

## Case studio of material topics for a Spanish logistics enterprise

### Estudio de caso del análisis de materialidad para una empresa logística española

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#### Abstract

This work presents the analysis of the material topics of sustainability of a Spanish company in the logistics sector. The methodology used is the case study based on the interview with an official of the organization, internet research on the organization's performance, based on the analysis of the application of the SDGs, from a SWOT and CAME analysis, of the analysis of Porter's forces, and of the quantitative analysis of material topics. With all this, a work strategy for the organization for the short term is outlined. Among the conclusions, this analysis shows the importance of the circular economy, the organization's sustainability strategy and awareness about the registration of its carbon footprint. But also, the need for alliances with suppliers and the development of collaborators, as well as the requirement for a robust digital platform and obtaining Lean & Green recognition. All to advance the company's competitiveness in terms of sustainability.

#### Resumen

En este trabajo se presenta el análisis de los temas materiales de la sostenibilidad de una empresa española del sector logístico. La metodología utilizada es el estudio de caso a partir de la entrevista con un funcionario de la organización, la investigación en internet sobre el desempeño de la organización, a partir de los análisis de la aplicación de los ODS, de un análisis DAFO y CAME, del análisis de las fuerzas de Porter, y del análisis cuantitativo de los temas materiales. Con todo esto se delinea una estrategia de trabajo de la organización para el corto plazo. Entre las conclusiones, este análisis da cuenta de la importancia de la economía circular, de la estrategia de la sostenibilidad de la organización y de la conciencia sobre el registro de la huella de carbono de esta. Pero también, de la necesidad de las alianzas con proveedores y del desarrollo de los colaboradores, así como del requerimiento de una plataforma digital robusta y de la obtención del reconocimiento *Lean & Green*. Todo para avanzar en la competitividad de la empresa en cuanto a la sostenibilidad.

**Materiality Topics, Logistics Enterprise, Sustainability**

**Temas materiales, Empresa de logística, Sostenibilidad**

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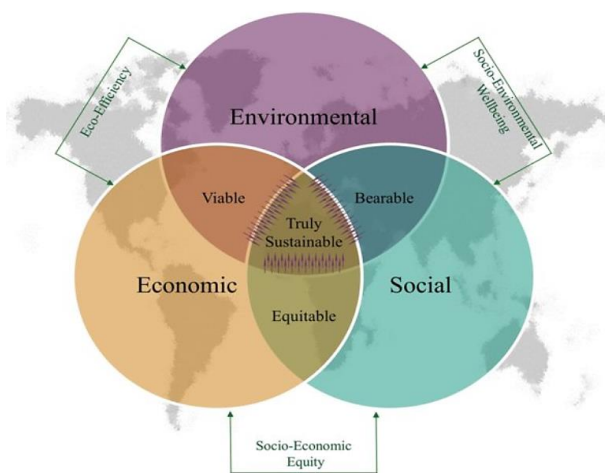
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**Introduction**

The optimisation of a company's resources is permeable to all business-related processes. While, generally speaking, increasing financial profit is the main objective of a profitable enterprise, it has been associated with a host of other strategies and activities for decades.

From lean manufacturing to green or sustainable, organisations have had to update themselves and use the resources available in the environment in a better way. The latest trends have been sustainable or green that minimise the ecological footprint and promote the circular economy in the supply chain, up to the concept of the triple bottom line: economic, social and environmental (Sharma, et al., 2021).

The Triple Bottom Line TBL or 3BL principles as triple bottom line positive balance, associated with true sustainability of companies (Tasdemir, Gazo and Quesada, 2020), shown in Figure 1, have been present since the European Union Green Paper (Commission of the European Communities, 2001). The TBL or 3BL principles state that a company's performance should be measured on the basis of its contribution to economic prosperity, environmental quality and social capital. (Zak, 2015).

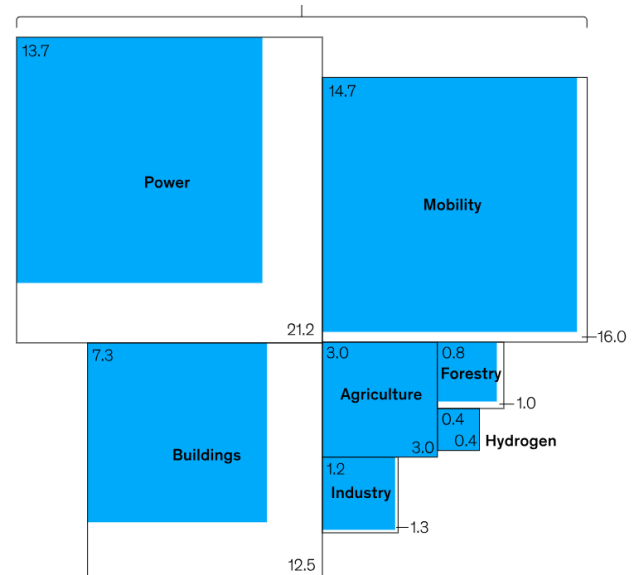


**Figure 1** TBL principles and their relationship to the pillars of sustainability. *Source: Tasdemir, Gazo and Quesada (2020)*

While the European 2020 Strategy sets targets such as: "To reduce greenhouse gas emissions by 20 % compared to 1990 levels, to increase the share of renewable energy in our final energy consumption to 20 % and to increase energy efficiency by 20 %" (European Commission, 2010, p. 36),

Spain has reciprocated with a series of commitments and subsidies for companies that join this sustainable policy (Government of Spain, 2020).

