

# Analysing the impact of sustainability initiatives and practices in the British Automobile Industry – A Comparison between BMW Group and Tesla

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## Keywords

*Sustainability, Sustainability Initiatives, The British automobile industry, Triple Bottom Line, Corporate Social Responsibility (CSR).*

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## Abstract

*As the world grapples with climate change and environmental degradation, the automotive industry is being pushed to the forefront of sustainability. This push is not just from within the industry but from external forces such as governments, consumers, and investors. These stakeholders are demanding a complete overhaul of operational practices, company culture, and product lines, and the industry is responding, albeit with varying degrees of success.*

*BMW Group and Tesla are the leading vehicle manufacturers in the British automotive industry. Hence, this study comprehensively analyses the profound impact of BMW Group's and Tesla's sustainability initiatives on their strategies and the subsequent influence on their financial operations. To investigate the study properly, it covered several concepts such as the triple bottom line, corporate social responsibility, etc.*

*To conduct the study, the primary data were collected via a questionnaire from stakeholders such as BMW Group and Tesla employees, related administrators and authorities, academics, and graduates in the UK. The questionnaires were distributed to the stakeholders via emails or social media platforms, and the convenience sampling technique was applied to reach those participants.*

*This research is poised to lay the groundwork for other scholars and professionals interested in corporate sustainability. Without further exploration, concluding that the results indicate no impact of BMW Group's and Tesla's sustainability initiatives on the British automobile industry would be premature. The study emphasises the need for a comprehensive evaluation of the impact of sustainability initiatives beyond individual company performance to understand their broader implications for the industry.*

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## 1. Introduction

The demand for incorporating sustainability into daily life has been a pressing issue for several years. Numerous studies have delved into sustainability from various angles, all to understand the correlation between sustainability and improving our quality of life. This correlation brings hope and optimism for a better future (The United Nations, 2019).

In 2015, the United Kingdom, marked by the endorsement of the SDGs, ignited regulatory shifts worldwide. A shining example is the UK's automobile industry, which is now making significant strides towards the nation's sustainability agenda by transitioning to electric battery cars (Climate Change Committee, 2020).

Sustainability is one component of the Sustainability Development Goals among 16 other goals (The United Nations, 2015). This implies that organisations should apply techniques and methods that meet their needs today while ensuring the protection and enhancement of the environment for future generations. Sustainability is about meeting the needs of the future without jeopardising their capacity to meet their own needs (Kotob, 2011). It's worth noting that the number of sustainability reports released by the third since 2016 has increased (The United Nations, 2023). However, only 10% of these reports have mentioned the 17 goals, which the United Nations considers a positive sign. This underscores the urgent need for global collaboration in sustainable development, a call to action that we all must heed (The United Nations, 2023).



Figure 1: The chronological development of sustainability since 1983 (The United Nations, 1987) (Hossain,2011) (The United Nations, 2015).

When it comes to the automobile industry, research has often been limited to a few countries, such as the U.S.A., India, Italy, and others, which are considered stable on the sustainable infrastructure level (Mathiyazhagan et al., 2018) (Shao et al., 2016). This approach, however, neglects the potential contributions of other countries, such as Arab countries, in global sustainability efforts. Considering a diverse range of countries, a more inclusive approach is not just beneficial; it's essential. After all, sustainability is a global issue, and our solutions should reflect that, fostering a sense of unity and shared responsibility. Therefore, it is not the responsibility of developed countries only. Regardless, if one country applied sustainability on all levels, it would not impact the Earth's planet enough.

Other research has focused solely on using electric vehicles to address current and potential environmental issues without considering the challenges arising from their continuous use (Mathiyazhagan et al., 2018). This research, however, will delve into how both BMW Group and Tesla have implemented sustainability initiatives in the British automobile industry and the potential challenges that may arise in the future,

The significance of the research is determined by broadening the implications of sustainability on the British automobile industry and sharing its contribution to the knowledge of sustainability through a critical analysis of two major companies in the British automobile industry: BMW Group and Tesla. This will be achieved by Analysing the sustainability initiatives of those companies, which will offer comprehensive insights into their strategies and financial operations. As a result, it will help other companies to enhance their competitive advantage. Surveys will back this up to offer a clear perspective regarding consumer behaviours.

The research aims to analyse BMW Group's and Tesla's sustainability initiatives and systems in the British automobile industry, and to provide a comprehensive explanation regarding the impact of BMW Group's and Tesla's sustainability initiatives on their strategies and how this affected their financial operations.

The Objectives of this research are going to be listed in three objectives, which are the following:

1. Identify the components that affect BMW's and Tesla's sustainability initiatives and methods.
2. Examine the impact of sustainability initiatives on the British automobile industry.
3. Suggest recommendations and analyse the environmental achievement results of sustainability initiatives.

As a result, it results in one question:

Are sustainability initiatives of BMW Group and Tesla sufficient to make an impact on the British automobile industry?

## 2. Literature Review

### 2.1. Sustainability Initiatives in the Automobile Industry

The most recent action that affected the British automobile industry is Brexit. In 2016, the UK's automobile industry turnover was £77 billion, and the amount deficit with the EU was £25 billion in the

first three months of 2017, post-Brexit, 2018 (Malinauskaite et al., 2021). Brexit has affected not only the automobile industry with the EU but several sectors/aspects, some related, such as electrical vehicle battery manufacturing (Malinauskaite et al., 2021) and sustainable development (Thomas, et al., 2021), and some not, such as the health sector (Burki, 2018), agriculture (Kam et al., 2023), criminal justice (Wilson, 2021)... etc

Therefore, the British government implemented several measures, such as the financial penalties for CO2 emissions on the companies. (Wallach & Popovich, 2023). The UK committed to ending the use of petrol cars by 2030 and achieving zero carbon neutrality by 2050 (SMMT Driving the Motor Industry, 2022).

For British initiatives, for example, but not limited to, the Climate Change Levy and Climate Change Agreement (Giampieri et al., 2019). It financially supports companies converting to sustainability by £20 million in R&D funding for low-carbon technologies and reducing taxes for companies transitioning to sustainability (Zhang et al., 2023). It established the Green Finance Institute to support investment in environmental sustainability.

