UNIVERSITY OF LONDON



COURSEWORK REPORT

STATISTICAL METHOD FOR MARKET RESEARCH

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Executive Summary

The proposal aims to address three research objectives and problems presented in the client brief. Firstly, the research will investigate customers' attitudes towards electric vehicles, including their maximum price points and the factors that influence their purchasing decisions. Secondly, the proposal seeks to explore Tesla's brand perception in comparison to other manufacturers, with a focus on identifying unique features that set Tesla apart. Lastly, the research will investigate potential new product lines or features that Tesla could invest in, analyzing customer demand and market potential to ensure feasibility and cost-effectiveness. To achieve the first objective, the research will use linear regression analysis to build a product price model that considers various factors such as wages, age, education, etc. The expected results suggest that consumers' salaries will significantly influence their decision to buy a product, which can help Tesla gain a better understanding of customers' attitudes towards electric car products. The second objective will employ cluster analysis to group customers based on their ratings of brand attributes. The anticipated outcome of this analysis is that Tesla's main market, the US, will have a high level of positive feedback, while other places may respond with less positivity. The results of this analysis will help Tesla identify potential customer groups and devise strategies to attract them effectively. Finally, to better understand the market potential of new products, the research will use factor analysis. By evaluating the features that users prefer and grouping them into common categories, the research team will identify areas with high potential, allowing Tesla to allocate its R&D budget accordingly. The expected result of this analysis is that customers will prefer innovative and eco-friendly products or features.

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1. Introduction

1.1 Background Information

Since the 1890s, the electric vehicle (EV) industry has undergone a century-long evolution that has seen numerous peaks and troughs. The industry has experienced periods of stagnation, including a time when EVs underwent minimal technological advancements, commonly referred to as the "dark age" of EVs. Recently, the growing public concern regarding energy, environmental issues, and sustainable societal development has made electric vehicles an increasingly appealing solution. In recent years, major automobile manufacturers such as Ford, Hyundai, and Toyota have joined the EV race by launching their high-quality electric car models. However, Tesla Company remains the market leader in this industry.

Tesla, Inc. (former name: Tesla Motors, Inc.) is an American company that designs, manufactures, and distributes electric automobile products and components for electric vehicles. Having found in 2003, with more than 20 years' operating, Tesla is the leader and the world's most valuable automotive brand with total market capitalization nearly 665 billions US dollars (Companies Marketcap, 2023).

1.2 Problem Definition

In recent years, a series of global events, such as the Covid-19 pandemic, political tensions between Russia and Ukraine, inflationary storms, and global recession, have significantly impacted oil prices, leading to energy crises in many countries worldwide. Consequently, an increasing number of individuals are gravitating towards sustainable, eco-friendly energy products. For Tesla, a "vertically integrated sustainable energy company" (Client Brief, 2022), this presents an auspicious opportunity to expand its global presence. However, as noted in section 1.1, numerous automakers have also entered the electric vehicle industry, posing a direct challenge to Tesla. As a result, Tesla must devise strategies to retain its current customer base, draw in new customers, diversify its product lines to capture a more extensive market share, and bolster its leadership position.

According to the client brief, there are three main research aims (R.As) and corresponding research problems (R.Ps) that will be explored and resolved in this research proposal. The first aim is to understand customers' attitudes towards the electric vehicle (R.A.1), in specific, they want to know about the highest price customers will pay for an electric vehicle. To answer this question, we will research the customers' considerations and factors that are likely to influence their final purchase decision (R.P.1). The results can help Tesla determine whether the current product is affordable to people, and how they can balance the selling price with the operating costs to scale their sales globally.

The second aim is to understand more about Tesla's brand perception compared to other manufacturers (R.A.2), which are the unique spirits that only exist on Tesla's products (R.P.2). Leveraging these competitive advantages, the company can retain loyal customers, attract more potential customers, and create huge differences for their products in the marketplace.

