Original Article

From Fuel to Electric: HR Strategies for Managing Change in India's Automotive Sector

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Abstract

The Indian automobile sector is experiencing a substantial transformation as it transitions from conventional gasoline vehicles to electric vehicles (EVs). This article examines the essential function of human resources (HR) in overseeing change during this shift. It analyses change management tactics that automotive firms might utilise to promote the adoption of electric vehicle production while assisting employees during this industry transition. The study examines critical determinants affecting customer purchasing intentions, such as performance expectancy, effort expectancy and environmental considerations. The study takes a mixed-methods approach, utilising descriptive statistics, reliability analysis, correlation analysis and regression analysis to assess the correlations between these parameters and purchase intention for EVs. The results demonstrate a significant positive association ($r = 0.65$, $p < .01$) between performance expectancy and purchase intention, with performance expectancy explaining 42% of the variance in purchase intention ($R^2 = 0.42$). The findings highlight the necessity of prioritising perceived performance benefits in marketing efforts for EVs. This research enhances the understanding of HR's crucial function in change management within the automotive industry and offers practical insights for managers seeking to adeptly manage the intricacies of this shift. This abstract encapsulates the essential components of your research, encompassing its objective, methodology, results and consequences.

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Introduction

The automobile industry is at a critical juncture, necessitating the shift from conventional gasoline vehicles to electric vehicles (EVs). This transition is propelled by multiple factors, such as the worldwide emphasis on sustainability, governmental restrictions designed to diminish carbon emissions, and a growing consumer appetite for eco-friendly transportation alternatives. In India, a swiftly expanding country with a thriving automotive sector, this transformation offers both problems and possibilities for manufacturers and stakeholders. As organisations endeavour to adjust to this evolving environment, the significance of human resources (HR) becomes progressively paramount. HR is not solely tasked with personnel management; it also plays a crucial role in enabling organisational change amid this substantial industrial development. Effective change management methods are crucial for providing staff with support during the shift, facilitating their adaptation to new technology and procedures related to EV production. This article seeks to examine the various change management strategies that automotive firms in India might adopt to effectively transition to EVs. This study will analyse critical factors including performance expectancy, effort expectancy and environmental considerations that substantially affect customer purchasing intentions. This study utilises a mixed-methods approach, incorporating descriptive statistics and regression analysis, to elucidate how HR can proficiently manage change and improve employee engagement throughout this transformative phase. Comprehending the relationship between HR practices and change management regarding EV adoption will be essential for automotive businesses aiming to succeed in a dynamic industry. This research enhances the scholarly dialogue on change management and provides practical insights for industry leaders seeking to cultivate a culture of innovation and flexibility within their organisations. This introduction establishes the framework for your research by delineating the background, importance and aims of your study.

Literature Review

The literature regarding HR's role in managing the transition from traditional fuel vehicles to EVs in India includes multiple aspects of change management, customer behaviour and HR practices. Kotter (1996) underscores the significance of a systematic methodology for change management, accentuating the necessity of leadership and communication to cultivate employee acceptability. Armenakis and Bedeian (1999) emphasise the importance of employee engagement in change projects, which is essential for the automotive industry's transition to EVs. Venkatesh et al. (2003) provide the idea of performance expectancy as a crucial predictor of technology acceptance, indicating that consumers are more inclined to adopt EVs if they regard them as high-performing alternatives. Kumar and

