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**DATA DRIVEN MANAGEMENT**

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Dataset: Ev\_19 & Rep\_19

Wordcount: 2111**Words**

**Date: 14th March 2024**

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# **Executive Summary**

The report examines a 12-month product database of a leading electric vehicle (EV) retailer to enhance a key performance metric. According to Chelniciuc (2015), enhancing car retailers' performance yields benefits like improved customer satisfaction, increased sales, and better profitability, which highlight the significance of this analysis for the company's success.

In traditional marketing, manufacturers handle product promotion, but in the evolving automobile industry, collaboration between manufacturers and retailers is key. According to Madić et al. (2021), joint promotional efforts between car manufacturers and retailers enhance sales performance, fostering revenue growth in the automotive sector. This highlights the changing dynamics and benefits of collaborative marketing strategies in the industry.

The analysis focused on univariate analysis of promotions, revealing that while promotions accounted for 19.1% of sales, the majority (80.9%) of sales occurred without promotions. This highlights the need to refine marketing approaches by prioritizing non-promotional methods, such as improving product quality and customer service. Furthermore, customized marketing initiatives modified to different consumer segments and continuous assessment and adaptation of strategies based on sales performance were recommended to optimize outcomes.

By extending the company's online presence beyond Facebook to Twitter, Instagram, and TikTok, it may increase exposure and interaction on a variety of channels. Adopting a multi-platform strategy allows the business to stay in step with changing customer preferences while expanding its reach. To maximise marketing impact and optimise resource utilisation across these various channels, techniques must be constantly tracked and adjusted. It also illustrates the business's efforts to remaining flexible and sensitive to shifting market conditions.

# **Background**

Marketing and promotion are fundamental elements of business strategy, serving essential functions in enhancing brand exposure, boosting sales, and encouraging customer interaction. Marketing involves a diverse range of initiatives geared towards advertising products or services to specific audience segments, with the primary aim of meeting consumer demands and fulfilling company goals (Kotler and Armstrong 2018). On the other hand, promotion particularly refers to marketing strategies that can be used to influence customers to purchase a product.

Despite significant investments in marketing activities, the analysis indicates that promotional techniques might not be delivering the expected results for the company. This illustrates how important it is to examine promotional techniques as well as prioritize non-promotional marketing activities to boost sales effectiveness. Identifying customer behavior and changing marketing strategies accordingly is critical for profitability in a competitive industry.

Through fine-modifying marketing methods and enhancing promotional approaches, companies can effectively cater to changing customer preferences, leading to business expansion and sustained competitiveness.

Thus, good marketing and promotion are critical for firms to succeed in today's changing market the environment. Companies must deliberately leverage these components to develop brand awareness, grow sales, and foster enduring connections with customers, positioning themselves for long-term success in the marketplace.

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# **Data Preparation and Variable Definition**

**DATA RESTRICTIONS**

In the initial phase of data preparation, two datasets, "Electricvehicle" and "Representative data," were imported, totalling 49,427 and 99 observations, respectively. These datasets were joined using the common variable "rep id”. This was done using the inner\_join resulting in the creation of the dataset "Electricvehicle\_rep," which comprised 49,427 observations and 14 variables.

Following data joining, Data cleaning procedures were implemented to ensure data quality and preparations.

Exploratory data analysis was performed using the `skim()` function to gain insights into the dataset's characteristics and distributions, laying the groundwork for subsequent analysis and interpretation.

Missing values such as "marketing", "Purchase", “experience,” “buyer,” “Jobtype”, “qualification” was eliminated. Additionally, which resulted in a refined dataset, "Electricvehicle\_rep," containing 40,629 observations and 14 variables, ready for further analysis.

**DATA TRANSFORMATION**

These were the processes that were done while transforming the data:

* Rounding the period to whole number.
* Renaming “Fbook” to “Facebook”.
* Grouping the experience into five categories: Junior (1 – 8years), Intermediate (9 – 16years), Midlevel (17 – 24years), Experience (25 – 32years), Senior (33 – 40years)
* Renaming the experience with five categories into category\_year
* Grouping the period into four categories: Early stage (1-3 months), Mid stage(4-6month), Intermediate stage (7-9 months), Late stage (10-12 months).
* Renaming the period with four categories into period\_year
* Removing the period and experience from the table.
  1. **Table 1: Variable Definition in EV data**

|  |  |
| --- | --- |
| **Variable** | **Metrics** |
| Marketing | Numerical, shows marketing spent on the product in £’s. |
| Purchase | Numerical, shows purchase value of the product in £’s |
| Product | Categorical, shows the type of product offered by the company which is represented as “SUV”,” SEDAN”,” SPORT.” |
| Period | Numerical, shows the period in months. These are categorized into the following:  1 -3: "Early Stage"  4 - 6: "Mid Stage"  7 - 9: “Intermediate stage"  10 – 12: "Late Stage" |
| Promotions | Categorical shows if the product was purchased using promotion which is represented as “YES”, “NO”. |
| Campaign | Categorical shows the marketing channels for the product which is represented as “Facebook”, “Twitter”, “Instagram”, “TikTok”. |
| Buyer | Categorical, shows the consumer profile for the products purchased which is represented as “Single”, “Couples”, “Family”. |
| Qualification | Categorical, shows the qualification of the rep which is represented as “HND”, “BSC”, “MSC”. |
| Experience | Numerical, shows the years of experience. These are categorized into the following:  1 - 8: "junior",  9 - 16: "intermediate",  17 - 24: "midlevel",  25 - 32: "experienced",  33 - 40: "senior". |
| Job type | Categorical, shows the job type which is represented as “Part time”, “Full time”, “Zero hours”. |

