STATISTICAL METHOD FOR MARKET RESEARCH
ST3188 COURSEWORK

TESLA, INC. MARKET RESEARCH PROPOSAL

Name: MICHELLE ANGELINE

UOL Student Number: 200618238

Word Count: 2940

Table of Contents

Executive Summary

Tesla, Inc. is an integrated sustainable energy company that aims to switch the world to electric mobility by manufacturing electric vehicles. Tesla was founded in 2003 and headquartered in Austin, Texas. From the 2021 international deliveries data, Tesla has sold more than 936,000 units and is keen to accrue more market share by strengthening its customer acquisition and retention. Tesla also aims to expand its current product range and allocate its research and development (R&D) budget. (Client Brief) In this research, our market research agency will help Tesla in achieving its business objectives by fulfilling the four research aims proposed in the client brief:

1. Tesla wants to understand drivers' attitudes towards electric cars accurately.
2. Tesla wants to better understand the brand perceptions among motorists of different manufacturers to assist with customer acquisition and retention.
3. Tesla wants to engage in problem identification research by horizon-scanning of market potential for new product lines.
4. Tesla wants to engage in problem identification research by horizon-scanning of Tesla's evolving trends in consumer appetites.

From these research aims, we propose several research questions and research objectives to analyze the variables that address the research aims. This proposal will outline the methodology involved, data collected, sampling techniques, and statistical methods to analyze the collected data. Additional information, such as the questionnaire, project schedule (Gantt Chart), and proposed budget estimation, has also been provided for Tesla's reference. Furthermore, we also showcase recommendations for future research on drivers' considerations towards Tesla's direct competitors and Porter's generic competitive strategy.

Bottom line, we desire to provide Tesla with insightful information and suggestions based on our analysis. By offering the proposed recommendations, we are confident that Tesla will accomplish its business objectives of accelerating the shift to electric cars, accruing market share, expanding the current product range, and allocating its research and development budget.

1. Introduction

A. Background Identification

Tesla, Inc., founded in 2003, is a multinational company specializing in automotive, sustainable energy, and artificial intelligence based in America. Tesla aims to transform daily human mobility into electric mobility by manufacturing electric vehicles. Moreover, Tesla also produces battery energy storage, solar panel, solar roof tiles, and other related products. Currently, Tesla has 438 stores worldwide and would like to accrue electric vehicles' market share by better understanding drivers' perceptions.

B. Problem Definition

As a multinational automotive company, Tesla wants to expedite the adoption of electric cars globally. Having awareness of its competitors, such as Ford, Mercedes-Benz, Volkswagen, and others, Tesla desires to increase its market share. While many automotive companies struggle with customer acquisition and retention, Tesla has kept a whopping 83% of its customers[1] and still remains concerned about maintaining and improving it. Tesla is also interested in diversifying its existing product range and deciding its budget allocation for research and development (R&D). As mentioned in the client brief, Tesla has a large budget and would like to complete the research within six months.

C. Research Aims

From the client's brief, we have identified four research aims to pursue Tesla's interests.

RA1: Tesla wants to understand drivers' attitudes towards electric cars accurately.

RA2: Tesla wants to better understand the brand perceptions among motorists of different manufacturers to assist with customer acquisition and retention.

RA3: Tesla wants to engage in problem identification research by horizon-scanning of market potential for new product lines.

---

[1] According to S&P Global Mobility in https://insideevs.com/news/640858/tesla-takes-keeps-customers-industry-struggles-at-retention/.

RA4: Tesla wants to engage in problem identification research by horizon-scanning of electric vehicle's evolving trends in consumer appetites.

D. Research Questions (RQ) and Research Objectives (RO)

We propose some RQ(s) and RO(s) to better understand our research aims.

For **RA1[2]:**

- **RQ1.1:** What are the aspects that influence drivers' in purchasing electric cars?
  - ○ **RO1.1:** Examine the relationship between purchasing electric cars with the following variables: time to charge, range in a single charge, and radius to find a charging point.
- **RQ1.2:** How does age group influence the maximum price that drivers are willing to pay for an electric car?
  - ○ **RO1.2:** Determine the influence of age group on the maximum price that drivers are willing to pay for an electric car.
- **RQ1.3:** Do drivers' attitudes towards purchasing electric cars vary according to a demographic variable such as region?
  - ○ **RO1.3:** Determine if drivers' attitudes towards purchasing electric cars vary according to region.

These research questions explore drivers' preferences and considerations towards electric cars. From the results, we can understand drivers' attitudes toward electric cars based on their preferences towards various electric vehicles' features and demographic variables.

---

[2] Tesla wants to understand drivers' attitudes towards electric cars accurately.

For **RA2**[3]:

- **RQ2:** How do demographic variables influence Tesla's brand perceptions?
  - **RO2:** Examine the relationship between Tesla's brand perceptions with the following demographic variables: age group, gender, annual household income, and household size.

