To Trust or not to Trust:

The Impact of Mandatory Sustainability Reporting Guidelines and Audit in the Electric Vehicle Industry

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Abstract

This thesis researches the impact of mandatory sustainability reporting guidelines and audit on trust using the example of the electric vehicle industry. In 2022, the European Union legislated the Corporate Sustainability Reporting Directive, under which companies are obligated to report their sustainability information based on the binding European Sustainability Reporting Standards starting 2024. Besides the binding guidelines, the information will also be checked by an independent auditor. This new Directive is replacing the Non-Financial Reporting Directive from 2014, which neither had binding guidelines nor required an assurance of the information by an auditor. To research the effect of binding guidelines and audit, a survey experiment was conducted in the context of the two Directives.

The study discovered that binding guidelines and audit had a significant positive effect on trust in the reported information. Furthermore, it revealed that an increased level of trust and a positive attitude towards the product, in this case Battery Electric Vehicles, positively influenced the purchase decision. It was therefore concluded that the progress in sustainability reporting was necessary to enhance the credibility and reliability of the information, and that higher trust levels also had positive effects for companies.

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Resumo

Esta tese investiga o impacto das directrizes obrigatórias para a elaboração de relatórios de sustentabilidade e da auditoria na confiança, utilizando o exemplo da indústria de veículos eléctricos. Em 2022, a União Europeia legislou a Diretiva relativa aos relatórios de sustentabilidade das empresas, ao abrigo da qual as empresas são obrigadas a comunicar as suas informações de sustentabilidade com base nas Normas Europeias de Relato de Sustentabilidade vinculativas a partir de 2024. Para além das orientações vinculativas, as informações serão também verificadas por um auditor independente. Esta nova diretiva substitui a Diretiva relativa aos relatórios não financeiros de 2014, que não tinha orientações vinculativas nem exigia a garantia das informações por um auditor. Para investigar o efeito das orientações vinculativas e da auditoria, foi realizada uma experiência de inquérito no contexto das duas directivas.

O estudo descobriu que as directrizes vinculativas e a auditoria tiveram um efeito positivo significativo na confiança nas informações comunicadas. Além disso, revelou que um maior nível de confiança e uma atitude positiva em relação ao produto, neste caso os veículos eléctricos a bateria, influenciaram positivamente a decisão de compra. Concluiu-se, portanto, que o progresso nos relatórios de sustentabilidade era necessário para aumentar a credibilidade e a fiabilidade da informação, e que níveis de confiança mais elevados também tinham efeitos positivos para as empresas.

Título:	Confiar ou não confiar: O impacto das directrizes obrigatórias para a elaboração de relatórios de sustentabilidade e da auditoria na indústria dos veículos eléctricos
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List of Abbreviations

ANCOVA	Analysis of Covariance
BEV	Battery Electric Vehicle
CSR	Corporate Social Responsibility
CSRD	Corporate Sustainability Reporting Directive
EEA	European Economic Area
ESG	Environmental, Social and Governance
ESRS	European Sustainability Reporting Standards
GHG	Greenhouse Gas Emissions
GRI	Global Reporting Initiative
HV Battery	High-Voltage Battery
LCA	Life Cycle Assessment
M	Mean
NFRD	Non-Financial Reporting Directive
PIE	Public-Interest Entity
SD	Standard Deviation
SGDs	Sustainable Development Goals
SME	Small and Medium-Sized Enterprises
Std. Deviation	Standard Deviation
UN	United Nations

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1 Introduction

In the past decade, many efforts have been made to raise awareness for the importance of sustainability. One of these efforts has been the introduction of sustainability reporting by the European Union. Initially voluntary, it became mandatory since 2017 with the Non-Financial Reporting Directive being legislated in 2014 for some large undertakings to report on their sustainability efforts. However, there were no binding guidelines to report on this information, and the information itself was not checked for accuracy by an outside party. Consequently, companies could frame information in a way that made them look more sustainable than they actually were. However, this is about to change. In 2022, the Corporate Sustainability Reporting Directive was legislated and starting 2024, undertakings are obligated to report on their sustainability situation based on the European Sustainability Reporting Standards. Furthermore, the information will be checked by an auditor. This is not only a major step forward for increasing sustainability efforts, but most importantly gives sustainability reporting a similar significance to financial reporting. Not least, companies also benefit from publishing more reliable and comparable information, as greater trust from the public can have a positive effect on purchasing behaviour and loyalty.

However, the implementation of this new law involves a great amount of work for all parties involved. Thus, the question arises: Do binding reporting guidelines and their assurance bring about the change needed for this information to be considered trustworthy and reliable?

There is currently no research on the impact of binding guidelines and audit on trust. Additionally, as 2024 is the first reporting year under the new Directive, there are currently also no studies in this particular context. Consequently, the aim of this thesis is to research the effectiveness of binding guidelines and the assurance of the information in building trust in the context of the Corporate Sustainability Reporting Directive.

The research was conducted using the example of the electric vehicle industry. The electrification in the automotive industry is a source of debate and causes much controversy. While car manufacturers are focusing on electromobility as part of their sustainability strategy and claim that electric vehicles are the key for sustainable mobility, the public remains sceptical – rightfully so. Due to its size and public attention, this industry was chosen for the analysis.

1.1 Structure

The first part of this thesis is the theoretical discussion which focuses on some important sustainability information, before diving into sustainability reporting and the laws of the European Union from the past decade. After that, an overview of trust, including different types of trust, its importance, and its measurability is given. The chapter on trust is significantly shorter than the chapter on sustainability, as there is a clear research gap regarding this topic. In addition to significantly less reliable information being available, the data is oftentimes ambiguous due to differences of opinion among researchers. The last part of the theoretical discussion provides a short introduction into the electric vehicle industry, to give the reader a basic overview, and further explain the controversy regarding this industry.

The second part deals with the methodology of this thesis. It gives an overview of the sample, the procedure of the survey and its structure, and the measures that were used to measure the variables and effects.

The third part is about the results of the survey experiment. Besides giving an insight into the main variables that were measured during the survey, the chapter specifically focuses on the results of the trust experiment.

The last part of this thesis is the discussion. Besides giving a quick summary, the main findings are further explored and recommendations for future research are given, before talking about some limitations and concluding the thesis with a final statement.

2 Theoretical Discussion

2.1 Sustainability

Sustainability – a topic nobody can avoid these days as it is present everywhere in our everyday life. While sustainability is oftentimes mistaken as just being concerned with the environment, it in reality has many facets. This chapter aims to give an insight into sustainability by explaining what sustainability is, how sustainability reporting and guidelines have evolved in the European Union since the turn of the millennium, what impact it has on companies and the society at large, and what changes there will be in the near future.

For better understanding, a timeline of the sustainability development discussed in this chapter can be found in Appendix 1: Sustainability Timeline.

2.1.1 Sustainability – An Explanation

In 1987, the so-called Brundtland Report, also known as “Our Common Future”, has been published by the Brundtland Commission. This report has delivered one of the most well-known definitions of sustainable development:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (United Nations, 1987).

Essentially, sustainable development is a transformation process that aims to increase the current and future potential to meet people’s needs and desires. To achieve this, the transformation process aims to harmonize the use of resources, the purpose of investments, the course of technological development and institutional change (United Nations, 1987). Hereby, we often talk about the three-dimensional concept, also known as the three pillars of sustainability on which sustainable development is based: The social, economic, and environmental pillars (Purvis, Mao, & Robinson, 2018).

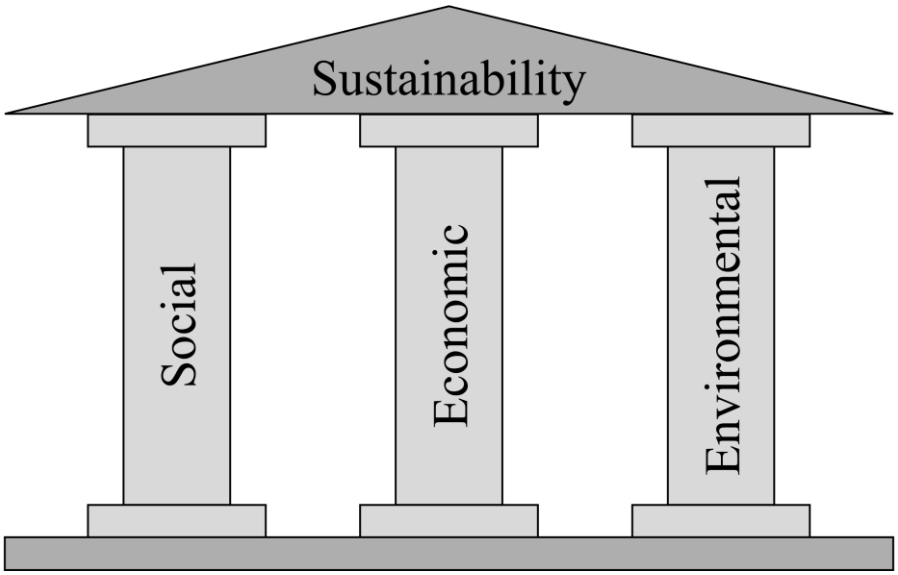

Figure 1: The three pillars of sustainability
Own representation based on Purvis et al. (2018).

The **social** pillar focuses on, among others, social equity, inclusion, and diversity. This is done by guaranteeing safe and fair labour standards, protecting human rights and prioritizing health and safety (Purvis, Mao, & Robinson, 2018).

Economic sustainability is about, for example, the creation of economic value, a responsible resource allocation and, last but not least, the maintenance of long-term profitability (United Nations, 1987).

Lastly, the **environmental** pillar focuses on reducing, or if possible eliminating, negative impacts on the environment. This is for example done by conserving natural resources, minimizing waste, and reducing greenhouse gas emissions (GHG) (United Nations, 1987; Purvis et al., 2018).

By focusing on the three pillars and addressing these issues, companies are operating in a way that is not only socially responsible, but also profitable in the long-run and can create long-term value that is beneficial for all stakeholders (United Nations, 1987).

2.1.2 ESG – Environmental, Social and Governance

One of the most well-known initiatives are the Environmental, Social and Governance factors, better known as the ESG factors. The main difference between sustainability and the ESG factors is the measurability (Kazmierczak, 2022). ESG factors are an assessment of sustainability that uses different metrics and benchmarks. This quantification helps

stakeholders as well as investors to evaluate a company's environmental, social and governance impact (Kazmierczak, 2022).

Similarly to the **environmental** pillar of the three pillars of sustainability, the environmental factor focuses, for example, on GHG, water and waste management, resource usage, and conservation of biodiversity (Nasdaq, 2019).

The **social** aspect of ESGs focuses on the relationship of the company with their stakeholders such as employees, customers, suppliers, and communities. Besides others, topics of the social aspect include human rights, diversity and equal opportunities, working conditions, and community engagement (Nasdaq, 2019).

Lastly, **governance** focuses on the manner in which a company is managed and controlled. This includes for example corporate management, the composition of the board of directors, compliance with laws and regulations, prevention of corruption, and transparency (Nasdaq, 2019).

An ESG rating or ESG score refers to the evaluation of the abovementioned ESG factors. ESG ratings can be very helpful in providing the reader an insight into the company's sustainability situation. However, there are also some limitations. While the ratings allow for a quantification of the sustainability measures and a rating of the company, a comparison between different companies is not always possible. There is no single official ESG score, but rather various organizations that have created their own ESG scores. These ratings are based on different methodologies and have different orders of magnitude, hence why a comparison between companies using different rating systems is very complicated. Furthermore, the different metrics developed by organizations such as the Global Reporting Initiative (GRI), which was the first organization to release sustainability reporting guidelines, or the Sustainability Accounting Standards Board allow companies to pick the ratings where they look best. This again highlights the need for standardization (Moreira da Cruz, 2023).

2.2 The Introduction of Mandatory Sustainability Reporting

While the new ESG rating regulations represent a step-forward in making a comparison between companies possible to a certain extent, progress has also been made in mandatory sustainability reporting in the past decade.

2.2.1 Directive 2013/34/EU – The Accounting Directive

On 26 June 2013 the Directive 2013/34/EU was legislated. This Directive, also known as the Accounting Directive, is concerned with annual financial statements, consolidated financial statements, and related reports. In this policy, the term public-interest entity (PIE) has been introduced for the first time. It refers to:

- undertakings that are subject to the law of a Member State and whose securities are admitted to trading on a regulated market in the EU,
- undertakings that are a credit institution,
- insurance companies,
- and undertakings that have been appointed a PIE by a Member State. This can be, for example, companies that are of considerable public importance due to their size or the nature of their business (European Parliament, Council of the European Union, 2013).

2.2.2 Directive 2014/95/EU – The Non-Financial Reporting Directive (NFRD)

On 22 October 2014 the Directive 2014/95/EU, commonly known as the Non-Financial Reporting Directive (NFRD) was legislated. It is amending Directive 2013/34/EU with regard to the disclosure of non-financial and diversity information. (European Parliament, Council of the European Union, 2014)

The aim of this directive is to provide stakeholders such as investors or employees with information beyond financial reports and thus allow for a broader understanding of the company. The NFRD only applies to large public-interest entities (PIE) with more than 500 employees and has entered into force on 5 December 2014. In 2018, companies in the European Economic Area (EEA) had to report on non-financial and diversity information for the first time for the 2017 fiscal year (European Parliament, Council of the European Union, 2014). Generally, the information should be disclosed in the company's annual report. However, twenty EU countries are also allowing the disclosure in a separate report (European Parliament, Council of the European Union, 2022). Subsidiaries do not need to publish a separate statement if the information is enclosed in the parent company's report (European Parliament, Council of the European Union, 2014).

The report must include an analysis of the business model, main risks, key performance indicators, policies and outcomes regarding environmental, social and employee matters,

human rights, anti-corruption, and bribery. Furthermore, it must contain information regarding the company's policy on the diversity of the board of directors. In case a company does not have a policy covering one of the previously mentioned areas, the statement should explain why (European Parliament, Council of the European Union, 2014).

The European Commission published guidelines for the reporting on this non-financial information. However, these guidelines are non-binding and companies are free to use other national, European, or even international frameworks such as the GRI standards or the UN Global Compact (European Parliament, Council of the European Union, 2014).

2.2.3 Benefits and Drawbacks of the NFRD

A study researching the effect of the NFRD on European companies has found that the Directive caused firms to reach higher ESG scores. In this study, 835 companies listed from 2002 to 2020 have been observed. A total of 16,635 annual ESG scores using the Refinitiv ESG score were examined. The Refinitiv ESG score by Thomson Reuters Eikon Datastream uses a percentile ranking from 0 to 100, or alternatively letters from D- to A+, and is based on more than 630 standardized ESG data points. While the average score was 55.85 in 2013, it increased to 58.28 in 2015, after the legislation of the Directive in 2014. In 2020, the average score has risen up to 60.12, with Portugal making the most progress from 18.70 in 2003 to 61.65 in 2020.

Being sustainable is not a fixed state, but rather a learning process that must evolve over time in order to adapt to new conditions and findings and make progress. While the NFRD was a great step forward when it comes to sustainability reporting, some issues and challenges have been identified after its implementation:

Firstly, the NFRD only concerned large PIEs with more than 500 employees. The common terminology considers a company as large if it has 250 or more employees. In the EU, only 0.2% of enterprises are companies of that size, which consequently means that even less companies are considered a PIE with more than 500 employees. In 2021, there were approximately 30.1 million enterprises in the EU, meaning that the number of companies that were affected by the Directive was less than 60,200. While this small percentage of companies employs around 36% of the labour force and is thus of crucial public interest, more than 99.8% of companies were not required to report on their sustainability (eurostat, 2022).

Secondly, the so-called “Commission report on the review clauses and its accompanying fitness check” of 21 April 2021 has recognized several problems regarding the effectiveness of the NFRD. One major issue is the limited comparability and authenticity of sustainability information as there are no fixed rules on how to report the non-financial and diversity information. Furthermore, there is substantial evidence that numerous companies that were supposed to report under the NFRD were not publishing material information on all key sustainability topics, which included for example data regarding all greenhouse gas emissions (GHG). This allowed companies to engage in greenwashing and conceal information from the public (European Parliament, Council of the European Union, 2022).

Thirdly, there is a gap between the sustainability information needed by stakeholders and the information provided by the companies. The lack of information prevents investors from accounting for sustainability-related risks and opportunities when making their investments. Consequently, financial resources are less likely to be directed at companies or business activities that are concerned with environmental and social issues. All this negatively effects the objectives of the European Green Deal and the Paris Agreement. The lack of policy action and provided information prevents stakeholders from being able to call companies to account for their influence on the environment and on people. This accountability shortfall could subsequently lead to reduced trust levels from the public. Additionally, the absence of generally recognized standards and approaches for handling sustainability risks also has a negative impact on the undertakings’ ability to guarantee that their business activities are sustainable (European Parliament, Council of the European Union, 2022).

Fourthly, the Directive does not indicate if the information to be disclosed should relate to the company’s past or future performance. The publication of forward-looking information is especially relevant in terms of sustainability information and has often been neglected in the past (European Parliament, Council of the European Union, 2022).

