Taught Master's Level Reports and Essays

A REPORT COMPARING THE ELECTRIC VEHICLE STRATEGIES OF TESLA AND FORD

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Climate Change and Electric Vehicles

Responsibility can be understood in business ethics through moral and legal lenses. The collective responsibility for climate change both morally and legally is a global problem that cannot be easily undertaken by any one entity (Hormio, 2023). Introducing sustainability as a vital goal for business ethics serves an important role in addressing climate change and its impacts (Crane et al., 2019, p. 34). In the 1990s John Elkington coined the term “Triple Bottom Line” to describe a framework which considered social and environmental performance as well as financial (Slaper et al., 2011). Otherwise known as the three P’s (People, Planet, Profit), the social and environmental aspects of business can be balanced with profit and economic growth to generate sustainability (Figure 1).

Figure 1: The Interconnection of the Triple Bottom Line Concepts

Source: Anderson (2025)

Global efforts such as the Paris Agreement and COP26 have initiated and continuously reemphasized goals to monitor the global average temperature and specifically stress

the need to limit global warming to 1.5 degrees Celsius (UNFCCC, 2025). Governments and organizations across the world have managed their commitments to prevent the severe and devastating environmental impacts of inaction (UKCOP, n.d.). The transition to electric vehicles can be seen as a global response to climate change by agents who contribute to the bulk of these carbon emissions causing the rise in global average temperature.

Currently Ford and Tesla occupy spots two and three in a 2024 ranking by ‘Lead the Charge’ considering automobile manufacturers’ efforts to reduce carbon emissions and environmental impacts (Figure 2). Tesla and Ford are key sustainability leaders in a larger call to action to clean up supply chains. While Tesla has been known for years for its sole production of fully electric vehicles, Ford’s electric vehicle line is a more recent subsection of its larger petrol-based automobile manufacturing. These efforts are a step in the right direction, but it is important to consider the wider challenges of electric vehicle production and the environmental risks that still exist in the manufacturing process (Appendix 1).

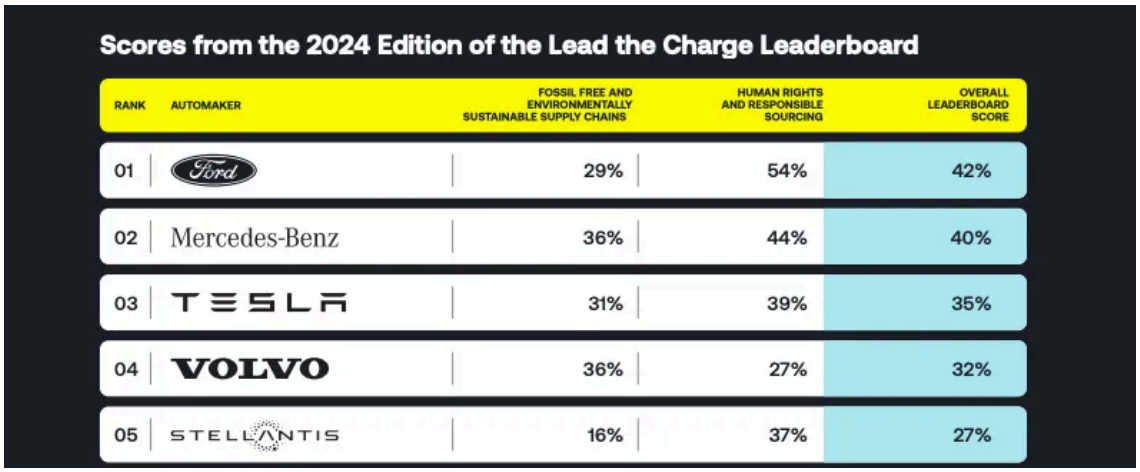


Figure 2: Lead the Charge Leaderboard Top 5 Rankings

Source: Hawkins (2024)

Circular Economy

While battery powered electric vehicles produce less greenhouse gas emissions than traditional petrol reliant vehicles, a closer look must be taken at the process to manufacture these batteries and source the necessary raw materials to evaluate risk. As electric vehicle demand increases, so does the demand for the critical raw materials, such as cobalt and lithium, that these electric vehicle batteries are dependent on. Concerns arise regarding material reserves and the environmental implications of the carbon footprint of the global logistics required for mapping, mining, and extraction (Lehtimäki, 2024). Circularity can be promoted as an alternative to alleviate high pressure on raw material extraction. The idea of the circular economy focuses on the reuse and recycling of materials, the reduction of non-renewable resources and promotion of renewable energy (SEAS, 2020). In the automobile sector, this framework looks to improve the circularity of these electric vehicle batteries (Figure 3).

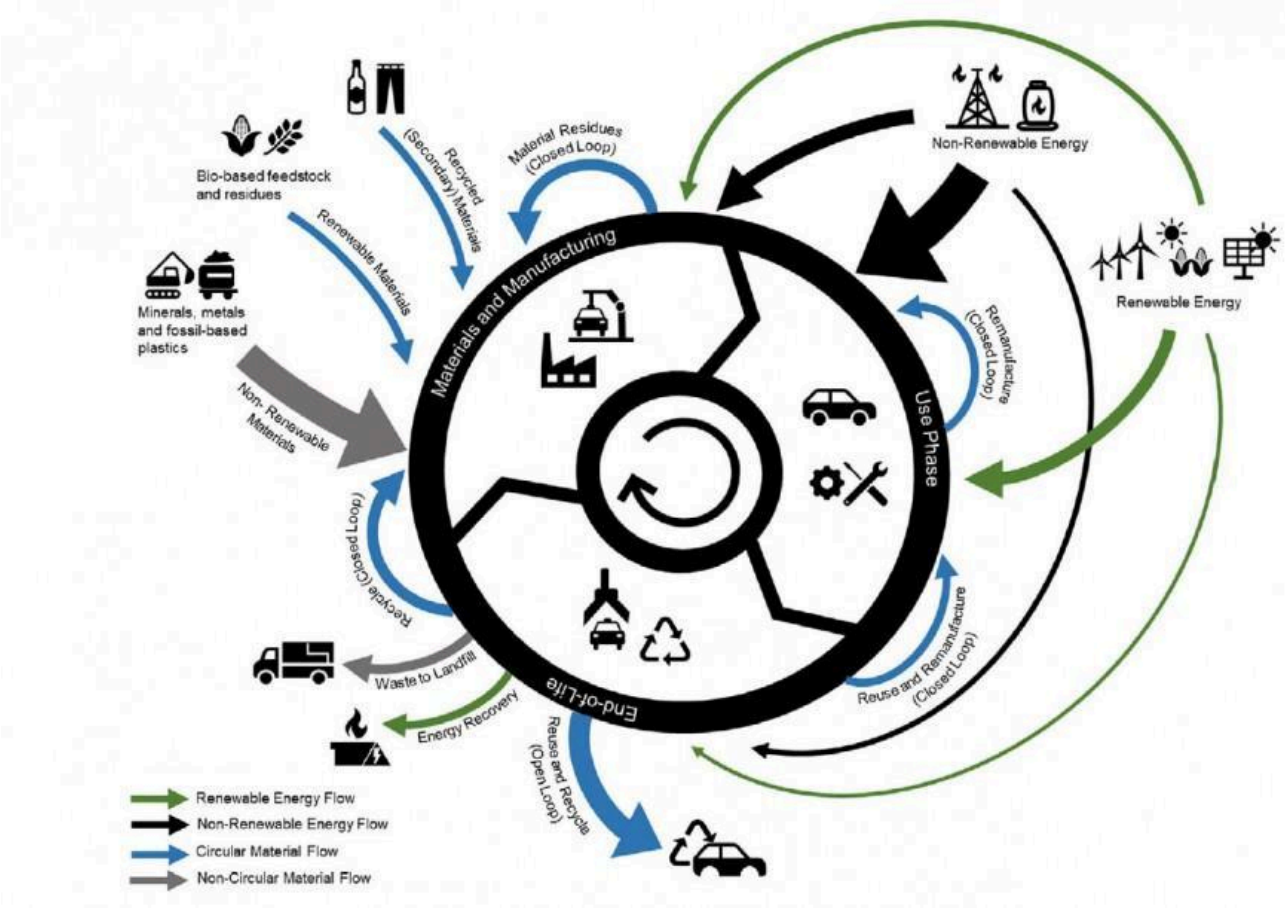


Figure 3: A Circular Economy Framework for Automobiles

Source: SEAS (2020)