  This research question compares the brand perceptions towards Tesla amongst several demographic groups. This will allow Tesla to segment drivers into different market segments and apply appropriate strategies to assist with customer acquisition and retention in each market segment.

For **RA3**[4]:

- **RQ3:** How does drivers' interest level in buying Tesla's new product lines differ across different regions and genders?
  - **RO3:** Examine the drivers' interest level in buying Tesla's new product lines across different regions and genders.

  This research question seeks to discover the drivers' interest level in purchasing Tesla's new product lines amongst different regions and gender. With this data, Tesla can identify the potential market for new product lines and apply different marketing strategies to each market.

For **RA4**[5]:

- **RQ4:** What are the evolving trends of electric vehicles in consumer appetites?
  - **RO4:** Examine the evolving trends of electric vehicles in consumer appetites (robotic advancement, new safety features trends, supercomputing power, and fully self-driving vehicles).

---

[3] Tesla wants to better understand the brand perceptions among motorists of different manufacturers to assist with customer acquisition and retention.
[4] Tesla wants to engage in problem identification research by horizon-scanning of market potential for new product lines.
[5] Tesla wants to engage in problem identification research by horizon-scanning of electric vehicles' evolving trends in consumer appetites.

This research question will provide insights for Tesla to allocate their budget based on drivers' opinions on evolving trends such as robotic advancement, new safety features trends, fully autonomous vehicles, and supercomputing power. This allows Tesla to understand drivers' interests and appetites better.

2. Methodology

A. Purpose of Research

As mentioned in the client's brief, Tesla has proposed several research aims. Regarding those aims, we have identified six research questions and research objectives in hopes of achieving desirable results. This research targets to gather the required information and utilize the data collected by identifying the relationship between factors in discussion to provide insights and solutions to achieve Tesla's aims.

B. Fieldwork Approach

Since Tesla is a multinational company, we should conduct this survey globally to be representative. Due to time and budget constraints, we should avoid personal or face-to-face interviews, telephone interviews, and mail interviews since they are not ideal for collecting a high volume of information globally. Therefore, conducting the survey and focus group through an online or electronic survey is the best option. We should conduct pilot testing with a sample of 50 respondents to identify potential problems in the online questionnaire that create ambiguous answers. The finalized questionnaire should have no doubt regarding content, wording, and instructions for respondents.

C. Focus Group Approach

We propose to practice 20 online focus group discussions[6], allocated 2 hours per session in a small group of 10 respondents each[7]. Some benefits of conducting online focus groups are that they are more affordable, time efficient, and flexible in terms of location[8]. Moreover, they let us have a more representative sample from the target population through a judgmental sampling technique and obtain more honest, spontaneous, and sincere answers. Thus, we strongly encourage practicing online focus groups, especially for completing **RO4**[9]. Incentives will be issued after participating to attract more respondents to join the online focus group discussions.

D. Research Design

Based on the research aims, the objective of this market research involves exploratory and descriptive designs. For **RO4**, we will use exploratory design to investigate the evolving trends of electric vehicles in customers' appetites as we currently have insufficient information and need to conduct online focus group discussions. The rest of the research objectives will adopt a descriptive design as we want to obtain the population characteristics in a detailed manner.

We applied a quantitative approach to research objectives that required statistical analysis, given primary data obtained from the online survey and secondary data acquired from Tesla's internal database. This approach includes formulating hypotheses, determining independent and dependent variables, and discovering the insights between various measured variables. On the other hand, we applied a qualitative approach to objectives that required understanding participants' opinions and behavior through an online focus group for **RO4**.

---

[6] Coenen et al. (2012) found that twenty focus groups were enough to reach saturation and gain insights.
[7] Robson (2002) found that a focus group of between 8 to 12 people might be more appropriate.
[8] According to Netquest in https://www.netquest.com/blog/en/5-advantages-of-the-online-focus-group.
[9] Examine the evolving trends of electric vehicles in consumer appetites (robotic advancement, new safety features trends, supercomputing power, and fully self-driving vehicles).

3. Fieldwork and Data Collection

A. Respondents Selection

In this research, we would like to target all drivers aged 18 and above. As we will conduct this research online, technological competency is also required. Thus, respondents with technology capability are more able to access and complete this research.