# **3.0 Data Analysis**

**3.1 Percentage of purchases with promotions**

A graph of purchases with promotion

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**Figure 1: Percentage of purchases with promotions**.

Figure 1 shows that promotions have a limited influence, accounting for 19.1% of promotions, whereas most sales (80.9%) occur without promotions. This implies that while promotions help to drive sales, other variables also affect purchasing decisions. To improve sales effectiveness, marketing methods must go beyond promotions. To attract consumers, a focus must be on increasing product quality, providing better customer service, or introducing loyalty programs. Marketing efforts may be more targeted by modifying them depending on consumer response to promotions vs non-promotional sales, as well as knowing customer segmentation. The company needs to experiment with different promotional tactics, such as bundled packages or time-limited offers, to better understand client preferences and optimize sales strategies. A regular evaluation of the success of promotions alter strategy according to optimize results.

**3.2 Product bought with and without promotions.**

A graph of sales growth

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**Figure 2: Product bought with and without promotions.**

This figure shows that various product categories have varied buying patterns when it comes to promotions. Sedans had a lower proportion of purchases with incentives (2.3%) compared to those without (9%), while sports vehicles and SUVs indicate large variations as well. In sports vehicles, 17.2% of purchases are without promotions and 4.3% with promotions, while in SUVs, 54.7% of purchases are without promotions while 12.6% with promotions. Given these differences, it is critical to structure advertising efforts accordingly and prioritize non-promotional marketing efforts for sedans and sports automobiles, such as promoting product features or providing great customer service. In contrast, to increase sales of SUVs, explore new promotional offers or loyalty programs. Also, regular analysis of sales data by product category can help improve the marketing strategy for optimal success.

**3.3 Buyers for each product category without promotions**

A graph of blue rectangular bars with text

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**Figure 3: Buyers for each product category without promotions**

Figure 3 shows varying buyer preferences across product categories in the absence of promotions. SUV purchases predominantly originate from single buyers (33.9%), followed by families (10%) and couples (5.4%). Sports cars are predominantly favored by singles (25.4%), with families at 8.4% and couples at 4.4%. Sedan has the lowest with singles (8.4%), families (2.8%), and couples (1.3%).

Understanding these preferences is important for developing effective marketing approaches. Customizing product characteristics to appeal to various buyer groups might help boost sales. For example, emphasizing SUV characteristics that cater to both individual lifestyles and family demands might help it gain market share. Similarly, highlighting elements that appeal to single purchasers of sports vehicles and sedans might help attract more customers. Continuously modifying methods to changing customer habits is critical for maintaining market competitiveness.

**3.4 Percentage of Total marketing spend per product.**

**A graph of a bar chart

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**Figure 4: Percentage of Total marketing spend per product.**

Figure 4 reveals that most of the marketing budget is allocated to SUVs (67.4%), reflecting their high demand and competitiveness. Sports cars receive a substantial but slightly lower investment (21.4%), while sedans have a share (11.2%). Most of their sales (54.8%) occur without promotions, despite the considerable amount spent on marketing for SUVs. To maximize returns, the company must ensure that promotional efforts effectively target the SUV market segment. Also, allocating additional resources to the growing sports car category should be considered. Maintain a strategic but modest marketing expenditure on sedans to sustain market presence. Regularly reassess marketing strategies based on sales performance to optimize resource allocation.

**3.5 Percentage of total marketing spend per product.**

A graph of a graph showing the percentage of a product

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**Figure 5: Percentage of total marketing spend per product.**

Figure 5 shows that Facebook has most of the overall marketing spend (64.5%), followed by Twitter (22%), while Instagram and TikTok are significant (6.2% and 7.3%, respectively). This demonstrates Facebook's dominance in marketing spend when compared to other platforms.

In addition to utilizing Facebook's popularity, diversifying marketing efforts across Twitter, Instagram, and TikTok can improve company exposure and interaction across numerous online platforms. Regular monitoring and revision of approaches ensures optimal resource allocation and marketing effectiveness.

**3.6 Percentage of Total Marketing Spend by Experience Level**

**A graph of marketing level

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**Figure 6: Percentage of Total Marketing Spend by Experience Level**

Figure 6 indicates that marketing spend varies across different experience levels of sales representatives. Junior representatives receive the highest percentage (27.6%) of total marketing spend, followed closely by the Intermediate category (21%). Senior and Experienced representatives also contributed significantly, with percentages of 20.2% and 20.7%, respectively. Midlevel representatives make the lower contribution (10.5%).

