	36
		Expected	1.3	9.1	17.8	5.6	2.2	36.0
		Count						
Total	Count	4	29	57	18	7	115	
	Expected	4.0	29.0	57.0	18.0	7.0	115.0	
	Count							

7.How long have you been using TVS brakes?

* 9. How 4 are you with your current brake performance? Crosstabulation

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	30.858*	12	.002
Likelihood Ratio	26.093	12	.010
N of Valid Cases	115		

. 13 cells (65.0%) have expected count less than 5. The minimum expected count is .24.

Interpretation:

This indicates that there is a significant association between the two variables — the responses to receiving reminders or alerts for brake maintenance from TVS *vary* significantly across different age, groups. In other words, age has an influence on whether respondents receive or respond to brake maintenance reminders.

Findings:

The research on A study on predictive analytics for personalized customer experiences conducted

on TVS brakes India has concluded that predictive technology is playing a vital role in increasing customer satisfaction and brand loyalty. From the research findings, it is identified that most customers are already satisfied with TVS brakes and are aware of the importance of receiving regular reminders for maintenance. A majority of customers also expressed their strong preference for personalized and predictive notifications for services.

From the correlation and regression analysis conducted on the research, it has been identified that the age factor does not contribute to the receipt of reminders, but the duration of the usage of the products is related to customer satisfaction. This indicates that customers are more satisfied with the products because of their association with the products over the years rather than their age and other factors. Furthermore, the study's results emphasize how predictive maintenance, personal communication, and digital service alerts can help in boosting customer convenience and trust. For instance, customers prefer fast and non-intrusive communication channels like SMS and email. This is because of the technological advancements in customer communication.

Overall, it may be concluded that with the incorporation of predictive analytics in customer service operations, TVS Brakes India would be able to follow a proactive and personalized approach in its business. This would not only help



in strengthening customer relationships but would also boost business performance and competitiveness in the future

Conclusion:

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