Finally, when Tesla want to diversify its product lines, they have to find out where should be allocated their R&D budget (R.A.3). Therefore, they need to know what new features customers are currently looking for in an existing product, or what new products could be to make significant contributions to the business (R.P.3). The problem to study here is the feasibility and cost of investing in researching new products, as well as whether the market potential they possess is commensurate with the investment resources.

1.3 Research Objectives

Each research aim will come with multiple research questions (R.Qs), which can help the research process fully explore those aims. After that, for each research question, there will be a corresponding research hypothesis (R.H) based on previous research papers or analytical factors.

For the R.A.1: Research on drivers' considerations for buying EV

- R.Q.1.1: What is the maximum price that customers will pay for an EV?
- R.H.1.1: The 95% CI for the average willingness to pay is from \$50000 to \$60000 for an EV

The hypothesis is based on the average transaction price for an electric vehicle from a CNBC article, which can help us determine the interval for the mean of willingness to pay for an EV of the customers (Winters, 2021).

- R.Q.1.2: What are the major factors that affect the willingness to pay motorists?
- R.H.1.2: The factors that affect motorists' willingness to pay are monthly income, education, household size, maintenance cost, age of the owned car, driving distance per day, and environmental awareness.

The hypothesis is based on a research about factors that may affect the willingness to pay for electric vehicle conversion (Suthathip Suanmali, Kritsakon Kiewsongsakool, Dec 21, 2021).

- R.Q.1.3: Which factor(s) have the most significant impact on willingness to pay? What is
 its weight?
- R.H.1.3: Monthly income is the most significant factor that affects purchasing power, 1
 unit increase in monthly income will rise the purchasing power by \$500.

The hypothesis is based on a survey on the attitude of European car drivers towards electric vehicles (C. Thiel, A. Alemanno, G. Scarcella, A. Zubaryeva, G. Pasaoglu, 2012).

These questions help Tesla conclude the efficiency of the current price. In addition, we also know the risk factors affecting the purchasing power of the customer that could be taken into consideration when there is a price adjustment.

For the R.A.2: Research on Tesla's brand perception

- R.Q.2.1: What are the common brand attributes of Tesla?
- R.H.2.1: The common brand attributes of Tesla are innovative, stylish, and environmentally beneficial.

The hypothesis is based on a research conducted by Inger Miller from Florida Agricultural and Mechanical University (Miller, Inger, 2019).

- R.Q.2.2: What do people think about Tesla's brand perception?
- R.H.2.2: Tesla is a "High-tech company", "Future car manufacturer", "A friend of environment"

The hypothesis is based on a brand attributes made in R.H.2.

- R.Q.2.3: What is the profile of each cluster in R.Q.2.2?
- R.H.2.3: The "High-tech company", "Future car manufacturer" are from young participants, mainly in US and Asia. However, "a friend of environment" will vary from different locations.

The reason for this hypothesis is that the US is the main market and where Tesla established and invested heavily. Meanwhile, in other regions such as Europe, the headquarters of other manufacturers such as BMW and Mercedes-Benz, customers may also have a different perception compared to another group in the US.

These research questions help Tesla understand their current image to customers, know how they are different from other manufacturers, thereby can be able to develop appropriate strategies to assist customer acquisition and retention.

For the R.A.3: Research on where should be allocated their R&D budget

- R.Q.3.1: What features that the customer prefer for a Tesla's product?
- R.H.3.1: Sleek design, auto Pilot, one touch screen, fast charging network, ecofriendly nature.

The hypothesis is based on a Forbes article on how Tesla impress people with their products (Morgan, 2021).

- R.Q.3.2: What profile of customer would be most interested in a new product for sustainable energy?
- R.H.3.2: About 40% of Tesla's customers, who are middle class, living in America, have children, looking to Tesla's new product for protecting environment (eco-friendly choice).

The hypothesis is based on an article of how Tesla segment, target and focus on each their customer clusters (N.A, 2021).