To enhance marketing effectiveness, targeted training programs should focus on entry-level and junior representatives. Continuous performance monitoring and fostering knowledge sharing among representatives of different experience levels are also recommended. The implementation of these techniques allows representatives in sales to use their exceptional skills and knowledge to create business success in the competitive electric vehicle industry. Marketing strategies should be regularly evaluated and modified based on performance data to ensure success over the long term.

**3.7 Percentage of Total Marketing Spend by Qualification**

A graph of marketing spend by qualification

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**Figure 7: Percentage of Total Marketing Spend by Qualification**

Figure 7 illustrates the distribution of total marketing spend across different qualification levels of sales representatives. The highest percentage of total marketing spend is observed among representatives with a MSc, constituting 64% of the total. Following this, representatives with a BSc account for 25.3% of the total marketing spend. Conversely, representatives with a HND have a lower contribution, representing 10.7% of the total marketing spend.

Investing in advanced education enhances MSC holders' marketing expertise, maximizing their contribution to marketing spend. BSC holders receive support to improve marketing strategy skills. Diverse skill sets, particularly among HND holders, complement advanced degrees. Encouraging collaboration among representatives of varying qualifications fosters comprehensive marketing strategies, leveraging each level's strengths for success in the competitive market. By implementing these recommendations, the company can optimize its marketing efforts by leveraging the diverse qualifications and skill sets of its sales representatives. Investing in education and development initiatives tailored to each qualification level can enhance overall marketing effectiveness and contribute to the company's success in the competitive electric vehicle market.

**3.8 Percentage of Total Marketing Spend by Job Type**

**A graph of sales and sales

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**Figure 8: Percentage of Total Marketing Spend by Job Type**

Figure 8 reveals the distribution of total marketing spend across different job types among sales representatives, excluding promotions. Part-time representatives emerge as the most significant contributors, accounting for 49.3% of total marketing spend, closely followed by full-time representatives at 25.3%. Zero-hour contract representatives contribute 25.4% to the total marketing spend. To capitalize on these insights effectively, tailored strategies for each job type are essential. Optimizing resources and strategies for part-time representatives can maximize impact, while initiatives aimed at enhancing engagement and productivity among full-time representatives are crucial. Additionally, a thorough evaluation of the effectiveness and flexibility of Zero-hour contracts is necessary to ensure efficient resource allocation. Encouraging collaboration and knowledge sharing among representatives of diverse job types can foster a cohesive marketing strategy, leveraging the unique strengths and capabilities of each group. Implementing these recommendations can optimize marketing efforts across various job types, driving sustained success in the competitive market landscape.

# **4.0 Recommendations**

Based on the analysis recommendation include prioritizing non-promotional marketing efforts, customizing advertising strategies, strategically allocating resources, diversifying marketing channels, implementing targeted training programs, and fostering knowledge sharing among sales representatives.

* Modify Marketing Approaches: Emphasize on non-promotional marketing strategies such as upgrading product quality, delivering great customer service, and developing loyalty programs to maintain sales growth, realizing that a significant percentage of sales occur without promotions.
* Optimizing Promotional Approaches: Experiment with various promotional strategies, such as package deals or time-sensitive offers, to better understand consumer preferences and increase promotional effectiveness.
* Customized Marketing Measures: Customize marketing techniques to diverse customer categories by promoting product characteristics and benefits that connect with their preferences, independent of their tendency toward promotional incentives.
* Regular Evaluation and Adaptation: To optimize results, regularly analyze the success of marketing initiatives, including both promotional and non-promotional efforts, and adapt them depending on sales performance and customer feedback. Companies that connect their marketing strategy with known sales patterns can successfully use a combination of promotional and non-promotional approaches to boost sales and maintain market competitiveness.

# **5.0 Limitations**

* The analysis relies on available data, which may not capture all relevant factors influencing consumer behaviour.
* Market conditions and consumer preferences may evolve over time, affecting the effectiveness of current strategies.
* The analysis focuses on marketing spend and consumer behaviour within the electric vehicle industry, limiting generalizability to other sectors.

In conclusion, the analysis highlights the need of understanding customer behavior and modifying promotional approaches to support business growth in the competitive electric vehicle industry. The company needs to maximize sales and increase market competitiveness by prioritizing non-promotional marketing activities, exploiting insights into customer preferences, and continually refining tactics based on performance data. However, it is important to realize the limits of the analysis and reiterate.

However, it is essential to recognize the limitations of the analysis and remain adaptable to changing market dynamics for sustained success. However, it is necessary to realize the limitations of the analysis and remain versatile to changing market conditions for long-term viability.

# **References**

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# **Performance Dashboard**

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# **Appendices**

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| --- | --- | --- | --- | --- | --- |
| **Minimum** | **1st Quarter** | **Median** | **Mean** | **3rd Quarter** | **Maximum** |
| **873.9** | **945.2** | **960.2** | **960.2** | **975.2** | **1058.9** |