## 2.2. Current Practices and Strategies in Sustainability

Some private initiatives have been adopted by agencies such as the International Renewable Energy Agency. It endorses the countries' transformation pathway to renewable energy, grants information, and investigates technology, novelty, protocols, and investments (The International Renewable Energy Agency, 2022).

Other crucial practices that most companies adopt are corporate social responsibility (CSR) and Triple Bottom Line (TBL). CSR is based on the stakeholders' theory, where the corporation's morale and plant management are based (Schaltegger et al., 2019, as cited in Mahajan et al., 2023). It is based on the idea that companies should care about different issues rather than profits (Mahajan et al., 2023). The second theory CSR is based on is the sustainability era when the world started converting to sustainability; as a result, CSR is when the companies should act and deal on a non-profit basis and achieve other non-financially based goals (Bavik, 2019, as cited in Su et al., 2024).

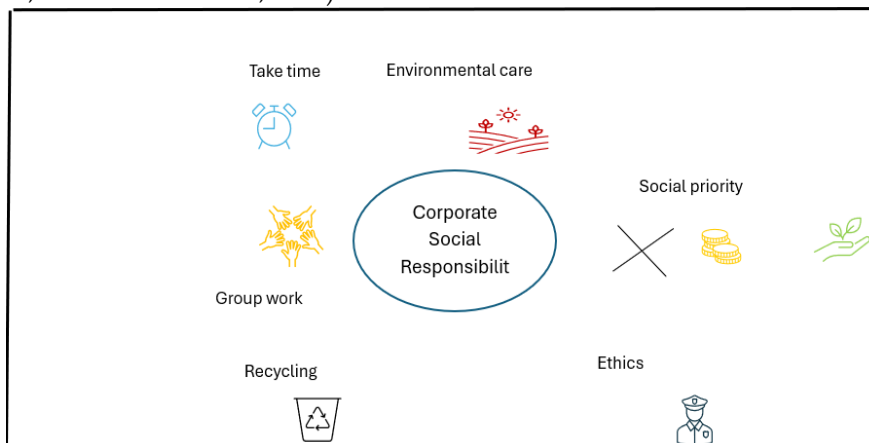


Figure 2: CSR Components (developed by the author)

Kuhlman and Farrington (2010) stated that sustainability should be defined based on three dimensions, which are social, economic, and environmental, which are combined to be the Triple Bottom Line (TBL). As for (Gibson, 2001, as cited in Kuhlman & Farrington, 2010), he added on the previous dimensions, which are cultural and political pillars. Kuhlman and Farrington (2010) linked sustainability according to TBL (Agrawal & Singh, 2019), which means people, the planet, and profit. For example, companies, while concerned about financial gain (profit), have to care about protecting the surrounding environment (earth), in addition to thinking about the other's interests (people) (Kuhlman & Farrington, 2010).

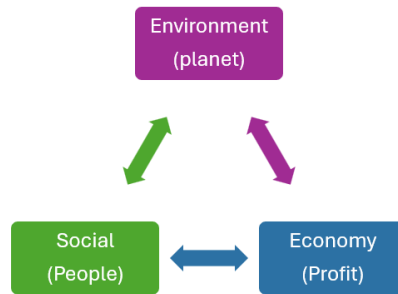


Figure 3: TBL (Kuhlman & Farrington, 2010), (Tjahjadi, et al., 2021)

2.3. Previous research on BMW Group and Tesla's sustainability initiatives.

BMW planned to reach this goal by 1.5 °C, and they have already achieved part of its goal, which is a 70% reduction of the gross reductions per vehicle since they started in 2006. BMW plans to reach 90% by 2030, reducing carbon emissions to less than 10% less than in 2006 (BMW Group, n.d.-1) (Zhang et al., 2023).

They launched BMW, which has been building an electrical program. The idea was generated in 2008 and provided a perspective on the new brand through BMW Vision Efficient Dynamics (BMW Group, 2021). Through the injection technology into fuel engines, BMW is interested in all that concerns electrical driving, carbon reduction based on using less water with 70%, home charging, renewable raw materials, etc. (BMW Group, 2021).

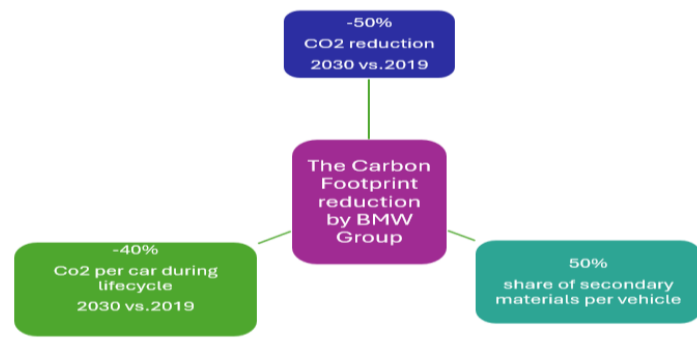


Figure 4: BMW Group Sustainability Initiatives the Carbon Footprint Reduction (BMW Group, n.d.-1)

Tesla uses renewable power in the current grid, and changing fossil fuels to electricity is problematic. Thus, Tesla's plan is based on integrating electricity charging stations into the existing fossil fuel stations (Tesla, 2023). Second, it is switching to electric vehicles, which are 4x more efficient than other vehicles (Tesla, 2023). Third, switching to heat pumps in residential, business, and industry means that the heat is transferred from one place to another by the press and expands via a specific refrigerant (Tesla, 2023). Fourth, they use electrified high-temperature heat delivery and hydrogen production. The final stage of the plan is sustainably fuelling planes and boats (Tesla, 2023).