These research questions help Tesla understand customers' desires for its products, thereby optimizing current features, ameliorating the drawbacks, and focusing resources to invest in new potential features or products.

2. Methodology

2.1 Research design

To thoroughly analyze the RAs and test the RHs mentioned in Section 1.3, this proposal will use both research design types, such as exploratory and descriptive designs, to collect the necessary data. The exploratory design will be used to determine the scope or dimensions of problems (R.A.1 and R.A.2), or to form an initial idea of the question (R.A.3). After that, the descriptive design will help us identify variables, collect the necessary data to conduct the hypothesis testing and make conclusions. Here are data that is needed for each RA.

For the R.A.1

The first data required is a list of common customers' considerations for purchasing EVs. This can be obtained by searching for previous reputable studies or conducting online focus group discussions to understand about what people are usually concerned when they buy an EV. Then we need descriptive data such as the highest price a customer will pay for an EV (in USD), and the rating of all of the considerations. All these data will be collected through an online survey with Likert scale method. The reason for using this method is that Tesla's customer group is quite large and scattered all over the world. Performing a face-to-face assessment will be difficult, time-consuming, and expensive. Therefore, we need to use an online survey method to collect data.

For the R.A.2

The first information required is a list of major brand attributes for Tesla, made possible by the online focus group method. Next is data on ratings of brand attributes, and let the participants choose the company names with given descriptions, also applying online survey with Stapel scale methods to collect. Furthermore, for R.H.2.3, we need to have demographic and geographic information about participants so we can use secondary internal data.

For the R.A.3

Similarly, we will use the online focus group method to gather a list of features that are preferred for new Tesla products. Subsequently, we run an online survey with Likert scale method to rate the new features collected through the focus group. Finally, for R.H.3.2, secondary internal data is used to obtain demographic information of the survey participants.

2.2 Fieldwork / Data Collection

A. Sampling Design

The focus of this study is on the global population of electric vehicle (EV) users, encompassing both Tesla and other competing brands' customers who have purchased an EV since 2022. The sampling frame comprises a roster of customers' email addresses, which they provided upon registering for purchasing an electric vehicle. The sample selection method used in this study is the simple random sampling (SRS) technique. Each customer's email address will receive an invitation to participate in the survey, with a commitment to receive a voucher when shopping online, for instance, on Amazon. Moreover, advertisements will be placed on social networking platforms such as Facebook, YouTube, Twitter, and the company's website to attract a more diverse pool of participants. The survey will initiate with qualifying questions to verify if the respondents have prior experience using an EV. While this method of sampling is comparatively less complicated and saves considerable time when compared to other sampling techniques, the sample selection process can be costly and requires investment to attract survey participants. Furthermore, there is no guarantee that the survey will receive a high participation rate or that the quality of responses will be satisfactory. However, in consideration of the client's request, it is worth noting that Tesla has allocated a substantial budget for this survey and desires to conclude the study within six months, thus making this method the most suitable. After that, the expected sample size of Tesla's customer group and competitor's customers will be determined as follows

For Tesla's customers group

To calculate the minimum sample size, we use this following formular,

$$n \ge \frac{Z_{\alpha}^{2}(p(1-p))}{e^{2}}$$

, where p is the proportion of target group, e is the precision level

According to Forbes Statistic (Rapier, 2022), the market shares of Tesla is 65.4%. At 95% confidence level, the precision level is 5%. We have the minimum sample size is,

$$n \ge \frac{1.96^2(\ 0.654\ (1-0.654))}{0.05^2} = 347.71 \approx 348$$

Assume the population size, N, of Tesla's customer is 5000 (based on client brief). We have the adjustment for needed sample size is,

$$n_c = \frac{n*N}{N+n-1} = \frac{348*5000}{5000+348-1} = 325.416 \approx 326$$

To calculate the initial sample size, we use this following formular,

$$Initial Sample Size = \frac{Final Sample Size}{incidence \ rate \times completion \ rate}$$

According to PeoplePulse (PeoplePulse, 2023), normally, an online market research surveys often have response rates in the 10% - 30% range. In this research, we choose 20% as the average completion rate. So the sample size needed for Tesla's customers group is,

$$\frac{326}{0.654 \times 0.2} = 2492.35 \approx 2493$$

Therefore, we estimate the sample size needed for Tesla's customer group is 2493.