Lastly, one of the most serious issues relates to the assurance of the information. The Accounting Directive specifies that the data provided on non-financial and diversity information under the NFRD does not have to be assured by an independent auditor. While audit firms need to confirm that the non-financial information has been provided, either as a non-financial statement in the management report or in a separate report, the information itself is not reviewed. That does not only jeopardize the credibility of the published

information, but consequently also fails to adequately respond to the needs of the recipients of the information (European Parliament, Council of the European Union, 2022).

These issues and changing times called for a revision and a strengthening of the policies in order to improve the informative value and credibility of sustainability reporting.

2.2.4 Directive 2022/2464/EU – The Corporate Sustainability Reporting Directive (CSRD)

On 14 December 2022, the Directive 2022/2464/EU, known as the Corporate Sustainability Reporting Directive (CSRD), was legislated, and entered into force on 5 January 2023. The Directive is amending the Accounting Directive and is replacing the NFRD. Starting 1 January 2024 large PIEs that previously had to report under the NFRD, are obligated to report on sustainability matters following the European Sustainability Reporting Standards (ESRS). The development of the ESRS has been assigned to the European Financial Reporting Advisory Group by the European Commission. The Commission later made some adjustments to the standards (European Parliament, Council of the European Union, 2022). Starting 2025, large undertakings, that will then be defined as undertakings with more than 250 employees, a net turnover of more than EUR 40 million and a balance sheet total of more than EUR 20 million, are obligated to report under the Directive. In 2026, medium-sized and small undertakings will follow. Furthermore, non-EU companies generating more than EUR 150 million per year in the EU also fall under the Directive. However, only if these companies have a subsidiary that falls under the category of a large, medium or small company, or if there is a branch in the EU with a turnover greater than EUR 40 million. From 2028, these companies have to report at the group level, with separate standards being adopted for this scenario (Press Corner of the European Commission, 2023). As compared to the NFRD, the number of companies that are obligated to report on their sustainability has increased considerably (European Parliament, Council of the European Union, 2022).

Table 1 gives an overview of the types of companies and their characteristics that will be affected by the Directive.

Table 1: List of companies in the EEA that must report under the NFRD

Category	Criteria (at least two must be fulfilled)		Reporting obligation start date	
			Public-interest entity (PIE)	**No public-interest entity (PIE)**
Large	Balance sheet total	> EUR 20 million	1 January 2024 (if previously under NFRD) Otherwise 1 January 2025	1 January 2025
	Net turnover	> EUR 40 million		
	Ø Number of employees	> 250		
Medium	Balance sheet total	≤ EUR 20 million	1 January 2026	No obligation
	Net turnover	≤ EUR 40 million		
	Ø Number of employees	≤ 250		
Small	Balance sheet total	≤ EUR 4 million	1 January 2026	No obligation
	Net turnover	≤ EUR 8 million		
	Ø Number of employees	≤ 50		
Micro	Balance sheet total	≤ EUR 350 000	No obligation	No obligation
	Net turnover	≤ EUR 700 000		
	Ø Number of employees	≤ 10		
Non-EU companies	Net turnover (mandatory)	> EUR 150 million /year in the EU		2028
	Additional Requirements	EU branch turnover > EUR 40 million **Or** Subsidiary is a large company or SME		

Own representation based on European Parliament, Council of the European Union (2022), Press Corner of the European Commission (2023) and European Parliament, Council of the European Union (2013).

The ESRS under which these companies must report are a total of twelve standards that are concerned with ESG topics. An overview of these standards can be found in Table 7 in the appendix.

Before the CSRD, the sustainability information provided by companies was not sufficient and a comparison between companies not possible, which is essential for investors and other stakeholders (Press Corner of the European Commission, 2023). Using common standards ensures comparability between companies as well as reliability of their sustainability information. Furthermore, research has found that companies following sustainability guidelines disclose 39% more information than companies not following any sustainability

guidelines (Darnall et al., 2022). The ESRS have a high similarity to the global standards of the International Sustainability Standards Board and the GRI. The Standard ESRS 1 (General Requirements) is only explaining general principles when reporting, while ESRS 2 (General Disclosures) is pointing out crucial information that must be published by all undertakings. It is the only standard that is mandatory for all companies under the CSRD (Press Corner of the European Commission, 2023). For all other standards, a materiality assessment decides which information a company must report on. The standards are using the so-called double materiality perspective. That means that companies must report on their impacts on the environment and people, as well as on the impacts environmental and social issues have on the company. Information that is not material, meaning not relevant, can be neglected and must be stated in the report as "not material" (European Parliament, Council of the European Union, 2022).

Small and Medium-Sized Enterprises (SME) that fall under the CSRD are disclosing information using a proportionate version of the standards. These standards less ambitious, in order to help the companies in question with their reporting (Press Corner of the European Commission, 2023).

2.2.5 Assurance of Sustainability Information

Research has shown that the assurance of information is an important part of sustainability reporting. While reporting standards and frameworks already contribute to the improvement and comparability of information, the study has found that an assurance has additional benefits in terms of improving reports and identifying errors (Ballou et al., 2018).

With the new Directive, the published information must be assured by an external audit company. Hereby, there is a distinction between limited assurance and reasonable assurance. In a limited assurance, also referred to as negative assurance, the auditors are stating that based on their work, nothing has been found that indicates any material misstatements. In a reasonable assurance, also referred to as positive assurance, the auditors are stating that the information provided is free from material misstatements. While this refers to a high level of assurance, it is never an absolute assurance that there are no misstatements. For now, audit firms are obligated to carry out a limited assurance, which covers the compliance with the sustainability standards, the process undertaken by the company to find the information, and the adherence to labelling sustainability reporting. Until 1 October 2028 the latest, the European Commission is assessing if a reasonable assurance is feasible for auditors due to its

complexity and will adopt assurance standards for it. If feasible, auditors will then need to carry out a reasonable assurance of sustainability information, which fulfils the goal of having a similar level of assurance between financial and sustainability information (European Parliament, Council of the European Union, 2022).

The adoption of the CSRD marks a significant milestone in the improvement of sustainability reporting. While the NFRD has laid the foundation for sustainability reporting, some flaws have been discovered throughout the time. The new Directive does not only apply to a larger number of undertakings, but the ESRS make a comparison between companies possible and assure greater reliability of information. Not least the mandatory assurance of the sustainability information through an external auditor will improve the credibility of the data (European Parliament, Council of the European Union, 2022).

2.2.6 Advantages of Sustainability Reporting for Companies

While the overall advantages concerning sustainability reporting have been previously mentioned, there are also several advantages for companies themselves to engage in it. Besides others, these are some of the benefits for companies:

Firstly, sustainability reporting can help companies improving their risk management, by identifying risks and opportunities related to sustainability. It can also be helpful to support decision making as the reporting delivers new insights concerning for example societal or environmental changes (European Parliament, Council of the European Union, 2022).

Secondly, sustainability reporting can help undertakings to identify areas for improvement and thus help with cost optimization and ensure higher profitability (KPMG Netherlands, n.d.).

Lastly, sustainability reporting increases the transparency of companies and can be seen as a basis for better communication between the companies and their stakeholders. Consequently, it helps companies to improve their reputation and trustworthiness (European Parliament, Council of the European Union, 2022).

2.3 Trust

Trust is a concept most people have heard of. However, its holistic concept concerning different types of trust, its importance and its measurability are something rather abstract and require further analysis. The following chapter aims to provide a brief overview of that.

2.3.1 What is Trust?

Trust plays a significant role when building and maintaining relationships, not just between people but also between companies and their stakeholders (McKnight & Chervany, 2000). This is especially true in situations where we have interdependency between different parties, or when there is uncertainty, or other risks involved (McKnight & Chervany, 2000). It is not easy to describe trust with only one definition. Some researchers even call trust an "elusive concept to define" (McKnight & Chervany, 2000). The reason for this is that researchers often only look at trust from their perspective. This results in, for example, psychologists seeing trust as a personal trait, while economists view trust as an economic choice mechanism (McKnight & Chervany, 2000). When looking at definitions of trust from common dictionaries, the Cambridge Dictionary defines trust as the "belief that someone is good and honest and will not harm you, or that something is safe and reliable", but also as the "hope and expectation that something is true" (Cambridge Dictionary, n.d.). The Oxford Learner's Dictionaries has added that someone is trustworthy if they "will not try to harm or trick you" (Oxford Learner's Dictionaries, n.d.). Generally, trust is defined as an expectation towards something or someone rather than a behaviour, and this expectation can change over time. Nevertheless, individuals have some expectations that are situation independent and thus have basic trust (Uslaner, 2018). These are only a few examples of trust definitions. McKnight & Chervany (2000) have analysed the number of definitions for trust in different dictionaries and found that on average trust has 17 definitions, as compared to other concepts such as confidence or cooperation which on average have 4.7. This again emphasises the complexity and multi-faceted nature of trust and the difficulty of defining it. Some characteristics when describing trust are competence, benevolence, integrity but also predictability (McKnight & Chervany, 2000).

2.3.2 Different Types of Trust

Trust can be classified into different categories, that are defined differently and sometimes overlap depending on the researcher. The following are some examples of different trust types:

Generalised trust is based on shared behavioural norms. As long as there is no reason to do otherwise, people behave on the presumption of generalised trust. Social mechanisms such as peer pressure or the fear of exclusion help with its enforcement (Lindgreen, 2003).

Social and institutional trust differ in their definition of a trustee and expected behaviour. While in social trust the trustees are fellow citizens, a trustee in institutional trust is for example a company or the government. A relationship between the two parties does not imply that they know each other personally – however, there are also some opposing views on this. The expectations one has towards an institution naturally differs from that towards fellow people (Uslaner, 2018). System trust is based on written rules and their control by regulatory bodies. The trust is based on the effectiveness of these rules and their control (Lindgreen, 2003).

Process-based trust evolves through repeated interactions. If the involved parties behave and interact in a way that is expected by the counterpart, trust is built. At the beginning of the relationship, trust is more fragile and will evolve over time to become more resilient (Lindgreen, 2003).

2.3.3 Importance of Trust

Besides trust being one of the most important characteristics in a close relationship, it can also have an effect on brand equity or the customer's loyalty towards the brand. Research has shown that in order to create a bond between the brand and the consumer, trust is needed (Delgado Ballester, 2004). While some have confirmed that trust is definitely part of building a relationship between the brand and the consumer, others have gone as far as to say that it is the most important characteristic of a brand (Delgado Ballester, 2004) and indispensable for economic relations (Nooteboom, 2002). Besides its importance in building a relationship, trust also plays a significant role in customer retention. While the effect of trust on customer retention is smaller than the effect of their satisfaction, it is still very significant. Trust is a driving force for word-of-mouth and therefore very important for people to speak positively about the company and possibly recommend it to others (Ranaweera & Prabhu, 2003).

2.3.4 Measuring Trust

When measuring trust, one differentiates between direct and indirect measures of trust. In direct measures of trust, respondents indicate their level of trust themselves. In indirect measures, the researcher tries to derive the trust level by monitoring the behaviour of respondents and their reactions and decisions (Uslaner, 2018).

One way of direct trust measuring is asking the participants to rate their level of trust. For that, respondents are shown various statements, scenarios or even institutions, which they are then asked to rate on a scale of 0-10, for example. However, because trust is such a complex and not particularly tangible subject, the evidence on the best way of asking these questions is rather mixed (Uslaner, 2018). While an experiment with hypothetical scenarios is a somewhat easy way for researchers to study different settings, the self-reporting of trust levels could also be biased by the respondents (Uslaner, 2018). To improve the measurement, it is important that the information shown to the respondents is specific and explicit. That means that any person or group that is part of the scenario, as well as the context and their behaviour must be described sufficiently. Furthermore, the scales used for the self-reporting should have clear endpoints and must be adequately explained to the respondents. Such scales include, for example, a probability scale measured as a percentage (Uslaner, 2018).

In an indirect measure of trust, the researcher tries to derive the trust level by observing the participants' behaviours, decisions, and reactions. However, other factors such as self-interest or competitiveness make a measurement difficult as they could influence the behaviour of participants. In a number of lab experiments, researchers have tried to control these factors and were able to conclude that the factors alone could not be responsible for the participants' behaviour, and thus inferred that it is due to trust being involved. However, these experiments are rather complex (Uslaner, 2018).

2.4 The Electric Vehicle Industry: A quick Introduction

In this thesis, the effectiveness of the new sustainability reporting guidelines, their assurance as well as trust in the aforementioned is researched using the example of the Electric Vehicle Industry. This chapter provides a brief overview of the key facts regarding the industry.

Sustainability is a central topic for car manufacturers and many aim to reduce their carbon footprint or even become carbon neutral companies, according to their sustainability reports. To do so, companies such as Porsche AG, Volkswagen AG, or Audi AG are focusing on expanding electromobility by building electric cars that provide an alternative to traditional cars with combustion engines (Porsche AG, 2022; Volkswagen AG, 2022; Audi AG, 2022). Electric cars, or rather Battery Electric Vehicles (BEVs), are purely electric vehicles that are powered by rechargeable batteries. However, their sustainability is often questioned and is accompanied by much controversy. Reason for this controversy is that BEVs are classified to have no direct emissions (ADAC, 2023).

The Worldwide harmonized Light-duty vehicles Test Procedure (WLTP) is used to measure fuel consumption as well as CO_2 emissions of cars while driving. The testing procedure is the same for all cars worldwide and thus allows for comparisons between different vehicles (Porsche AG, 2021). As BEVs do not run on fuel and therefore do not have any direct CO_2 emissions into air while driving, their WLTP CO_2 value is by definition $0\,\frac{g}{km}$ (ADAC, 2023). This shows a distorted view of the sustainability situation and makes BEVs look more environmentally friendly than cars with combustion engines and a higher WLTP value. A Life Cycle Assessment (LCA), which not only considers direct emissions, but all environmental impacts generated during the entire life cycle of the vehicle, allows for a better comparison (Egede, 2017). While different impact categories such as acidification or freshwater ecotoxicity are also part of an LCA, only the Global Warming Potential is relevant for calculating the carbon footprint (Porsche AG, 2019). However, for several reasons it is not possible to make a general statement about which type of vehicle is more sustainable:

While BEVs have a higher environmental impact during the production phase than vehicles with a combustion engine (Egede, 2017), the emissions generated during the use phase of the vehicle depend greatly on the user of the vehicle. While electric cars do not have any direct emissions, there are indirect emissions generated through the charging of the High-Voltage Battery (HV Battery). If the user of the vehicle is charging their battery with green electricity, the indirect emissions caused by charging are much lower than when charging with electricity

from coal or natural gas. Depending on that, and on how extensively the vehicle is used, the break-even point where a BEV is more environmentally friendly than a conventional vehicle shifts. Thus, a BEV is only more environmentally friendly if driven over a long period of time, due to the higher emissions in the production phase, and if charged using a sustainable energy source (Keck, 2021).

The recycling of the HV Batteries, which is also often criticised, only makes up for about 8 % of the carbon footprint of a BEV. Contrary to assertions, most batteries are not simply disposed of. They are either recycled and used as secondary raw material, or they can be given a second life as, for example, a home storage system (Keck, 2021).

All in all, while BEVs have potential to be a more sustainable alternative to vehicles with combustion engines, the criticism and controversy is not unjustified and it is clear that people are critical of the topic.

3 Methodology

The primary aim of this thesis is to research the effect of mandatory sustainability reporting guidelines and their assurance on trust using the example of the electric vehicle industry. The following chapter explains the methodology that was used.

As this specific topic has not been researched before, primary data was collected through a survey experiment. The survey can be found in Appendix 2: Survey Experiment. As already discussed in the chapter on measuring trust, one way of measuring it is the direct measurement approach, in which participants rate their level of trust themselves. Due to its feasibility and straightforwardness, this method was chosen. To prevent misunderstandings and make everything as comprehensible as possible, three pretests of the survey were run before publishing the final version. To reach a greater audience, the survey was available in English and German. During the survey, participants had to choose an answer for each question before moving on to the next block. Once respondents pressed “next”, they could not go back to the previous block, to prevent them from overthinking and changing their answers as the survey progressed.

3.1 Sample

The target sample size for this survey experiment was 120 participants. In the end, a total of 224 responses were collected, out of which 150 were usable for further analysis, which is a useable response rate of 66.96%, and exceeds the target by 25%. 74 responses were neglected for further analysis as 51 respondents did not complete the survey, and 23 answered the “Attention Check Question” wrong, which will be further explained later in this chapter.

The detailed results of the survey can all be found in Appendix 3: Survey Experiment Results.

The cleaned dataset had a share of 51.33% male and 48% female respondents. One respondent (0.67%) chose the option “prefer not to say”.

In terms of age, there were no participants under the age of 18 or over the age of 75. The largest age group (38.67%) ranged from 25-34, followed by the age group of 18-24 with a share of 26%. The age groups 35-44 and 45-54 both had 9.33% of participants each. 14.67% were in the category 55-64 years old, and only 2% were between 65-74 years old.

People from 19 different nationalities participated in the survey, with Germany being the largest group represented by 78%, followed by Portugal with 8.67%, Brazil with 2% and Morocco with 1.33%. The other 15 nationalities had one participant each.