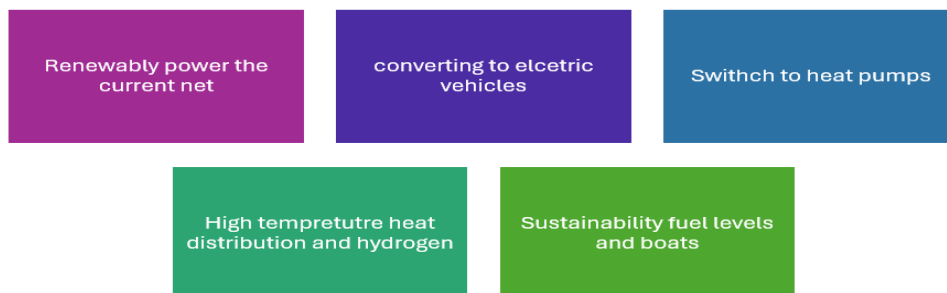


Figure 5: Tesla's 5-step plan towards sustainable energy (Tesla, 2024).

#### 2.4. Hypothesis

Therefore, the research hypothesis will be the following:

##### **Hypothesis 1:**

H0 (Null Hypothesis): There is no significant relation between the level of familiarity with sustainability initiatives and the importance of sustainability features when buying a car.

H1 (Alternative Hypothesis): A significant positive association exists between familiarity with sustainability initiatives and the importance of sustainability features when buying a car.

##### **Hypothesis 2:**

H0 (Null Hypothesis): There is no significant link between customers' evaluations of BMW's and Tesla's sustainability efforts in the UK and their evaluation of sustainability initiatives in the British automobile industry.

H1 (Alternative Hypothesis): There is a significant link between customers' evaluations of BMW's and Tesla's sustainability efforts in the UK and their evaluation of sustainability initiatives in the British automobile industry.

##### **Hypothesis 3:**

H0 (Null Hypothesis): There is no significant link between educational background and sustainability knowledge.

H1 (Alternative Hypothesis): There is a significant link between educational background and sustainability knowledge.

#### 2.5. Research Gap

The gap in this research is the lack of studies comparing BMW Group and Tesla's sustainability initiatives. Also, there is no direct comparison between these two companies. Another central point in the research is the limited knowledge about the companies' sustainability.

This research will help increase knowledge in the academic field, especially since the UK is on the path to zero emissions by 2050. This leads to the need to understand the basis of the British government's compensation plans for fuel vehicle owners in 2030.

### **3. Research Methodology**

#### 3.1. The Research Design

The research philosophy is positivism, which will show the quality of what is demonstrated in general, emphasising the assessment of data and facts independent of the influencer or individuals (Alharahsheh & Pius, 2020). The deductive process will be used, beginning with every conceptual framework from which several hypotheses will be deduced. (Woiceshyn & Daellenbach, 2018). This research will start with common theory-specific hypotheses that can be created and connected to BMW's and Tesla's sustainability situation. Also, the reasoned approach will be used to test the theory for BMW Group and Tesla sustainability initiatives in the British automobile industry, which will launch with a foundation theory and search to see if the hypothesis and theories made are related to the results. (Hyde, 2000). The research will be based on primary data by collecting surveys.

#### 3.2. Data Collection

The data collection method will be based on primary data and a survey questionnaire distributed to potential buyers working/working at BMW Group, Tesla, or the British automobile industry (Saunders et al., 2019). The survey will be abstracted by several specific questions about BMW Group and Tesla's sustainability level in the UK and to what extent the population are familiar with these initiatives (Smeds, 2022). Since permission to distribute the questionnaires was not obtained from the concerned companies, the research sample has been changed to Northumbria University students at the London Campus and other candidates from the research community, according to the non-probability technique.

#### 3.3. Sample Techniques and Data Analysis

The researcher distributed the survey on social media platforms and personally on campus. Candidates could answer the survey by scanning a QR code. As a result, 110 participated in the survey, which was more than expected. However, the participants were more university students, and only a few experts participated in the survey, which affected the results. Also, the SPSS program will be used to analyse the

preliminary data since it provides different tests to analyse the data for various sorts of variables (Villatte et al., 2023).

This research strived to understand if BMW Group's and Tesla's sustainability initiatives have a direct impact on the British automobile industry at the current time.

#### 4. Findings and Discussion

To test the link between familiarity with sustainability initiatives and the importance of sustainability features when purchasing a vehicle, which is the first hypothesis, the correlation test will be used to test if there is a relationship between the variables and how much strength the relation is if it exists. (Brzozowska & Sajewicz, 2024). The null hypothesis states no significant relationship exists between familiarity with sustainability initiatives and the importance of sustainability features when deciding to buy a car.

**Correlations**

|                                                                                             |                     | How much are you familiar with sustainability practices in the British automobile industry? | Do you consider sustainability features when buying a car? |
|---------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------|
| How much are you familiar with sustainability practices in the British automobile industry? | Pearson Correlation | 1                                                                                           | -.163                                                      |
|                                                                                             | Sig. (2-tailed)     |                                                                                             | .088                                                       |
|                                                                                             | N                   | 110                                                                                         | 110                                                        |
| Do you consider sustainability features when buying a car?                                  | Pearson Correlation | -.163                                                                                       | 1                                                          |
|                                                                                             | Sig. (2-tailed)     | .088                                                                                        |                                                            |
|                                                                                             | N                   | 110                                                                                         | 110                                                        |

Figure 6: Author's SPSS Results

According to the correlation test, the significant level is 0.088, which means that the level is greater than or equal to the considerable level to accept or reject a hypothesis.

$$0.088 > 0.05$$

The rule states that:

The significant level or the P- P-value is 0.05 and indicates "sig". Therefore, there are two ways to accept or reject a hypothesis according to the following. (Garth, 2008):

1. If the sig results are  $> 0.05$ , the null hypothesis is accepted, and the researcher assumes no relationship exists between the variables he tested.

2. If the results of sig are  $< 0.05$ , the null hypothesis is rejected, and the researcher rejects the hypothesis and states that there is no relationship.

Based on the rule above, the result is 0,088, more than the P-value of 0.05. As a result, the first null hypothesis is accepted, and there is no relationship between familiarity with sustainability initiatives and considering any sustainability features when buying a car.