For competitor customers group

The minimum sample size needed is,

$$n \ge \frac{1.96^2((1-0.654)0.654)}{0.05^2} = 347.71 \approx 348$$

Since there is no population size for this group, we can continue calculating the sample size needed, with the same completion rate 20%,

$$\frac{348}{(1-0.654)\times0.2} = 5028.901\approx5029$$

The estimated the sample size needed for competitor customers group is 5029.

Hence, the total sample size for the online survey is estimated at 7522 participants, with 5029 people from competitor customers group and 2493 people from Tesla's customers group

B. Data Collection

When conducting a focus group, a representative sample of approximately 5% of the Tesla's customer, consisting of 500 individuals, will be selected to participate in the interview. The focus group will be divided into smaller groups of 20-30 individuals, and each group will engage in discussions and provide their opinions to the company, enabling the organization to gain a comprehensive understanding of the RAs and collect the necessary information highlighted in section 2.1.

For the online survey, an electronic survey form will be created, and the responses will be collected and aggregated through Google Forms. The survey form is provided in section 5. All participant-provided information will be kept confidential.

2.3 Data Analysis

From section 1.3, we have come up with some research questions and hypotheses that need to be tested. And for each of the research hypothesis, we will use different analytical methods to test and help investigating the research aims.

Research Aim 1

For R.H.1.1

In the survey, we will ask about the average price that participants are willing to pay for an EV product. Next, we use one-sample test to test the hypothesis. Note that we treat each interval as one value by taking the middle value, for example under \$30000 becomes \$30000, \$30000 to \$40000 becomes \$35000.

Value label	Intervals	Frequency
	Under \$30000	
	Between \$30000 and \$40000	
The maximum price can	Between \$40000 and \$50000	
be made for an EV	Between \$50000 and \$60000	
	Between \$60000 and \$70000	
	More than \$70000	
Total		

One-sample t test **

$$H_{0:} \mu = 55000$$

$$H_1$$
: $\mu \neq 55000$

$$t = \frac{\bar{X} - \mu}{\frac{S}{\sqrt{\pi}}} \sim t_{n-1}$$

The test statistic:

*All the tables and expected results are for illustration purposes, they are not real information.

**The picture is taken from Subject Guide/SIM's Lecture Notes.

After that, we find the p-value using SPSS, if p-value is higher than 0.05, we do not reject the H_0 at 95% confidence level and conclude that the average willingness to buy an EV is between \$50000 and \$60000.

For R.H.1.2

After implementing the focus group method and obtaining common considerations of the customer, we conduct survey to assess the importance and rating of those. The possible considerations are monthly income, education, household size, maintenance cost, age, driving distance, and environmental awareness. Multiple linear regression will be used to determine how the dependence of the price varies with the considerations.

The regression model is:

 $Price = \beta_0 + \beta_1 income + \beta_2 edu + \beta_3 house size + \beta_4 cost + \beta_5 age + \beta_6 drivdisc + \beta_7 env + \epsilon$ where , "income" is the monthly income

"edu" is the education of participant

"housesize" is the household size

"cost" is the maintenance cost

"age" is the age of participant

"drivdisc" is the driving distance

"env" is the environmental awareness (1 = Yes, 0 = No)

 ϵ is the error term

The estimated regression equation is:

$$\widehat{Price} = \widehat{\beta_0} + \widehat{\beta_1}income + \widehat{\beta_2}edu + \widehat{\beta_3}housesize + \widehat{\beta_4}cost + \widehat{\beta_5}age + \widehat{\beta_6}drivdisc + \widehat{\beta_7}env$$