Twelve different current countries of residence were indicated by the participants. Again, Germany being the largest group with 74%, followed by Portugal with 15.33%. Luxembourg and Italy were chosen by 2% each, while 1.33% each live in Spain and Austria. The other six countries were again only chosen by one participant.

In terms of education, all people had at least a high school degree (10.67%). 13.33% did an apprenticeship, while 42% hold a bachelor's degree, followed by 31.33% holding a master's degree, and 2.67% of participants having a PhD.

Regarding the employment status, 49.33% of participants were working full-time, while 17.33% were working part-time. Pupils or students made up for 26% of the answers, and 4% were unemployed or looking for work. While 2.67% were already retired, there were no housewives/-husbands or non-working parents in the sample.

Respondents were also asked if they own a car. 67.33% responded in the affirmative to this question, and 32.67% said that they do not own a car.

Out of the 101 car owners, seven (6.93%) had a fully electric vehicle, which is 4.67% of all participants. 93.07% (or 62.67% of all participants) had a car that is not fully electric.

3.1.1 Attention Check

The "Attention Check Question" mentioned in the previous section was used to filter out people who were not paying attention during the survey. As it was expected that some participants would not be attentive throughout the survey, this was done to minimise the risk of distorted results due to carelessness. During the experiment, participants were asked to rate the same eight statements in both scenarios on a scale of 1-5. One of the statements instructed the respondents to rate it with "2". People that answered with a different number were excluded from the analysis, as they did not carefully read the instructions. In total, 23 responses, which corresponds to 10.27% of all responses and 13,29% of all finished responses were discarded. Although this measure helped to improve data quality, it is no guarantee that some respondents answered this question correctly by chance.

3.2 Procedure

The survey was a survey experiment conducted via Qualtrics. It was distributed through different platforms using an anonymous link and a QR code. To minimise the number of multiple responses by the same person, the setting of the survey has been changed to allow one response only. The survey was published on different platforms such as LinkedIn, WhatsApp, and Instagram over a course of four weeks. Other students, as well as friends and family also shared the survey with their network through different channels.
The time for completing the survey was estimated to be seven minutes. Although it was known beforehand that the response time will likely be above seven minutes, this was not communicated to the respondents, as a longer estimated time would have prevented some from participating in the first place. In the end, the median completion time was 8min and 36sec.

The survey experiment consisted of the following five blocks:

- Demographics
- Consumer Characteristics
- Attitude Scales
- Sustainability Reporting Knowledge Check
- Experiment

In the first block, respondents were asked about the typical demographic data: Age, gender, nationality, current country of residence, education level, and employment status.
A distinction between nationality and country of residence was made, as participants could live in countries different to their nationality. Given that Católica Lisbon School of Business and Economics has many international students, this distinction seemed important.
For the education level, the participants were asked about their highest completed degree, to prevent people from replying with degrees they have not (yet) finished.

As this research is about the electric vehicle industry, it was important to know how many car owners and electric car owners there are in the sample. For that, respondents were asked in the consumer characteristics block if they own a car. In case the question was answered with "yes", the participants were then asked if that car is fully electric. In case the answer was "no", they were immediately redirected to the next question where they were asked to rate the likelihood of them buying a car (new or second-hand) in the next few years.

The aim of the attitude scales block was to research the participants' attitude towards the three main topics of this thesis: Electric vehicles, sustainability reporting, and audit. For that, they were asked to rate their agreement with five statements. Before rating the statements, the participants were shown very brief explanations of each topic. While it is very likely that most people have heard about electric cars, it is possible that some are not very familiar with sustainability reporting and auditing. The explanations ensured that every participant had at least a basic idea about the topics. In the following, the term "topic" was used to clarify that the questions for all three topics were (almost) the same. In the survey itself, the term was replaced by "Electric Cars", "Environmental, Social and Governance Reports (ESG Reports)", which in this context are representing sustainability reports, and "Auditing Practices". The following statements were shown to the participants:

- I am well informed about the topic.
- I think the topic is important.
- I think the topic is a good thing.
- In the future, it is likely for me to become more aware of the topic.
- I trust the topic.

Only the fourth question differed for electric cars. Here the statement was "In the future, it is likely for me to buy an Electric Car". Asking the same questions for all three subjects later allowed for a direct comparison of the three.

The next block, which is the last part of this survey before moving on to the experiment, was a knowledge check about ESG reports. The topic has only gained more attention in recent years, so while it is likely that people have heard about ESG reports before, it is questionable how much they actually know about them. To get an idea about people's knowledge, participants were shown ten topics and asked to pick all that they think belong in an ESG report. Out of the ten options, six are usually included in ESG reports, and four are not. The topics were picked based on ESG reports of car manufacturers and included both obvious and more ambiguous subjects. The following options were shown to the participants in a random order:

Correct:

- Risks and opportunities
- Compliance topics
- Information regarding the board members
- Community engagement
- Waste management
- Disclosure of quantitative goals

Incorrect:

- Individual employee performance evaluations
- Balance sheet
- Revenue forecasts
- Technical specifications of products and services

Next, the experiment started. First, all participants saw the same short instruction, asking them to pay close attention to the description and telling them that there will be a total of eight statements to rate. In the instruction it was emphasized that the remaining of the survey is very short, to prevent participants from dropping out. Furthermore, the fictitious company "E-Car" was introduced as a large European manufacturer of electric cars. The reason for choosing a fictitious company was to avoid any bias people might have, based on personal preference regarding car manufacturers. As the laws at stake in this experiment are applicable in the EEA, the company was classified as European. A further specification of a country of origin was not made to avoid any bias here as well.

Next, the participants were randomly assigned to one of two scenarios. Both scenarios had the same structure, to ensure that both groups were given the same kind of information. However, they differed in content, so that the effect of the presence of binding guidelines and their assurance could be measured as compared to their absence. The first scenario was about the NFRD from 2014, where only non-binding guidelines were published and where the information was not audited by an outside party. The second scenario was about the CSRD that was legislated in 2022 and stated that reports must be prepared based on the binding ESRS, and that the information is assured by an external auditor.

The scenarios consisted of four paragraphs:

- General information regarding the Directives: Legislation date, start date of implementation, and general information about the content that needs to be reported.
- Information regarding guidelines and auditing of published information according to the Directive.
- Information that E-Car is among the companies that must prepare a report.
- Information that the report is publicly available and about its assurance.

In Scenario 2, it was additionally stated that the external auditor confirmed the accuracy of the information. Theoretically, that would mean that the statements shown to respondents in Scenario 2 provide a true and fair view of the company's sustainability situation. The detailed scenarios can be found in Appendix 2: Survey Experiment.

To ensure that participants would not immediately skip the description, there was a 30 second timer before the "next" button was unlocked. Furthermore, while research has shown that there is no significant difference between reading or listening to information (Clinton-Lisell, 2021), an audio of the text of both scenarios was still provided. This gave participants the option to choose whatever method they preferred and made the information more accessible to those struggling with reading longer texts.

The respondents were then shown eight statements, one at a time, in a random order. One of the statements was the "Attention Check Question", the other seven were actual quotes from the 2022 sustainability reports of different car manufacturers from Europe, that have been slightly adapted. Real quotes were chosen to make it look as authentic as possible. Furthermore, the statements were about different topics, including fair wages, supplier sustainability training, CO_2 footprint comparison of electric and conventional vehicles, decarbonisation efforts, human rights, corporate citizenship, and sustainability ratings. Quotes from various areas were deliberately selected, to counteract possible differences in knowledge about the topics. Additionally, the chosen quotes were a mix of plausible statements and more controversial and unbelievable ones. This was done on purpose to see if the respondents would rate them differently, even after they were told that all statements were verified by an external auditor in Scenario 2. Again, all statements including their variable names can be found in Appendix 2: Survey Experiment.

3.3 Measures

3.3.1 Attitude towards Electric Cars, Sustainability Reporting and Audit

The aim of this block was to measure the attitude of the respondents towards these three topics. For each of the three topics, participants were rating five statements, also referred to as items. To ensure that questions could be answered quickly, the five items regarding one topic were shown at once, whereas the three topics were shown on different pages, one at a time. All sentences were very short and formulated in a simple way to avoid any misunderstandings. Using the same scales and sentences ensured a later comparison of the topics.

The scale used for all attitude measurements was a five-point bipolar Likert scale. Bipolar means, that the two endpoints are clear contrary opinions, in this case ranging from "1-Strongly disagree" to "5-Strongly agree". In practice, five- or seven-point Likert scales are most used, as they are a good middle ground between having too many gradations or too few, which make it hard for respondents to rate the statements. Furthermore, an odd scale was used to give participants the option to take a neutral stance on a topic (Qualtrics XM, n.d.).

To test the reliability of the scale, Cronbach's α, which is the most common scale reliability measurement, was calculated (Field, 2009). For that, statements 2-4 were used, which reflect the cognitive, emotional, and behavioural attitudes of the participants.

The following table shows the results of the calculation:

Table 2: Results of the single attitude measures and calculation of Cronbach's α

	Mean	Std. Deviation	Cronbach's α
BEV_Importance	3.51	1.13	
BEV_Good_Thing	3.51	1.18	
BEV_Future_Purchase	3.05	1.29	**0.91**
ESG_Importance	3.77	1.00	
ESG_Good_Thing	3.81	0.99	
ESG_Future_Awareness	3.34	1.04	**0.84**
Audit_Importance	4.14	0.88	
Audit_Good_Thing	4.01	0.88	
Audit_Future_Awareness	3.17	1.05	**0.76**

In theory, an $\alpha > 0.7$ is regarded an acceptable value indicating a reliable scale (Field, 2009). The reliability analysis showed that all three Cronbach's α from the attitude measurement are

showing good to excellent internal consistency. For further analysis, the three statements of each category were summarised into one attitude factor each, called BEV_Attitudes, ESG_Attitudes and Audit_Attitudes, as shown in Table 3.

3.3.2 Sustainability Reporting Knowledge Check

The aim of the knowledge check was to find out how much people know about sustainability reporting. As previously discussed, participants were shown ten possible components of a sustainability report, of which six were correct and four were incorrect. To measure the performance, respondents were assigned points. For every option they chose, which was labelled a correct answer, they received one point. For every option they did not choose, which was labelled an incorrect answer, they were also awarded one point. For options not chosen that would have been correct, and options chosen that were incorrect, participants were not given any points. The number of points divided by ten, which is the highest possible result, was the individual score.

3.3.3 Trust

To measure trust, participants were rating seven statements on a five-point bipolar Likert, just as they had done with the attitude questions earlier. The eighth question was the "Attention Chek Question" which did not serve the purpose of measuring trust. Again, the scale ranged from "1-Strongly disagree" to "5-Strongly agree".

The same measurement scale was used throughout the survey to prevent confusion and have participants feel more familiar with the ratings, as well as allowing for a comparison of the results of the different variables.

An Exploratory Factor Analysis was carried out to further investigate the data and potentially reduce the number of variables by creating a smaller set of factors. In the course of this research, it was ultimately decided against continuing with the factors. The reasons for that are explained in the Discussion section. Nevertheless, the results of the Exploratory Factor analysis can be found in Appendix 4: Exploratory Factor Analysis.

4 Results

The analysis of the results was conducted via JASP, a statistical analysis tool. In addition to the findings in this chapter, all other results from the survey experiment can be found in Appendix 3: Survey Experiment Results.

4.1 Sample Observations

4.1.1 Car Purchase Intention

The purpose of these questions was to observe people's attitude towards purchasing a car in the future. Approximately two thirds (67.33%) of the sample were car owners, with only 4.67% owning an electric car. On average, the likelihood of buying a new or second-hand car in general, and of buying an new or second-hand car that is electric were very similar and close to the mid-point of the scale ($M_{Purchase\_General} = 3.07$; $SD_{Purchase\_General} = 1.50$; $M_{BEV\_Future\_Purchase} = 3.05$; $SD_{BEV\_Future\_Purchase} = 1.29$ (Table 3)). The analysis of the frequencies for these questions showed that when asked about car purchase in general, people spread into two opposing groups (26% answering "5-Strongly agree" and 21.33% answering "1-Strongly disagree"), whereas when asked about the purchase of a BEV, people were much more agreeable (26% answering "4-Somewhat agree" and 24% answering "3-Netiher agree nor disagree").

In brief, while the respondent answered very differently on the car purchase question, a slight positive tendency was visible for buying an electric vehicle in the future.

4.1.2 Perceived Information, Self-Reported Trust and Attitudes

With the purpose of exploring people's self-assessment regarding their perceived information, attitudes, and trust towards BEVs, sustainability reporting, and audit, respondents were asked to rate several statements.

Overall, the level of **perceived information** was around the mid-point of the scale ($M_{BEV\_Informed} = 3.49$; $M_{ESG\_Informed} = 2.83$; $M_{Audit\_Informed} = 2.95$ (Table 3)), meaning that people did neither feel particularly informed nor disinformed about BEVs, sustainability reporting, and audit. It is noticeable that people felt more informed about BEVs, than they did about sustainability reporting or auditing. However, this is not too surprising as it is probably the topic with which they have the most points of contact. Nevertheless, the average is still

rather low. When looking at the frequencies of the answers, 38.67% (Table 18) of participants chose a rating of "4-Somewhat confident" for the BEVs, indicating that they are somewhat well informed about the topic. In comparison, the most selected answer for both sustainability reporting and audit was "2-Somewhat doubtful", with 28% (Table 19) and 26.67% (Table 20) respectively.

Regarding **self-reported trust**, the means were very close to the mid-point of the scale ($M_{BEV\_Trust} = 2.87$; $M_{ESG\_Trust} = 2.97$; $M_{Audit\_Trust} = 3.21$) and again had a low variability of the answers ($SD_{BEV\_Trust} = 1.17$; $SD_{ESG\_Trust} = 1.05$; $SD_{Audit\_Trust} = 0.97$). While the trust towards BEVs was the lowest, followed by sustainability reporting, it was noticeable that the means of both statements indicated a slight mistrust of the participants regarding these topics. In comparison to that, the trust towards audit was the only trust statement that was answered with a slightly positive affirmation of trust (Table 3).

Regarding the **attitudes** towards BEVs, sustainability reporting and audit, the respondents had the most positive attitude with the least variability towards audit ($M_{Audit\_Attitudes} = 3.77$; $SD_{Audit\_Attitudes} = 0.77$), followed by sustainability reporting ($M_{ESG\_Attitudes} = 3.64$; $SD_{ESG\_Attitudes} = 0.88$). While the attitudes towards BEVs brought up the rear, the mean and standard deviation still indicated a positive stance with low variability towards BEVs ($M_{BEV\_Attitudes} = 3.36$; $SD_{BEV\_Attitudes} = 1.1$) (Table 3).

In brief, there were no extremes or polarised answers, and the means were generally located around the mid-point of the scale. Respondents felt most informed about BEVs, however trusted them least, and had the lowest but still positive attitude towards them. While the respondents felt least informed about sustainability reporting, and showed a slight tendency of distrust, their overall attitude towards sustainability reporting was quite positive. Lastly, the participants had the highest positive attitude towards audit, and showed a tendency to trust it, however, they claimed that they are slightly uninformed about the topic.

4.1.3 Sustainability Reporting Knowledge Check

With the purpose of measuring the participants' knowledge level regarding sustainability reporting, a scoring system was developed. The average score was 6.29 out of 10 possible points, so 62.9% (Table 3). Half of the respondents reached a score of at least 60%, and most people (27.33%) answered 70% correctly. All participants chose at least two options correctly, and 2% of the respondents even scored 100% (Table 17).

Even though most participants were somewhat doubtful about their knowledge level regarding sustainability reporting as stated in their self-assessment regarding perceived information, the knowledge check showed that most participants had a decent understanding of what belongs in a sustainability report.

Table 3: Results of perceived information, trust, attitudes, and the knowledge check

	Mean	Std. Deviation
Purchase_General	3.07	1.50
BEV_Future_Purchase	3.05	1.29
BEV_Informed	3.49	1.04
BEV_Trust	2.87	1.17
BEV_Attitudes	3.36	1.10
ESG_Informed	2.83	1.22
ESG_Trust	2.97	1.05
ESG_Attitudes	3.64	0.88
Audit_Informed	2.95	1.21
Audit_Trust	3.21	0.97
Audit_Attitudes	3.77	0.77
Knowledge_Score	6.29	1.66

4.2 Effect of the Scenarios

The experiment's purpose was to determine whether people's trust in sustainability reporting is different when there are binding guidelines and an auditor compared to when this is not the case.

As shown in Figure 2, all results are somewhat located around the mid-point of the scale, and there is a clear difference between Scenario 1 and 2. As previously mentioned in the Procedure chapter, somewhat controversial statements were deliberately chosen to see if people believe in them when there is an external auditor confirming their accuracy. Therefore, it is not too surprising that the ratings were generally not very high. Figure 2 and the results listed in Table 4 show that the statements were rated higher on average in Scenario 2, where there were both binding guidelines and an auditor. The means stated in Table 4 further clarify that only one statement (*Decarbonisation*) in Scenario 2 was rated lower than the mid-point of the scale, indicating distrust, whereas in Scenario 1 four out of seven statements were below the mid-point. Generally, the means ranged from 2.2 to 3.46. The highest ranked statement in Scenario 1 was *Human_Rights* ($M_{Human\_Rights\_S1} = 3.12$), which is just slightly above the mid-point of the scale. The lowest ranked statement of this scenario was *Decarbonisation*

($M_{Decarbonisation\_S1} = 2.2$), which was also the lowest ranked statement in Scenario 2 ($M_{Decarbonisation\_S2} = 2.74$). The highest ranked statement in Scenario 2 was *Training* ($M_{Training\_S2} = 3.46$).