B. Data Collection

Variables	Data Level	Classification of Variables
Age Group	Categorical Ordinal	18 - 24 years, 25 - 39 years, 40 - 60 years, and more than 60 years
Gender	Categorical Nominal	Male and female
Annual Household Income	Continuous	Income in pound sterling (£)
Household Size	Discrete	Number more than 0
Region	Categorical Nominal	Asia, America, Europe, and Australia-New Zealand
Driver's willingness to (re)purchases an electric car	Categorical Nominal	Yes or no
Proportion of drivers purchasing an electric car	Continuous	Obtain the proportion by calculating the number of respondents in each category (Y/N) divided by total respondents.
Preferred time to charge	Continuous	Time in hours
Preferred range in a single charge	Continuous	Range in miles
Preferred radius to find a charging point	Continuous	Radius in km
Maximum price the drivers willing to pay	Continuous	Price in pound sterling (£)
Level of brand perception	Discrete	5-point Likert Scale
Drivers' interest level in buying Tesla's new product lines	Discrete	5-point Likert Scale

Table 1 Data Collection

C. Sampling Technique for Tesla Customer

Sampling frame for Tesla customer is provided through Tesla's customer database. From the client's brief, Tesla suggests having a minimum sample size of 5000 Tesla customers globally. But we would like to offer a suitable sample size that still gives a robust result due to time and budget constraints. We recommend using a two-stage cluster sampling technique. In the first process, we will cluster the target population, obtained from Tesla's internal database, by region[10]: Asia, America, Europe, and Australia-New Zealand. Then, we will select the proportion of respondents from each region of the target population equally. Finally, we will perform a conservative sample size calculation using this formula:

$$n_1 \geq \frac{Z_{\frac{\alpha}{2}}^2(\pi(1-\pi))}{e^2}$$

n_1 represents the minimum sample size of Tesla customers needed. At a 95% confidence interval resulting in $Z_{\frac{\alpha}{2}}$ = 1.96 with 0.05 margin error and a conservative value of π = 0.5, the minimum sample size required is:

$$n_1 \geq \frac{1.96^2(0.5(1-0.5))}{0.05^2} = 384.16 \approx 385 \text{ respondents}$$

Considering the incidence and response rate, we will use $\frac{1}{3.13}$ or 0.320 as the incidence rate, where 3.13 is the average household size in the US[11] (as most Tesla customers live in the US) to eliminate overlapped responses in the households' survey. With an estimated 33% average survey response rate[12], the final sample size will be:

$$\text{Final sample size} = \frac{385}{\text{incidence rate x response rate}} = \frac{385}{0.32 \text{ x } 0.33}$$
$$= 3645.83 \approx 3646 \text{ sample size}$$

We must take note that 385 is the expected number of people that completes the survey and 3646 is the number of people to whom we distribute the survey.

---

[10] The four main regions are obtained from Tesla's report on sales by country, which is then grouped into regions to form a decent comparison. https://worldpopulationreview.com/country-rankings/tesla-sales-by-country.

[11] According to Statista https://www.statista.com/statistics/183657/average-size-of-a-family-in-the-us/.

[12] According to https://pointerpro.com/blog/average-survey-response-rate/, the average survey response rate is 33%.

D. Sampling Technique for Non-Tesla Customers

As there is no sampling frame for non-Tesla customers, we suggest using the convenience sampling technique since it is the least expensive, least time-consuming, and most convenient among other non-probability sampling methods. To conclude, it is also reasonable to suggest 3646 as the minimum sample size for non-Tesla customers as the population size is large enough.

E. Sampling Technique for Focus Group

For the focus group discussion, we propose using judgmental sampling to approach more representative respondents that match the required target profile to get more accurate responses in this study. However, if time completion is a crucial aspect of this research, we suggest using convenience sampling since it is the least time-consuming.

4. Data Analysis

All calculations are done using SPSS at **5% significance level** ($\alpha = 0.05$).

A. RO1.1 | Discriminant Analysis

We will perform a 2-group discriminant analysis for **RO1.1**[13]. Let the dependent variable be the drivers' willingness to purchase an electric car. The predictor variables are the preferred time to charge until complete, the range of an electric vehicle in a single charge, and the radius to find a charging point. The discrimination function will be:

$$D = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$$

D = Discriminant Score

X_1 = Time to charge until complete

X_2 = Range of an electric vehicle in a single charge

X_3 = Radius to find a charging point

β_k = Discriminant weight for variable k

---

[13] Examine the relationship between purchasing electric cars with the following variables: time to charge, range in a single charge, and radius to find a charging point.

To assess the predictors' discriminatory ability:

1. From the "Tests of Equality of Group Members" table, Wilks' Lambda indicates each predictor's discriminatory ability in the model. Ranging from 0 to 1, 0 indicates total discrimination, while 1 indicates no discrimination. If P-value is less than 0.05, we can reject the null hypothesis and conclude the predictor variables are statistically significant in discriminating the two groups.

Tests of Equality of Group Members

	Wilks' Lambda	F	df1	df2	Sig.
Time to charge until complete					
Range of an electric vehicle in a single charge					
Radius to find a charging point					

Table 2 Tests of Equality of Group Members

2. Standardized canonical discriminant function coefficient indicates the relationship between discriminant weight and predictors. A larger coefficient shows more discriminatory ability. From the "Structure Matrix" table, predictors are ranked from the highest correlation with the discriminant function to the lowest.

