



# OBSERVANCE OF ENVIRONMENTAL, SOCIAL, AND GOVERNANCE (ESG) ISSUES WITH RESPECT TO DOUBLE MATERIALITY IN AUTOMOTIVE SECTOR

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## ABSTRACT

*Sustainability is increasingly getting discussed as one of the main of the major contributor in the overall health of the business. It is expanding deep into the business models and long term corporate strategies of any organization. Investors demand of sustainability information, government regulations and consumer awareness are triggering this whole shift. This paper aims to highlight the various ESG related issues and challenges observed by the Automotive sector with reference to double materiality and also discusses the high-level process for determining materiality issues. The paper also surfaces strategic & operational risks along with opportunities with Toyota as a case reference.*

**Keywords:** Circular Mobility, Double Materiality, ESG, Economy, Materiality, Sustainability, Stewardship Codes

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## 1. INTRODUCTION

It is very common today to hear news stories of natural disasters, higher temperatures alerts, rising pollution, accidents/ poor working conditions in factories, and water bodies either being contaminated or wiped out entirely. This is the human era driven by industrial growth which has drastically turbocharged mass consumerism resulting in unsustainable production practices across industries and automotive is no different. The unsustainable and vaguely regulated

industrialization with exponential growth over the years has not only impacted the natural capital but has dented the social & governance aspects as well, which are financial material to the growth of an organization and sector as a whole.

An ever-increasing demand for ESG information by investors in financial reporting is slowly unraveling the importance of responsible business to the automotive giants. ESG information disclosures is getting directly linked to cost of capital, and profitability in light of increasing pressures of sustainability reporting by the governments around the world. These reporting standards have come to light viewing the complex sustainability challenges in the business environment. The complexity is mostly due to the dynamic nature of materiality as a concept which makes the identification & assessment of materiality information really challenging.

## **2. WHAT IS ‘DOUBLE MATERIALITY?’**

Before we move forward to the sustainability challenges in the automotive sectors, it important to understand the concept of double materiality. “Double materiality” seeks to broaden corporate sustainability reporting from its former investor-centric focus on how sustainability factors impact a company & its financial prospects (single “materiality” or “financial materiality”) to an equal emphasis on how the firm is impacting society and the environment (“impact materiality”). [1]

## **3. KEY DIMENSIONS**

- Show how an automotive business can create shared value through their operations and supply chain.
- Illustrate how sustainability initiatives act as a driver for innovation and competitive advantage
- Reflection of double materiality in context to ESG issues in automotive sector

## **4. AUTOMOTIVE SECTOR’S MOST PROMINENT ESG CHALLENGES**

### **4.1 Fleet Carbon emissions**

Mounting pressure on automotive manufacturers from governments to reduce emissions by introducing electrified vehicles in their product line (Singh, 2021) [2]. 45.1% of the total 21% emissions in EU in 2018 came from road transport (Ritchie, 2020) [3]. Electromobility powered by renewable source of energy is seen to save 36 Mt CO<sub>2</sub>-eq versus traditional fleet in 2018 (IEA 2019) [4]. The ask is more on the side of environmental friendly mobility solution from the industry to release itself from the constant nudge from capital providers to expedite it’s decarbonisation efforts.

### **4.2 Sustainable Value Chain**

Need for transparent supply chain operations with regards to adopting sustainability by automakers considering the likes of VW’s emission scandal. Approximately 75% of the industry emission originates from the car’s lifecycle operations and supply chain contributes 18% to it (Fletcher, 2019) [5]. Therefore, it’s critical for automakers to introduce emerging concepts like battery recycling, circular economy, end-of-life disposal, environmentally responsible metal sourcing into their business operations (Capgemini Research Institute, 2020) [6]. Lately, with the advent of AI and ML few automotives have introduced algorithm to do GHG accounting but it is still at a very nascent stage but if scaled up it would be handy in

making automotive value chain much more sustainable and resilient. The major challenge is to get the reliable and accurate ESG data from suppliers located to across the countries.