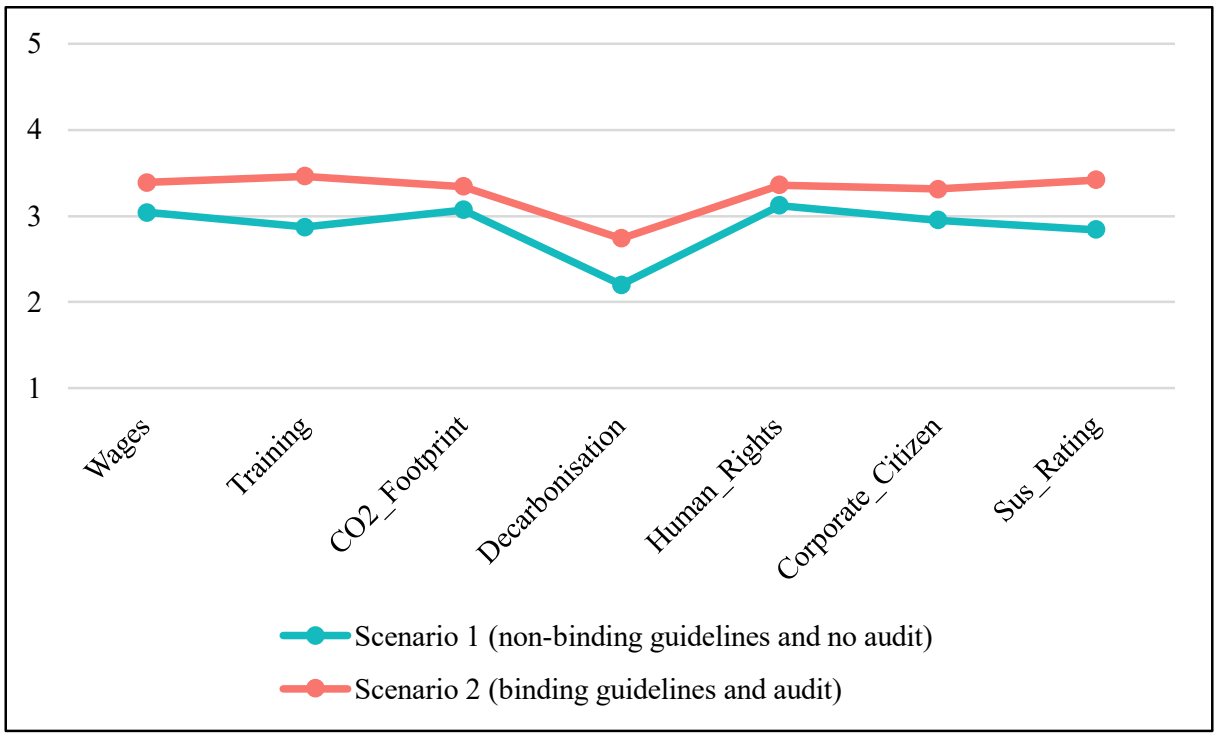

Figure 2: Graphical results of the experiment for Scenario 1 and Scenario 2

Table 4: Numerical results of the experiment for Scenario 1 and Scenario 2

	Scenario	Mean	Std. Deviation
Wages	1	3.04	1.17
	2	3.39	1.14
Training	1	2.87	1.02
	2	3.46	1.01
CO2_Footprint	1	3.07	1.31
	2	3.34	1.30
Decarbonisation	1	2.20	1.02
	2	2.74	1.23
Human_Rights	1	3.12	1.14
	2	3.36	1.19
Corporate_Citizen	1	2.95	1.02
	2	3.31	1.06
Sus_Rating	1	2.84	1.06
	2	3.42	1.06

4.2.1 ANCOVAs

To further analyse the results of the experiment, three sets of ANCOVAs were carried out for each statement. Besides the fixed factor *Scenario*, the selected covariates were controlling for attitudes, perceived information, and trust, as shown in Table 5.

In the following, first the results of the ANCOVAs were discussed, before analysing the interaction plots for patterns.

4.2.2 Analysis of the Significant Effects

In the **first set of ANCOVAs**, which was controlled for **attitudes**, the covariates used were the previously calculated attitude factors *BEV_Attitudes*, *ESG_Attitudes*, and *Audit_Attitudes*. Looking at the η^2, which is a measure of the effect size, the largest significant effect was the one of covariate *BEV_Attitudes* on *CO2_Footprint*, with $\eta^2 = 0.17$. Most importantly, the fixed factor *Scenario* had a significant effect on four of the seven statements, varying between $\eta^2 = 0.03$ and $\eta^2 = 0.07$ (Table 5A). Other than that, *BEV_Attitudes* had a significant effect on five statements, ranging from $\eta^2 = 0.03$ to $\eta^2 = 0.17$, while *ESG_Attitudes* had a significant effect on two ($\eta^2 = 0.02$ and $\eta^2 = 0.04$) and *Audit_Attitudes* on one ($\eta^2 = 0.03$) (Table 5A).

In the **second set of ANCOVAs**, which was controlled for **perceived information**, the covariates used were *BEV_Informed*, *ESG_Informed*, and *Audit_Informed*. Looking at the η^2, the fixed factor *Scenario* had the largest significant effect, with $\eta^2 = 0.08$ for *Training* and *Sus_Rating*. All in all, *Scenario* had a significant effect on five of the seven statements, varying from $\eta^2 = 0.03$ to $\eta^2 = 0.08$ (Table 5B). *BEV_Informed* had one significant effect ($\eta^2 = 0.04$), while *Audit_Informed* had two ($\eta^2 = 0.03$ and $\eta^2 = 0.04$) (Table 5B). *ESG_Informed* showed no significant effects in these ANCOVAs.

In the **third set of ANCOVAs**, which was controlled for **trust**, the covariates used were *BEV_Trust*, *ESG_Trust*, and *Audit_Trust*. Looking at the effect sizes, *BEV_Trust* had the largest significant effect on *CO2_Footprint* with $\eta^2 = 0.16$. Once again, *Scenario* had a significant effect on five statements, ranging from $\eta^2 = 0.03$ to $\eta^2 = 0.07$. *BEV_Trust* had a significant effect on four statements, varying between $\eta^2 = 0.04$ and $\eta^2 = 0.16$, while *Audit_Trust* had one on two statements ($\eta^2 = 0.02$ and $\eta^2 = 0.04$) (Table 5C) . *ESG_Trust* again had no significant effect in these ANCOVAs.

Overall, the analysis of the ANCOVAs showed that *Scenario* had a significant effect on trust in most of the statements, even after controlling for attitudes, perceived knowledge, and trust. Additionally to the effect of *Scenario*, *BEV_Attitudes* and *BEV_Trust* also showed consistent statistically significant effects across the statements, with the two largest effects being measured for *CO2_Footprint* ($\eta_{BEV\_Attitudes}{}^2 = 0.17$; $\eta_{BEV\_Trust}{}^2 = 0.16$ (Table 5)).

Table 5: Effects of Scenario, attitudes, perceived information, and trust

	1.[1]	2.	3.	4.	5.	6.	7.
A: Controlling for attitudes							
Scenario	0.02	0.07*	0.00	0.05*	0.00	0.03*	0.07*
BEV_Attitudes	0.00	0.03*	0.17*	0.04*	0.00	0.03*	0.07*
ESG_Attitudes	0.00	0.00	0.02*	0.00	0.04*	0.00	0.00
Audit_Attitudes	0.00	0.00	0.00	0.00	0.01	0.00	0.03*
R²	0.02	0.12	0.23	0.09	0.06	0.07	0.17
B: Controlling for perceived information							
Scenario	0.03*	0.08*	0.01	0.06*	0.00	0.03*	0.08*
BEV_Informed	0.00	0.04*	0.00	0.00	0.00	0.00	0.01
ESG_Informed	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Audit_Informed	0.04*	0.00	0.00	0.00	0.00	0.00	0.03*
R²	0.08	0.11	0.02	0.06	0.03	0.03	0.11
C: Controlling for trust							
Scenario	0.03*	0.07*	0.00	0.05*	0.01	0.03*	0.07*
BEV_Trust	0.00	0.05*	0.16*	0.04*	0.00	0.00	0.07*
ESG_Trust	0.00	0.00	0.00	0.00	0.02	0.00	0.00
Audit_Trust	0.04*	0.01	0.00	0.02	0.01	0.01	0.02*
R²	0.07	0.14	0.19	0.12	0.05	0.05	0.16

*p<0.06
[1]1. Wages, 2. Training, 3. CO2_Footprint, 4. Decarbonisation, 5. Human_Rights, 6. Corporate_Citizen, 7. Sus_Rating

4.2.3 Analysis of the Interaction Plots

The following is an additional exploratory non-significance driven analysis of the interaction plots. It was carried out to gain further insights into the interactions between the variables and to identify possible patterns. All plots can be found in Appendix 5: Interaction Plots. Figure 3 is an example of one set of interaction plots for *Training*. All sets of plots share the same structure to facilitate a comparison: The first row is about attitudes, the second about perceived information, and the last row about self-reported trust. The first column is about

BEVs, the second about sustainability reporting and the last column about audit. Each plot shows the interaction between one of the covariates and a statement, with separate lines for each scenario.

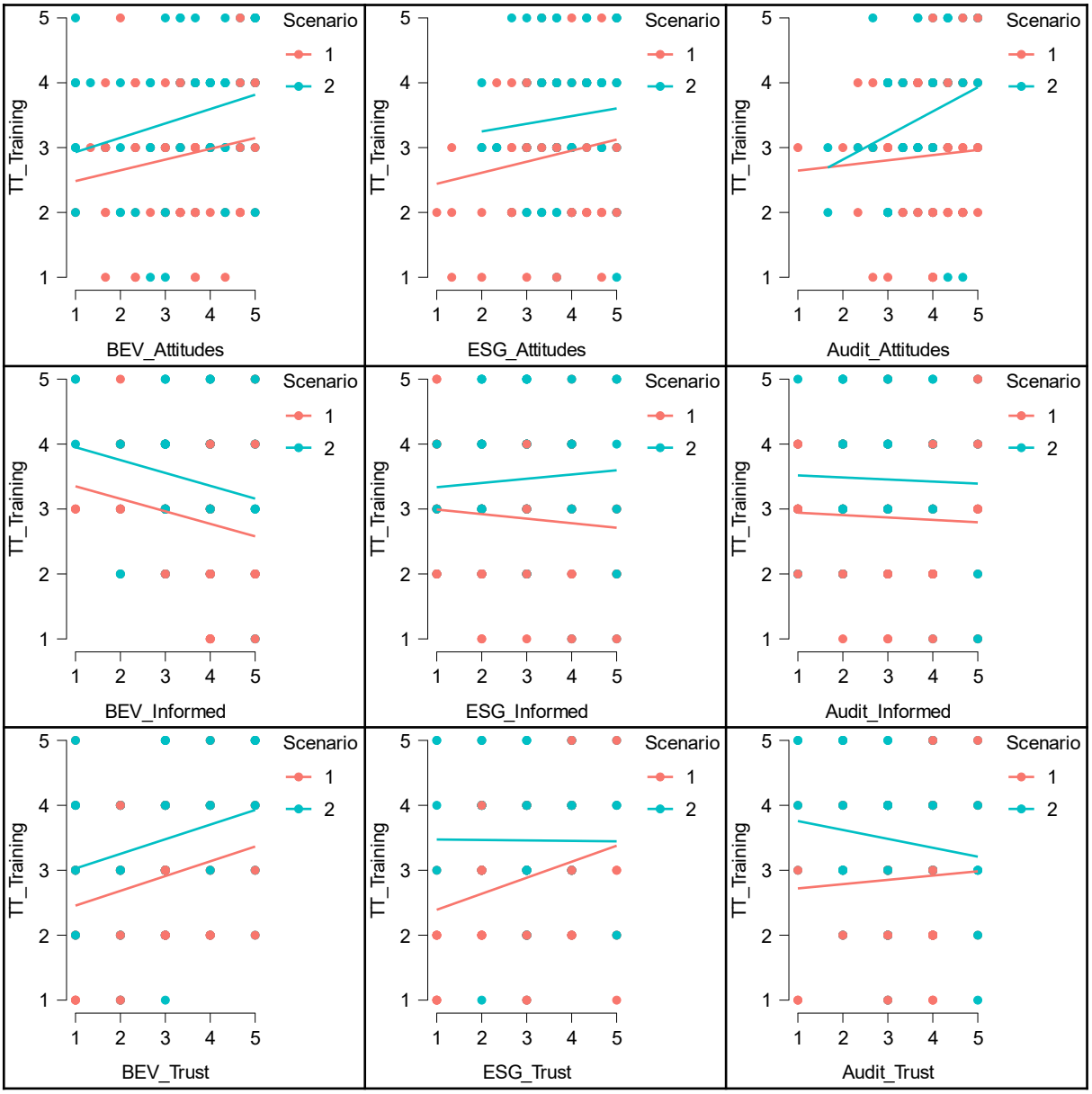

Figure 3: Example of the interaction plots of Training

In the **first set of ANCOVAs**, which was controlled for **attitudes**, the effect of *Scenario* was clearly observable by the gap between the lines of Scenario 1 and 2. All graphs generally showed a positive slope for both scenarios, even if it varied in steepness. This means that the more negative the attitude towards BEVs, sustainability reporting or audit, the smaller the trust in the statements. And consequently, the more positive the attitude towards BEVs,

sustainability reporting or audit, the larger the trust in the statements. This pattern was observed across all statements in 17 out of 21 plots. Furthermore, in 17 out of 21 cases the attitudes enhanced the effect of *Scenario*, as shown by a steeper slope of Scenario 2 compared to Scenario 1.

For *Corporate_Citizen*, *ESG_Attitudes* showed close to no effect, as displayed by the very minimal positive slope of the lines. Furthermore, for *Audit_Attitudes* there was a slight negative but almost not recognisable slope for Scenario 1. For *Wages*, the slope of the lines for *BEV_Attitudes* was also not recognisable, again showing that the covariate did not have an effect on the trust in this statement. In the same statement for *ESG_Attitudes*, Scenario 2 showed a slight negative slope, indicating a decrease in trust with an increase in attitude towards sustainability reporting.

In the **second set of ANCOVAs**, which was controlled for **perceived information**, the interaction plots for *BEV_Informed* showed a clear downwards slope for all statements for at least one scenario. In three cases, there was a downwards slope for both scenarios (*Training*, *Decarbonisation*, *Human_Rights*), in one case only for Scenario 1 (*CO2_Footprint*), and in three cases only for Scenario 2 (*Wages*, *Corporate_Citizen*, *Sus_Rating*). This downwards slope was also seen for *ESG_Informed* (*Wages*, *Training*, *Decarbonisation*) and *Audit_Informed* (*Training*, *Decarbonisation*, *Human_Rights*). Generally, the negative slope indicates that the better the respondents were informed about BEVs, or alternatively sustainability reporting or audit, the less they trusted the statements to be true, and vice-versa the less they were informed about the topics, the more they trusted them.

Besides the downwards slope, there was no clear pattern identified for the rest of the plots. While the effect of *Scenario* was still evident, it has both increased and decreased with the control for the covariates as shown by the larger or smaller gap between the lines of Scenario 1 and 2.

In the **third set of ANCOVAs**, which was controlled for **trust**, the effect of *Scenario* was once again clearly visible by the gap between the lines of Scenario 1 and 2. Analysing the graphs for *BEV_Trust* showed a clear pattern. For both scenarios, there was generally a positive slope meaning the less trust people had in BEVs, the less they trusted the statements to be true and consequently the more trust people had in BEVs, the more they trusted the statements to be true. Furthermore, Scenario 2 had a steeper slope than Scenario 1 in all

statements except *Training*, which again indicated that *BEV_Trust* enhanced the effect of *Scenario*. For *Training*, there was no difference in the slopes between the scenarios.

Just like for *BEV_Trust*, the plots of *ESG_Trust* generally showed a positive slope for both scenarios, and the slope of Scenario 2 was steeper than of Scenario 1 in most cases. For *Training*, Scenario 2 had no slope, meaning that the trust in sustainability reporting had no effect on *Training* in this scenario. The same applied for Scenario 1 in *Corporate_Citizen*.

For *Audit_Trust*, the plots again generally showed a positive slope for the lines of both scenarios, meaning that the more trust people had in audit, the more they trusted the statements to be true. While in *Wages* both scenarios had the same slope, the slope of Scenario 1 was steeper this time than for Scenario 2 for *CO2_Footprint*, *Human_Rights*, and *Sus_Rating*. Furthermore, Scenario 2 had a negative slope for *Training*. Only *Decarbonisation* and *Corporate_Citizen* showed the same pattern that was seen many times before, with Scenario 2 showing a steeper slope than Scenario 1.