Standardized Canonical Discriminant Function Coefficients

	Function 1
Time to charge until complete	
Range of an electric vehicle in a single charge	
Radius to find a charging point	

Table 3 Standardized Canonical Discriminant Function Coefficient

3. Eigenvalue measures how well the discriminant function discriminates between the categories. A larger eigenvalue indicates better discrimination.

We can use the cutting score to split the respondents willing to purchase an electric car and those not willing. We can count the cut-off point from the "Functions at Group Centroids" table by averaging the scores (green-shaded cells). For example, if the cut-off point is 0, a group of respondents with a discrimination function score of more than 0 would likely purchase an electric car.

Functions at Group Centroids

Willingness to Purchase	Function 1
Willing to purchase an electric car	
Not willing to purchase an electric car	

Table 4 Functions at Group Centroids

In the "Classification Results" table, we can compute the hit ratio from the validation sample. Given two groups of equal sizes, the expected hit ratio is 50% by chance alone. We calculate the improvement over chance and obtain insights on whether time, range, and radius will influence drivers to purchase an electric car.

B. RO1.2 | One-Way ANOVA

We will conduct a one-way ANOVA to carry out **RO1.2**[14]. Let the maximum price the drivers are willing to pay for an electric car be the dependent variable and age group be the independent variable.

Age Group
18 - 24 years
25 - 39 years
40 - 60 years
More than 60 years

Table 5 Age Group

---

[14] Determine the influence of age group on the maximum price that drivers are willing to pay for an electric car.

Levene's Test

Let $\sigma_1{}^2$ be the variance of maximum price willing to pay for age 18 – 24 years.

$\sigma_2{}^2$ be the variance of maximum price willing to pay for age 25 – 39 years.

$\sigma_3{}^2$ be the variance of maximum price willing to pay for age 40 – 60 years.

$\sigma_4{}^2$ be the variance of maximum price willing to pay for age > 60 years.

The hypothesis will be:

$H_0: \sigma_1{}^2 = \sigma_2{}^2 = \sigma_3{}^2 = \sigma_4{}^2$

$H_1:$ Not all variances are equal

From the "Test of Homogeneity of Variances" table, if P-value (green-shaded cell) > 0.05, we do not reject H_0 and conclude at 5% significance level that the variance of maximum price willing to pay are not significantly different between the age groups.

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Maximum Price	Based on Mean				
	Based on Median				
	Based on Median and with adjusted df				
	Based on trimmed mean				

Table 6 Test of Homogeneity of Variances

ANOVA Table

Let μ_1 be the population mean of maximum price willing to pay for age 18 – 24 years.

μ_2 be the population mean of maximum price willing to pay for age 25 – 39 years.

μ_3 be the population mean of maximum price willing to pay for age 40 – 60 years.

μ_4 be the population mean of maximum price willing to pay for age > 60 years.

The hypothesis will be:

$H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4$

$H_1:$ Not all means are equal

From the ANOVA table, if P-value < 0.05, we reject H_0 and conclude at 5% significance level that not all mean of maximum price willing to pay are equal across different age groups.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups					
Within Groups					
Total					

Table 7 ANOVA

C. RO1.3 | Chi-Square Test of Homogeneity

We will use χ^2 test of homogeneity for **RO1.3**[15]. Let the region be the independent variable and the proportion of driver's intent in purchasing an electric car be the dependent variable, where the proportion $(\pi) = \frac{\text{count for purchasing an electric car}}{\text{total count}}$

$\pi_{\text{purchase}} + \pi_{\text{not purchase}} = 1$, for each region.

Purchase * Region Crosstabulation

		Region				Total
		Asia	America	Europe	Australia-New Zealand	
Drivers purchasing an electric car	Purchase					
	Not Purchase					
Total						

Table 8 Purchase * Region Cross Tabulation

Let π_i be the population proportion of driver's intent in purchasing an electric vehicle for region i, where i = Asia, America, Europe, and Australia-New Zealand.

The hypothesis will be:

$H_0: \pi_{\text{Asia}} = \pi_{\text{America}} = \pi_{\text{Europe}} = \pi_{\text{Aus}-\text{NZ}}$

H_1: Not all π_i are equal

---

[15] Determine if drivers' attitudes towards purchasing electric cars vary according to region.

From the "Chi-Square Tests" table, we obtain the P-value from the green-shaded cell. If the P-value < 0.05, we reject H_0 and conclude that the population proportion of driver's intent in purchasing an electric car is influenced by regions.

Chi-Square Tests

	Value	df	Asymptotic Significance (2 sided)
Pearson Chi-Square			
Likelihood Ratio			
Linear-by-Linear Association			
N of Valid Cases			

Table 9 Chi-Square Tests

D. RO2 | Multiple Linear Regression Analysis

Multiple Linear Regression helps address **RO2**[16]. Let the independent variables be gender, annual household income, household size, and age group. Let the dependent variable be the level of Tesla's brand perception. Annual household income and household size are on a measurable scale. We assume that the variables are homoscedastic[17].