Both Ford and Tesla have implemented circular approaches to their battery manufacturing. Ford has partnered with Redwood Materials to re-use batteries from electric waste attempting a closed loop for battery recycling and a domestic supply for critical battery materials (Redwood Materials, 2021). By pursuing a contracted relationship with a third-party organization Ford is able to push circularity despite their lack of resources for internal recycling processes and can lean into supply chain sustainability. However, potential shortcomings exist in the lack of control that exists with a contracted relationship and the required amount of coordination to fully implement circularity.

Tesla, on the other hand, has internal programs and facilities, such as their recycling center in Nevada, that recycle old Tesla batteries and handle other electronic recycling incentives (Tesla, 2025). This is due to the duration Tesla has been producing electric vehicles and their ability to create and facilitate internal processes. While Tesla can promote closed loop integration due to their resources available in comparison to Ford, there are potential limitations that arise from the future ability to cope with a rapidly rising demand (Appendix 2.2). By participating in a circularity of battery recycling both Ford and Tesla can avoid certain ethical concerns that arise with the mining and extraction of critical primary raw materials.

Supply Chain Human Rights

Sustainability cannot solely consider the environmental impacts of electric vehicle production related to climate change but must also examine the social and economic effects of the supply chain within the relevant context (Crane et al., 2019, pg. 31). Over 70% of the global mining of cobalt for electric vehicle batteries occurs in the Democratic Republic of the Congo (Hodal, 2019). While the majority of cobalt in the DRC is mined legally and safely at regulated sites, artisanal and small-scale mining (ASM) is an informal mining practice that is legally permitted and makes up around 15-30% of the

cobalt sourced from the DRC (Save the Children, 2024). ASM is typically unregulated and can promote child labor as well as unsafe mining conditions leading to events such as a recent bridge collapse near an ASM site (Chibelushi et al., 2025). Child labor is difficult to trace and prevalent in ASM as poverty and lack of access to schooling pushes children into desperate situations for work. In addition, human rights challenges arise with foreign mining organizations, such as Glencore, who work with governmental parties and at times alongside militia groups to capitalize on the rapidly increasing demand for cobalt by exploiting the informal mining process (Fleming, 2018).

For companies such as Ford and Tesla, sourcing cobalt from other countries with stricter regulations comes at a high price and the limited availability will not respond to the increasing demand for raw material. The situation becomes more complex still due to the heavy reliance of the DRC's economy on cobalt mining and the inability to properly track violations. These economic and social factors of the supply chain must be considered to determine the ethics behind sourcing cobalt from the DRC and how western organizations such as Ford and Tesla play a role in improving the transparency of the supply chain.

Ethics

The lack of transparency in the supply chain creates an ethical dilemma regarding the responsibility of sourcing cobalt from the DRC. Organizations like Ford and Tesla must consider if they are directly responsible for these human rights violations occurring throughout the sourcing process, even if they claim they are not aware of them. One could argue that agents such as mining companies, like Glencore, or even the DRC government hold the responsibility for addressing these ethical concerns. However, once Ford and Tesla are made aware of these challenges, is the lack of accountability equivalent to complicity in these immoral actions themselves? Despite most of these violations occurring in small percentage of ASM, the lack of regulations and transparency make it difficult to measure the exact scale at which these issues are occurring.

Using Bentham's utilitarian consequentialism, the consequences of sourcing cobalt from the DRC can be considered in terms of how much pleasure and pain results from these actions (Bentham, 1789). Utilitarian consequentialism measures this pleasure/pain value of actions as 'utility' to support moral decision making in a process similar to an economic cost-benefit analysis (Crane et al., 97). While this can appear to be a practical measurement of morality, once monetary values are involved the process carries controversy regarding weighing the risks to human welfare against financial gain. This was demonstrated in the poorly and potentially dangerously designed petrol tank of the Ford Pinto that Ford refused to initially recall. In Ford's cost-benefit analysis the estimated cost of the recall outweighed the expected benefits. However, while Ford outweighed the risk to human life with a potential financial burden, the following lawsuits led to larger monetary payouts and the car was eventually recalled anyway (Birsch et al., 1995). When comparing the Ford Pinto to the present-day scenario in the DRC, Ford and Tesla must take care to ensure they are not assigning human life a monetary value that can be measured to maximize utility or advance financial gain. According to Bentham, utility should be measured quantitatively, and hedonic calculus provides an objective framework to comprehensively measure and compare the different courses of action in this way (Blackburn, 2018).

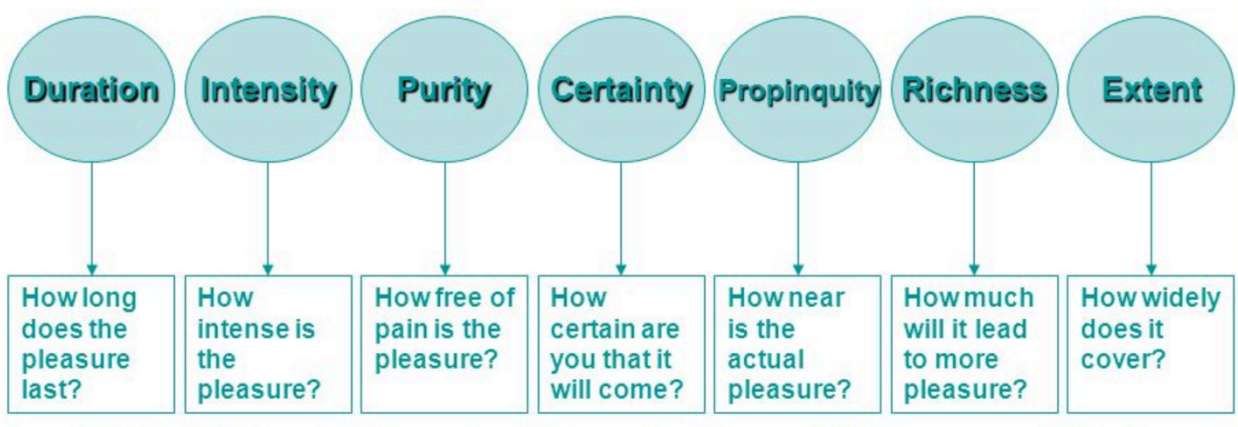


Figure 4: Hedonic Calculus Criteria

Source: Anderson (2025)

Using Bentham's utilitarian consequentialism and the objective criteria of hedonic calculus shown in Figure 4, the decision to source or not source cobalt from the DRC should be based on what provides the greatest good for the greatest number. This assessment can be reflected in overall positive and negative effects on the environment, society, and economic aspects such as employment and financial opportunities as seen in Table 1.