Following is a test of the consumer evaluations of BMW's and Tesla's sustainability efforts in the British automobile industry. It tests BMW and Tesla loyalty as brands according to the consumers, which refers to the second hypothesis, which states that there is no significant link between customers' evaluations of BMW's and Tesla's sustainability efforts in the UK and their evaluation of sustainability initiatives in the British automobile industry, as it is shown in the figure below since the P-value is more than 0.05.

The results varied among the above features. However, all the results were  $>$  the P-value 0.05, which indicates that the second null hypothesis is accepted. There are no significant relationships between the customer's evaluation of sustainability efforts for BMW Group and Tesla and the sustainability features in the British automobile industry.

Nevertheless, the participants are significantly concentrated on certain sustainability features, such as using renewable energy or electric or hybrid technology, reducing carbon emissions, and improving energy efficiency.

|                                                                                                   |                     | Correlations                                                                                      |                                                                                               |                           |                             |                        |                               |                             |                                               |                                 |       |
|---------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------|-----------------------------|------------------------|-------------------------------|-----------------------------|-----------------------------------------------|---------------------------------|-------|
|                                                                                                   |                     | How do you evaluate the efforts of BMW Group in enhancing the sustainability situation in the UK? | How do you evaluate the efforts of Tesla in enhancing the sustainability situation in the UK? | Reducing carbon emissions | Promoting electric vehicles | Using renewable energy | Enhancing recycling and waste | Improving energy efficiency | Fostering social responsibility and community | Implementing sustainable supply | Other |
| How do you evaluate the efforts of BMW Group in enhancing the sustainability situation in the UK? | Pearson Correlation | 1                                                                                                 | .646**                                                                                        | b                         | b                           | b                      | b                             | b                           | .445                                          | b                               | b     |
|                                                                                                   | Sig. (2-tailed)     |                                                                                                   | <.001                                                                                         |                           |                             |                        |                               |                             | .074                                          |                                 |       |
|                                                                                                   | N                   | 110                                                                                               | 110                                                                                           | 67                        | 61                          | 40                     | 24                            | 36                          | 17                                            | 19                              | 14    |
| How do you evaluate the efforts of Tesla in enhancing the sustainability situation in the UK?     | Pearson Correlation | .646**                                                                                            | 1                                                                                             | b                         | b                           | b                      | b                             | b                           | .330                                          | b                               | b     |
|                                                                                                   | Sig. (2-tailed)     | <.001                                                                                             |                                                                                               |                           |                             |                        |                               |                             | .196                                          |                                 |       |
|                                                                                                   | N                   | 110                                                                                               | 110                                                                                           | 67                        | 61                          | 40                     | 24                            | 36                          | 17                                            | 19                              | 14    |
| Reducing carbon emissions                                                                         | Pearson Correlation | b                                                                                                 | b                                                                                             | 1                         | b                           | b                      | b                             | b                           | b                                             | b                               | b     |
|                                                                                                   | Sig. (2-tailed)     |                                                                                                   |                                                                                               |                           |                             |                        |                               |                             |                                               |                                 |       |
|                                                                                                   | N                   | 67                                                                                                | 67                                                                                            | 67                        | 43                          | 28                     | 22                            | 25                          | 14                                            | 15                              | 3     |
| Promoting electric vehicles                                                                       | Pearson Correlation | b                                                                                                 | b                                                                                             | b                         | 1                           | b                      | b                             | b                           | b                                             | b                               | b     |
|                                                                                                   | Sig. (2-tailed)     |                                                                                                   |                                                                                               |                           |                             |                        |                               |                             |                                               |                                 |       |
|                                                                                                   | N                   | 61                                                                                                | 61                                                                                            | 43                        | 61                          | 29                     | 18                            | 23                          | 14                                            | 15                              | 4     |
| Using renewable energy                                                                            | Pearson Correlation | b                                                                                                 | b                                                                                             | b                         | b                           | 1                      | b                             | b                           | b                                             | b                               | b     |
|                                                                                                   | Sig. (2-tailed)     |                                                                                                   |                                                                                               |                           |                             |                        |                               |                             |                                               |                                 |       |
|                                                                                                   | N                   | 40                                                                                                | 40                                                                                            | 28                        | 29                          | 40                     | 13                            | 20                          | 11                                            | 10                              | 3     |
| Enhancing recycling and waste                                                                     | Pearson Correlation | b                                                                                                 | b                                                                                             | b                         | b                           | b                      | 1                             | b                           | b                                             | b                               | b     |
|                                                                                                   | Sig. (2-tailed)     |                                                                                                   |                                                                                               |                           |                             |                        |                               |                             |                                               |                                 |       |
|                                                                                                   | N                   | 24                                                                                                | 24                                                                                            | 22                        | 18                          | 13                     | 24                            | 14                          | 12                                            | 7                               | 3     |
| Improving energy efficiency                                                                       | Pearson Correlation | b                                                                                                 | b                                                                                             | b                         | b                           | b                      | b                             | 1                           | b                                             | b                               | b     |
|                                                                                                   | Sig. (2-tailed)     |                                                                                                   |                                                                                               |                           |                             |                        |                               |                             |                                               |                                 |       |
|                                                                                                   | N                   | 36                                                                                                | 36                                                                                            | 25                        | 23                          | 20                     | 14                            | 36                          | 11                                            | 11                              | 3     |
| Fostering social responsibility and community                                                     | Pearson Correlation | .445                                                                                              | .330                                                                                          | b                         | b                           | b                      | b                             | b                           | 1                                             | b                               | b     |
|                                                                                                   | Sig. (2-tailed)     | .074                                                                                              | .196                                                                                          |                           |                             |                        |                               |                             |                                               |                                 |       |
|                                                                                                   | N                   | 17                                                                                                | 17                                                                                            | 14                        | 14                          | 11                     | 12                            | 11                          | 17                                            | 9                               | 4     |
| Implementing sustainable supply                                                                   | Pearson Correlation | b                                                                                                 | b                                                                                             | b                         | b                           | b                      | b                             | b                           | b                                             | 1                               | b     |
|                                                                                                   | Sig. (2-tailed)     |                                                                                                   |                                                                                               |                           |                             |                        |                               |                             |                                               |                                 |       |
|                                                                                                   | N                   | 19                                                                                                | 19                                                                                            | 15                        | 15                          | 10                     | 7                             | 11                          | 9                                             | 19                              | 2     |
| Other                                                                                             | Pearson Correlation | b                                                                                                 | b                                                                                             | b                         | b                           | b                      | b                             | b                           | b                                             | b                               | 1     |
|                                                                                                   | Sig. (2-tailed)     |                                                                                                   |                                                                                               |                           |                             |                        |                               |                             |                                               |                                 |       |
|                                                                                                   | N                   | 14                                                                                                | 14                                                                                            | 3                         | 4                           | 3                      | 3                             | 3                           | 4                                             | 2                               | 14    |

\*\* . Correlation is significant at the 0.01 level (2-tailed).  
b . Cannot be computed because at least one of the variables is constant.