Once we have the estimated equation, we will use the overall F test to check the significance of each $\hat{\beta}_i$, i = 1,2,...7

Overall F test **

$$H_0: \beta_1 = \beta_2 = \beta_3 = \dots = \beta_7 = 0$$

$$H_1$$
: Not all $\beta_i = 0$

The F test statistic is: $F = \frac{R^2/7}{(1-R^2)/(n-7-1)} \sim F_{7,n-7-1}$, where R^2 is the strength of association

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Using SPSS, we find the p-value of this test, if p-value < 0.05, we reject H_0 and conclude that it is meaningful to predict the maximum price based on those considerations. We shall continue do the individual t test to find the significance of each β_i

Individual t test **

$$H_0: \beta_i = 0$$

$$H_1: \beta_i \neq 0$$

Test statistic:
$$t = \frac{\widehat{\beta_i}}{S.E.(\widehat{\beta_i})} \sim t_{n-k-1}$$

Using SPSS to find the p-value, if p-value < 0.05, we reject H_0 , the coefficient is significant.

For R.H.1.3 **

We can use the t test for $\widehat{\beta_1}$ only

$$H_0: \beta_1 = 500$$

$$H_1: \beta_1 \neq 500$$

Test statistic:
$$t = \frac{\widehat{\beta_1} - 500}{S.E.(\widehat{\beta_1})}$$

Using SPSS to find the p-value, if p-value > 0.05, we do not reject H_0 , concluding the hypothesis is true. Monthly income is the most significant variable with 1 unit increase in monthly income (1 unit = \$1000) raise the willingness to pay of the customer by \$500.

Research Aim 2

For R.H.2.1, R.H.2.2

Through the focus group we have information about the list of brand attributes about tesla (Innovative, Stylish, Environmentally beneficial). Next, we will collect the rating of these three attributes from the survey, apply the clustering method to analyze.

The objective is clustering customers based on attitude towards Tesla's brand perception

Three brand attributes such as Innovative, Stylish, Environmentally beneficial will be rated by the participants (Stapel from -5 to 5: -5 = very disagree, 5 = strongly agree)

We expect to have a result like this table

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Case	Innovative	Stylish	Environmentally
			beneficial
1	2	4	-2
2	5	1	5
3	1	-1	3
4	-2	3	4

Next, we choose Euclidean distance measure for this analysis,

$$\delta_{ij} = \sqrt{\sum_{k=1}^p (x_{ik} - x_{jk})^2}$$

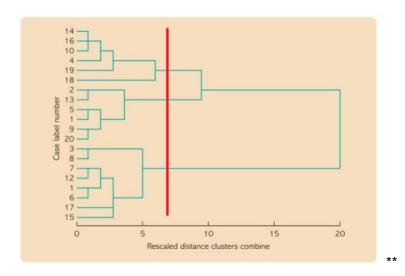
And conduct a proximity matrix in SPSS, the matrix is expected to be

Dist	X_1	X_2	<i>X</i> ₃	X_n
<i>X</i> ₁				
X_2	0.27			
<i>X</i> ₃	0.35	0.79		
X _n				

 X_i is the th participant

After that, we use Variance methods (Ward's procedure) to define the cluster, we start with n clusters, the pair with minimum distance will be one cluster in the next stage and continue until we have the desired clusters number.

From literature review, there will be 3 clusters need to be defined, which is "High-tech company", "Future car manufacturer", "A friend of environment". We can draw a dendrogram for easier viewing.



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**The picture is taken from Subject Guide/SIM's Lecture Notes.

For R.H.2.3

We can find the demographic and geographic of the participants using our internal data, from that, we can interpret about the profile of each cluster to prove the hypothesis.