	UTILITARIAN CONSEQUENTIALISM ANALYSIS: Sourcing Cobalt from the DRC			
	Continue to source from the DRC		*Cease sourcing from the DRC*	
Ford/Tesla	Financial gain	Potential risk to reputation (Appendix 4)	Repaired reputation, good conscience	High demand pressure on new sourcing, higher costs
Glencore	Financial gain	Potential participation in human rights violations such as child labor (Appendix 3)		Loss of material source, potential financial downfall
EV Consumer	Good conscience from contributing towards sustainability movement		Good conscience from contributing towards sustainability movement	More expensive EV products, potentially shift away from purchasing due to high cost
ASM Miner in DRC	Financial livelihood for the unemployable due to lack of schooling and professional skills (Zvarivada, 2018)	High safety risks, hard work	No high risk career	Potentially no income, taking worse/higher risk job for income
Professional Miner in DRC	Steady financial income			Potentially no income, taking worse/higher risk job for income

Table 1: Utilitarian Consequentialism Analysis: Sourcing Cobalt from the DRC

When weighing 'pleasure' and 'pain' in this way it can be evidenced that the pain from pulling out of the DRC outweighs the controversies and potential burdens that exist for the people of the DRC by continuing to source cobalt. The risk of economic downfall from leaving the DRC combined with the positive contributions electric vehicles have towards climate change can justify the decision that continued cobalt sourcing from the DRC is ethical. However, it is the indirect responsibility of organizations like Ford and Tesla to ensure they are held accountable in the support of a sustainable and ethical supply chain (Appendix 4). While they have the influence and resources to improve regulations related to the mining process, this ethical responsibly cannot be undertaken alone and it is vital that they take advantage of partnerships to manage this.

NGO Partnerships

Partnerships with non-governmental organizations (NGO) can be beneficial in situations such as the one Ford and Tesla find themselves in. It can be difficult for organizations to achieve ethical and sustainability goals internally as they do not have the local knowledge and expertise related to the issues occurring. Ford and Tesla can be more efficient with their sustainability efforts by working with an NGO instead of training their own teams to fulfill the skillset that an NGO already possesses. This is a mutually beneficial relationship where NGOs are able to utilize the resources that come with a larger organization such as Ford and Tesla. This relationship can also increase an NGOs visibility making their advocacy more effective and can diversify their portfolio over a sole reliance on philanthropy and donors. NGOs can assist in fostering communication, inclusive environments, and supportive working conditions. This contributes greatly to sustainable development as it relates to overall supply chain and managing risk.

Ford works with “Promoting the Empowerment of Women in Copper + Cobalt Mineral Supply Chains” which works with women in the DRC in hopes that they will seize opportunities to become financially independent. To achieve this, they train the women on a range of business management topics and formalize ASM cooperatives (King, 2021). This is an excellent use of resources available to ensure a vulnerable demographic of the community receives the education and the resources to support themselves. Ford has also teamed up with LG Chem and Huayour Cobalt to launch a blockchain project to track cobalt mining (Mining Technology, 2020). This is vital as transparency is a key concern with the cobalt supply chain.

Tesla has partnered with Glencore, and both have joined the Fair Cobalt Alliance (FCA). The FCA works to improve the ASM sector across the DRC by improving working conditions and working to end child labor (Mining Technology, 2020). While Ford has taken a local approach to aid a specific population, Tesla has joined a broader effort to regulate ASM with safe and fair working conditions. These are powerful steps in the

right direction. However, it is critical that these relationships employ proper management techniques and take action to improve conditions in the DRC for these partnerships to be successful towards a sustainable and accountable supply chain.

Governance

Corporate governance focuses on key issues similarly to proper supply chain management such as transparency, risk management, and accountability. Introducing corporate governance to promote enhanced ethical decision making is a key component of business ethics to implement and support values important to both stakeholders and business success (Crane et al., 2019, p. 241). A materiality matrix shows these impacts on the organization and the stakeholders. It is vital for the messaging behind a code of ethics to be properly introduced and followed through on in action.

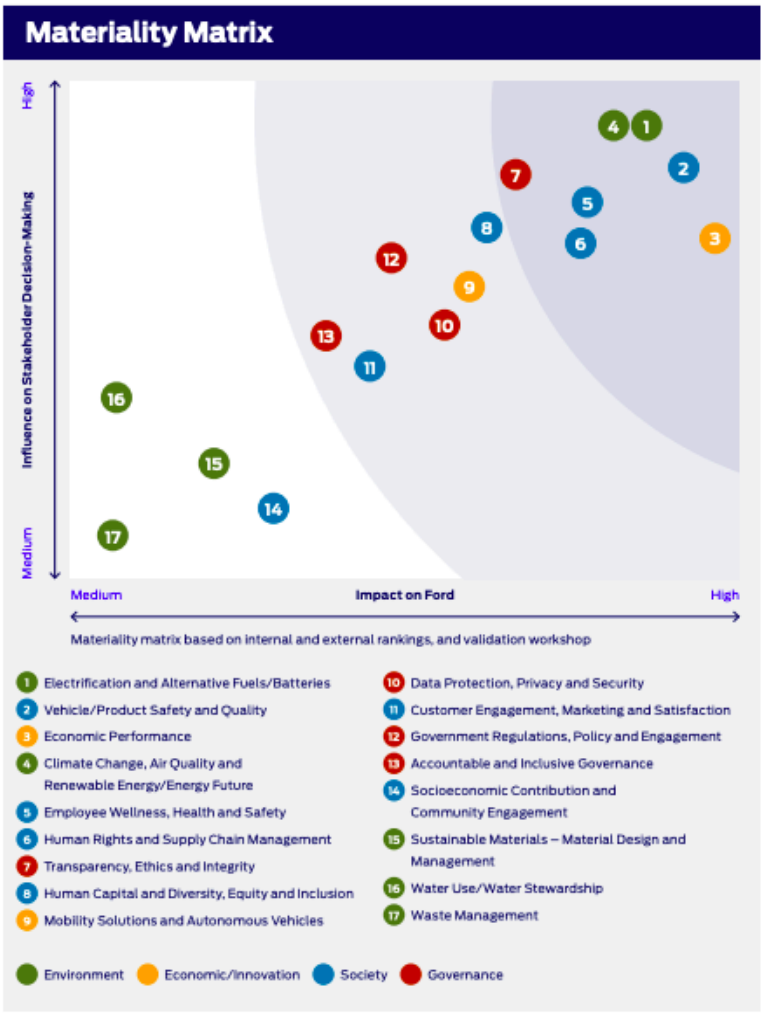


Figure 5: Ford's Materiality Matrix

Source: Ford (2022)

Certain aspects in Ford's matrix directly contradict each other in their value influences and impacts, highlighting the importance of follow through in action versus messaging. Ford claims alternative fuel batteries and climate change/renewable energy as top issues impacting their stakeholders and organization, but considers waste management, sustainable materials and water use as the lowest priorities. These matrix placements do not align with Ford's messaging regarding environmental concerns and priorities from electric vehicle manufacturing.