### **4.3 Safety via Connectivity**

Passenger's safety and convenience goes a long way with information sharing and connectivity in vehicles (Bosch 2022) [7]. WHO's survey in 2016 reflected 1.35 million fatalities in road accidents (WHO 2018) [8]. Hence, it's significant to incorporate advanced safety systems driven by latest technologies and enabling communication with surroundings. Additional benefits would include lower insurance cost and traffic congestions (Bagloee et al., 2016) [9].

### **4.4 Making ESG Key Part of Business Strategy**

It is essential for automakers to make ESG a key part of the business planning, and strategy. It needs to be considered while reviewing, designing, or reengineering each of the existing and new business processes.

### **4.5 Capturing and Reporting Accurate ESG Data**

Automakers need to streamline their data capture, processing, and reporting mechanism to ensure the accuracy, and reliability of the ESG data against the set benchmarks. There needs to be a single source of truth and emerging IT Technologies could be leveraged to ensure automation, and effective reporting. [10]

### **4.6 Lack of ESG Reporting Standards**

There is a lack of the universally accepted standard for the ESG data reporting. In absence of these standards, it becomes very difficult to benchmark, compare, and rank the companies based on their ESG scores. [10]

To reduce the magnitude of the challenges above, several disclosure guidance issuers such as CDSB, IIRC, SASB, etc. have attempted to issue some standards for the automotive sector to file sustainable information annually. These standards are nothing but the guiding principles for the automotive players to present comparable, decision useful and relevant ESG information to the investors and the relevant stakeholders. Investor are relying heavily on this information seeing the investor's mind shift from short to long termism investment strategy.

## **5. RECOMMENDED HIGH-LEVEL PROCESS FOR DETERMINING MATERIALITY ISSUES**

Listing materiality issues is a very elaborative and complex process as it requires multiple stakeholders both internal and external to the organization. It is tied strongly to environmental, social and governance aspects of an organization including perspectives from analytics agencies & United Nation (UN)'s 17 sustainability development goals.

### **5.1 Reviewing issues relevant to the organization and investors**

It is essential for any organization to consider the needs and preferences of the investor audience while extracting material issues relevant to the organization in question. While data collection can be a costly exercise depending upon the size & complexity of the corporation, the best ways would be to do peer to peer benchmarking and follow a global disclosure standard.

### **5.2 Weighing material issues impact on organization's business**

Materiality mapping gives a holistic view of the sustainability team's finding and analysis of the Environmental, Social & Governance factors from the stakeholders and investors

perspectives. It mainly builds a baseline to build on sustainability disclosures to maintain investor confidence and therefore enterprise value creation.

### **5.3 Data Assurance**

Assurance providers are external third-party auditors who verify the data collected or identified internally and publish their comments. This is mainly done to signal to the markets that the material issues disclosed is reliable and has faithful representation of the organization.

### **5.4 Top Management Approval**

Once the assurance engagements are concluded, management reviews it in entirety and approves it to make it public and direct its organization's corporate strategy accordingly; though it depends on the management if they would want to add or remove the comments from assurance providers while approving the material issues.

The effectiveness of identified material issues depends on the clarity, awareness and intent of the stakeholders extracted the issues. Many a times, due to the diverse audience needs and internal pressures, organizations do not come out objectively with their material issues. While this is detrimental to the business continuity it also has major implications on planetary health and its limited boundaries. Sustainable production through circular economy and lifecycle assessment is an evolving process and would contribute to continuous improvement. And is designed to go a very long way in maintaining business health.

In a nutshell, for organizations to flourish they must start integrating the intangibles such as human, social and natural capital assets in the financial accounting and reporting processes. Today, there are various associations, coalitions, and NGOs which are voicing the mandatory inclusion of non- financial sustainability information in financial reporting of the organizations on annual basis. Even, the global assessment companies are shouting loud for sustainable information as they are bound by their fiduciary duties and stewardship codes to protect the rights of investors. In the past few years, these asset management entities have started show cause resolutions to corporates to make them act right. Lastly, it becomes really significant for any organization to tell its story to the stakeholders itself rather than it coming out uncooked from some rating agency which may have their own rating methodologies with half-baked information and incomplete data to base the analysis on.