Research Aim 3

For R.H.3.1

From focus group, we have determined the possible new features that customers prefer for a Tesla EV. Those new features will be rated by the participants through survey, using Likert scale 7-points (1 = strongly unimportant, 7 = strongly important)

 V_1 = Sleek Design

 V_2 = Auto Pilot

 V_3 = Only one touch screen

 V_4 = fast charging network

 V_5 = eco-friendly nature

To begin with, we do the preliminary analysis of the correlations between variables to test whether it is appropriate to perform the factor analysis. We use SPSS to construct the correlation matrix, KMO statistic, and Bartlett's test of sphericity.

If the KMO statistic is more than 0.5, this indicate that the correlations between pairs of variables can be explained by other variables (Lecture Notes, 2023)

The Bartlett's test of sphericity is used to test the uncorrelation of variables in the population. If the null hypothesis is rejected, then the correlation matrix is not an identity matrix (i.e. variables are correlated in some pairs), and it is meaningful do the factor analysis. Here is the illustration example, the variables name can be changed in our case.

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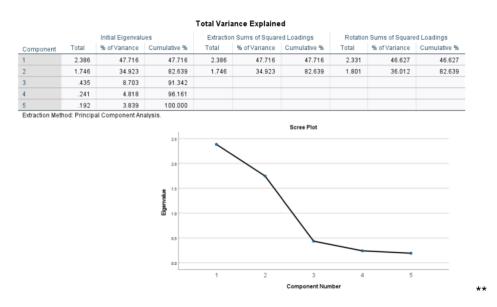
	Mean	Std. Deviation	Analysis N
Awareness	4.28	1.894	40
Attitude	4.13	1.924	40
Preference	4.28	1.585	40
Intention	4.15	1.657	40
Loyalty	4.03	1.717	40

		Awareness	Attitude	Preference	Intention	Loyalty
Correlation	Awareness	1.000	.799	.598	030	.014
	Attitude	.799	1.000	.594	.042	.053
	Preference	.598	.594	1.000	.189	.195
	Intention	030	.042	.189	1.000	.765
	Loyalty	.014	.053	.195	.765	1.000
Sig. (1-tailed)	Awareness		<.001	<.001	.428	.467
	Attitude	.000		.000	.398	.372
	Preference	.000	.000		.122	.114
	Intention	.428	.398	.122		.000
	Loyalty	.467	.372	.114	.000	

Kaiser-Meyer-Olkin Me	asure of Sampling Adequacy.	.626		
Bartlett's Test of Sphericity	Approx. Chi-Square	90.478		
	df	10		
	Sig.	<.001		

	Initial	Extraction
Awareness	1.000	.850
Attitude	1.000	.836
Preference	1.000	.692
Intention	1.000	.880
Loyalty	1.000	.874

SPSS will also help us to show the results of principal components analysis for the data, after that, we depend on the total variance explained and scree plot with the eigenvalues plotted in the order of extraction to select the number of factors. The factor(s) with eigenvalue more than 1 will be retain, and from the scree plot, the suggested number of component is where the elbow is formed.



Next, we can observe from the factor loading plot to see how variables connect with each other and name the factors. For example, auto pilot, one touch screen might be in the same factor, we can name it as "Innovative feature".

For R.H.3.2

Similar to approach R.H.2.3, we will employ our internal data to extract the customer profile associated with each factor. This will enable us to comprehend which factors hold the most *All the tables and expected results are for illustration purposes, they are not real information.

^{**}The picture is taken from Subject Guide/SIM's Lecture Notes.

significance in our target market. As an illustration, the US market serves as a crucial and leading market for Tesla. Therefore, identifying the features or factors preferred by customers in this market can aid the company in determining where to allocate their R&D budget and developing new features that align with customer preferences.