The hypothesis will be:

H_0: There is no relationship between attitude towards Tesla's brand perception and the demographic variables.

H_1: There is a relationship between attitude towards Tesla's brand perception and the demographic variables.

---

[16] Examine the relationship between Tesla's brand perceptions with the following demographic variables: age group, gender, annual household income, and household size.
[17] All independent variables have the same error term.

The multiple linear regression equation is:

$$\widehat{\text{Perception}} = \widehat{\beta_0} + \widehat{\beta_1}\text{Gender}_i + \widehat{\beta_2}\text{AHI}_i + \widehat{\beta_3}\text{HHS}_i + \widehat{\beta_4}\text{AG1}_i + \widehat{\beta_5}\text{AG2}_i + \widehat{\beta_6}\text{AG3}_i$$

$\widehat{\beta_0}$: The intercept or value change in perception when all variables are zero.

$\widehat{\beta_1}$: The amount which change in perception when X_i increases by 1 unit while the values of other independent variables are held constant, i = 1,2,3,4,5,6

$\text{Gender} = \begin{cases} 0 \text{ for male} \\ 1 \text{ for female} \end{cases}$

AHI = Annual Household Income

HHS = Household Size

Dummy Variables for Age Group:

	AG1	AG2	AG3
18-24	0	0	0
25-39	1	0	0
40-60	0	1	0
More than 60	0	0	1

Table 10 Age Group Reference

From the "Coefficients" table, the "Unstandardized B" column shows how much an independent variable varies with the dependent variable while holding other variables constant. Using a partial t-test, we want to test the individual significance of the independent variables on whether the variables have zero regression coefficient ($\beta_i = 0$). If the P-value (green shaded cells) < 0.05, we reject H_0 and conclude that variable X_i contributes significantly (in terms of predicting power) to the level of Tesla's brand perception.

Coefficients[a]

Model		Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B	
							Lower Bound	Upper Bound
1	(Constant)							
	Gender							
	Annual Household Income							
	Household Size							
	Age Group 1							
	Age Group 2							
	Age Group 3							

a. Dependent Variable: Level of Tesla's Brand Perceptions

Table 11 Coefficients

From the "Model Summary" table, the R Square measures the model's overall fit. The larger the R Square, the better the model fits the observations.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1				

Table 12 R-Squared and Adjusted R-Squared

From the "ANOVA" table, a global F-test will be used to test the overall significance of the model on whether all the independent variables have zero regression coefficients ($\beta_i = 0$). If the P-value (green-shaded cell) < 0.05, we reject H_0 and conclude that not all β_s are zero. This means that some of the independent variables do have the ability to explain the variation in the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression					...[b]
	Residual					
	Total					

a. Dependent Variable: Level of Tesla's Brand Perceptions
b. Predictors: (Constant), X6, X5, X4, X3, X2, X1

Table 13 ANOVA

16

E. RO3 | Two-Way ANOVA

We will perform two-way ANOVA for **RO3**[18]. Let the drivers' interest level in purchasing Tesla's new product lines be the dependent variable, while regions and genders are the independent variables.

Region	Gender
Asia	Male
America	Female
Europe	
Australia-New Zealand	

Table 14 Independent Variable Classifications

The hypotheses will be:

	H_0	H_1
Region	The drivers' interest level in purchasing Tesla's new product lines is the same across different regions	The drivers' interest level in purchasing Tesla's new product lines differs across different regions
Gender	The drivers' interest level in purchasing Tesla's new product lines is the same across different gender	The drivers' interest level in purchasing Tesla's new product lines differs across different gender
Interaction	There is no interaction between Region and Gender	There is an interaction between Region and Gender

Table 15 Hypotheses

From the "Tests of Between-Subjects Effects" table, if the P-value < 0.05, we reject the H_0 and conclude that the drivers' interest level in purchasing Tesla's new product lines differs across regions and gender. We repeat the same calculation for the interaction effect. The partial eta squared measures the proportion of variability in the drivers' interest level in purchasing Tesla's new product lines accounted for by the independent variable (regions or genders).

---

[18] Examine the drivers' interest level in buying Tesla's new product lines across different regions and genders.

Tests of Between-Subjects Effects

Dependent Variable: Interest Level in Purchasing Tesla's New Product Lines

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model						
Intercept						
Region						
Gender						
Region*Gender						
Error						
Total						
Corrected Total						

a. R-squared =   (Adjusted R-Squared =   )

Table 16 Test of Between-Subjects Effects

F. RO4 | Focus Group

Due to the target market's geographical spread and time constraints, we will conduct the research through online focus group discussions for **RO4**[19]. There will be twenty focus groups with 10 participants in each group. An incentive of a £30 PayPal voucher will be given to each participant after completing the study. We will perform a dual-moderator focus group, with one moderator responsible for the smooth flow of the discussion and the other ensuring the topics are being discussed, with the goal of understanding drivers' interests and concerns about the following trends:

1. Robotic advancement
2. New safety features trends
3. Supercomputing power
4. Fully self-driving vehicles

The focus group discussions will be recorded and remain confidential for internal purposes.