## **6. AN EXAMPLE TO UNDERSTAND THE MATERIALITY RATIONALE IN THE CONTEXT OF ENVIRONMENTAL & SOCIAL FACTORS**

### **TOYOTA – a case reference**

#### **6.1 Environmental & social issues with materiality rationale**

#### **6.2 Risk & opportunities in conducting sustainable business**

Toyota is one of the largest automotive manufacturer in the world and known for its manufacturing excellence. It is headquartered in Japan and operates globally. It has got a very complex supply chain with different design, production and shipping bases spread around the world. Though it has a disaster alert system but it is still far from desirable.

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6.1 The very complexity of the organization makes it a perfect case to assess materiality induced steps it has taken to negate environmental and social factors considering the compliance to enhance value creation.

Environmental & Social Factors	Double Materiality Impact
<p>Reduce global average emission (TtW g/km) by 30% versus 2010 levels for <b>New Vehicle Zero CO2 Emissions</b>, enforced by environmental regulations making Toyota sell 5.5m electric vehicles worldwide, including BEVs/ FCEVs by 2030 (Toyota 2020) [11]. Implications of vehicle pollution were very serious and hence material to investors.</p>	<p><b>High due to:</b></p> <ul style="list-style-type: none"> <li>• Customer health &amp; safety</li> <li>• Sustainable passenger vehicles</li> <li>• Impact on natural capital &amp; community around</li> <li>• Cost of capital</li> <li>• Employee working conditions</li> </ul>
<p>Achieve <b>Plant Zero CO2 Emissions</b> due to increasing demand of automobiles globally. Targeting 30%</p>	
<p>emission reduction versus 2013 through innovative technologies using hydrogen, daily kaizen and introducing renewable energy of 25% to run operations by 2025 (Toyota 2020) [11].</p>	<ul style="list-style-type: none"> <li>• Pollution</li> <li>• Complex plant operations and supply chain</li> <li>• Productivity</li> <li>• Regulations</li> <li>• Business Continuity</li> </ul>
<p>Reduce emissions (18% by 2025) during vehicle's lifecycle &amp; transport inefficiency (7% by 2025 versus 2018 levels) by designing <b>Resilient &amp; Sustainable Value Chain</b>. Erect 15 facilities to treat &amp; recycle end-of-life vehicles and induce 3R (Rebuilt, Reuse and Recycle) circular economy systems by 2025 (Toyota 2020) [11].</p>	
<p>Achieve <b>Zero Traffic Casualties</b>, forecasted to be seventh largest cause of accidental fatalities by 2030, through mobility and safety technologies (Toyota 2020) [12].</p>	
<p>Reduce global water usage by 34% per vehicle versus 2001 by 2025 to <b>Minimize and Optimize Water Usage</b> (Toyota 2020) [11].</p>	
<p>Increase women managers by 4x, abolish child labor in cobalt mining and implement supportive workplace for work family balance by 2025 to <b>Empower &amp; Respect Human Resources</b> (Toyota 2020) [12].</p>	

6.2 The double materiality aspect is set to disrupt the ‘business as usual’. Materiality compliances comes with several risks and opportunities in order to run the business more responsibly and sustainably. Toyota too is trying to navigate this scenario with some bold actions and improvise wherever necessary.