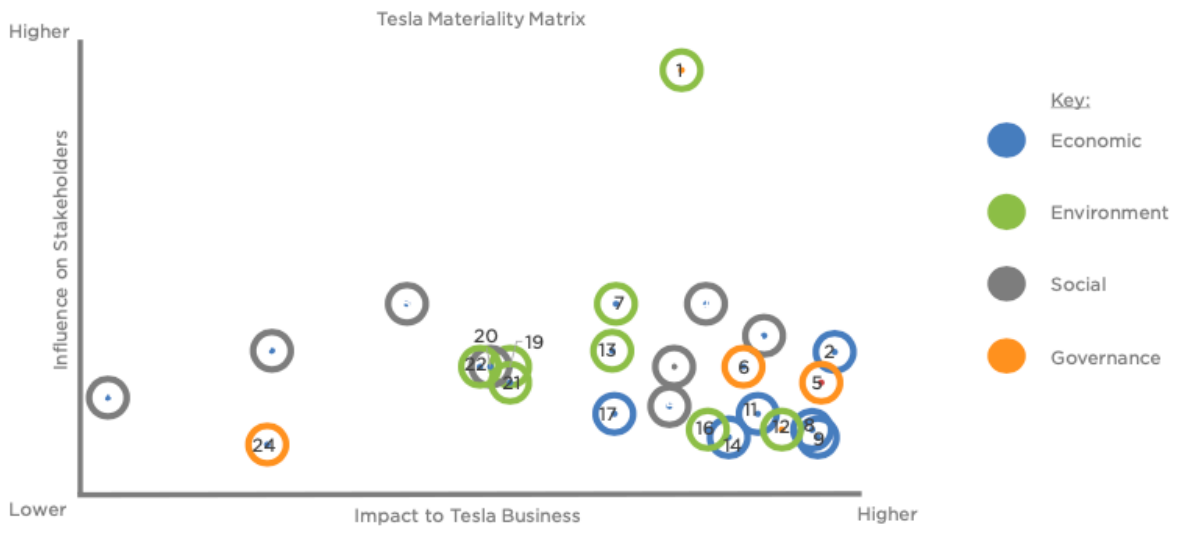


Figure 6: Tesla's Materiality Matrix

Source: Tesla (2022)

Tesla highlights a strong emphasis on the environmental impacts of electric vehicles, placing environmental management and reducing carbon as its highest priority. However, when analyzing the remaining issues, they are hard to separate from each other due to confusing overlap and are all listed as substantially low priorities. In addition, the majority of the high impact priorities regard business practices and economic influences. Social concerns are not considered an important impact which contradicts most of Tesla's sustainable value messaging.

While these contradictions demonstrate a lack of effective value messaging, a variety of other risks exist to both Ford and Tesla's corporate governance. Ford must improve its supply chain as a series of recalls and lack of quality control has led to a decrease in investor trust (Appendix 6). Tesla faces challenges related to Elon Musk's personal reputation and scandals that are now affecting the brand (Appendix 6). It is important for Ford and Tesla to improve their corporate governance practices in order to improve their overall performance in regard to their respective environmental, social, and governance (ESG) rankings.

ESG

MSCI provides critical information and ESG rankings to investors, stakeholders, and customers to make informed decisions regarding the global investment community. Using these holistic metrics within a sector it is easy to identify and separate the leaders in ESG performance from those lagging behind.

When considering their electric vehicle strategy, their material circularity, NGO partnerships, and governance practice from the 2024 MSCI reports, both Tesla and Ford have solid relative performance rankings in the automobile sector towards overall sustainability. When compared to previous rankings Tesla's performance has been worsening over time to an average 'BBB,' while Ford has been slowly improving to reach its 'A' ranking (Figure 7). This is impressive as Ford is still impacted by their petrol vehicle production. Despite Tesla's fully electric business model, they are struggling to keep up with improvements other automobile manufacturers, such as Ford, have made.

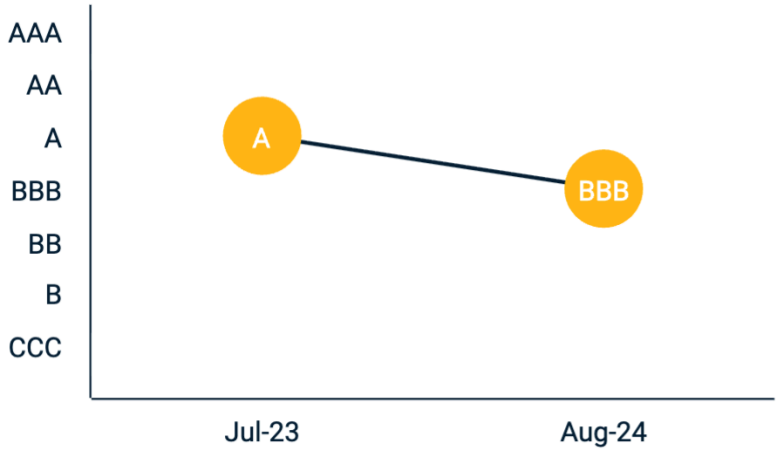
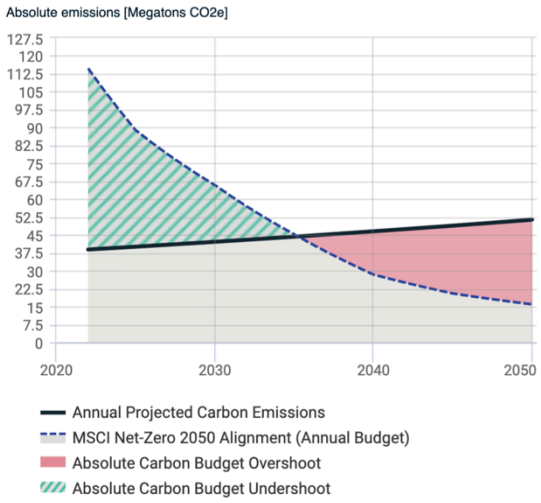


Figure 7: Tesla's MSCI ESG Rating History

Source: MSCI (2024)

Despite a worsening ranking, Tesla is still considered an ESG leader in Corporate Behavior and Opportunities in Clean Tech and is well aligned with the Net-Zero Alignment at 1.5 degrees (Figure 8). Ford is not an ESG leader in any key issues but is

making steady improvements overall that contribute to its strengthening ranking, such as its drastic improvement to reach 1.8 Net-Zero Alignment (Figure 9, Appendix 7.7).



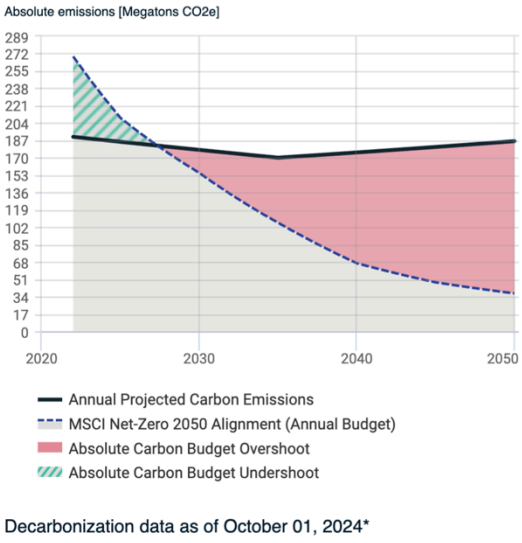


Figure 8: Tesla's Net-Zero 2050 Alignment

Figure 9: Ford's Net Zero 2050 Alignment

Source: MSCI (2024)

Included in the MSCI rankings are the United Nations 17 Sustainable Development Goals, which govern the sustainability agenda (Figure 10). Referencing Ford and Tesla,

their performance, products, operations, and services are not positively aligned with a single goal. These goals aim to foster collaboration between private and public stakeholders to address global challenges.

Figure 10: United National Sustainable Development Goals

Source: Crane et al. (2019) p. 33

To improve their overall sustainability performance, Ford and Tesla should consider an alignment with several of the goals that work hand in hand with their value messaging regarding sustainable supply chains, environmental concerns, and ethical business practices.

AI Use Reflection

Copilot was used for the AI responses throughout the weekly reflection worksheets. Overall, Copilot performed the best when providing factual and objective information in response to a prompt or topic. Copilot provided ample information comparing Ford and Tesla's performance metrics, sustainability strategies and goals, governance risks, and other aspects of their organizations that could be easily objectively measured (Appendix

1, 2, 6, 7). However, morality was a difficult topic for Copilot to breach, and it could not determine straight answers regarding the ethics of and the responsibility of Ford and Tesla sourcing cobalt in the Democratic Republic of the Congo (Appendix 3.2, 4.2, 5.2).