Figure 7: Author's SPSS Result

\*The results are considered in the sig (2-tailed)

There was a significant difference among the answers regarding the participants` knowledge of sustainability initiatives. Therefore, a Chi-Square test should be made to examine whether there is a link between educational background and sustainability knowledge level with statistical essentials. (Mindrila, 2013). As a result, there is no significant link between the two dependents, such as the P-value is > 0.05, which equals 0.887.

Chi-Square Tests

|                              | Value              | df | Asymptotic Significance (2-sided) |
|------------------------------|--------------------|----|-----------------------------------|
| Pearson Chi-Square           | 5.069 <sup>a</sup> | 10 | .887                              |
| Likelihood Ratio             | 6.505              | 10 | .771                              |
| Linear-by-Linear Association | .058               | 1  | .810                              |
| N of Valid Cases             | 110                |    |                                   |

a. 13 cells (72.2%) have expected count less than 5. The minimum expected count is .09.

Figure 8: Author's SPSS Results

The following test was essential to comprehend the relationship of familiarity with sustainability initiatives between genders (males and females). According to the surveyed sample, there is a clear difference in the understanding of sustainability initiatives between different genders; the P-value is 0.04, as shown in the figure below, which is less than 0.05. As a result, further research should be conducted to understand if the difference is due to the number of participants or if there is a fundamental difference between them.

|                                                                                             |                             | Levene's Test for Equality of Variances |      | t-test for Equality of Means |         |                          |             |                 |                       |                                           |       |
|---------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------|------|------------------------------|---------|--------------------------|-------------|-----------------|-----------------------|-------------------------------------------|-------|
|                                                                                             |                             | F                                       | Sig. | t                            | df      | Significance One-Sided p | Two-Sided p | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |       |
|                                                                                             |                             |                                         |      |                              |         |                          |             |                 |                       | Lower                                     | Upper |
| How much are you familiar with sustainability practices in the British automobile industry? | Equal variances assumed     | .004                                    | .947 | 2.073                        | 108     | .020                     | .041        | .403            | .195                  | .018                                      | .789  |
|                                                                                             | Equal variances not assumed |                                         |      | 2.064                        | 102.453 | .021                     | .042        | .403            | .195                  | .016                                      | .791  |

Figure 9: Author's SPSS Results

The T-test should have been conducted between males and females to determine consumer preferences among the two companies. The results showed no difference in preferring one brand over the other; the results were almost close, with 0.51 for BMW Group among males and females and 0.50 for Tesla among males and females, as shown in the figure below. Therefore, there is no difference between the two brands in the survey sample.

|                                                                                                   |                             | Levene's Test for Equality of Variances |      | t-test for Equality of Means |        |              |             |                 |                       |                                           |       |
|---------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------|------|------------------------------|--------|--------------|-------------|-----------------|-----------------------|-------------------------------------------|-------|
|                                                                                                   |                             | F                                       | Sig. | t                            | df     | Significance |             | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |       |
|                                                                                                   |                             |                                         |      |                              |        | One-Sided p  | Two-Sided p |                 |                       | Lower                                     | Upper |
| How do you evaluate the efforts of BMW Group in enhancing the sustainability situation in the UK? | Equal variances assumed     | 4.762                                   | .031 | -.682                        | 108    | .248         | .497        | -.287           | .420                  | -1.120                                    | .547  |
|                                                                                                   | Equal variances not assumed |                                         |      | -.661                        | 86.188 | .255         | .510        | -.287           | .433                  | -1.148                                    | .575  |
| How do you evaluate the efforts of Tesla in enhancing the sustainability situation in the UK?     | Equal variances assumed     | 4.550                                   | .035 | -.691                        | 108    | .245         | .491        | -.300           | .434                  | -1.160                                    | .560  |
|                                                                                                   | Equal variances not assumed |                                         |      | -.675                        | 90.293 | .251         | .502        | -.300           | .445                  | -1.183                                    | .583  |

Figure 10: Author's SPSS Results

The final test is to answer whether there is an impact of BMW Group and Tesla on the British automobile industry, which, according to the significant value for Tesla, is 0.47 and for BMW Group is 0.27. Both of them are bigger than the P-value 0.05. As a result, the sustainability initiatives of both BMW and Tesla have no impact on the British automobile industry.

| Model |                                                                                                   | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig.  |
|-------|---------------------------------------------------------------------------------------------------|-----------------------------|------------|---------------------------|--------|-------|
|       |                                                                                                   | B                           | Std. Error | Beta                      |        |       |
| 1     | (Constant)                                                                                        | 2.655                       | .370       |                           | 7.176  | <.001 |
|       | How do you evaluate the efforts of Tesla in enhancing the sustainability situation in the UK?     | -.045                       | .062       | -.089                     | -.716  | .476  |
|       | How do you evaluate the efforts of BMW Group in enhancing the sustainability situation in the UK? | -.071                       | .064       | -.137                     | -1.108 | .271  |

a. Dependent Variable: In your opinion, and based on your best knowledge, have sustainability initiatives in the UK automobile industry had a measurable impact on reducing environmental impact and promoting social respo...