2.4 Timetable

ID	Name	Fe.	Ma	r, 23				Apr, 23			May, 23			١,	J		
ID	Name	22	26	05	12	19	26	02	09	16	23	30	07	14	21	28	C
1	Contact data department for customers' email																
2	Focus group questions preparation																
3	Contact the focus group participants																
4	Execution focus group discussion																
5	Synthesize information obtained from focus gr																
6	Create survey form																
7	Contact survey participants (email)																
8	Run advertisements for the survey																
9	Data cleaning and processing to database																
10	Data analysis																
11	Prepare for final report																
12	Report presentation															1	

2.5 Cost

Suggested budget

Description	Cost	Reason
Focus group	\$10,000	\$20 / participant (est 500 participants)
Online survey	\$75,220	\$10 / participant (est 7522 participants)
Data Analysis	\$80,000	For analytics team operation
System operation	\$50,000	For database, cloud and data storage team
Human resources	\$50,000	For employees who doing data collection
Advertisement	\$70,000	For advertisement the survey
Miscellaneous expenses	\$20,000	Additional cost for unexpected events
Total	\$305,220	

2.6 Further research

In order to attract more customers and expand globally, Tesla can research and develop many new features to bring a special experience to customers. The company can use data and analytics to personalize its marketing efforts to individual customers. This can include customized email marketing campaigns, targeted social media ads, and personalized product recommendations. Or they can also form strategic partnerships with other companies and organizations to increase brand awareness and reach new audiences. For example, Tesla could partner with companies in the travel or hospitality industries to offer electric vehicle charging stations or with renewable energy companies to promote sustainable energy solutions.

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^{**}The picture is taken from Subject Guide/SIM's Lecture Notes.

3. Conclusion

By utilizing research and analytical methods, we can derive solutions to address the research aim. To gain a better understanding of consumer attitudes towards electric vehicles, we will construct a linear model to investigate the relationship between price changes and other factors. Analyzing this model will enable us to identify the crucial variables and gain insights into customer pricing requirements. Additionally, to enhance our understanding of the company's brand perceptions, we will perform cluster analysis to group customers based on their rating on the brand's attributes. This will help us determine the appropriate target customer groups, or can identify those clusters that have a negative perception of the brand, allowing us to implement appropriate strategies to attract them. Finally, we will employ factor analysis to identify related features that users desire and group them accordingly. This will enable us to determine where to invest and which product lines hold significant potential for customers in different markets.

4. Research Organization and Researchers

Researcher: Khoi Nguyen Dinh

Research Organization: Singapore Institute of Management

5. Questionnaire



Tesla Market Survey

Founded in 2003, Tesla is a vertically integrated sustainable energy company which also aims to transition the world to electric mobility by making electric vehicles. By taking part in this survey, you will receive a \$10 Amazon voucher that will be sent to your email as soon as you complete the survey. This survey should take no more than 10 minutes to complete. We value your time and appreciate your efforts. Thank you for participating.

Your fullname *
Your answer
Email *
Your answer
Nationality *
Your answer
Have you ever driven or owned an Electric Vehicle before? *
Yes
○ No
What is the maximum price that you will pay for an EV? *
O Under \$30,000
\$30,000 to \$40,000
\$40,000 to \$50,000
\$50,000 to \$60,000
\$60,000 to \$70,000
More than \$70,000

	In your opinion, how important the following considerations are when you make decision to buy an EV? (1 = very unimportant, 7 = very important)										
	1	2	3	4	5	6	7				
Monthly income	0	0	0	0	0	0	0				
Education	0	0	0	0	0	0	0				
Age	0	0	0	0	0	0	0				
Household size	0	0	0	0	0	0	0				
Maintenace cost	0	0	0	0	0	0	0				
Driving distance per day	0	0	0	0	0	0	0				
Environmental awareness	0	0	0	0	0	0	0				

In your opinion, how accurately these brand attitudes relating to Tesla? (-5 = very inaccurate, 5 = very accurate)									
	-5	-4	-3	-2	-1	1	2	3	4
Innovative	0	0	0	0	0	0	0	0	C
Stylish	0	0	0	0	0	0	0	0	C
Environmentally beneficial	0	0	0	0	0	0	0	0	(

