CUSTOMER PERCEPTION ON TECHNOLOGICAL INNOVATIONS IN AUTOMOTIVE INDUSTRY

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ABSTRACT

The study explores the technological innovations in automotive sector and its impact on customer perception, preferences and brand values focusing on the Kerala market. The research combines primary data with secondary sources; and the data collected from 345 automotive consumers and industry professionals through structured online surveys and purposive sampling. Key findings reveal a demographic majority within the 25-35 age range, predominantly male. Findings revealed that digital technologies profoundly influence automotive marketing; digital advertising and social media campaigns significantly enhancing brand awareness and perception among customers. The integration of digital features in cars influences purchase decisions. The insights emphasize the need for car manufacturers and marketers to adapt and innovate, focusing on digital safety, connectivity, and customer-centric approaches.

Keywords: Digital Technologies, Automotive Industry, Consumer Perception, Customer Preferences, brand values.

INTRODUCTION

The automotive industry is undergoing a substantial transformation driven by digital technologies. Brands worldwide are leveraging digital tools to enhance customer engagement and create personalized experiences, a trend that is mirrored in Kerala's market (Kumar, Rahman, & Kazmi, 2020). The use of advanced technologies like AI and machine learning in vehicles is a global phenomenon that offers a competitive edge, with features such as autonomous driving and predictive maintenance (Smith & Jafari, 2021). The rise of online car booking platforms and virtual showrooms has revolutionized the traditional vehicle purchasing experience, transform brands as innovative and customer-centric.

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Social media and digital marketing have become vital tools for direct consumer engagement, a strategy that is effectively employed by automotive brands in Kerala to connect with their audience (Brown & Michael, 2019; Krishnan & Pillai, 2020).Understanding customer behaviour via data analytics is essential for developing customised marketing plans in a variety of marketplaces, including the complex Kerala market (Jones, 2018; Patel & Singh, 2019). The way the automobile industry approaches brand positioning is changing due to digital technology, and this is having a noticeable effect both globally and in particular markets such as Kerala. These technologies will have an even greater impact on customer interactions and car marketing techniques as they develop.

PROBLEM STATEMENT

Currently, the automobile sector faces a critical challenge: adjusting to the quickly changing digitally-shaped world. This difficulty is especially noticeable when considering brand strategy and market positioning. Automotive businesses have to traverse a complicated array of new marketing techniques, customer expectations, and technology advancements as digital technologies progress; and the effective use of social media and data analytics has become essential for automotive brands to engage with consumers and understand their preferences. However, successfully implementing these digital strategies while maintaining brand identity and meeting the diverse needs of consumers remains a significant challenge for automotive brands, both globally and in specific markets like Kerala.

This problem statement outlines the need for automotive brands to effectively integrate digital technologies into their market positioning strategies, considering both the global trends and the unique aspects of regional markets such as Kerala.

LITERATURE REVIEW

Research is commonly focused on areas such as labour productivity and sales ;and the use and advantages of digital technologies for business and innovation platforms (Anand, 2016; Gawer, 2021). But it's common to ignore the difficulties manufacturing and sophisticated product companies have incorporating digital capabilities into their understanding of components and systems. Industrial transformation necessitates that businesses quickly develop technology based on current practices while investigating distinct technology categories in various sectors, as noted by Bergek et al. (2013).The collective and overlapping characteristics of certain digital technologies, which constitute distinctive building blocks, may be the deciding factor in digital

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transformation across sectors. A meso-level approach is required since inventions and firms alone cannot adequately account for technological development, as noted by Carlsson and Stankiewics (1991, p. 23).The basic digital transformation of industries may be revealed by examining the interactions between technologies and other industrial players, such as users, equipment makers, data analytic corporations, governments, and technology companies. As noted by Daniele et al. (2015), the general adoption of early-stage digital technologies like the Internet of Things, AI, blockchain, and the Metaverse is still unclear in terms of application across sectors and wider audience appeal.

Since identical technologies may have been produced by various organisations and in different sectors, understanding the properties of digital technologies aids academics in examining their cumulative influence on digital transformation.

OBJECTIVES OF THE STUDY

- To identify the transformative impact of digital technologies in automotive market.
- To analyse the customers' perception towards the digitally linked auto market

RESEARCH METHODOLOGY

The study employs a mixed methods approach to gather comprehensive insights from both qualitative and quantitative perspectives. The target population includes automotive customers in the Kerala market. To ensure a well-rounded understanding, a random sampling method was applied, sample size determined as 345 customers; and the data collected through structured questionnaire. In addition to primary data, secondary data from government reports and financial records supplement the research, enhancing the richness of the analysis. Percentage analysis and Chi square testing were used to examine the data.

RESULTS AND DISCUSSION

1 Socio economic profile of the respondents

The socio-economic profile of the respondents analysed on the basis of their gender, age educational qualification and occupation; and the results are shown in Table 1.

Table: 1 Socio-economic profile of the respondents

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Variables	Categories	No. of Respondents (n=345)	Percentage
Gender	Male	283	82
	Female	62	18
Age (in years)	18-30	152	44
	31-40	90	26
	41-50	41	12
	Above 50	62	18
Education	School	110	32
	Graduate	110	32
	Post Graduate	125	36
Occupation	Government Employee	79	23
	Private Employee	121	35
	Business	145	42

Source: Primary Data

The sample respondents were aged above 18 years; 44 percent of them came preferably from the younger group of 18-30 years. Based on gender, 82 percent are male and only 18 percent are female car owners. 36% of respondents have postgraduate degrees. As regards to the occupation of the respondents, 35 percent of them are employed in private sectors, 42 percent doing their own businesses, and remaining 23 percent of the respondents are Government employees.