While Copilot struggled with moral dilemmas, this human perspective occurred naturally and frequently in evolving classroom discussions. This was especially evident in week 4 and 5 seminars as Copilot's analysis lacked the opinionated detailed perspective and intrinsically human critical analysis that complex and nuanced issues such as human rights and the ethical responsibility of Ford and Tesla require (Appendix 3, 4). The classroom discussion delved into strong moral stances resulting from personal backgrounds and opinions, which an AI such as Copilot could not contribute to (Appendix 3.3, 4.3). As the seminars progressed, so did my own feelings of distrust towards Ford and Tesla's strategies to recover their reputation (Appendix 5.3, 6.3). Distrust is not something Copilot is programmed to share with the user; thus, each set of responses maintained a consistent tone unlike how a human perspective might evolve through ongoing discussions of these sensitive topics.

Copilot often lacked details in initial responses to prompts and at times felt like it needed to be coaxed to provide specific information that otherwise flowed naturally during the classroom discussions. For example, in week 2, Copilot easily identified a variety of sustainability issues regarding electric vehicle production, but failed to identify indigenous peoples rights as a specific key issue (Appendix 1.2) Overall, it frequently appeared that Copilot was short of missing the main point and that it was up to the user to either comb through the provided response for specifics or continue to prompt Copilot for more details.

Throughout the use of Copilot this semester, I became more comfortable providing back and forth conversational prompts, combing through responses for relevant specifics, and was overall impressed with how much information I received from the right prompt or question. I was initially uncomfortable using Copilot as my own perception of AI has

been negative in the past and I have had an inherent distrust of it. I have seen it used as an attempt to replace human creativity and have heard of its negative environmental impacts. However, interacting with Copilot did initiate a unique thought process as I came to my own conclusions regarding each week's discussions (Appendix 1.5, 5.5). I could not help but be influenced by Copilots responses and I found myself questioning previous understandings I had of the electric vehicle industry (Appendix 1.3). Having this vast database of information regarding an entire industry of ethical risks and sustainability concerns that I was not previously aware of so easily accessible continuously surprised me. While we looked at Ford and Tesla's electric vehicle market specifically, I felt that as a consumer I should be more aware of the issues surrounding cobalt sourcing as it is connected to most usable forms of technology. I think this task was an interesting use of AI in relation to moral topics and now feel that it can be a positive thing to use AI to spark this sort of critical reflection. Despite experiencing how AI can influence human opinion and initiate a unique kind of reflection, I do not think I would use any form of AI again in a personal setting without doing additional reflection on my own distrust of it and research into its negative impacts.

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Appendix A - Assignment Brief

Title: Producing a Report Comparing the Electric Vehicle Strategies of Tesla and Ford.

Word Count 3000 Words +/-10% (excluding figures, tables and reference list (including in-text citations)

Module Learning Objectives: 1-3

Weighting: 100% of module (Students please note that every week we will have activities, worksheets, and quizzes to help you build your assignments)

AI Assessment Scale:

https://learnteach.stir.ac.uk/ai-assessment-scale/

Level 3: AI Collaboration
'AI may be used to help complete the task, including idea generation, drafting, feedback, and refinement. Students should critically evaluate and modify the AI suggested outputs, demonstrating their understanding.'

You may use AI to assist with specific tasks such as drafting text, refining and evaluating your work. You must critically evaluate and modify any AI-generated content you use.

Note: we will discuss this in the first lecture and seminar. Each week you will also be completing the following worksheet Weekly Reflection Worksheet.docx

Report Structure:

Climate Change and Electric Vehicles (300 words)

This section will serve as your introduction, there is no need for a separate introduction. In this section I will be looking for you to explain the transition to electric vehicles, why it is

happening, including climate legislation, and where Tesla and Ford are in relation to this transition.

Circular Economy (300 words)

Tesla and Ford's circular economy approaches to battery manufacturing are reviewed and compared. Justification is given for why each strategy is being pursued and potential shortcomings in each strategy.

Supply Chain Human Rights (300 words)

The human rights risks in the battery supply chain are reviewed detailing the types of labour practices that exist as well as the complexities of why they exist.

Ethics (600 words)

In this section you will use ONE of the following moral philosophical ethical frameworks

- Utilitarian Consequentialism
- Kantian Categorical Reasoning

You will need to use ONE of these frameworks to analyse the ethics of different choices in choosing to source or not source cobalt from the Democratic Republic of Congo.

NGO Partnerships (300 words)

In this section you will review the benefits of NGO partnerships while comparing the different NGO strategies of Ford and Tesla.

Governance (300 words)

In this section you should consider CSR reporting, including the materiality matrices of Tesla and Ford, as well as identify risks to corporate governance.

ESG (300 words)

In this section you should consider the ESG performance of Tesla and Ford and how their electric vehicle strategy, as well as possible circular economy, NGO, or governance practices might impact the ESG performance of each company. You may wish to use the MSCI metrics to help do this

AI Use Reflection (600 words)

In this section you need to personally reflect on your experiences of reviewing the AI responses to each section of the report. The important thing in this section is that you need to be specific. It must be clear that you are reflecting on the task you undertook, as well as your own personal feelings in relation to the task or section of the report.

MANDATORY APPENDIX - Please attach your 7 weekly reflection worksheets. You should be filling out the following worksheet Weekly Reflection Worksheet-1.docx

You should have worksheets for the following report sections/seminars:

1. Climate Change and Electric Vehicles (included in the assignment, Ethical AI Use, and Reflection Seminar) - Week 2
2. Circular Economy - Week 3
3. Human Rights - Week 4
4. Ethics - Week 5
5. NGOs - Week 8
6. Governance - Week 9
7. ESG - Week 10

Marking Criteria

Rubric

BUAP0323453007

Climate Change and Electric Vehicles – 5 points

The importance of climate change and Net Zero frameworks is understood and the importance of transitioning to electric vehicles within these.

Circular Economy - 10 points

The circular economy strategies of Tesla and Ford are identified and there is critical reflection on the strengths of these strategies

Supply Chain and Human Rights – 10 points

The context of cobalt mining and its link to battery production is understood. The complexity of mining practices in the Democratic Republic of Congo are fully laid out.

Ethics – 15 points

A moral philosophical framework is successfully defined and applied correctly to analyse the ethics of choosing or not choosing to source cobalt from the Democratic Republic of Congo.

NGO Partnerships – 10 points

There is critical reflection on the role of NGOs and the strengths they can bring. The two NGO partnership approaches of Tesla and Ford are reviewed.

Governance – 10 points

The CSR reporting strategies of Tesla and Ford are reviewed and there is critical reflection in terms of prioritisation as well as risks to good governance.

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ESG – 10 points

The ESG ratings of Tesla and Ford are compared and contrasted with critical reflection in relation to the strengths and weakness in the two companies' ratings, including risks to their ratings.

Use of AI Reflection - 15 points

There is a good level of personal reflection on the use of AI, giving specific reference to individual responses and feelings in relation to outputs.

MANDATORY APPENDIX - 5 points

Reflexive worksheets are filled out for all 7 sections/seminars.

Overall Structure and Cohesion – 5 points

The report flows in a logical manner as per the assignment instructions and points build towards a well justified and cohesive argument.

Presentation and Referencing – 5 points

The report is well presented with sensible use of figures and proper referencing.