Overall, the analysis of the graphs showed a clear effect of *Scenario* by the gap between the lines of Scenario 1 and 2. Besides that, there were several patterns identified: For most of the plots that were controlled for attitudes and trust the slope was positive, indicating a positive relationship between the covariate and trust in the statement. For perceived information, the slopes were mainly negative, indicating a negative relationship between the covariate and trust in the statement.

4.3 Other Relevant Phenomena: Trust, Attitudes and Purchase

The following is an additional analysis of the relationship between trust, attitudes, and purchase intention. Current literature about trust and purchase intention suggested a correlation between the two. The objective of this analysis is to test if the data collected within this research comes to the same conclusion.

The correlation matrix in Table 6 provided further insights into the relationship between trust and purchase intention. The sample correlation coefficient between *BEV_Future_Purchase* and *BEV_Trust* was $r = 0.68$. This indicates a strong positive relationship between people trusting in BEVs and their intention to purchase a BEV in the future. Furthermore, a very strong positive relationship was found between *BEV_Future_Purchase* and *BEV_Attitudes* with $r = 0.88$. It is important to mention that the variable *BEV_Future_Purchase* was included in the calculated factor *BEV_Attitudes*. Thus, a new factor called

BEV_Attitudes_w/o_Purchase was calculated to see if the effect remains without *BEV_Future_Purchase* being included in the factor. As shown in Table 6, the correlation coefficient has decreased, as expected, however still showed a strong relationship between *BEV_Future_Purchase* and *BEV_Attitudes_w/o_Purchase* with $r = 0.72$.

Therefore, one can conclude that a higher level of trust and a more positive attitude towards BEVs have a positive influence on the purchase decision. This corroborates the findings of current literature and adds that attitudes also influence purchase decision. These insights are especially relevant for companies trying to increase their sales.

Table 6: Correlation matrix

Variable	1.	2.	3.	4.
1. BEV_Future_Purchase	—			
2. BEV_Trust	0.68*	—		
3. BEV_Attitudes	0.88*	0.74*	—	
4. BEV_Attitudes_w/o_Purchase	0.72*	0.70*	0.96*	—

*p<0.06

5 Discussion

The rationale behind this research was the recent entry into force of the CSRD, which introduced mandatory sustainability reporting guidelines and the assurance of this information. With the implementation of the new Directive, which involves a great amount of work for all parties involved, the question arose if these new regulations influence people's perceptions regarding the trustworthiness and reliability of the sustainability information. Therefore, the objective of this thesis was to research the effect of mandatory sustainability reporting guidelines and the assurance of the information on trust. For this research, the case of the electric vehicle industry was chosen because of its size, current relevance, and controversy.

A survey experiment was conducted where all participants first answered a self-assessment by rating statements regarding their information level, attitudes, and self-reported trust towards BEVs, sustainability reporting, and audit on a Likert scale, before checking their knowledge about ESG reports. After that, respondents were randomly allocated to one of two scenarios. Scenario 1 was about the NFRD, under which sustainability reports were created without binding guidelines or assurance of information. Scenario 2 was about the CSRD that has binding guidelines and an audit. All participants were then shown the same eight statements, with one being an Attention Check, that they rated according to how much they trusted them to be true.

The main finding from this research was that the existence of binding reporting guidelines and the assurance of the information by an outside auditor had a positive effect on people's trust levels regarding sustainability reporting. This effect remained even after controlling for attitudes, perceived information, and trust. Additional analysis has shown that in the setting of the electric vehicle industry the trust and attitude towards BEVs (*BEV_*Trust and *BEV_*Attitudes) also had an effect on trust in the statements. An exploratory analysis of the interaction between the scenarios and attitudes, and between the scenarios and self-reported trust suggested a positive relationship between them. Accordingly, higher levels of attitude or self-reported trust led to a higher level of trust. Furthermore, higher levels of perceived information led to lower levels of trust. Finally, additional analysis showed that a higher level of trust and a more positive attitude towards BEVs both had a positive influence on the BEV purchase decision.

5.1 To Trust or not to Trust

The results of the experiment unequivocally showed that the presence of binding guidelines and the assurance of information have a positive effect on trust. But what exactly does this mean in the context of sustainability reporting, or more precisely the CSRD? Why is this an important insight for both the public and companies?

Based on the overarching idea that transparency influences trust, an effect of binding guidelines and the assurance of information was expected. However, due to its novelty there was no evidence on this, and one could even argue the opposite – people might not be trustful of these binding guidelines and the assurance of information because of the low level of trust in institutions, such as the EU. The results of this thesis are a first test of this idea and unequivocally showed that, in an experimental paradigm, comparing one scenario with binding guidelines and audit to one without, the scenario with had a consistent positive effect on the evaluation of trust in a set of reporting statements.

One comment that should be made about the findings is that the effect size of the manipulation was small. Considering that participants were assessing trust not in a real decision-making context but in an artificial environment, and were shown mainly controversial statements, makes the mere occurrence of the effect quite astonishing. This type of effect will have a multiplicative nature in the real world because it will interact with other elements of the consumer experience, such as involvement with the product, environmental values, or social norms. Future studies could further analyse if lower trust levels are based on scepticism towards audit or lack of knowledge of the subject. For that, past scandals that involved audit, such as the Wirecard scandal or the Volkswagen emissions scandal, could be further analysed for their impact on how audit work is perceived. Additionally, a differentiation between binding guidelines and audit could be researched to see which of the two has a larger effect on trust. This was not done in this research as the study was designed around the CSRD, which includes both.

The enhanced credibility and transparency of the information gained through the CSRD is especially relevant for people looking to invest and consequently can improve companies' access to capital. Furthermore, it increases the accountability of companies and consequently increases the pressure on them to improve their sustainability practices. This also helps with identifying risks and reduces the chance of reputational damage and legal issues. The improved reputation gained from trustworthy sustainability reports does not only make

companies more attractive to customers, but also allows them to gain a competitive advantage over undertakings with less reliable information or information that indicates unsustainable behaviour.

5.2 The Overconfidence Bias

The results suggested that less informed people trust more, and vice-versa, that more informed people trust less. A potential explanation for this is that respondents are generally not good at self-assessing how informed they are. In fact, the correlation coefficient between the self-assessment of knowledge regarding sustainability reporting and the knowledge check indicated a weak relationship which confirms this assumption. This means that this negative association between self-assessed information and trust can actually be a form of overconfidence bias (Vallinder & Olsson, 2014), where people that in reality know less about BEVs, sustainability reporting, and audit self-asses themselves as being more knowledgeable. In other words, at first sight this may seem to be a paradoxical effect of knowledge on trust, but it can instead simply be an effect of overconfidence on trust.

To further investigate the contribution of the overconfidence bias to the effect of the scenarios on trust, a preliminary test with our data is recommended, which breaks down the sample into overconfident (those that self-asses as being knowledgeable but score low on actual knowledge) and underconfident people (vice-versa) and tests for the moderation effect of overconfidence on the effect of the scenarios on trust. Again, it would be expected that the effect of the scenarios on trust is stronger for underconfident people as compared to overconfident people.

This analysis is of particular importance because it taps into how simplified representations of complex themes such as BEVs, sustainability reporting and audit can have detrimental effects on the level of trust. A potential future line of research could provide an extensive test of people's overconfidence on trust levels and validate the contributions of this phenomenon to the effects reported in this paradigm.

5.3 Trust Sells

The last important finding from this research, which was the discovery that the trust levels and attitude towards BEVs have an influence on the purchase decision, is especially relevant

for companies, as it shows them the importance of building trust and creating a positive reputation in gaining, but also retaining customers.

Although this effect was measured in the context of the electric vehicle industry, there is no apparent reason why this finding should not also apply to other products and industries. With this insight, companies can adapt their marketing strategies to focus more on building trust and a positive attitude towards their product and company. This can be done by for example discussing and understanding consumer concerns, and potential benefits of their products. The same applies for the development of products, where companies should focus on developing their products in a way that fosters trust of potential customers. Furthermore, research has shown that an effective way of building consumer trust is the alignment of CSR strategies with company values. This not only shows consumers that companies genuinely care about the issues but also works as a moderator between CSR and consumer trust (Min et al., 2023). In the context of the electric vehicle industry, an increase of trust and attitude towards BEVs and thus an increase of sales ultimately also contributes to the reduction of direct carbon emissions and thus helps combating climate change.

5.4 Limitations and Suggestions for Improvement

One limitation of this study was using all statements for the trust analysis. Before the assessment, the data was further investigated and revealed that an exploratory factor analysis should be carried out which potentially reduces the number of variables by creating a smaller set of factors. The different tests that were carried out, as well as the detailed results of the exploratory factor analysis can be found in Appendix 4: Exploratory Factor Analysis. The results revealed that a maximum of two factors should be used for further analysis. Despite these findings, the decision was made to carry on with all statements instead of two factors only. Reason for this decision was the loss of variability by summarising statements into a factor. As the statements were all about very different areas, and it was expected that the trust levels could vary with the statements, keeping them separately allowed for a more in-depth analysis. However, having only one statement per subject poses another limitation, as it is questionable how meaningful one statement is for general validity. For future research, the analysis could focus on summarising the statements into the suggested factors. Generally, more statements of the same thematic area could be used, as this allows for drawing more meaningful conclusions and could also influence the exploratory factor analysis.

While a sample size of 224 respondents, or rather 150 usable respondents, is enough to identify trends and draw conclusions, it does not replicate a perfect sample of the population. This is not least due to the fact that the majority of the participants that answered the survey were collected through direct acquisition and thus came from the same environment. However, there is no indication that the composition of the sample had any significant negative effect on the results and their validity. Nevertheless, for future research it would be advisable to collect a larger sample, that is better resembling a cross-section of the population.

5.5 Final Statement

This thesis gave insights into a topic that has not been researched before: The effectiveness of binding guidelines and audit in building trust. While sustainability reporting has been around for some time, it only recently started to get more attention and recognition with the introduction of the CSRD. The insights that non-binding guidelines are not as effective in building trust as binding guidelines and the review by an auditor can be transferred to areas other than sustainability reporting, that currently struggle with unreliable and ambiguous information and therefore a lack of trust.

This research showed that the change in sustainability reporting was needed, that the efforts will pay off in the long run, and that this is only just the beginning of sustainability gaining a more central role in the business world – as it should.

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Appendix 1: Sustainability

Timeline

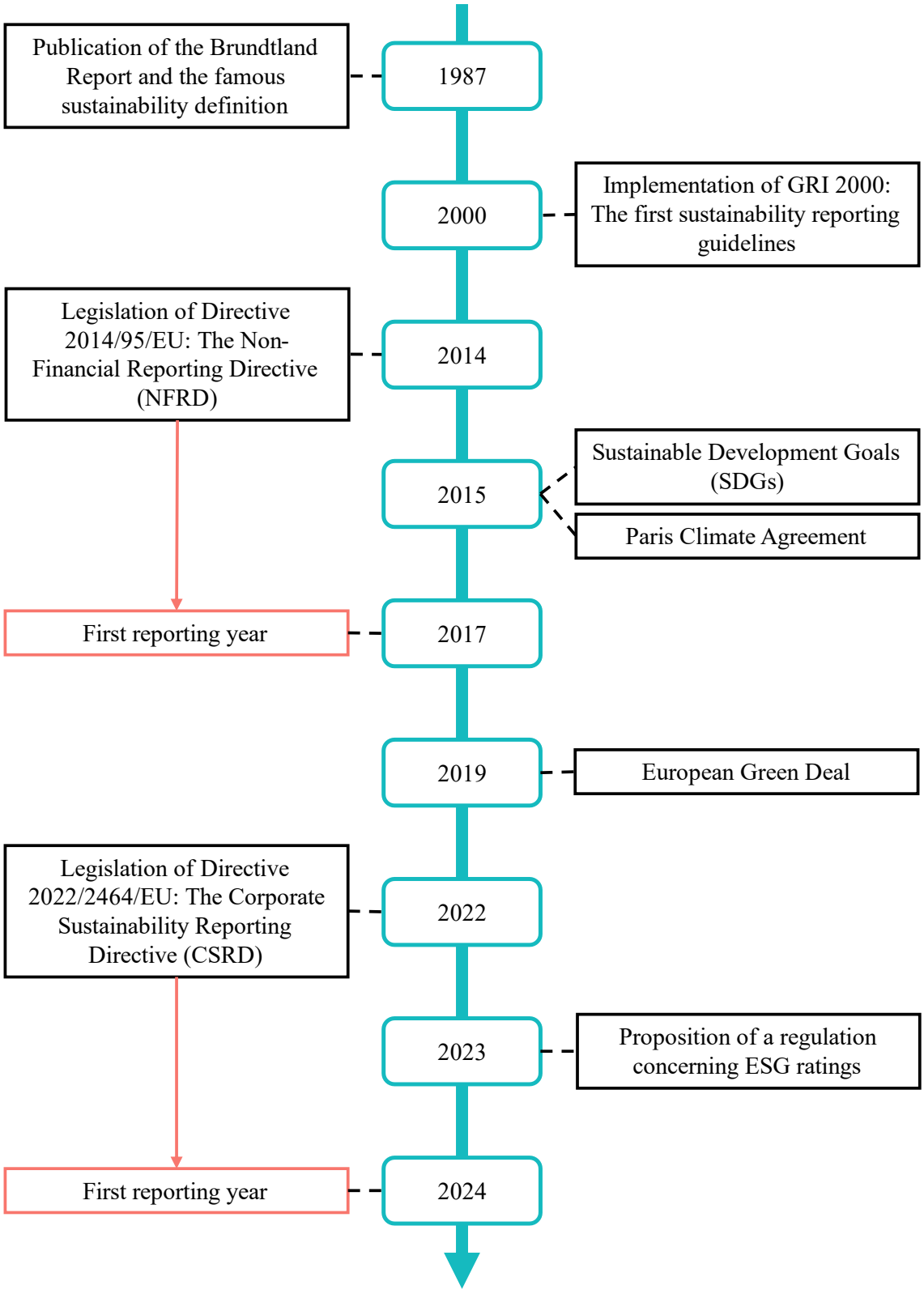


Figure 4: Timeline of the sustainability milestones

Other Sustainability Efforts and Long-Term Goals

SDGs – The Sustainable Development Goals

In 2015, the so-called 2030 Agenda for Sustainable Development was approved by the United Nations (UN). The Sustainable Development Goals, or SDGs, are at the centre of this agenda. There are a total of 17 main goals and 169 targets or subgoals that are concerned with topics such as poverty, health, education, equality, or climate. The aim of the SDGs is to create "peace and prosperity for people and the planet, now and into the future" and thus promote socially, economically, and economically sustainable development. Each year, an SDG Progress Report is developed in order to track the progress that was made. The Sustainable Development Goals (SDGs) are to be reached by all countries until 2030 (United Nations, 2023).

The Paris Agreement

On 12 December 2015, the Paris Agreement was adopted at the UN Climate Change Conference (COP21), and later entered into force on 4 November 2016. It is a legally binding international agreement that concerns 196 parties and aims at limiting global warming. More concretely, the objective is to keep "the increase in the global average temperature to well below 2 °C above pre-industrial levels" (United Nations, n.d.) and to continue the effort to limit it to 1,5°C. The Paris Agreement is the first legally binding agreement that aims at combating climate change and is bringing all nations together (United Nations, n.d.).

The European Green Deal

The European Green Deal was introduced in December 2019 and is a growth strategy that aims to reduce emissions and create jobs at the same time (European Commission, 2019). The primary goal of the European Green Deal is for Europe to become the first climate-neutral continent by 2050. Furthermore, at least 55 % less net greenhouse gas emissions should be emitted by 2030 compared to 1990, and three billion trees shall be planted until 2030. Generally, it aims to protect human life, as well as animals and biodiversity by reducing pollution (European Commission, 2024).

The EFRS

Table 7: Overview of the twelve ESRS

Group	Number	Subject
Cross-cutting	ESRS 1	General Requirements
Cross-cutting	ESRS 2	General Disclosures
Environment	ESRS E1	Climate
Environment	ESRS E2	Pollution
Environment	ESRS E3	Water and marine resources
Environment	ESRS E4	Biodiversity and ecosystems
Environment	ESRS E5	Resource use and circular economy
Social	ESRS S1	Own workforce
Social	ESRS S2	Workers in the value chain
Social	ESRS S3	Affected communities
Social	ESRS S4	Consumers and end users
Governance	ESRS G1	Business Conduct

Based on Press Corner of the European Commission (2023).

Appendix 2: Survey Experiment

English

Preface

Dear participant,

The following survey is being conducted as part of my master thesis research at Católica Lisbon School of Business and Economics.

The study aims to research your attitude towards Electric Cars, Sustainability and Auditing.

The survey takes approximately seven minutes to complete. All responses are anonymous and will be treated confidentially. The data will be used for academic research purposes only.

If you have any questions or feedback regarding this survey, you can contact me by email:
s-jkeck@ucp.pt

Thank you for your time and for becoming a participant in this project.

By pressing *next* you agree with how the data is going to be treated for this project.