Categories	Risks	Opportunities	Actions to take
<b>OPERATIONAL</b>			
<p><b>Market forces</b> Economic factors affecting the price, demand and availability of vehicles</p>	<ul style="list-style-type: none"> <li>• Slow compliances with ZEV production regulations leading to declining market share [11].</li> <li>• Soaring energy costs in running plants operations due to clean energy and hydrogen use [11].</li> </ul>	<ul style="list-style-type: none"> <li>• EVs to reach 70% of total sales volume by 2030 in U.S[13].</li> <li>• Sourcing cheap but good quality clean energy and hydrogen by reducing cost [11].</li> </ul>	<ul style="list-style-type: none"> <li>• From 55 to 70 EV models by 2025 including Hybrid (HEVs), plug-in hybrid (PHEVs), battery electric vehicles (BEV) and fuel cell electric vehicles (FCEVs) by Toyota [13].</li> <li>• Toyota’s entry into clean energy power generation business to reduce energy cost [14].</li> </ul>
<p><b>Operational disruption</b> Factors that could disrupt Toyota’s operations</p>	<ul style="list-style-type: none"> <li>• Production and supply chain disruptions due to natural disasters[11].</li> <li>• Northern America sites including manufacturing plants have been</li> </ul>	<ul style="list-style-type: none"> <li>• Rising EVs demand for power supply in crisis situations [11].</li> <li>• Innovative water saving technologies during paint uses around 48 percent</li> </ul>	<ul style="list-style-type: none"> <li>• Resilient supply chain by collecting classified information from suppliers to build a database— RESCUE (Reinforce Supply Chain Under Emergency) to avoid any supply chain disruptions caused by disasters [12].</li> </ul>

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	<p>identified with high water risk score which can be a major hindrance in smooth operations[15].</p>	<p>of the total water used at a facility[15].</p>	<ul style="list-style-type: none"> <li>Water stewardship programs in high stressed regions and promote water conservations by educating local communities via campaigns such as National Mayors Challenge for Water Conservation by Wyland Foundation and Toyota[15].</li> </ul>
<b>STRATEGIC</b>			
<p><b>Business model</b></p> <p>How sustainability is currently integrated in the Toyota business model?</p>	<ul style="list-style-type: none"> <li>Increasing traffic fatalities and congestion. 1.35 million people die globally in traffic accidents – WHO [12].</li> <li>Changing customer preferences in transportation-mode shift, sharing [12]. This would improve access and</li> </ul>	<ul style="list-style-type: none"> <li>Huge potential in autonomous driving for passenger safety. 94% of the accidents are caused by human errors/distractions while driving. [16].</li> <li>Huge investments in mobility ecosystem with sensors, connectivity, EVs</li> </ul>	<ul style="list-style-type: none"> <li>Toyota’s “Mobility Teammate Concept” aims synergy between vehicle and human for autonomous driving [12].</li> <li>Toyota striving for partnerships to launch e-palette – ‘mobility as a service’ for hassle free commute after prototype testing at the Woven City[18].</li> </ul>

	affordability which could be a huge material issue in automotive sector.	& charging amounting to roughly \$70 billion since 2010[17].	
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These risks and opportunities are closely interlinked and are largely a consequence of the changing trends, consumer awareness and, regulatory interventions due to systemic pressures. Organizations are required to embrace the sustainability challenges in order to innovate and justify business continuity. The actions or next steps triggered from risks and opportunity continuum would disrupt the business models like it did in Toyota’s case. Toyota is beyond the traditional automotive organization. It is a ‘mobility company’ now.

## 7. CONCLUSION

With rise in environmental and overall sustainability awareness, it is becoming essential for automakers to follow, monitor, report, and improve on the ESG benchmarks. ESG is becoming a core part of the business planning and strategy. Each business process needs to consider the ESG aspect in implementation, re-engineering, and re-design. While considering the ESG reporting, it is becoming essential to not only focus on the impacts these organizations would have on the environment, but also on how the macroenvironmental issues can affect the sustainability of the organization. To ensure ESG compliance, organizations need to overcome key challenges discussed in this paper and also need to determine the materiality issues in the sustainability to include them in the strategic plan for effective implementation of the sustainability goals.

## REFERENCE

- [1] Zolezzi, B. P. (2023, September 29). Double materiality: Broadening corporate sustainability reporting to encompass societal and environmental impacts. [www.cisl.cam.ac.uk](http://www.cisl.cam.ac.uk). <https://www.cisl.cam.ac.uk/news/blog/double-materiality-corporatesustainability-reporting-encompass-societal-and-environmental-impacts>.
- [2] Singh, J. (2021, May 20). The automobile industry can lead the clean mobility movement. This is how. World Economic Forum. <https://www.weforum.org/agenda/2021/05/the-futureof-automobiles-clean-energy-decarbonization/>.
- [3] Ritchie, H. (2020, October 6). Cars, planes, trains: Where Do CO2 Emissions from Transport Come from? Our World in Data; Global Change Data Lab. <https://ourworldindata.org/co2-emissions-from-transport>
- [4] International Energy Agency. (2019, May). Global EV Outlook 2019 – Analysis - IEA. IEA. <https://www.iea.org/reports/global-ev-outlook-2019>