Appendix 1

Seminar: Week 2 AI, Reflective Learning, and Assignment

1.1 Explain 3 things that AI was able to identify in the case study	Copilot was able to identify these three main topics when asked: *"What are the key issues facing electric vehicles manufacturers sustainability?"* 1. Battery Production and Materials – raw material sourcing regarding ethical sourcing and human rights and battery life cycle 2. Supply Chain and Manufacturing - the carbon footprint of production, supply chain complexity, contract manufacturing risk 3. Infrastructure and Technology – battery charging infrastructure, battery technology, and digital integration
1.2 Explain what AI was unable to identify	Copilot fails to include Indigenous rights and Human Rights Violations as a main factor affecting sustainability. This was mentioned specifically in the article as one of the key factors affecting the supply chain along with steel decarbonization. While Copilot did have subsection of bullet points in which human rights was listed, it was not emphasized as a main factor and was not given any additional context.
1.3 Explain how the case study made you feel	The article made me question the process of creating the EV. I considered the impact of the process/supply chain on the environment as well as the ethical ramifications of that supply chain against the pros of moving towards EVs as the future standard over traditional automobiles in order to heal and improve the environment. This case study did not evoke strong feelings necessarily but did prompt new thought processes regarding the impact of EV supply chain and processing.

1.4 Do you think that the AI output was able to identify the most important aspects of the case study. Explain why.	According to Copilot the most important aspects of the case study surround the top performing automakers, the areas in which they lag and a call to action “urging automakers to take a stronger action on ethical sourcing and climate responsibility.” I do think this summarizes the article well and provides key takeaways overall despite lacking additional context in a few key areas.
1.5 Explain what you would conclude differently to the AI	Copilot was able to summarize the key points from both the question asked and the article. It did emphasize the key issues facing EV sustainability in similar ways that was discussed in the class discussion. I would conclude differently however, that the key takeaways from both the article and the question asked are that the supply chain/process to create EVs has large impacts on both environmental concerns and human rights concerns regarding Indigenous Peoples. Copilot failed to conclude that human rights concerns play as large of a role as I believe they do.
1.6 Reflect on how your own perspectives, and feelings might impact how you agree or disagree with the AI outputs.	My own feelings and perspective of a general dislike for AI use and feelings towards EV as a positive future for the environment may influence my ability to agree with AI outputs. This could prompt me to initially want to disagree with AI despite certain points lining up and agreeing with the article key takeaways. New feelings towards my confusion on how I feel about the process of creating EVs could influence my initial support of the EV movement as I analyze the process of creating an EV under a more scrutinizing lens in the future.

1.7 What would you choose to focus on if you were trying to highlight the key points in your assignment.	Key points: ● When sourcing materials and elements through the supply chain, a risk of human rights violations surrounding Indigenous Peoples exist ● Steel decarbonization and the EV supply chain can have negative impacts on the environment ● There is a call to action for automakers to improve in certain areas regarding negative impacts on environmental and human rights ● Certain automakers may be making improvements but not in every key aspect of the scoreboard. Some clearly do better than others which leads to the question: should one support certain automaker EV brands over others?
1.8 Refine the key points you would write into a bullet point list of 3 points	Key points include: 1. Human rights violations especially regarding Indigenous Peoples 2. Potential environmental impacts 3. The responsibility and future actions of automakers

Appendix 2

Seminar: Week 3 Circular Economy

2.1 Explain 3 things that AI was able to identify in the case study	Copilot identified the key comparison between Ford and Tesla's circular economy strategies regarding: 1. Battery recycling 2. Material innovation 3. Community engagement
2.2 Explain what AI was unable to identify	Copilot did not narrow in on the US market for Ford's initial circular economy attempts. Copilot also did not reflect on the reasons behind the support for inhouse recycling at Tesla due to control, funding, support, personal investments and backing from Musk, compared to Ford which does not have as large of an investment into the EV market. Ford has other vehicles running off standard gasoline so contracting out makes more sense for them in order to not put all of their eggs in one basket in case market desires shift. Tesla only produces EVs and can control the entire production from beginning to end, ensuring a closed loop. Copilot was also unable to identify potential risks of a closed loop economy between Tesla and Ford. This includes the amount of energy required to create a circular economy, the potential regulations and issues working internationally compared to at a domestic level, and the expectation for increased demand of batteries and materials that will affect the supply chain. The goal would be for this demand to be one day met by recycling old batteries. Copilot does not discuss Redwood taking batteries from products other than EVs and does delve into Redwood's policies in

	the same way the discussion naturally evolved to.
2.3 Explain how the case study made you feel	The case study did not evoke any emotions, and I felt indifferent. That being said, it did open my eyes to the processes behind EV recycling. I did not realize it required so much energy or that it was currently being handled at such a large scale.
2.4 Do you think that the AI output was able to identify the most important aspects of the case study. Explain why.	Yes. In terms of factual information comparing the two circular economies, Copilot identified that Ford followed collaborative and regulatory frameworks while Tesla focussed on innovation and integration.
2.5 Explain what you would conclude differently to the AI	I would conclude that Ford is sticking to contracted recycling efforts in an attempt to generate a circular economy that will not financially and economically backfire on them should the market shift or the supply chain be affected negatively. Therefore, I would not conclude that Ford is “pushing circularity” as they are not fully invested in the EV market due to their reliance on contractors. Tesla has the funding and control over the EV market in the US to create in house facilities where they can ensure the closed loop is fully implemented. I would not draw the conclusion that they are pushing innovation from this information alone, but agree that they are promoting integration due to their internal processes.
2.6 Reflect on how your own perspectives, and feelings might impact how you agree or disagree with the AI outputs.	Copilot mostly lists factual information comparing the two companies and their processes. There is nothing I necessarily disagree with, but my reflection and discission with classmates goes a bit deeper than the regurgitation of facts Copilot presents regarding this topic.

2.7 What would you choose to focus on if you were trying to highlight the key points in your assignment.	I would highlight that the main difference between the two EV automakers is that Ford contracts out their recycling at a smaller scale than Tesla's inhouse program that goes much farther in terms of a true closed loop. I would also point out that these articles and goals are from 2021 so an update could be provided on how these automakers are doing today at completing this circular economy.
2.8 Refine the key points you would write into a bullet point list of 3 points	1. Ford works with contracted recyclers 2. Tesla completes the circular economy inhouse through battery recycling 3. EV recycling requires a lot of work, energy, and resources to be a successful circular economy strategy

Appendix 3

Seminar: Week 4 Human Rights

3.1 Explain 3 things that AI was able to identify in the case study	Copilot identified: 1. Human rights violations 2. Child labour violations and exploitation 3. Corporate complicity
3.2 Explain what AI was unable to identify	Copilot could not provide a straight answer on whether mining cobalt is ethical or unethical. It attempted to break down issues with the supply chain and process but when prompted multiple times struggled to say “yes” or “no” regarding the topic of ethics.
3.3 Explain how the case study made you feel	These articles made me feel sad, disappointed, and angry towards the unethical systems and exploitative use of children and lack of justice for the families of children who have been injured or killed. The failure of the lawsuit to go through, in a legal aspect, made logical sense to me but made me feel sympathetic towards the families who will continue to see members of their community abused the same way their children were.
3.4 Do you think that the AI output was able to identify the most important aspects of the case study. Explain why.	Copilot was able to touch upon the potential human rights issues and violations surrounding the production and supply chain of cobalt mining as well as potential human rights violations and concerns with the production of electric vehicles. From a human point of view this addressed the most important aspects of this week’s topic.