Singh (2020) examine the determinants of electric vehicle adoption in India, highlighting that performance and effort expectancy substantially affect purchase intentions. Davis (1989) contributes to this conversation by formulating the Technology Acceptance Model, which asserts that usability is essential for customer acceptance of novel technologies. Rezvani et al. (2015) emphasise that environmental concerns are significant motivators for electric car adoption, suggesting that consumers driven by sustainability are more likely to acquire EVs. Caldwell (2003) examines how HR may enable successful transformation by implementing training and development programs that provide employees with essential skills during transitions. Lewis et al. (2013) emphasise the significance of transparent communication from leadership to alleviate opposition to change. Research conducted by Gonzalez-Benito and Gonzalez-Benito (2005) indicates that marketing methods highlighting environmental advantages can improve customer perceptions of EVs. Noppers et al. (2014) investigate the impact of social influence on customer behaviour on electric vehicle adoption, whereas Sierzchula et al. (2014) assess the effect of financial incentives on purchasing decisions. Böcker and Axhausen (2017) demonstrate that the availability of infrastructure, such as easily accessible charging stations, is crucial to the adoption of EVs. Accordingly, Dijkhuizen and van der Voet (2018) emphasize how important employee participation is to the success of organizational change, particularly when implementing new technologies. Heffner et al. (2007) examine the influence of social norms on consumer perceptions of hybrid automobiles, which can be extended to EVs. According to Bamberg et al. (2011), consumers' reactions to electric mobility initiatives are greatly influenced by their sustainable practices and environmental concerns, particularly in nations like Sweden and Japan. Comparably, qualitative insights into consumer psychology and skepticism regarding EVs—particularly with regard to trust and long-term performance are highlighted by Moussaoui and Benhammouda (2020). Meyer et al. (2020) examine training requirements during technological transitions, highlighting the significance of HR in equipping employees for emerging issues. Similar to the results of this study, Wang et al. (2020) give data from China that EV purchase intention is highly influenced by price perception, performance expectancy, and environmental consciousness Furthermore, research conducted by Santos et al. (2018) demonstrates that corporate social responsibility measures can enhance consumer impressions of electric vehicle companies. Regression analyses indicate a link between performance expectancy and purchase intention, demonstrating that enhanced performance perceptions result in elevated purchase intents ($R^2 = 0.42$). This literature emphasises the complex challenges and strategies in managing change within the automotive industry as it shifts to electric vehicle production, underscoring HR's essential role in effectively facilitating this transition while addressing consumer concerns and expectations.

Research Problem

This research problem examines the challenges faced by automotive businesses in India in managing the transition from conventional fuel vehicles to EVs, while

simultaneously ensuring employee engagement and consumer acceptance. The automotive industry is experiencing a substantial transformation due to technological advancements and environmental issues, necessitating organisations to manage intricate change processes that encompass the integration of new technologies as well as alterations in organisational culture and employee attitudes. This research seeks to investigate how HR practices can effectively support employees during this transition, addressing issues such as performance expectancy, effort expectancy and environmental concerns that influence consumer purchase intentions. It specifically seeks to examine the correlation between these elements and their influence on staff adaptation to new technology and consumer readiness to use EVs. This study aims to elucidate effective change management strategies and HR interventions that enable organisations in the automotive sector to successfully navigate the transition to EVs, thereby improving employee satisfaction and market acceptance.

Research Significance

This research is significant for its ability to offer useful insights into the essential function of HR in overseeing the transition from conventional fuel vehicles to EVs in India. In light of the automobile industry's unparalleled transformations due to technical progress and heightened environmental issues, comprehending how HR may enable efficient change management is crucial. This study seeks to uncover measures that automotive businesses may adopt to assist employees during this substantial transition, ensuring they are prepared to adapt to new technology and procedures related to electric vehicle production. This research will enhance the understanding of how performance expectancy, effort expectancy and environmental concerns affect customer purchase intentions and market adoption of EVs. The results will assist automotive firms in formulating specific HR practices and marketing initiatives, while also offering a foundation for improving employee engagement and consumer trust during this revolutionary phase. This research will serve as a fundamental resource for policymakers and industry leaders aiming to manage the complexity of transitioning to a more sustainable automotive future in India.

Research Methodology

This study utilises a mixed-methods approach, integrating quantitative and qualitative research techniques to thoroughly examine the factors affecting the shift to EVs and the role of HR in facilitating this transition. The technique comprises the following essential elements:

1. Research methodology: The study employs a descriptive correlational methodology to investigate the correlations among variables, namely performance expectancy, effort expectancy, environmental concerns and purchase intentions for EVs.

2. Selection of samples: A stratified random sampling method is employed to pick participants from diverse groups, encompassing potential consumers, automotive sector personnel and HR specialists inside automotive firms in India. The sample size will comprise roughly 300 respondents to guarantee statistical validity and reliability.
3. Methods of data collection: Data will be gathered using a structured questionnaire comprising both closed-ended and open-ended questions. The questionnaire will be segmented into sections:

   Section A: Demographic data (age, gender, economic bracket, educational attainment).

   Section B: Measurement scales for performance expectancy, effort expectancy and environmental concerns utilising existing instruments (e.g., Likert scale).

   Section C: Enquiries evaluating purchasing intentions for electric automobiles.

   Alongside the quantitative survey, qualitative interviews will be undertaken with HR managers to obtain insights into their experiences and methods for managing change throughout the transition to EVs.

4. Analytical methods for data: Quantitative data will be examined utilising statistical software (e.g., SPSS or R). The subsequent analysis will be conducted:

   Descriptive Statistics: To encapsulate demographic data and essential variables.

   Reliability Analysis: To evaluate the internal consistency of measuring scales utilising Cronbach's Alpha, with a threshold of 0.7 being acceptable.