Demographics

How old are you?

- ○ Under 18
- ○ 18 - 24
- ○ 25 - 34
- ○ 35 - 44
- ○ 45 - 54
- ○ 55 - 64
- ○ 65 - 74
- ○ 75 - 84
- ○ 85 or older

What is your gender?

What is your nationality?

What is your current country of residence?

What is your highest completed degree?

- ○ None
- ○ High school
- ○ Apprenticeship
- ○ Bachelor's degree
- ○ Master's degree
- ○ PhD / Doctorate

What is your current employment status?

- ○ Working full-time
- ○ Working part-time
- ○ Housewife/-husband or non-working parent
- ○ Pupil or student
- ○ Umemployed or looking for work
- ○ Retired
- ○ Other

Consumer Characteristics

Do you own a car?

- ○ Yes
- ○ No

Is the car you own fully electric?

- ○ Yes
- ○ No

Please rate the level of likelihood on a scale of 1 to 5, where 1 stands for "extremely unlikely" and 5 stands for "extremely likely".

	1 - Extremely unlikely	2	3	4	5 - Extremely likely
How likely is it that you will buy a car (new or second-hand) in the next few years?	○	○	○	○	○

Attitude Scales

Next, we will ask you to rate your beliefs about three topics: Electric Cars, Environmental, Social and Governance Reports (ESG Reports), and Auditing Practices.

Please rate the following statements on a scale of 1 to 5, where 1 means "strongly disagree" and 5 means "strongly agree."

Electric Cars or rather Battery Electric Vehicles (BEVs) are purely electric vehicles that are powered by rechargeable batteries. The cars are intended to improve the sustainability of mobility and provide an alternative to traditional combustion engines.

	1 - Strongly disagree	2	3	4	5 - Strongly agree
I am well informed about Electric Cars.	○	○	○	○	○
I think Electric Cars are important.	○	○	○	○	○
I think Electric Cars are a good thing.	○	○	○	○	○
In the future, it is likely for me to buy an Electric Car.	○	○	○	○	○
I trust the Electric Car Business.	○	○	○	○	○

Environmental, Social and Governance Reports (ESG Reports) give the reader an insight into the company's sustainability performance and its commitment to responsible business practices.

	1 - Strongly disagree	2	3	4	5 - Strongly agree
I am well informed about Environmental, Social and Governance Reports (ESG Reports).	○	○	○	○	○
I think Environmental, Social and Governance Reports (ESG Reports) are important.	○	○	○	○	○
I think Environmental, Social and Governance Reports (ESG Reports) are a good thing.	○	○	○	○	○
In the future, it is likely for me to become more aware of Environmental, Social and Governance Reports (ESG Reports).	○	○	○	○	○
I trust the intentions regarding Environmental, Social and Governance Reports (ESG Reports).	○	○	○	○	○

An audit is an examination of a company's financial documents or processes, for example. It provides the reader with information on whether the published data reflects the actual situation of a company.

	1 - Strongly disagree	2	3	4	5 - Strongly agree
I am well informed about Auditing Practices.	○	○	○	○	○
I think Auditing is important.	○	○	○	○	○
I think Auditing is a good thing.	○	○	○	○	○
In the future it is likely for me to become more aware of Auditing.	○	○	○	○	○
I trust in Auditing Practices.	○	○	○	○	○

Knowledge Check ESG

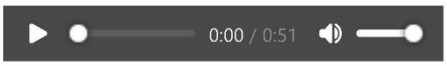
Based on your knowledge, what topics do you think are part of an Environmental, Social and Governance Report (ESG Report)? It is normal not to know exactly what is included in an Environmental, Social and Governance Report (ESG Report), many people do not know. Please be as honest as possible and select only the options that you are sure belong in an Environmental, Social and Governance Report (ESG Report):

- ☐ Risks and Opportunities
- ☐ Compliance topics
- ☐ Information regarding the board members
- ☐ Individual employee performance evaluations
- ☐ Balance sheet
- ☐ Community engagement
- ☐ Waste management
- ☐ Revenue forecasts
- ☐ Disclosure of quantitative goals
- ☐ Technical specifications of products and services

Scenarios - Description

The remaining of this survey is very short. You will see a description of an activity of a fictitious company called E-Car – a **large European manufacturer of Electric Cars**. You will rate a set of **8 statements** based on this description. It is fundamental that you pay close attention to the description you are about to read, so you can only skip the description after 30 seconds. You also have the option to listen to the description by clicking on the *play* button on the next page.

Scenario 1



On 22 October 2014 the **Non-Financial Reporting Directive (NFRD)** was legislated. Thus, since 1 January 2017 large public-interest entities are **obligated** to report on information regarding environmental, social and employee matters, human rights, anti-corruption, and bribery.

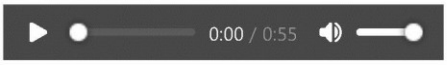
The **European Commission published guidelines** for the reporting of this non-financial information. These guidelines are **non-binding** and companies are free to use other frameworks for their reporting. While audit firms need to check that the non-financial information is provided, the **information itself is not audited** or checked by an outside party.

E-Car is among the companies that must report on non-financial information and has decided to do that in the form of an Environmental, Social and Governance Report (ESG Report).

The report, that has been uploaded to the company's website and is publicly available, has **not been audited or checked for accuracy by an outside party**.

- ○ I listened to the audio
- ○ I read the description
- ○ I listened to the audio and read the description

Scenario 2



On 14 December 2022 the **Corporate Sustainability Reporting Directive (CSRD)** was legislated. Thus, starting 1 January 2024 large public-interest entities are **obligated** to publish information on the sustainability of their business activities.

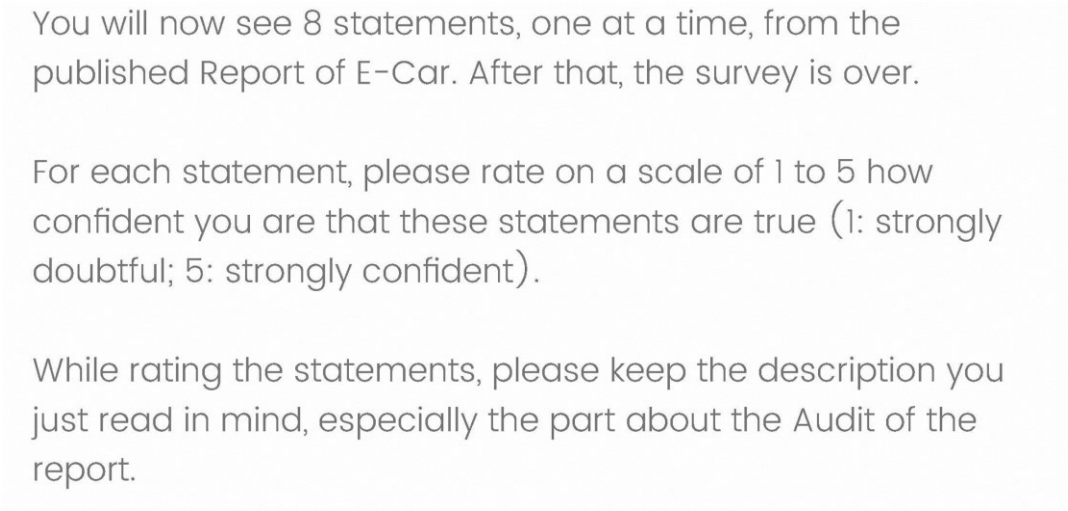
The reports **must be prepared based on the European Sustainability Reporting Standards (ESRS)**. There are a total of 12 standards that are concerned with Environmental, Social and Governance topics (ESG). Just like financial reports, these reports are **audited by an external auditor**. The audit ensures that the information provided in the reports gives a true and fair view of the company's ESG situation.

E-Car is among the companies that must publish a report based on the European Sustainability Reporting Standards (ESRS).

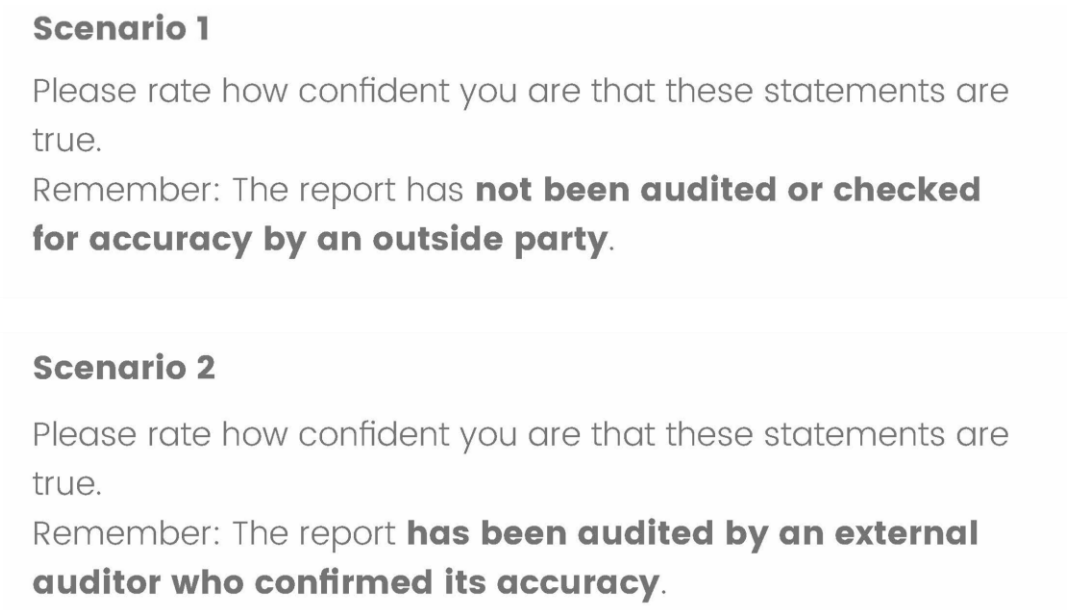
The report, that has been uploaded to the company's website and is publicly available, **has been audited by an external auditor upon publication**. The auditor has **confirmed that the report provides a true and fair view** of the company's Environmental, Social and Governance situation.

- ○ I listened to the audio
- ○ I read the description
- ○ I listened to the audio and read the description

30



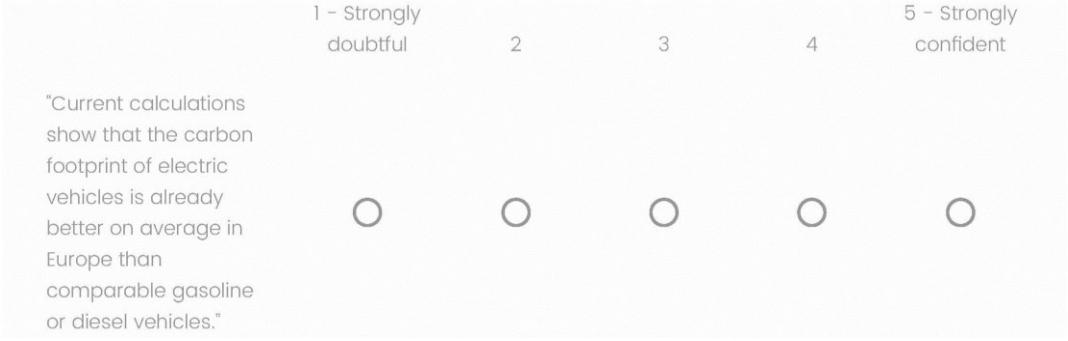
The respondents were shown the same eight statements in a random order. However, depending on the scenario the info shown above each statement differed. For the sake of clarity and space, the info is only shown once, and the questions are displayed without repeating the info text each time.



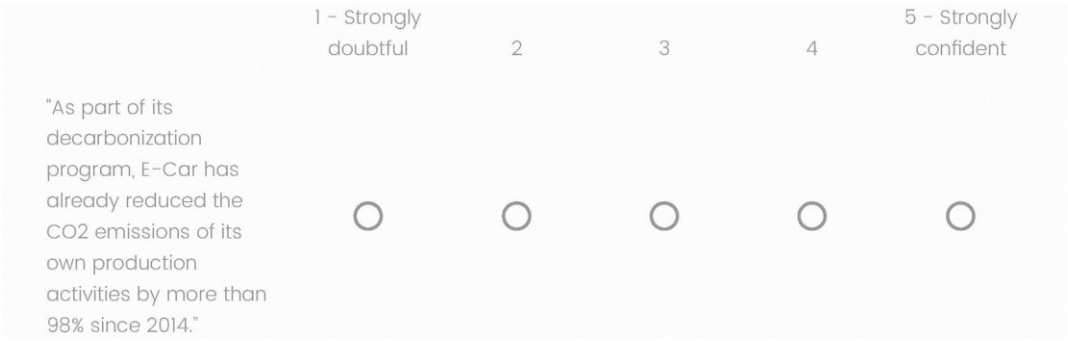
Wages:

Training:

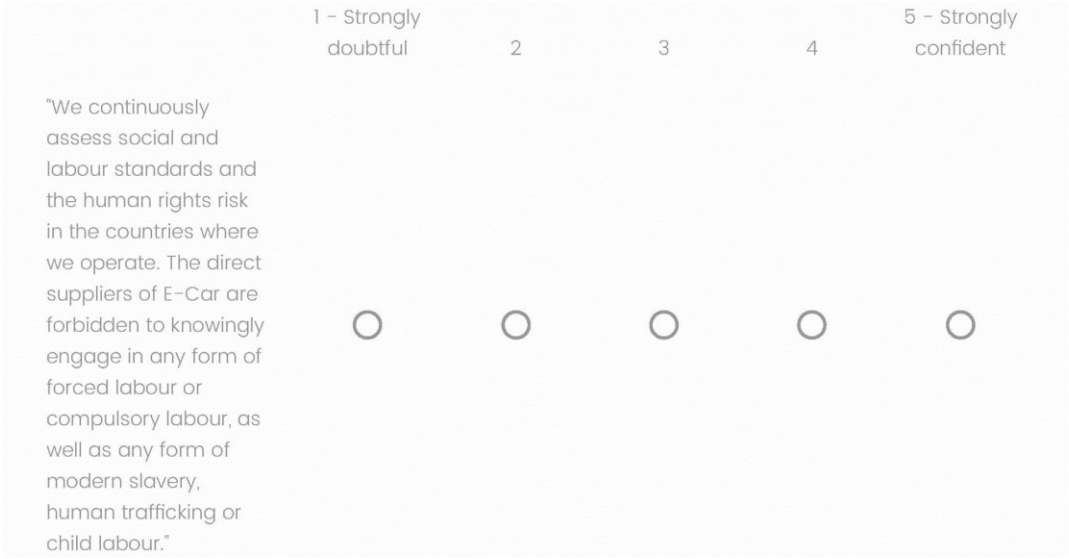
CO2_Footprint:



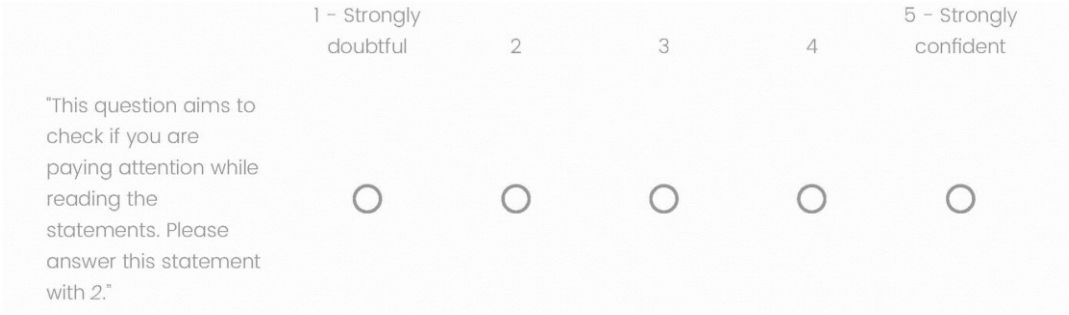
Decarbonisation:



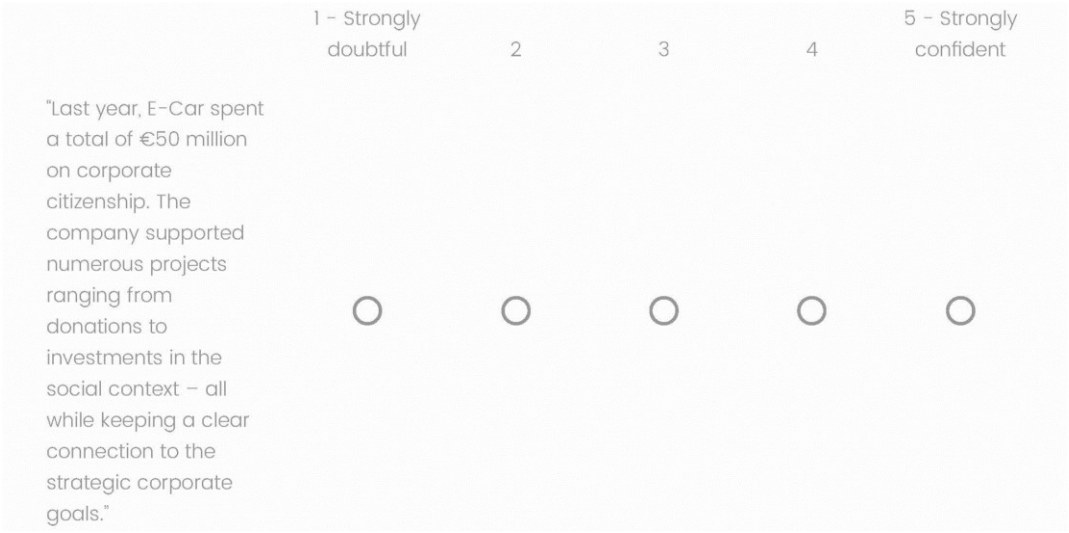
Human_Rights:



Attention_Check:



Corporate_Citizen:



Sus_Rating:


1 - Strongly doubtful
2
3
4
5 - Strongly confident
"In the past year, E-Car achieved an 88,5% degree of fulfilment in the Sustainability Rating, meaning that 88,5% of direct suppliers received the grade "A" in the Sustainability Rating. By 2030, E-car aims to increase this value to 90%."