Can you choose the brand name suitable for descriptions below? *							
	Tesla	Ford	Rivian	Mercedes- Benz	Honda	Hyundai	
High tech company							
Future car manufacturer							
A friend of environment							

How important the features below are for a Tesla's product? (1 = very unimportant, 7 = very important)						*	
	1	2	3	4	5	6	7
Sleek design	0	0	0	0	0	0	0
Auto pilot	0	0	0	0	0	0	0
One touch screen	0	0	0	0	0	0	0
Fast charging network	0	0	0	0	0	0	0
Eco- friendly nature	0	0	0	0	0	0	0
Culomit							Classifarin
Submit							Clear form

6. Agreement

Agreement form for focus group discussion (York St John University, 2023)

RESEARCH CONSENT FORM

Title of study

Research on customer's opinion on Tesla Company

Please read and complete this form carefully. If you are willing to participate in this study, ring the appropriate responses and sign and date the declaration at the end. If you do not understand anything and would like more information, please ask.

I have had the research satisfactorily explained to me in written form by the researcher.

YES / NO

I understand that the research will involve:

- · A half day focus group event
- Discussions with the other focus group members on the topic of research development in Tesla's EV product and to identify key issues
- Identifying key factors which will be used to develop a survey on the topic of research development

YES / NO

I understand that I may withdraw from this study at any time without having to give an explanation.

YES / NO

I understand that all information about me will be treated in strict confidence and that I will not be named in any written work arising from this study

YES / NO

I understand that any data collected will be used solely for research purposes and will be						
erased on completion of the research						
YES / NO						
I understand that the data will only be discussed within the research team						
·						
YES / NO						
I understand that study participants and their respective organisations will not be named in						
subsequent write ups and material submitted for publication.						
YES / NO						
I freely give my consent to participate in this research study and have been given a copy of						
this form for my own information.						
Signature:						
Name (capital letters)						
Date:						
Contact details: (include address, email and telephone number)						
,						

References

- N.A. (2021). *Tesla Segmentation, Targeting, and Positioning*. Retrieved from Wondershare edrawmind: https://www.edrawmind.com/article/tesla-segmentation-targeting-and-positioning.html#:~:text=Tesla's%20targeting%20segmentation%20approach%20incl udes,term%20cost%2Deffectiveness%20of%20automobiles.
- Morgan, B. (2021, May 10). 3 Ways Tesla Creates A Personalized Customer Experience. Retrieved from Forbes: https://www.forbes.com/sites/blakemorgan/2021/05/10/3-ways-tesla-creates-a-personalized-customer-experience/?sh=52d4477623b3

- Cikaric, D. (2022, Febuary 8). 22 Tesla Statistics Putting You on the Road of Reliability.

 Retrieved from WebsiteBuilder: https://websitebuilder.org/blog/22-tesla-statistics-putting-you-on-the-road-of-reliability/
- Miller, Inger. (2019). Has Tesla influenced consumer perceptions of electric vehicles? Insights from a survey of Canadian car buyers. SIMON FRASER UNIVERSITY.
- C. Thiel, A. Alemanno, G. Scarcella, A. Zubaryeva, G. Pasaoglu. (2012). *Attitude of European car drivers towards electric vehicles: a survey.* European Comission.
- Suthathip Suanmali, Kritsakon Kiewsongsakool. (Dec 21, 2021). Factors Affecting the Willingness to Pay for Electric Vehicle Conversion (EVC).
- Winters, M. (2021, Dec 29). Here's whether it's actually cheaper to switch to an electric vehicle or not—and how the costs break down. Retrieved from CNBC: https://www.cnbc.com/2021/12/29/electric-vehicles-are-becoming-more-affordable-amid-spiking-gas-prices.html
- Companies Marketcap. (2023). *Largest Companies by Market Cap*. Retrieved from companiesmarketcap: https://companiesmarketcap.com/