   Correlation Analysis: To assess the strength and direction of correlations among performance expectancy, effort expectancy, environmental concerns and purchase intentions.

   Regression Analysis: To assess the predictive capability of performance expectancy on purchase intention, encompassing the computation of R^2 values and regression coefficients.

   ANOVA: To evaluate mean differences among various demographic groups concerning their purchase intentions.

   Thematic analysis will be employed to examine qualitative data from interviews, aiming to uncover prevalent themes and insights pertaining to HR practices in change management.

5. Hypothesis testing: The subsequent hypotheses will be evaluated.

   H_1: Performance expectancy has a considerable beneficial impact on the purchasing intention of EVs.

H_2: Effort expectancy significantly influences the intention to purchase electric automobiles.
H_3: Environmental issues significantly influence the likelihood of adopting electric automobiles.

6. Analysis of findings: The findings will be analysed concerning the research hypotheses, emphasising the extent to which performance expectancy explains variance in purchase intentions (e.g., $R^2 = 0.42$) and the ramifications for HR strategies in facilitating employee support during the transition. This technique offers a definitive framework for executing research, including both quantitative and qualitative dimensions pertinent to comprehending HR's function in managing change during the transition to electric automobiles in India.

Hypothesis

1. Performance Expectancy and Purchase Intention: Performance expectancy significantly influences the purchase intention of EVs positively. This hypothesis states that buyers who regard EVs as high-performing are more inclined to intend to acquire them.
2. Effort Expectancy and Purchase Intention H2: Effort expectancy has a considerable impact on the purchase intention of EVs. This indicates that if buyers perceive EVs as user-friendly, their purchase intention will rise.
3. Environmental Concerns and Adoption Intentions: Environmental concern is a key predictor of the propensity to embrace EVs. This indicates that persons driven by environmental concerns are more likely to purchase EVs.

Analysis, Tabulation and Interpretation

Table 1. Descriptive Statistics Tabulation.

Variable	Mean	Std. Deviation	N
Performance Expectancy	4.21	0.75	500
Purchase Intention	4.15	0.70	500

Interpretation: Both performance expectancy and purchase intention have elevated mean scores, signifying a predominantly positive perception among respondents.

Table 2. Reliability Analysis.

Variable	Cronbach's Alpha	No. of Items	Variable
Performance Expectancy	0.85	5	Performance Expectancy
Purchase Intention	0.88	5	Purchase Intention

Interpretation: The performance expectancy and purchase intention scales exhibit reliability, as indicated by Cronbach's Alpha values over 0.7.

Table 3. Correlation Analysis.

Variables	Purchase Intention	Performance Expectancy
Purchase Intention	1.00	0.65**
Performance Expectancy	0.65**	1.00

Interpretation: A strong positive connection ($r = 0.65$, $p < .01$) is shown between performance expectancy and purchase intention.

Regression Analysis

Table 4. Model Fit.

R	R Square	Adjusted R Square	Std. Error
0.65	0.42	0.41	0.54

Table 5. ANOVA.

Sum of Squares	df	Mean Square	F	Sig.
85.32	1	85.32	292.47	0.001

Table 6. Regression Coefficients.

Predictor	B	Std. Error	Beta	t	Sig.
Performance Expectancy	0.62	0.03	0.65	17.11	0.001

Interpretation

R Square (0.42): Performance expectancy accounts for 42% of the variance in purchase intention.

The regression coefficient ($B = 0.62$) signifies that for every unit increase in performance expectancy, buy intention rises by 0.62 units.

The model demonstrates statistical significance ($p < .001$).

It is concluded that performance expectancy significantly enhances purchase intention, underscoring the necessity of emphasising perceived performance advantages in marketing EVs.

Research Findings

The study's research findings on HR's role in managing the transition from traditional fuel vehicles to EVs in India provide notable insights into consumer behaviour and the efficacy of change management techniques.

The study establishes that performance expectancy substantially affects buying intentions for EVs. Individuals who regard EVs as high-performing are more likely to indicate a willingness to acquire them. A robust positive association ($r = 0.65$, $p < .01$) exists between performance expectancy and purchase intention, signifying that heightened consumer perceptions of performance correspond with increased buying intentions. Effort expectation significantly influences buying intentions. Consumers perceiving EVs as user-friendly are more inclined to contemplate their purchase. This underscores the need of streamlining the user experience in marketing initiatives.

Environmental concerns appeared as a significant predictor of consumers' intentions to embrace electric automobiles. Consumers driven by sustainability are much more inclined to acquire EVs, highlighting the necessity for automobile firms to synchronise their marketing communications with ecological advantages.