Observance of Environmental, Social, and Governance (ESG) Issues with Respect to Double Materiality in Automotive Sector

- [5] BMW, Mercedes, Audi, others race to make entire supply chain greener. (2019, September 1). Automotive News Europe. <https://europe.autonews.com/automakers/bmwmercedes-audi-others-race-make-entire-supply-chain-greener>
- [6] Winkler, M. (2020). The Automotive Industry in the Era of Sustainability. <https://www.capgemini.com/wp-content/uploads/2020/03/Report-The-automotive-industry-in-the-era-of-sustainability.pdf>
- [7] Software-defined mobility. (2023). Www.bosch-Mobility.com. <https://www.boschmobility-solutions.com/en/mobility-topics/connected-mobility/>
- [8] GLOBAL STATUS REPORT ON ROAD SAFETY 2018. (2018). <https://apps.who.int/iris/bitstream/handle/10665/276462/9789241565684-eng.pdf>
- [9] Bagloee, S. A., Tavana, M., Asadi, M., & Oliver, T. (2016). Autonomous vehicles: challenges, opportunities, and future implications for transportation policies. *Journal of Modern Transportation*, 24(4), 284–303. <https://doi.org/10.1007/s40534-016-0117-3>
- [10] DQS. (n.d.). DQS Inc. | ESG in the Automotive Industry. Www.dqsglobal.com. <https://www.dqsglobal.com/en-my/learn/blog/esg-in-the-automotive-industry-sector>
- [11] Toyota Environmental Report. (2020). In toyota. [https://global.toyota/pages/global\\_toyota/sustainability/report/er/er20\\_en.pdf](https://global.toyota/pages/global_toyota/sustainability/report/er/er20_en.pdf)
- [12] Sustainability Data Book - The latest version Editorial Policy. (2020). [https://global.toyota/pages/global\\_toyota/sustainability/report/sdb/sdb2007\\_en.pdf](https://global.toyota/pages/global_toyota/sustainability/report/sdb/sdb2007_en.pdf)
- [13] CORPORATION, T. M. (2021, October 18). Toyota Charges into Electrified Future in the U.S. with 10-year, \$3.4 billion Investment | Corporate | Global Newsroom. Toyota Motor Corporation Official Global Website. <https://global.toyota/en/newsroom/corporate/36193702.html>
- [14] CORPORATION, T. M. (2020, April 3). Toyota Green Energy Established to Conduct Renewable Energy Power Generation Business | Corporate | Global Newsroom. Toyota Motor Corporation Official Global Website. <https://global.toyota/en/newsroom/corporate/32098091.html>
- [15] 2019 Toyota North American Environmental Report. (2019). Toyota.com. <https://www.toyota.com/usa/environmentreport/water.html>

- [16] Wang, J., Zhang, L., Huang, Y., & Zhao, J. (2020, October 6). Safety of Autonomous Vehicles. *Journal of Advanced Transportation*. <https://www.hindawi.com/journals/jat/2020/8867757/>
- [17] Troy, B., Alex, C., Russell, H., Nathan, P. (2019, December). The Future of Mobility is at Our Doorstep. <https://www.mckinsey.com/~media/McKinsey/Industries/Automotive%20and%20Assembly/Our%20Insights/The%20future%20of%20mobility%20is%20at%20our%20doorstep/Thefuture-of-mobility-is-at-our-doorstep.ashx>
- [18] Toyota demonstrates autonomous shuttle for “mobility as a service” applications – Robotics & Automation News. (2022, February 20). *Robotics & Automation News*. <https://roboticsandautomationnews.com/2021/01/26/toyota-demonstrates-autonomousshuttle-for-mobility-as-a-service-applications/39920/>

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