3.5 Explain what you would conclude differently to the AI	The moral and emotional perspective of this topic makes me consider cobalt mining as an unethical practice unless a major shift in how it is produced occurs. Copilot analyzed cobalt mining from a purely logical/factual status in which it does not provide the same in-depth moral analysis. Copilot did not mention that the industry is driven by money and demand, complex government, militias, and company relationships.
3.6 Reflect on how your own perspectives, and feelings might impact how you agree or disagree with the AI outputs.	My own human sympathies and anger towards exploitative work driven by greed will influence my perspective of cobalt mining being an unethical practice in the DRC. Copilot lacks emotion or human experience so it listed facts that can appear cold and lack sympathy for the people in these working conditions.
3.7 What would you choose to focus on if you were trying to highlight the key points in your assignment.	I would focus on the child labor violations that lead to extensive injuries, death, lack of pay, and exploitative working conditions. I would point out that this is driven by money and corruption and that this situation requires government intervention, systematic change and regulations for better working conditions.
3.8 Refine the key points you would write into a bullet point list of 3 points	1. Child labor violations need to be addressed 2. Systematic change and better regulations regarding working conditions need to be implemented 3. EV and battery recycling should be emphasized to reduce cobalt mining needs

Appendix 4

Seminar: Week 5 Ethics

4.1 Explain 3 things that AI was able to identify in the case study	Copilot was able to identify the following regarding the case study and Q1-Q5 from the seminar: 1. By sourcing cobalt from the Democratic Republic of Congo, Ford and Tesla could be held accountable for human rights violations both ethically and legally if they fail to prevent, address, or disclose risks associated with the supply chain. 2. Several alternative options exist to sourcing cobalt from the DRC, such as sourcing from countries with stable regulatory environmental and ethical mining practices, recycling and recovering cobalt from electronics and batteries, and searching for cobalt-free battery options. 3. Possible consequences of not sourcing cobalt from the DRC include higher costs and limited supply of cobalt that can lead to supply chain issues, as well as a negative impact on the economy of the DRC due to the heavy reliance on cobalt exports as a source of revenue.
4.2 Explain what AI was unable to identify	Copilot is unable to come to black and white definitive conclusions on ethical or moral issues regarding human rights violations and the sourcing of cobalt. It is unable to identify whether or not Ford/Tesla are directly responsible for human rights violations and skirts around the issue saying they “possibly” could be responsible if they didn’t follow certain protocol.

4.3 Explain how the case study made you feel	This week made me annoyed, cynical, and frustrated. It feels as though there is a catch 22 and someone is always going to try to exploit someone else, whether that be through governmental failure or otherwise.
4.4 Do you think that the AI output was able to identify the most important aspects of the case study. Explain why.	Yes and no. Copilot was able to point out facts regarding mining sources and certain aspects but could not draw conclusions about the ethics behind it.
4.5 Explain what you would conclude differently to the AI	Copilot could not determine a straight answer on some morally/ethically complicated issues that I am able to have a stronger stance on individually. I concluded that Ford and Tesla are indirectly responsible for ethical concerns and violations occurring throughout the mining process in the DRC.
4.6 Reflect on how your own perspectives, and feelings might impact how you agree or disagree with the AI outputs.	I'm looking at it from a human perspective of who is responsible when you go down the line. It is easy for companies to point fingers at each other and blame the lack of government regulation instead of taking responsibility themselves. It is also easy for the DRC mining production to blame the companies who continue to purchase the product. Copilot stated facts about what is going on and was unwilling to take a side using words like "could" instead of providing a "yes" or "no" answer.
4.7 What would you choose to focus on if you were trying to highlight the key points in your assignment.	I would highlight the debate regarding the ethical responsibility of Ford/Tesla. They have an indirect responsibility through purchasing power to influence local government and mining sources, but do they have autonomy to choose? How much power do Ford/Tesla really have over changing the cobalt mining sources? If they pulled out of the DRC, would the mining process actually change for the better? How would this affect the DRC's economy? My realistic conclusion is that,

	unfortunately, there would most likely be more negative consequences than positive of pulling out.
4.8 Refine the key points you would write into a bullet point list of 3 points	1. The responsibility of Ford and Tesla is debated, but there is no denying that there is some indirect responsibility that exists (at minimum) 2. Ford and Tesla may have influence over DRC mining practices, but more tech companies would need to pull out for a true difference to be made. The DRC needs governmental regulations and can't just blame foreign companies 3. The DRC economy is heavily reliant on cobalt exports and only a small portion of mining is done illegally, so is it worth the hit to the local economy to pull out of the market entirely

Appendix 5

Seminar: Week 8 NGO Seminar

5.1 Explain 3 things that AI was able to identify in the case study	Copilot was able to identify the following: 1. Ford and Tesla have implanted various strategies for dealing with human rights violations and how effective those strategies really are in practice, such as shifting from being reactive to proactive, putting pressure on their suppliers, and managing their reputation. 2. Artisanal mining in the DRC is a hindrance to the strategies actively working to deal with human rights violations due to its informal and widespread use and lack of regulation. 3. NGOs argue that no cobalt can be determined to be “clean” due to artisanal mining and the lack of proper sourcing due to the intertwined supply chains of artisanal mining and industrial corporate mining.
5.2 Explain what AI was unable to identify	Copilot was unable to identify that companies like Glencoe may claim to be using ethical sourcing methods and practices even when practicing artisanal mining, but that in reality there is a lack of data to show where their sourcing comes from and how much of their claims are merely propaganda or smoke and mirror effects. Copilot was unable to identify the role of the government and the economy within this supply chain, while the conversation in class quickly turned to legality, governmental regulations, and the pressure of extreme poverty on the individual to feel compelled to work in these dangerous conditions. When individuals have no money, they will work

	in dangerous conditions for any source of income they can get their hands on.
5.3 Explain how the case study made you feel	This week's topic matter made me feel exasperated, as exploitation is always going to exist and someone is always getting the short end of the stick. I do not trust Glencoe or other mining companies in the DRC to actually source their cobalt ethically, especially when they claim to use artisanal mining in in a legal and safe way.
5.4 Do you think that the AI output was able to identify the most important aspects of the case study. Explain why.	Copilot surprised me this week with its ability to point out the artisanal mining was a root problem when creating strategies to deal with human rights violations and that NGOs are determining no sourcing of cobalt to be ethical or clean because of it.
5.5 Explain what you would conclude differently to the AI	In comparison to Copilot's results, I would conclude that Ford and Tesla are joining and backing the right initiatives and movements to look good. They are all talk and no real action or change. They are just saying they "partner with a human rights organization" as a PR stunt. They know consumers won't look far past the surface and it will reassure consumers that Ford/Tesla are not doing anything wrong. I also believe that the Glencoe video is PR stunt full of empty talk to show that they are making a difference with artisanal mining, but it seems like they are defending an unethical process.
5.6 Reflect on how your own perspectives, and feelings might impact how you agree or disagree with the AI outputs.	I do not trust the larger corporations that complete their mining and sourcing in the DRC to actually be following through with their promises on clean and ethical sourcing without human rights violations or child labor. To an extent I do not trust that Ford and Tesla are not just saying what people want to hear but ignoring these violations in practice. AI does not have this same human level of distrust to scrutinize these organizations.

5.7 What would you choose to focus on if you were trying to highlight the key points in your assignment.	I would highlight that these large corporations are attempting to manage their reputation by playing clean up with NGOs and that the NGOs working with these corporations may be a PR stunt. I would also point out that the NGOs determined that no cobalt is “clean” or ethically sourced in the DRC, despite Glencoe claiming it can source cobalt through artisanal mining in a legal and safe regulated way. I would highlight that despite these measures; exploitation is still occurring in the DRC due to extreme poverty and desperation. The lack of regulations or enforcement when it comes to child labor makes it difficult to carry out ethical sourcing in practice. There is also a lack of data on legal artisanal mining that makes it difficult to determine if these strategies are properly dealing with artisanal mining, despite the NGOs attempting to assist with this.
5.8 Refine the key points you would write into a bullet point list of 3 points	1. Organized and regulated artisanal mining that cuts out child labor is a good step in the right direction, but it does make it difficult to trust that companies like Glencoe are doing it all ethically vs unethically sourcing behind smoke and mirrors. 2. NGOs claim that there is no “clean” or ethical mining in the DRC due to artisanal mining despite 80% of sourced cobalt coming from industrial mined sources that is regulated and safe. 3. Ford, Tesla, and Glencoe have put a lot of effort into managing their reputation and promising that they are effectively working through strategies to deal with human rights violations and

	prevent child labor from occurring, but there is a lack of evidence to support these as anything other than PR claims to prevent public outrage.