2 Brand of Car owned by the respondents

Brand plays as an important predictor while deciding the purchase of car. Table 2 depicts the brand of car owned by the respondents.

Table 2   Brand of car owned by the respondents

Particulars	No of Respondents (n=345)	Percentage
Hyundai	72	21
Maruti Suzuki	97	28
TATA	52	15
Mahindra	52	15
Toyota	48	14
Others	24	7

Source: Primary Data

Study identified the brand of cars owned by the sample respondents. Out of all 345 participants, 28 percent owned Maruti Suzuki, while 21 percent owned Hyundai and two brands TATA and Mahindra were owned by 15 percent of the respondents each,14 percent of the respondents owned Toyota and the remaining 7 percent of the respondents owned other brands available in the market.

3 The most preferred digital technology feature in cars

The customers preference in technological features of cars were identified and presented in Table 3

Table 3 The most preferred digital technology feature in cars

Technological features	No of Respondents (n=345)	Percentage
Advanced safety features	155	45
In car connectivity	63	18
AI assisted driving	72	21
Smart Navigation System	41	12
Other features	14	4

Source: Primary Data

The most preferred digital technology feature in cars is Advanced Safety Features like Automated Braking, with 45% of consumers rating it as the most important. AI-Assisted Driving Features follow at 21%, with In-car Connectivity (e.g., WiFi, Bluetooth) at 18%, and Smart Navigation Systems at 12%. Other features account for 4%, indicating that while consumers value a range of digital technologies, safety features are the top priority.

4 Marketing Innovations enhancing brand values in Automotive sector

Respondents' opinion on innovative marketing technologies adopted in automotive segments which will enhance the brand values were assessed and displayed in Table 4

Table 4 Marketing Innovations enhancing brand in Automotive sector

Variables	No of Respondents (n=345)	Percentage

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Digital advertising	97	28
Social media campaigns	93	27
Online brand visibility	66	19
Digital channel for feedback and service	90	26

Source: Primary Data

The use of digital technologies on automotive marketing is significant, as evidenced by the survey data. 28 percent of respondents agree that digital advertising effectively enhances brand awareness and values, 27 percent acknowledge the influence of social media campaigns on brand. Furthermore, 26 percent feel that digital channel for feedback and service increase brand values and 19% believe online brand visibility shape brand perceptions.

5. Correlation between digital features in automotive brands and consumer perceptions

Alternate Hypothesis: There is a significant positive correlation between consumer preferences for digital features in vehicles and their perceptions of automotive brand awareness and value.

Table 5 Correlation between digital features in automotive brands and consumer perceptions

Correlations		Digital advertising	Social media campaigns	Online Brand Visibility	Digital channel for feedback and service
Digital advertising	Pearson Correlation	1	.532**	.427**	.159**
	Sig. (2-tailed)		0	0	0.003
	N	345	345	345	345
Social media campaigns	Pearson Correlation	.532**	1	.559**	.367**
	Sig. (2-tailed)	0		0	0
	N	345	345	345	345
Online Brand Visibility	Pearson Correlation	.427**	.559**	1	.464**
	Sig. (2-tailed)	0	0		0

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	N	345	345	345	345
Digital channel for feedback and service	Pearson Correlation	.159**	.367**	.464**	1
	Sig. (2-tailed)	0.003	0	0	
	N	345	345	345	345

**. Correlation is significant at the 0.01 level (2-tailed).

The Pearson Correlation Analysis shows significant correlations among Digital Advertising, Social Media campaigns, Online Brand Visibility, and Digital channel for feedback and service. There's a strong positive correlation between Digital advertising and both Social Media Campaigns and Online Brand Visibility, suggesting that increased digital branding enhances social media presence and online visibility. Additionally, all these factors are significantly, though variably, correlated with Digital channel for feedback and service, highlighting their interconnected role in enhancing automotive brand perceptions.

SUMMARY OF FINDINGS

The findings from this dataset provide valuable insights into various aspects of consumer preferences and the impact of digital technologies on the automotive industry. Firstly, in terms of demographic data, it's evident that a significant majority of respondents fall within the 18-30 years age range, and males make up the majority of the surveyed population. Majority of the respondents are post graduates and businessmen constitute the major part of the sample respondents. When it comes to the importance of digital technology features in cars, safety features like Automated Braking emerge as the top priority for consumers, followed by AI-Assisted Driving Features, In-car Connectivity, and Smart Navigation Systems. These preferences shed light on what consumers value most in their digital automotive experiences.

Respondents also acknowledge the effectiveness of digital advertising and social media campaigns in enhancing brand awareness and shaping brand value perceptions. The Pearson Correlation Analysis further illuminates the relationships between key factors, showing the positive correlations between digital advertising, social media presence, online visibility, and their combined influence on digital channel for feedback and services.

CONCLUSION

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This study provides valuable insights into consumer preferences and the impact of digital technologies on the automotive industry. The findings highlight the significance of safety features, such as Automated Braking, as a top priority for consumers. Digital advertising and social media campaigns play a pivotal role in enhancing brand awareness and shaping brand perceptions.The integration of advanced digital technologies, particularly AI and smart navigation systems, significantly influences purchase decisions, underscoring the need for continued innovation in this area.These insights underscore the central role of digital technologies in shaping consumer preferences and brand values in the automotive industry.

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