Figure 11: Author's SPSS Results

As a result of the tests conducted above, the sustainability initiatives of BMW Group and Tesla have no direct impact on the British automobile industry. This means that to understand more about the British automobile industry, more brands should be included to understand the whole picture since it can not be concluded that only two companies can impact the British automobile industry. Moreover, the sample should be broader, and more accurate results could be obtained if the survey is distributed to a wider range, such as the British automobile industry and other brands` employees.

Some factors impact the sustainability situation of BMW`s initiatives. Therefore, the crucial goal for any company worldwide is making profits with minimum costs, or as it is called, "grow now, clean up later." This principle helped the old industrial economies become prosperous. It positively impacts significant fields, such as decreasing the death rate, extending lifespan, and enriching countries economically. (Ekins & Zenghelis, 2021). However, this theory is now the reason behind most, if not all, of the environmental disasters the Earth is suffering. As a result, the companies found themselves with only one choice: converting to sustainability to save what can be saved, which will cost the world more time, effort, and money.

The reasons listed above affected BMW Group`s conversion to sustainability. However, BMW Group started sustainability in 1602 in Munich when they revealed their first electric vehicle (BMW Group, 2023). Later, in 2001, BMW Group launched its first sustainability report to the public (BMW Group, 2023). The history of sustainability in BMW Group can be found in the figure below.

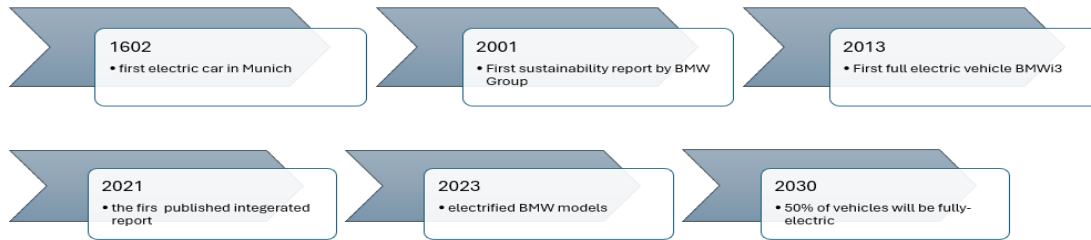


Figure 12: BMW sustainability history from 1602 – 2030 (BMW Group, 2023)

BMW's annual revenues have increased since they adopted sustainability, as shown in the table below. Moreover, they state in their reports that converting to some sustainability features will cost them a lot. Thus, they need government backing (BMW Group, 2001).

| € million        | 1999   | 2001   | 2002   | 2006   | 2010   | 2016   | 2022     |
|------------------|--------|--------|--------|--------|--------|--------|----------|
| Revenues         | 34,402 | 35,356 | 42,282 | 48,999 | 60,477 | 94,163 | 142,610* |
| Rate Change in % | N/A    | 2.8    | 19.6   | 15.9   | 23.4%  | 55.7   | 51.14    |

Figure 13: BMW Group Revenues since they officially adopted sustainability (BMW Group, 2001), (BMW Group, 2003), (BMW Group, 2016), (BMW Group, 2022)

\*The Gross profit = €24,568 million after deducting the cost of sales = €118,042 million

As for the factors impacting Tesla's sustainability, they started as the environment's friend company. Although Tesla has marketed its brand as electric cars and is accelerating to sustainability, Tesla still faces problems with its EVs due to technical issues that might expose individuals' lives to danger. In December 2023, Tesla withdrew almost 2 million vehicles in the USA after an investigation of years regarding the autopilot feature, which was responsible for 1,000 crashes. (Isidore, 2023). However, in the same month, December 2023, Tesla withdrew another 120,000 cars due to doors that could have been unlocked in the crash. (Shepardson, 2023). Regarding Tesla's annual revenues, the figure below shows how much Tesla made in the last four years.

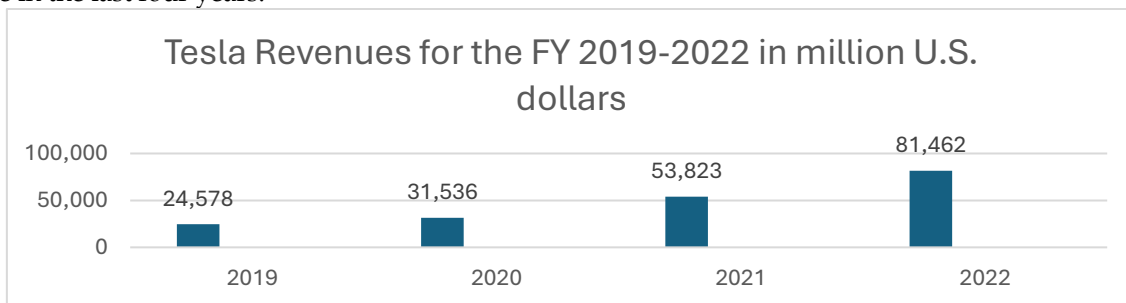


Figure 14: Tesla revenues in the last four years (Statista, 2024)

According to the test results, the sustainability initiatives of both BMW Group and Tesla have no impact on the British automobile industry. The reason is that the British automobile industry was established before other companies became sustainable (Automotive Council UK, 2013). Also, the British automobile industry is well established, and it is decided to change the current situation with other brands. The automobile industry in the UK is characterised by dynamic consumer behaviour. As a result, it will take more work for one or two brands to take full responsibility for impacting a significant industry like this. Another reason is that the British automobile industry is considered one of the industries with stringent standards that all companies should apply to succeed in the British market (SMMT Driving The Motor Industry, 2021).

### 5. Conclusion

In conclusion, this research asserts that financial and tax incentives introduced by the British Government are the other essential motivations for companies, including BMW and Tesla, to convert to sustainability. It is hard to attribute responsibility to the impact on the British automobile industry, especially since the industry has other companies that align with BMW and Tesla that could make a huge

impact. This research provides a detailed analysis of corporate sustainability, offering a framework for future researchers to contribute to understanding the impact on brand image and how it can affect the business. The research highlights the dynamic nature of sustainability initiatives in the British automobile industry and how they affect it. This suggests that continuous development and analysis are crucial to enhance sustainability practices in the industry.