Appendix 6

Seminar: Week 9 Governance Seminar

6.1 Explain 3 things that AI was able to identify in the case study	Copilot was able to identify the following: 1. Both Ford and Tesla show how governance risks can affect investor confidence, stock performance, and long-term sustainability. 2. Ford is dealing with challenges and difficulty related to their supply chain in the form of recalls which has in turn affected their investor trust and emphasized their need for stronger governance structures in risk management and quality control. 3. Tesla is facing challenges related to Elon Musk's influence over the brand resulting in calls for strengthening the board influence and shareholder reforms.
6.2 Explain what AI was unable to identify	Copilot was unable to identify the hypocritical and contradictory environmental and social priorities of Ford and Tesla that came up in the group discussion compared to overall business model and supply chain strategies. When looking at their materiality matrices the contradictions regarding priorities become apparent. For example, Ford claims to be environmentally conscious but places waste management at the very bottom of its impacts. Tesla claims its main priority is reducing carbon but does not place other environmental or sustainable topics in high impact areas.

6.3 Explain how the case study made you feel	This week's topic made me feel as though these companies are hypocritical at their core. I feel as though Ford and Tesla are not actually prioritizing the environmental and social focusses they claim to be. These feelings build upon last week's seminar where the majority of their claims are smoke and mirrors. In reality, they are simply playing cleanup and damage control of their reputations to avoid losing consumer support and not prioritizing proper actions towards environmental or social issues.
6.4 Do you think that the AI output was able to identify the most important aspects of the case study. Explain why.	Copilot identified important governance risks for Ford and Tesla but did not identify the contradictory nature of the priorities and high impact areas for both companies.
6.5 Explain what you would conclude differently to the AI	In comparison to Copilot's conclusion, I would conclude that many of the risks affecting Ford and Tesla stem from a lack of comprehensive priorities that align with the messaging the companies promote to consumers. The messaging that is pushed in mainstream media is not supported in action by their stakeholder priorities. I would also conclude similarly to Copilot's initial summary, that Elon Musk's scandals directly influence Tesla's risk management requirements.
6.6 Reflect on how your own perspectives, and feelings might impact how you agree or disagree with the AI outputs.	I think my own feelings of distrust and exasperation when it comes to these large corporations and their do-gooder claims impacts the way I interact with Copilot's outputs. I don't think Copilot is incorrect in any of its information this week, but I think the human perspective contributes to a deeper moral and ethical analysis of Ford and Tesla's contradictions.

6.7 What would you choose to focus on if you were trying to highlight the key points in your assignment.	The main focal areas of this week begin with the contradictory nature of Ford and Tesla's priorities and high impact topics. Ford's matrix places environmental concerns and waste management at opposite ends of the spectrum. Tesla places reducing carbon as its only high priority and another topic regarding the environment does not come up until placement seven. Both companies list their business concerns as higher than the environment and social concerns they claim to be promoting. This is contradictory to their messaging and "efforts" surrounding environmental and human rights violations. Ford's supply chain issues and governance risks are causing major recall and operational issues that is impacting their investor trust. Tesla's is too intertwined with Elon Musk's personal reputation and history of scandal. The personal affiliation is unusual for an organization of that size and is leading to performance issues and increased risks. The shareholders and board should have increased authority and influence over Tesla's brand and image.
6.8 Refine the key points you would write into a bullet point list of 3 points	1. Both Ford and Tesla have contradictory messaging compared to what their materiality matrices demonstrate are their highest impacts to business and stakeholder influence. 2. Ford has major governance risks when it comes to supply chain that need to be addressed in order to restore confidence and improve operations. 3. Tesla needs to work on risks that are directly tied to Elon Musk's public reputation and how that reputation directly impacts Tesla performance.

Appendix 7

Seminar: Week 10 ESG Seminar

7.1 Explain 3 things that AI was able to identify in the case study	Copilot was able to identify the following 1. There are presently major governance concerns for Tesla that were also discussed in class when analyzing the MSCI ratings 2. Ford has strengths in it social and governance aspects but is struggling to keep up environmentally due to its involvement with the petrol vehicle market. 3. Identified Tesla as an environmental pioneer and Ford a socially and governmentally stable incumbent.
7.2 Explain what AI was unable to identify	Copilot was unable to pinpoint more specific ESG aspects that the MSCI rating uncovered. With the prompts from this week's case study/seminar information, it felt like Copilot kept repeating the same broader ESG strengths and weaknesses of Ford and Tesla even when asked additional or clarifying questions.
7.3 Explain how the case study made you feel	This week I was impressed with how much Ford has done compared to other industry competitors and how they have improved their ratings drastically over a short period of time. I feel as though Tesla has remained stagnant in its efforts when compared to the rest of the sector, which results in a decrease of rating. Even as these organizations improve upon ESG categories, I still feel as though these results demonstrate that these companies are a lot of talk but not a lot of action when it comes to environmental sustainability and social concerns such as human rights violations.

7.4 Do you think that the AI output was able to identify the most important aspects of the case study. Explain why.	No, I think Copilot was able to hit on general and broader ESG issues affecting both Ford and Tesla but couldn't critically evaluate to the same level of detail that the discussion could. The discussion pinpointed exact components of the MSCI rating and how they affected ESG aspects of each organization.
7.5 Explain what you would conclude differently to the AI	I would conclude that Ford has made significant improvements to improve its rating, especially when discussing its Net Zero Alignment whereas Tesla has not done much in the past few years to keep its rating above average. Copilot did not mention the improvements or past ratings of either organization, but perhaps the rights prompts or questions were not utilized.
7.6 Reflect on how your own perspectives, and feelings might impact how you agree or disagree with the AI outputs.	During this week's seminar I was taking in the context of previous years data and could not help but be influenced in my opinion on how these ratings changed or did not over time. Copilot did not reference any past information but provided factual current information regarding the organization's efforts and areas of improvement. My scepticism regarding Ford and Tesla's efforts also continues to influence my perspective. This contributed to the difference in key points and conclusion between myself and Copilot.

7.7 What would you choose to focus on if you were trying to highlight the key points in your assignment.	Ford is doing exceptionally well according to MSCI in relation to the automobile sector in 2024 considering their previous years (2022, 2023) and especially when considering that they still produce petrol vehicles, making EV a subsection of their market. Ford's carbon reduction went down significantly to become aligned at 1.8 in 2024 from a misaligned 3.2 in 2022, demonstrating their commitment towards positive change. Despite these improvements, Ford is not leading in any category of MSCI key issues. Tesla has significantly dropped in multiple key issue categories for MSCI which has impacted their overall rating. Some of the potential reasons include governance issues, Elon Musk's reputation and deep-rooted connection to the brand, and relative ratings compared to industry competitors working on improvements. This all being said, neither Ford or Tesla are aligned or significantly aligned with the 17 MSCI SDG.
7.8 Refine the key points you would write into a bullet point list of 3 points	1. Ford's ESG performance is improving over time despite their continued work in the petrol industry and their lack of leadership in key issues. 2. Tesla's ESG performance is weakening over time as issues arise with their governance, and they struggle to keep up with the overall improving automobile sector. 3. Both Ford and Tesla can make improvements towards their ESG performance, especially when it comes to aligning with sustainable and social goals they claim to support in their company messaging.

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