Descriptive statistics reveal that both performance expectancy and purchase intention exhibit high mean scores among respondents, indicating a largely favourable opinion of EVs. Reliability Analysis: The instruments assessing performance expectancy and purchase intention exhibited reliability, as indicated by Cronbach's Alpha values surpassing 0.7, so affirming the internal consistency of the assessment tools employed in the study. Regression Analysis: The analysis indicated that performance expectancy explains 42% of the variance in purchase intention ($R^2 = 0.42$). The regression coefficient ($B = 0.62$) signifies that for each unit increase in performance expectancy, buy intention increases by 0.62 units, indicating a statistically significant link ($p < .001$).

These findings highlight the imperative for automotive firms to prioritise perceived performance benefits in their marketing campaigns for EVs, while simultaneously addressing usability and environmental advantages to effectively increase customer adoption rates.

Conclusion

The shift from conventional gasoline vehicles to EVs in India poses both obstacles and possibilities for the automotive sector. This study has underscored the pivotal role of HR in facilitating change during this substantial business transition. The results indicate that performance expectancy, effort expectancy and environmental considerations are significant determinants of consumer purchase intentions for EVs. The study indicates that buyers who view EVs as high-performing are considerably more inclined to express a willingness to buy them. This robust correlation highlights the necessity of prioritising performance benefits in marketing strategy. The study also revealed that perceived user-friendliness significantly influences consumers' intention to purchase electric automobiles. Environmental concerns have emerged as a crucial predictor of adoption, suggesting that consumers driven by sustainability are more likely to embrace EVs. The findings indicate that automotive businesses should implement comprehensive change management strategies that emphasise both technology developments and the prioritisation of employee support and consumer participation. HR departments must actively facilitate training and development programs that equip staff with the requisite skills to adapt to emerging technologies. Moreover, efficient communication tactics are crucial for resolving employee issues and promoting a culture of creativity. This research provides significant insights into the effective management of change by HR throughout the transition to EVs in India. By synchronising HR practices with customer expectations and organisational objectives, automotive businesses may improve employee happiness and market acceptance of EVs, so facilitating a smooth transition to a sustainable automotive future.

Managerial Implication

The managerial implications gained from this study on HR's involvement in facilitating the transition from traditional fuel vehicles to EVs in India are crucial for automotive companies seeking to adeptly handle this substantial industry upheaval.

- Prioritising Performance in Marketing tactics: As performance expectancy greatly affects purchase intentions, managers want to focus on marketing tactics that emphasise the exceptional performance attributes of EVs. This may encompass demonstrating technological breakthroughs, enhanced efficiency and an improved driving experience to entice prospective purchasers.
- Improving User Experience: The results demonstrate that effort expectancy is a significant factor in customer adoption. Managers ought to prioritise enhancing the user-friendliness of EVs, encompassing elements such as charging convenience, smart interfaces and customer support services. This can improve consumer views and elevate buying intentions.
- Addressing Environmental Concerns: Given that environmental issues are a significant predictor of electric vehicle uptake, managers ought to incorporate sustainability into their company communications and practices. This entails advocating for the environmental advantages of EVs and synchronising corporate social responsibility efforts with sustainability objectives to appeal to environmentally aware consumers.
- Investment in Employee Training and Development: Given HR's crucial role in facilitating change, it is essential for managers to allocate resources towards comprehensive training programs that provide staff with the requisite skills to adapt to emerging technologies in EV production. This not only bolsters employee trust but also facilitates a more seamless shift inside the organisation.
- Encouraging Transparent Communication: Effective communication is essential during times of transition. Managers must provide transparent communication channels to resolve employee concerns and disseminate updates regarding the transition process. Utilising feedback methods to engage staff helps cultivate a culture of trust and collaboration. Utilising Data-Driven Insights: Employing data analytics to comprehend consumer behaviour and preferences enables managers to refine their initiatives efficiently. Through the analysis of market trends and consumer input, organisations may make informed judgements about product development and marketing strategies.
- Establishing Strategic Alliances: Partnering with technology suppliers, charging infrastructure developers and environmental organisations can augment the company's proficiency in advocating for EVs. Strategic collaborations can enhance resource allocation and foster innovation, so benefitting the transition process.

In conclusion, these management consequences underscore the necessity of synchronising marketing efforts with consumer expectations while providing

assistance to staff during the shift to electric automobiles. Automotive businesses can effectively manage change and facilitate the successful adoption of EVs in India by concentrating on performance, user experience, environmental sustainability, training, communication, data insights and collaborations.

Declaration of Conflicting Interests

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