---

[19] Examine the evolving trends of electric vehicles in consumer appetites (robotic advancement, new safety features trends, supercomputing power, and fully self-driving vehicles).

5. Questionnaire

    A. Questionnaire Flow Chart
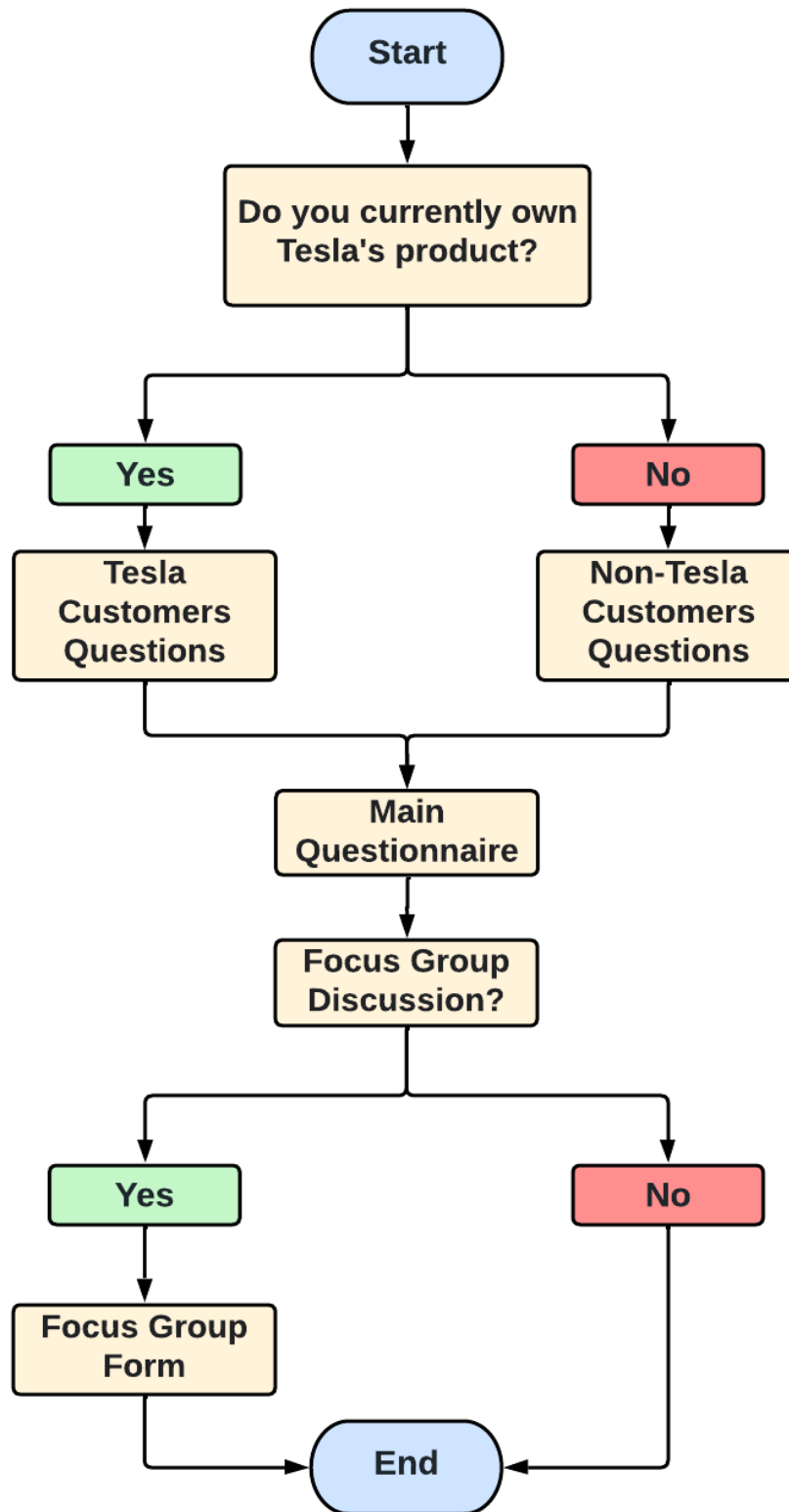
B. Online Questionnaire

TESLA

Tesla, Inc. Market Research

Founded in 2003, Tesla, Inc. is an American multinational automotive, artificial intelligence, and sustainable energy company headquartered in Austin, Texas. Tesla designs and manufactures electric vehicles, battery energy storage from home to grid-scale, solar panels and solar roof tiles, and related products and services.