## References

- Agency, T. I. (2022). *About IRENA*. Retrieved from <https://www.irena.org/About>
- Agrawal, S., & Singh, R. K. (2019). Analyzing disposition decisions for sustainable reverse logistics: Triple Bottom Line approach. *Resources, Conservation and Recycling*, 150, 104-148. doi:<https://doi.org/10.1016/j.resconrec.2019.104448>
- Agrawal, S., & Singh, R. K. (2019). Analyzing disposition decisions for sustainable reverse logistics: Triple Bottom Line approach. *Resources, Conservation and Recycling*, 150, 104448. doi:<https://doi.org/10.1016/j.resconrec.2019.104448>
- Alharahsheh, H. H., & Pius, A. (2020). A Review of key paradigms: positivism VS interpretivism. *Global Academic Journal of Humanities and Social Sciences*, 2(3), 39-43. doi: [https://www.gajrc.com/media/articles/GAJHSS\\_23\\_39-43.pdf](https://www.gajrc.com/media/articles/GAJHSS_23_39-43.pdf)
- Brzozowska, E. K., & Sajewicz, E. (2024). Application of non-parametric correlations to compare the compliance of Beighton and Sachse tests in the assessment of hypermobility based on research of the fitness instructors group. *Journal of Bodywork and Movement Therapies*, 37, 142-145. doi:<https://doi.org/10.1016/j.jbmt.2023.11.017>
- Burki, T. K. (2018). UK to align with EU clinical trial rules post-Brexit. *The Lancet Oncology*, 19(6), e289. doi:[https://doi.org/10.1016/S1470-2045\(18\)30327-9](https://doi.org/10.1016/S1470-2045(18)30327-9)
- Committee, C. C. (2020). *Briefing document The UK's transition to electric vehicles*. Retrieved from <https://www.theccc.org.uk/wp-content/uploads/2020/12/The-UKs-transition-to-electric-vehicles.pdf>
- Ekins, P., & Zenghelis, D. (2021). The costs and benefits of environmental sustainability. *Sustainability Science*, 16(3), 949-965. doi:10.1007/s11625-021-00910-5
- Garth, A. (2008). *Analysing data using SPSS*. Retrieved from [https://students.shu.ac.uk/lits/it/documents/pdf/analysing\\_data\\_using\\_spss.pdf](https://students.shu.ac.uk/lits/it/documents/pdf/analysing_data_using_spss.pdf)
- Giampieri, A., Ling-Chin, J., Ma, Z., Smallbone, A., & Roskilly, A. (2020). A review of the current automotive manufacturing practice from an energy perspective. *Applied Energy*, 261, 114074. doi:<https://doi.org/10.1016/j.apenergy.2019.114074>
- Group, B. (2001). *Sustainability value report 2001/2002*. Retrieved from [https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup\\_com/responsibility/downloads/en/2001/sustainable\\_value\\_report\\_en.pdf](https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/responsibility/downloads/en/2001/sustainable_value_report_en.pdf)
- Group, B. (2003). *Sustainable value report 2003/2004*. Retrieved from [https://ungc-production.s3.us-west-2.amazonaws.com/attachments/7463/original/SustainableValue\\_Report2003-2004BMWGroup.pdf?1282019185](https://ungc-production.s3.us-west-2.amazonaws.com/attachments/7463/original/SustainableValue_Report2003-2004BMWGroup.pdf?1282019185)
- Group, B. (2016). *Sustainability value report 2016*. Retrieved from [https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup\\_com/ir/downloads/en/2016/2016-BMW-Group-Sustainable-Value-Report.pdf](https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2016/2016-BMW-Group-Sustainable-Value-Report.pdf)
- Group, B. (2021). *10 years of BMW i: The success story of a vision*. doi:<https://doi.org/10.1016/j.jclepro.2023.139319>
- Group, B. (2022). *Annual report 2022*. Retrieved from [https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup\\_com/ir/downloads/en/2023/Annual-Reports-other-Group-companies/BMW\\_Finance\\_Annual\\_Report\\_2022.pdf](https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2023/Annual-Reports-other-Group-companies/BMW_Finance_Annual_Report_2022.pdf)
- Group, B. (2023). *The future is electric, digital, and circular*. Retrieved from <https://www.bmw.co.uk/en/topics/buying/business-corporate/sustainability.html>
- Group, B. (n.d.-1). *CO2 reduction*. Retrieved from <https://www.bmwgroup.com/en/sustainability/co2-reduction.html>
- Hossain, A. (2011). *Sustainable Development Handbook - a South Asian perspective*. Author House.
- Hyde, K. (2000). Recognising deductive process in qualitative research. *Qualitative Market Research: An International Journal*, 3, 82-90. doi:10.1108/13522750010322089
- Industry, S. D. (2021). *2021 UK automotive sustainability report*. Retrieved from <https://www.smmmt.co.uk/wp-content/uploads/SMMT-Sustainability-Report-2021.pdf>
- Industry, S. D. (2022). *2022 automotive sustainability report*. Retrieved from <https://www.smmmt.co.uk/wp-content/uploads/SMMT-Sustainability-Report-2022.pdf>
- Isidore, C. (2023). *Tesla recalls nearly all 2 million of its vehicles on US roads*. Retrieved from <https://edition.cnn.com/2023/12/13/tech/tesla-recall-autopilot/index.html>
- Kam, H., Smith, H., & Potter, C. (2023). Public money for public goods: The role of ideas in driving agriculture policy in the EU and post-Brexit UK. *Land Use Policy*, 129, 106618. doi:<https://doi.org/10.1016/j.landusepol.2023.106618>
- Kotob, F. (2011). *What is sustainability?* Retrieved from [https://www.researchgate.net/publication/282184670\\_What\\_Is\\_Sustainability](https://www.researchgate.net/publication/282184670_What_Is_Sustainability)
- Kuhlman, T., & Farrington, J. (2010). What is sustainability? *Sustainability Future*, 2(11), 3436-3448. doi:<https://doi.org/10.3390/su2113436>