Appendix 3: Survey Experiment Results

Table 8: Frequencies for Age

Age	Frequency	Percent	Cumulative Percent
18-24	39	26.00	26.00
25-34	58	38.67	64.67
35-44	14	9.33	74.00
45-54	14	9.33	83.33
55-64	22	14.67	98.00
65-74	3	2.00	100.00

Table 9: Frequencies for Gender

Gender	Frequency	Percent	Cumulative Percent
Female	72	48.00	48.00
Male	77	51.33	99.33
Prefer not to say	1	0.67	100.00

Table 10: Frequencies for Nationality

Nationality	Frequency	Percent	Cumulative Percent
Austria	1	0.67	0.67
Belgium	1	0.67	1.33
Brazil	3	2.00	3.33
France	1	0.67	4.00
Germany	117	78.00	82.00
Guatemala	1	0.67	82.67
India	1	0.67	83.33
Italy	1	0.67	84.00
Luxembourg	1	0.67	84.67
Malaysia	1	0.67	85.33
Mexico	1	0.67	86.00
Morocco	2	1.33	87.33
Netherlands	1	0.67	88.00
Norway	1	0.67	88.67
Poland	1	0.67	89.33
Portugal	13	8.67	98.00
Russian Federation	1	0.67	98.67
Switzerland	1	0.67	99.33
Turkey	1	0.67	100.00

Table 11: Frequencies for Residence

Residence	Frequency	Percent	Cumulative Percent
Austria	2	1.33	1.33
Czech Republic	1	0.67	2.00
France	1	0.67	2.67
Germany	111	74.00	76.67
Ireland (Republic)	1	0.67	77.33
Italy	3	2.00	79.33
Luxembourg	3	2.00	81.33
Malaysia	1	0.67	82.00
Netherlands	1	0.67	82.67
Portugal	23	15.33	98.00
Spain	2	1.33	99.33
Switzerland	1	0.67	100.00

Table 12: Frequencies for Education

Education	Frequency	Percent	Cumulative Percent
Apprenticeship	20	13.33	13.33
Bachelor's degree	63	42.00	55.33
High school	16	10.67	66.00
Master's degree	47	31.33	97.33
PhD/Doctorate	4	2.67	100.00

Table 13: Frequencies for Employment_Status

Employment_Status	Frequency	Percent	Cumulative Percent
Other	1	0.67	0.67
Pupil or student	39	26.00	26.67
Retired	4	2.67	29.33
Unemployed or looking for work	6	4.00	33.33
Working full-time	74	49.33	82.67
Working part-time	26	17.33	100.00

Table 14: Frequencies for Car_Ownership

Car_Ownership	Frequency	Percent	Cumulative Percent
No	49	32.67	32.67
Yes	101	67.33	100.00

Table 15: Frequencies for BEV_Ownership

BEV_Ownership	Frequency	Percent	Cumulative Percent
No	94	62.67	93.07
Yes	7	4.67	100.00

Table 16: Frequencies for Car_Purchase

Car_Purchase	Frequency	Percent	Cumulative Percent
1-Extremely unlikely	32	21.33	21.33
2-Somewhat unlikely	28	18.67	40.00
3-Neither likely nor unlikely	27	18.00	58.00
4-Somewhat likely	24	16.00	74.00
5-Extremely likely	39	26.00	100.00

Table 17: Frequencies for Knowledge_Score

Knowledge_Score	Frequency	Percent	Cumulative Percent
2	2	1.33	1.33
3	4	2.67	4.00
4	14	9.33	13.33
5	34	22.67	36.00
6	21	14.00	50.00
7	41	27.33	77.33
8	21	14.00	91.33
9	10	6.67	98.00
10	3	2.00	100.00

Table 18: Frequencies for BEV_Informed

BEV_Informed	Frequency	Percent	Cumulative Percent
1-Strongly disagree	6	4.00	4.00
2-Somewhat disagree	20	13.33	17.33
3-Neither agree nor disagree	42	28.00	45.33
4-Somewhat agree	58	38.67	84.00
5-Strongly agree	24	16.00	100.00

Table 19: Frequencies for ESG_Informed

ESG_Informed	Frequency	Percent	Cumulative Percent
1-Strongly disagree	23	15.33	15.33
2-Somewhat disagree	42	28.00	43.33
3-Neither agree nor disagree	38	25.33	68.67
4-Somewhat agree	32	21.33	90.00
5-Strongly agree	15	10.00	100.00

Table 20: Frequencies for Audit_Informed

Audit_Informed	Frequency	Percent	Cumulative Percent
1-Strongly disagree	19	12.67	12.67
2-Somewhat disagree	40	26.67	39.33
3-Neither agree nor disagree	38	25.33	64.67
4-Somewhat agree	36	24.00	88.67
5-Strongly agree	17	11.33	100.00

Appendix 4: Exploratory Factor Analysis

Before starting with the analysis, a Kaiser-Meyer-Olkin, as well as a Bartlett's Test were carried out, which both are showing the suitability of the data for structure detection. The Kaiser-Meyer-Olkin Test indicates the proportion of variance in the variables that might be caused by underlying factors. If the values are high, then a factor analysis can be useful. The Measurement System Analysis (MSA) showed an overall value of $MSA = 0.76$, with all values being between 0.7 and 0.81. As these values are high, a factor analysis may be useful. The Bartlett's Test, which tests if the variables are unrelated and therefore not suitable for structure detection, had a very small significance level of $p < 0.001$ and thus also indicated the usefulness of a factor analysis for this data set.

Looking at the factors in a Scree Plot, it clearly showed that there should not be more than two factors. The further analysis suggested transforming the variables into two factors only, with one factor being about the payment of fair wages, and the other factor being the aggregated other six variables, as shown in the table below. The uniqueness is the variance that is unique to that variable and not shared with others. The greater the uniqueness, the lower the relevance in the factor model.

Table 21: Results of the Exploratory Factor Analysis

	Factor 1	**Factor 2**	**Uniqueness**
Sus_Rating	0.83		0.37
Training	0.59		0.68
CO2_Footprint	0.49		0.80
Human_Rights	0.48		0.67
Decarbonisation	0.47		0.76
Corporate_Citizen	0.32		0.79
Wages		1.09	-0.04