We created this questionnaire for the purpose of having a better understanding from the drivers perspective. Data collected from this questionnaire will remain confidential and private for the company purposes. This questionnaire will only take 10-15 minutes to complete. Upon completion, you will receive a £5 PayPal voucher as a token of appreciation for taking this survey. Please answer the following questions to your best abilities.

miichelleangeline@gmail.com (not shared) Switch accounts

*Required

1. Do you currently own Tesla's product? *

○ Yes

○ No

Next   Clear form

Tesla Customers

2. Would you be willing to repurchase another electric car in the next 6 months? *

○ Yes

○ No

Back   Next   Clear form

20

Non Tesla Customers

2. Would you be willing to purchase an electric car in the next 6 months? *

◯ Yes

◯ No

Back   Next   Clear form

Main Questionnaire

3. What is your gender? *

◯ Male

◯ Female

4. Please select your age group *

◯ 18 - 24 years

◯ 25 - 39 years

◯ 40 - 60 years

◯ More than 60 years

5. Please select your Region of Residence *

◯ Asia

◯ America

◯ Europe

◯ Australia and New Zealand

6. What is your Average Annual Household Income? (in £) *

Your answer

7. How many people, including yourself, live in your household? (e.g. 3) *

Your answer

8. What is the maximum price would you be willing to pay for an electric car? *
(in £)

Your answer

Given your response regarding the maximum price you are willing to pay for an electric car, answer the following questions 9 until 11

9. How long would you be willing to wait for your electric vehicle to charge to full *
in terms of hours? (e.g. 2)

Your answer

10. What is your preference towards the range of an electric vehicle in a single *
charge in terms of miles? (e.g. 300)

Your answer

11. How far would you be willing to drive to find a charging point to charge your *
electric vehicle in terms of km? (e.g. 5)

Your answer

12. How would you rate Tesla as a brand? *

	1	2	3	4	5	
Very Poor	○	○	○	○	○	Very Good

13. Are you interested in buying Tesla Model Q which expected to be launched *
around 2025 with fully autonomous driving and cost from around £20,000?

	1	2	3	4	5	
Very Unlikely	○	○	○	○	○	Very Likely

Back   Next   Clear form

Focus Group (£30 incentive)

14. Are you willing to take part in a 2 hours online focus group discussion? *

○ Yes

○ No

Back   Next   Clear form

23

15. E-mail (e.g. johndoe@gmail.com) *

Your answer

16. Phone Number *

Your answer

Back   Submit   Clear form

Thank you for filling this questionnaire. We really appreciate your effort and time. The £5 PayPal Voucher will be sent in your email within 7 working days.