- Kuhlman, T., & Farrington, J. (2010). What is sustainability? *Sustainability*, 2(11), 3436-3448. doi:https://doi.org/10.3390/su2113436
- Mahajan, R., Lim, W. M., Sareen, M., Kumar, S., & Panwar, R. (2023). Stakeholder theory. *Journal of Business Research*, 166, 114104. doi:https://doi.org/10.1016/j.jbusres.2023.114104
- Malinauskaitė, J., Anguilano, L., & Rivera, X. S. (2021). Circular waste management of electric vehicle batteries: Legal and technical perspectives from the EU and the UK post Brexit. *International Journal of Thermofluids*, 10, 100078. doi:https://doi.org/10.1016/j.ijft.2021.100078
- Mathiyazhagan, K., Sengupta, S., & Poovazhagan, L. (2018). A decision making trial and evaluation laboratory approach to analyse. *Sustainable Production and Consumption*, 16, 58-67. doi:https://doi.org/10.1016/j.spc.2018.05.007
- Mindrila, D. (2013). The Chi Square Test. In *The basic practice of statistics*. W. H. Freeman and Company.
- Nation, T. U. (2015). *The 17 Goals*. Retrieved from https://sdgs.un.org/goals
- Nations, T. U. (1987). *Our common future*. Retrieved from https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf
- Nations, T. U. (2019). *The future is now*. Retrieved from https://sustainabledevelopment.un.org/content/documents/24797GSDR\_report\_2019.pdf
- Nations, T. U. (2023). *The sustainable development goals report*. Retrieved from https://unstats.un.org/sdgs/report/2023/The-Sustainable-Development-Goals-Report-2023.pdf
- Saunders, M. N., Lewis, P., & Thornhill, A. (2019). *Research methods for business students*. Pearson.
- Segal, A. (2017). *A brief history of car manufacturing in Britain*. Retrieved from https://www.insurethegap.com/articles/a-brief-history-of-car-manufacturing-in-britain
- Shao, J., Taisch, M., & Mier, M. O. (2016). A study on a configuration model for facilitating sustainable consumption: A case involving the automobile industry in Italy. *Journal of Cleaner Production*, 137, 507-515. doi:https://doi.org/10.1016/j.jclepro.2016.07.130
- Shepardson, D. (2023). *Tesla recalls 120,000 vehicles over doors that could unlock in crash*. Retrieved from https://www.reuters.com/business/autos-transportation/tesla-recall-over-120000-vehicles-us-nhtsa-2023-12-22/
- Smeds, M. R. (2022). A brief guide to survey methodology for vascular surgeons. *Seminars in Vascular Surgery*, 35(4), 431-437. doi:https://doi.org/10.1053/j.semvascsurg.2022.09.006
- Statista. (2024). *Tesla's revenue from FY 2008 to FY 2023*. Retrieved from https://www.statista.com/statistics/272120/revenue-of-tesla/
- Su, K., Liu, C., & Zhang, M. (2024). The optimization of a corporate social responsibility management system based on service-orientated architecture under the concept of sustainable development. *Technological Forecasting and Social Change*, 200, 123102. doi:https://doi.org/10.1016/j.techfore.2023.123102
- Tesla. (2023). *Master plan part 3 - sustainability energy for all of Earth*. Retrieved from https://www.tesla.com/ns\_videos/Tesla-Master-Plan-Part-3.pdf
- Tesla. (2024). *Impact report 2023*. Retrieved from https://www.tesla.com/impact
- The Business, E. a. (2018). *The impact of Brexit on the automotive sector*. Retrieved from https://publications.parliament.uk/pa/cm201719/cmselect/cmbeis/379/379.pdf
- Thomas, A., Cosby, B., Gooday, R., Lyons, H., Siriwardena, G., Kettel, E., . . . Emmett, B. (2021). Rapid adaptive modelling for policy support towards achieving Sustainable Development Goals: Brexit and the livestock sector in Wales. *Environmental Science & Policy*, 125, 21-31. doi:https://doi.org/10.1016/j.envsci.2021.08.009
- Tjahjadi, B., Soewarno, N., & Mustikaningtyas, F. (2021). Good corporate governance and corporate sustainability performance in Indonesia: A triple bottom line approach. 7(3), e06453. doi:https://doi.org/10.1016/j.heliyon.2021.e06453
- UK, A. C. (2013). *Driving success – a strategy for growth and sustainability in the UK automotive sector – Summary*. Retrieved from https://assets.publishing.service.gov.uk/media/5a7cad32ed915d6969f468f6/13-975es-driving-success-uk-automotive-strategy-for-growth-and-sustainability.pdf
- Villatte, G., Soleilhavoup, M., Antoni, M., Marcheix, P.-S., Pereira, B., Boisgard, S., . . . Erivan, R. (2023). Assessment and trends in the methodological quality of the top 50 most cited articles in shoulder arthroplasty. *Orthopaedics & Traumatology: Surgery & Research*, 109(8), 103702. doi:https://doi.org/10.1016/j.otsr.2023.103702
- Wallach, K. A., & Popovich, D. (2023). When Big Is Less than Small: Why dominant brands lack authenticity in their sustainability initiatives. *Journal of Business Research*, 158, 113694. doi:https://doi.org/10.1016/j.jbusres.2023.113694
- Wilson, T. J. (2021). EU-UK criminal justice and security cooperation after Brexit: A perspective. *Forensic Science International: Synergy*, 3, 100-144. doi:https://doi.org/10.1016/j.fsisyn.2021.100144
- Woiceshyn, J., & Daellenbach, U. S. (2018). Evaluating inductive versus deductive research in management studies: implications for authors, editors, and reviewers. *Organizations and Management An International Journal*, 13(2), 183-195. doi:DOI: 10.1108/QROM-06-2017-1538

---

Zhang, Y., Han, H., Fan, C., & Su, X. (2023). How low-income populations work determines carbon footprint reduction from remote work. *Journal of Cleaner Production*, 428, 139319. doi:<https://doi.org/10.1016/j.jclepro.2023.139319>

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