Appendix 5: Interaction Plots

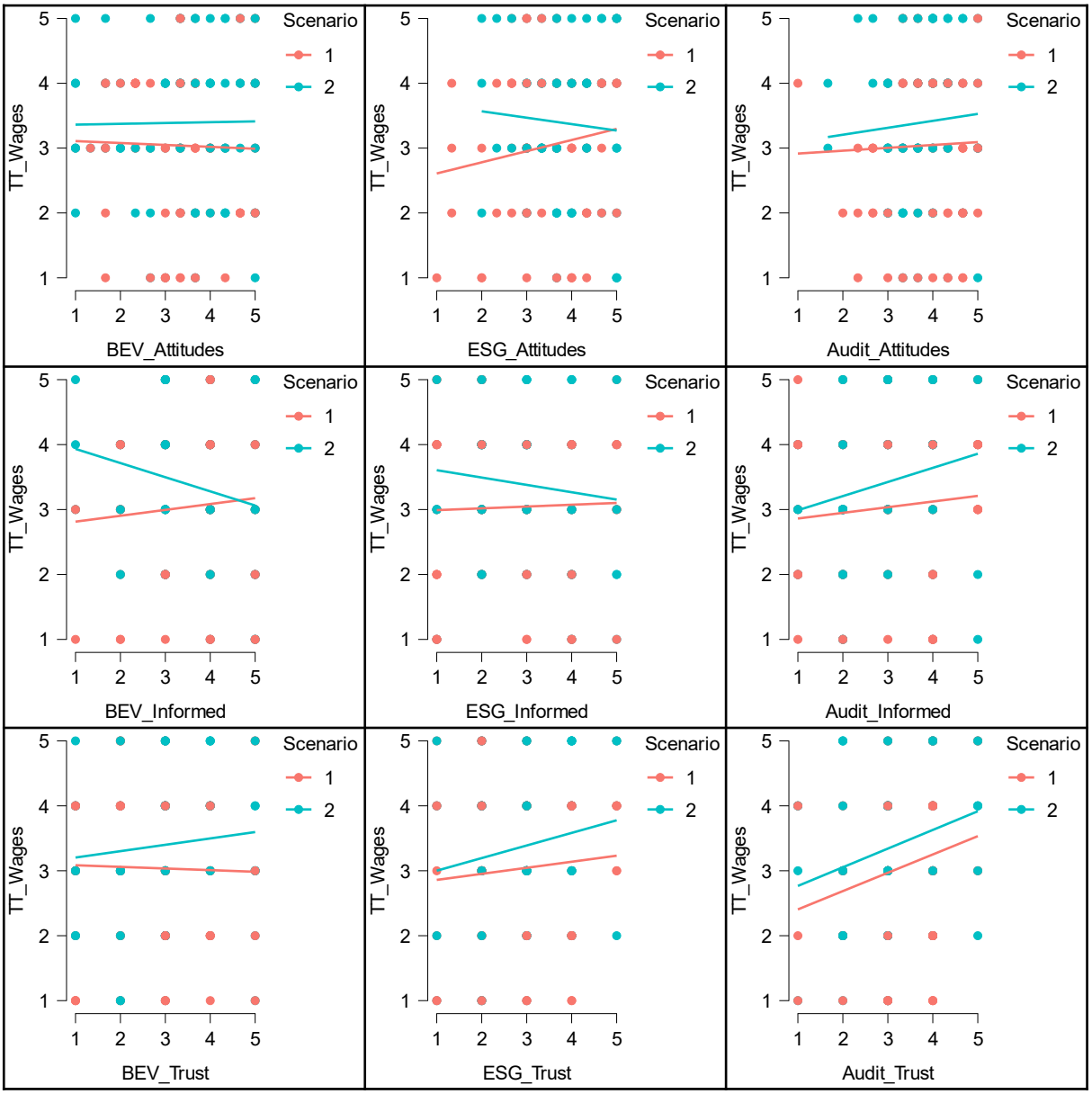


Figure 5: Interaction Plots for Wages

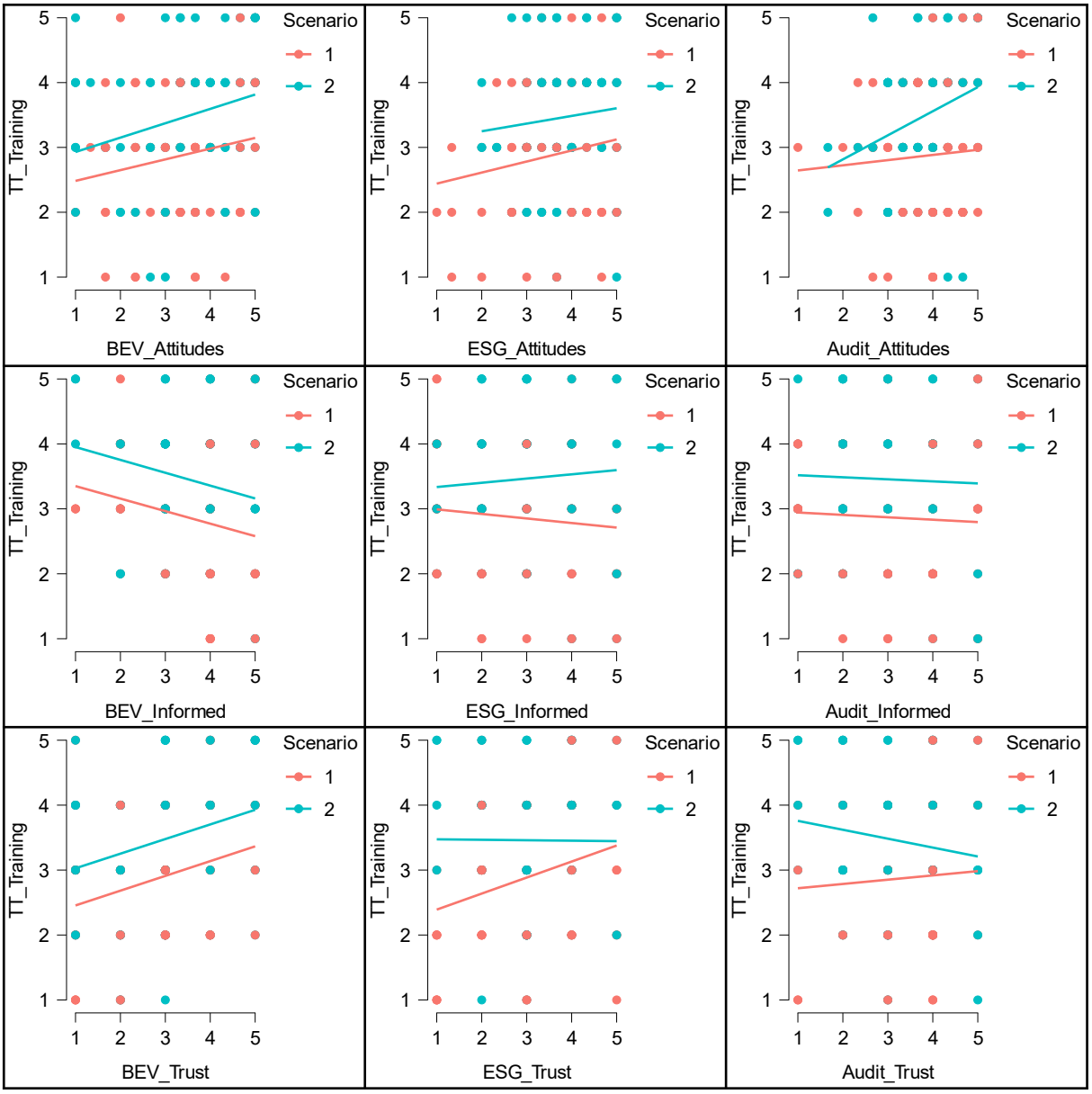


Figure 6: Interaction Plots for Training

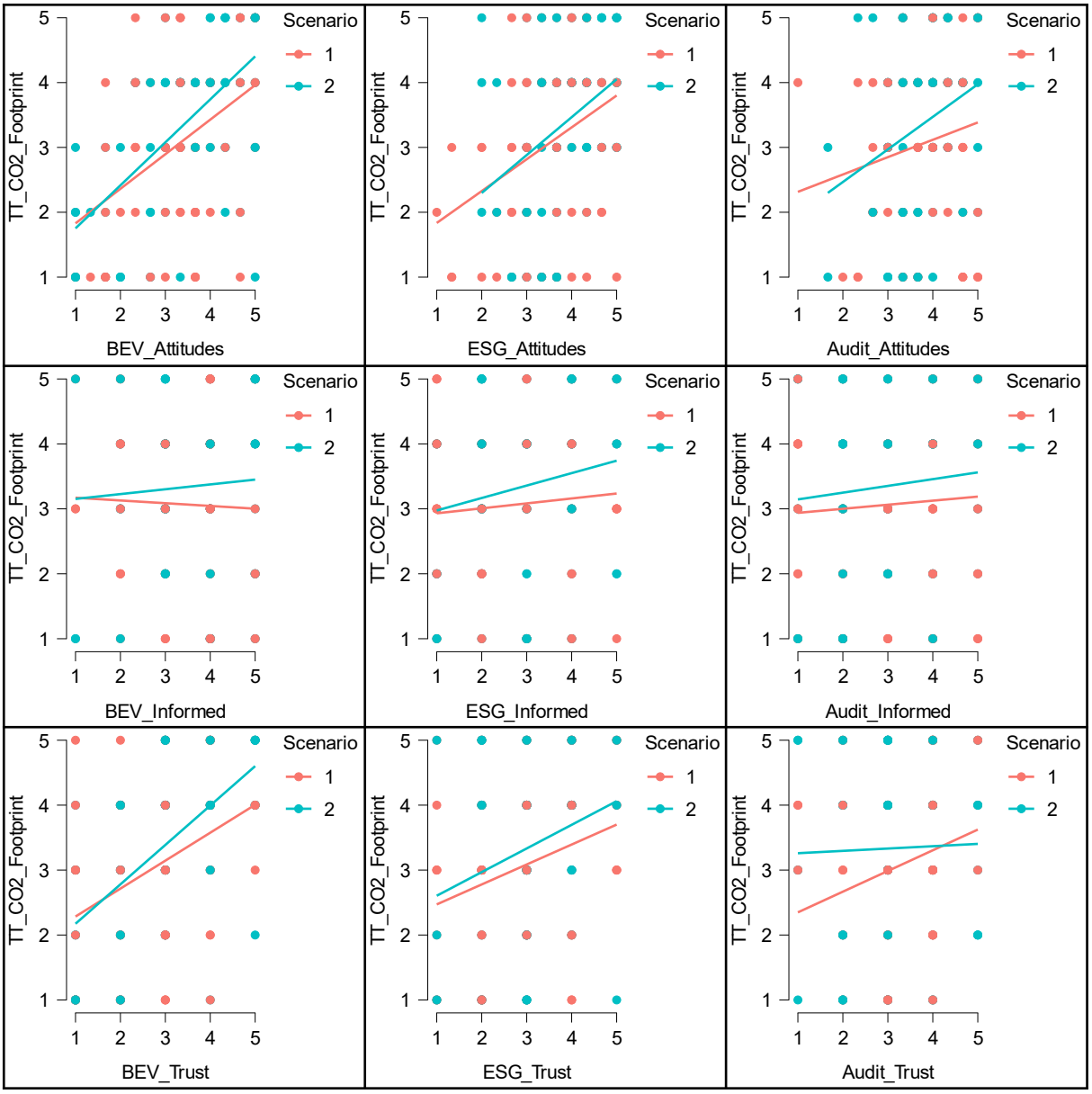


Figure 7: Interaction Plots for CO2_Footprint

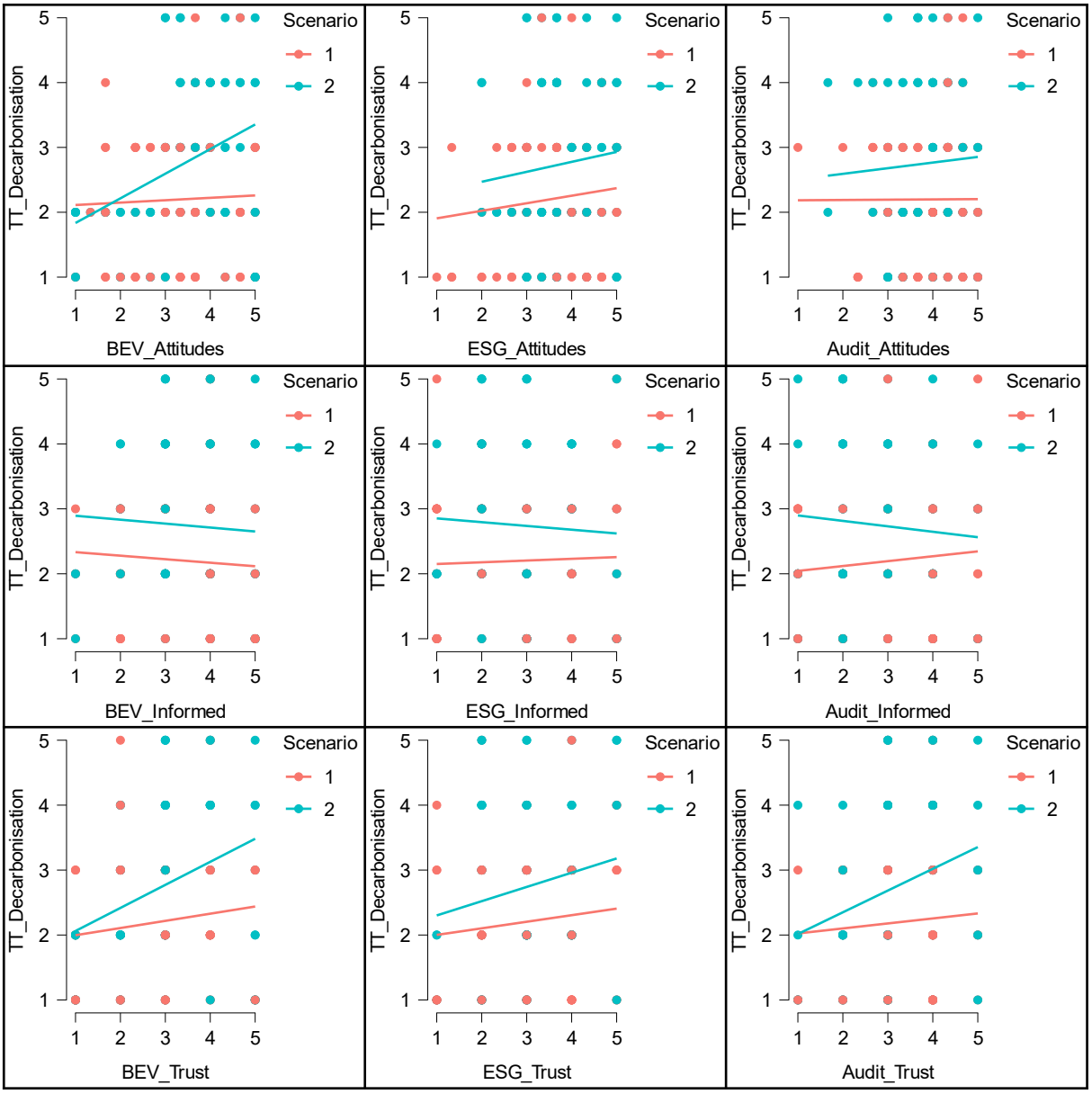


Figure 8: Interaction Plots for Decarbonisation

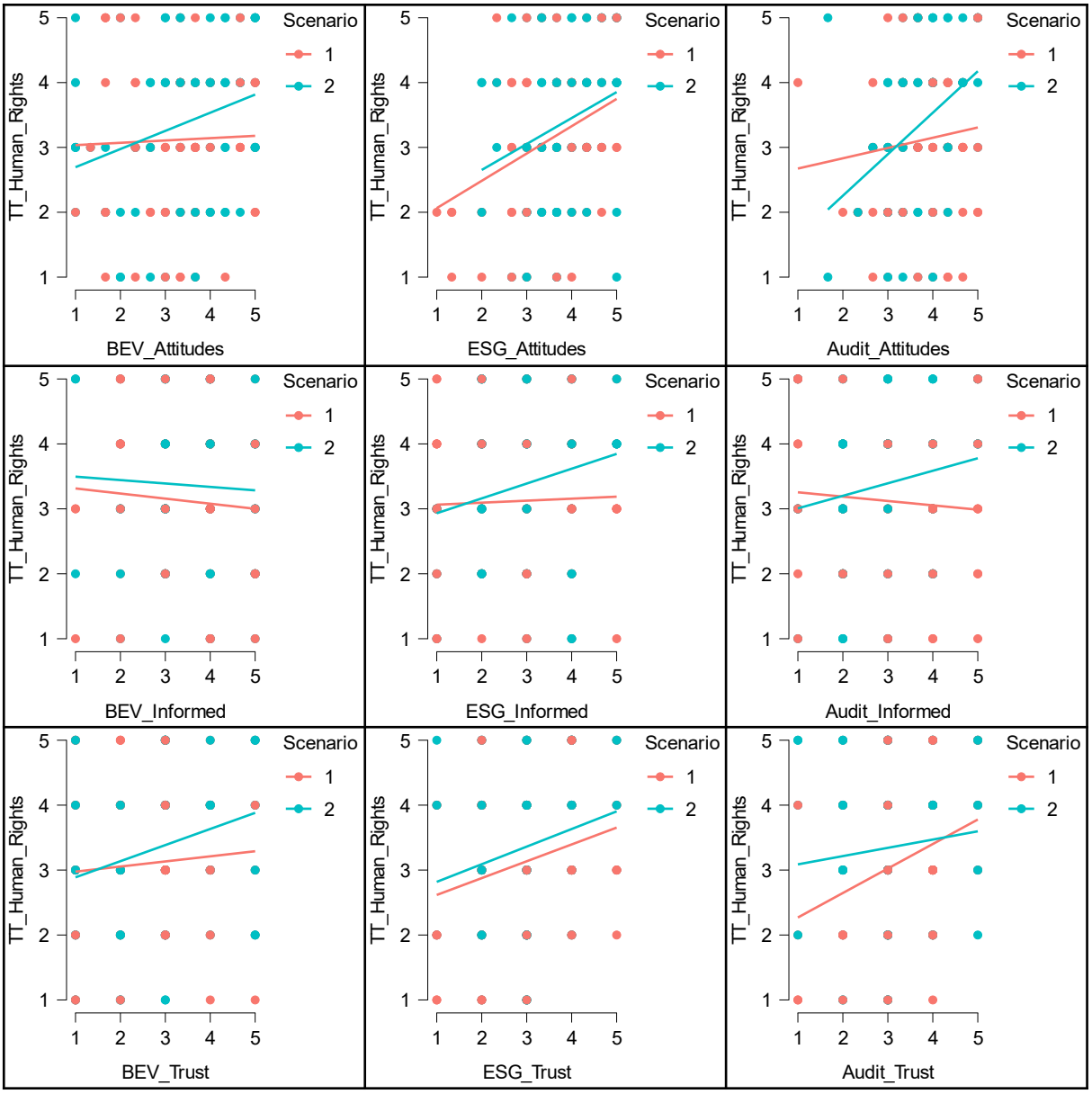


Figure 9: Interaction Plots for Human_Rights

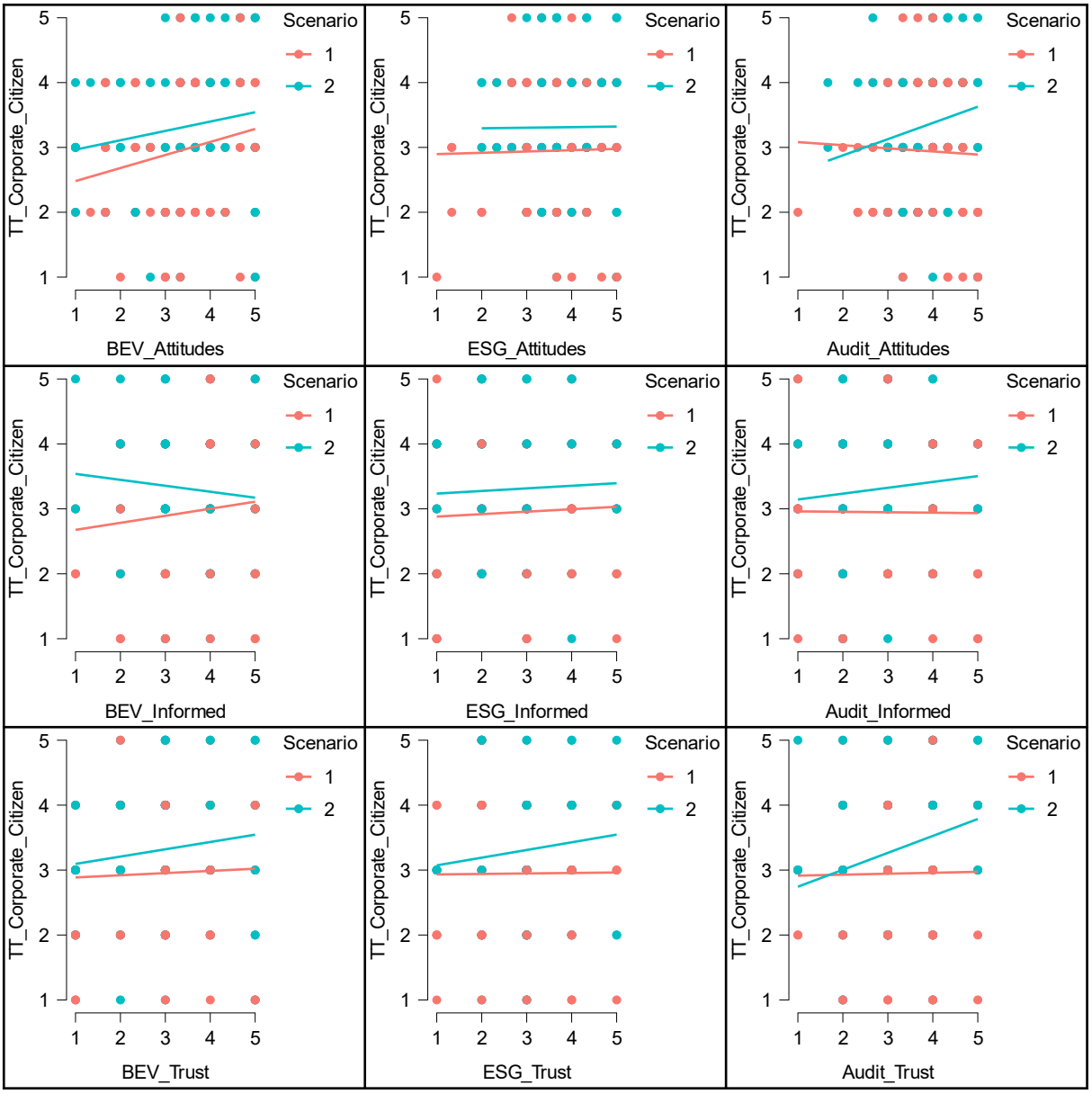


Figure 10: Interaction Plots for Corporate_Citizen

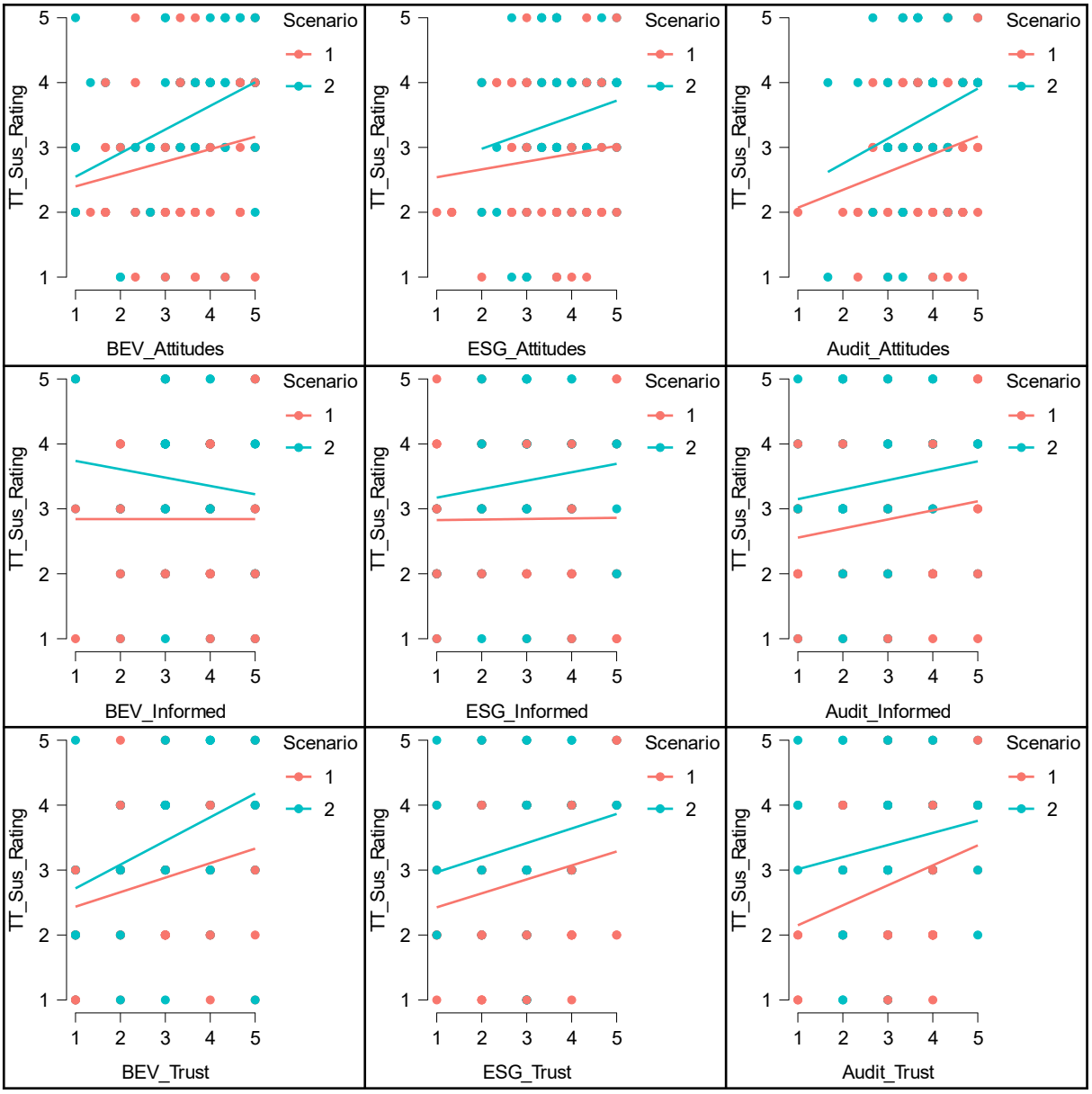


Figure 11: Interaction Plots for Sus_Rating