Submit another response

Figure 1 Questionnaire

6. Schedule and Cost

A. Project Schedule (Gantt Chart)
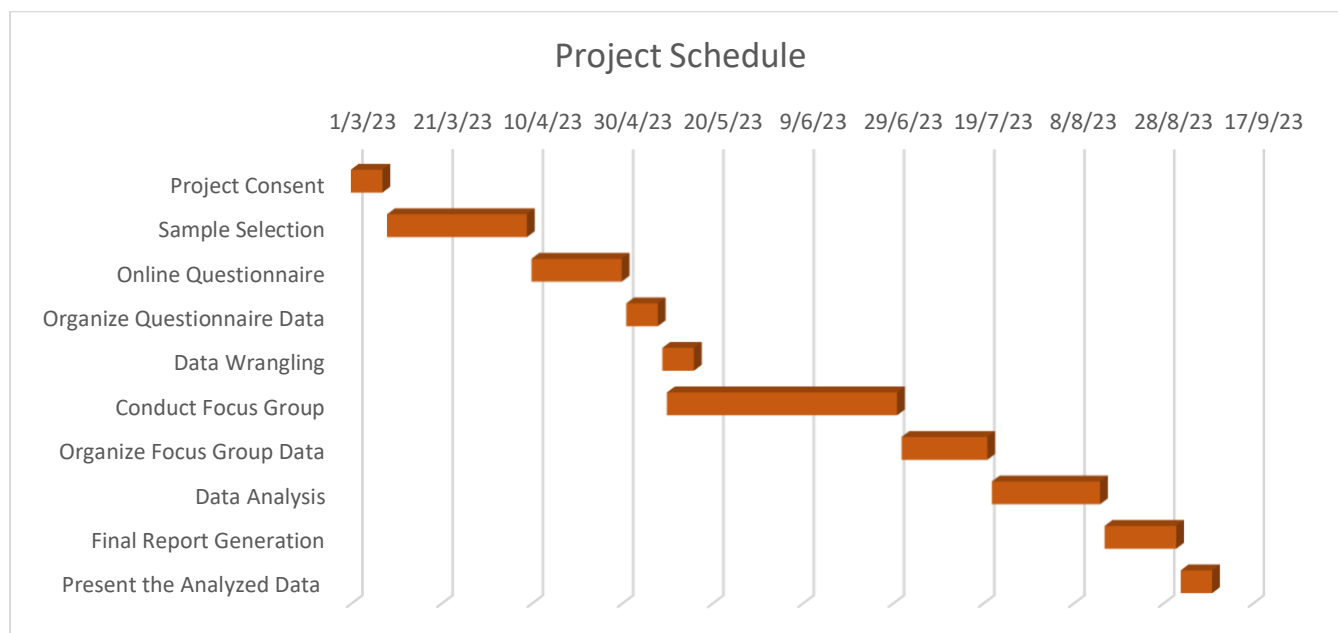
Figure 2 Gantt Chart

B. Budget Allocation (Estimated Costs)

Description	Estimated Costs (£)
Data Collection	£200,000
Data Analysis	£100,000
Operation and Administrative	£50,000
Questionnaire Incentives	£10,000
Focus Group Incentives	£6,000
Moderator Fees	£25,000
Miscellaneous	£10,000
20% Value Added Tax (VAT)	£80,200
Total	**£481,200**

Table 17 Budget Allocation

7. Recommendation for Further Research

A. Drivers' Considerations Towards Tesla's Direct Competitors

After understanding drivers' attitudes towards electric cars, we recommend further research on drivers' attitudes towards its direct competitors, such as Ford, Rivian, and Mercedes Benz. This will allow Tesla to implement a suitable value positioning by uncovering its competitors' key competencies and weaknesses, allowing Tesla to accrue a larger market share.

B. Porter's Generic Competitive Strategy

Moreover, we can use Porter's Generic Competitive Strategy to analyze Tesla's cost leadership and product differentiation strategy in hopes of understanding Tesla's sustainability positioning in the automotive industry. Thus, this helps Tesla diversify its existing product range to stand out from its competitors.

8. References

Staff, C. (2023) New entry-level Tesla confirmed: Price, Specs and release date, carwow.co.uk. Carwow. Available at: https://www.carwow.co.uk/tesla/news/5220/new-tesla-ev-compact-electric-car-hatchback-price-specs-release-date#gref (Accessed: February 19, 2023).

Raja, S. (2023) USD 25000 'Tesla Model 2' or 'model Q' proposed in 6 designs, TopElectricSUV. Available at: https://topelectricsuv.com/news/tesla/tesla-model-2-design-details/ (Accessed: February 19, 2023).

Mayo, A. and Kay, G. (2022) 21 interesting features that make teslas unlike any other car, Business Insider. Business Insider. Available at: https://www.businessinsider.com/22-tesla-features-that-make-them-unlike-any-other-car-2021-7#1-autopilot-1 (Accessed: February 19, 2023).

Forbes (2022) Top 5 tech trends we should all know ahead of Tesla Ai Day, Forbes. Forbes Magazine. Available at: https://www.forbes.com/sites/qai/2022/09/16/top-5-tech-trends-we-should-all-know-ahead-of-tesla-ai-day/?sh=58f801cf5dd5 (Accessed: February 19, 2023).

Lindemann, N. (2022) What's the average survey response rate? [2021 benchmark], Pointerpro. Available at: https://pointerpro.com/blog/average-survey-response-rate/ (Accessed: February 19, 2023).

World Population Review (2023) Tesla Sales by Country 2023. Available at: https://worldpopulationreview.com/country-rankings/tesla-sales-by-country (Accessed: February 19, 2023).

Duffin, E. (2022) Average family size in the U.S. 1960-2022, Statista. Available at: https://www.statista.com/statistics/183657/average-size-of-a-family-in-the-us/ (Accessed: February 19, 2023).

9. Technical Appendix

Fulfillment Proposal Requirements

Requirement	Section
Provide a full summary of the research brief, including the aims of the research.	Executive Summary
Demonstrate an understanding of the market or business context as well as any other publicly available research done in this area.	Executive Summary, 1, 2A
Detail how the fieldwork would be conducted, i.e. face-to-face, telephone, online, focus groups, mixed-mode etc.	2B, 2C, 2D
Explain the proposed sampling method as well as other sampling methods considered, including details on any sampling frame to be used.	3C, 3D, 3E
Detail the information that would be gathered and collected by the research.	3A, 3B
Explain how you would use any customer or operational data supplied to you by the client.	3B, 3C, 3D, 3E, 6
Describe what multivariate analysis techniques you propose and how these would help the client's research aims. (You are not required to actually conduct any analysis.)	4
Detail the proposed sample size necessary to construct confidence intervals around the questionnaire estimates.	3C, 3D, 3E
An appropriate questionnaire which would capture suitable data to perform the proposed multivariate analysis. (You are not required to actually run the questionnaire in practice.)	5
Proposed further research, i.e. include ideas for how some business or organisational objectives might be helped by further and different research.	7