In this framework, developing projects that contribute to the sustainability of companies is an imperative need, and if it is one whose major carbon footprint is in the distribution of its products, then the main focus should be on those sectors that have the greatest demand for reduction such as emissions due to transport, as shown in Figure 2.



**Figure 2** Spending requirements vs. global investments, to achieve zero net greenhouse gas emissions 2021-2030 *Source: Madgavkar, et al (2023)*

In this Figure 2, the sectors with the greatest need for investment to reduce greenhouse gas emissions towards the net-zero goal are: the energy sector, which includes wind, solar, hydrogen, nuclear, geothermal, biomass and gas with carbon dioxide capture and storage (CCS) to avoid emitting carbon dioxide into the atmosphere, as well as its transmission and distribution network and storage infrastructure; and mobility, which includes cars, buses, commercial transport vehicles and their corresponding infrastructure.

Therefore, innovation in logistics, and particularly in freight transport, will make the most sustainable companies in the services they offer become leaders in the sector, because they are socially responsible (Markley and Davis, 2007).

One resource that companies use to make their commitment, strategy and long-term vision visible are sustainability reports. These reports are produced and published to declare their actions and results to their stakeholders, which is why they are displayed on their websites. Anyone interested in understanding the company's approach to decision-making or in verifying the company's inclusion in certain sustainability initiatives can consult its sustainability report, which is generally published annually.

The most widely used standards for sustainability reports come from the Global Reporting Initiative (GRI) (Rodríguez Guerra and Ríos-Osorio, 2016), whose elements allow companies to meet the demand for transparency with their stakeholders, which results in trust towards the organisation, but also contribute to the comparability of the information disclosed, in terms of its economic, social and environmental aspects (GRI, 2023).

However, in order to reach this level of commitment, organisations must carry out actions in the field of Corporate Social Responsibility that will eventually allow them to show a comprehensive strategy. In the case of a Spanish logistics company, one example is the voluntary registration of its carbon footprint with the Spanish Ministry of Ecological Transition.

Likewise, the analysis of the monitoring of the Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (n.d.) is essential for companies that pride themselves on acting responsibly towards the planet.

The SDGs can be seen as a declaration of 17 goals set out and approved by the United Nations in response to the need to address a vision for the future. Their representative image can be seen in Figure 3: 1) End poverty, 2) Zero hunger, 3) Health and well-being, 4) Quality education, 5) Gender equality, 6) Clean water and sanitation, 7) Affordable and clean energy, 8) Decent work and economic growth, 9) Industry, innovation and infrastructure, 10) Reducing inequalities, 11) Sustainable cities and communities, 12) Responsible production and consumption, 13) Climate action, 14) Undersea life, 15) Life of terrestrial ecosystems, 16) Peace, justice and strong institutions, 17) Partnerships for achieving the goals (Naciones Unidas, s.f.).



**Figure 3** United Nations sustainable development goals  
Source: United Nations (n.d.)

The SDGs originated in 1987 with the Brundtland Report, which defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Ibid.).

This work is part of a sustainable project focused on reducing the carbon footprint of a Spanish company, referred to in this document as ELE, which provides product rental services to food transport companies. This is a project in alliance with one of its most important logistics providers, to replace diesel trucks with electric trucks on certain routes.

The objective of this document is to share the results of the materiality analysis of the ELE company, including the methodology and resources used.

## Methodology

This work was developed through a case study of a Spanish logistics company by conducting internet research and an interview with a senior executive of the company under study whose information is kept confidential at his request. The materiality analysis was carried out during 2022 and was arranged for the feasibility analysis of an intervention project on a pre-existing route.

The strategic planning tools used to study the environment in this case were: 1) the SDG implication analysis as a technique to visualise the organisation's performance through that sieve; 2) the SWOT analysis - weaknesses, threats, strengths and opportunities - complemented with the CAME strategy - correct, adapt, maintain and exploit - to address the findings of the SWOT; and 3) Porter's analysis.

It should be noted that the SDGs are not obligations established by the United Nations; adherence to them, whether by an individual, a company or an administration, is voluntary. However, they are a call to work together and in the same direction, for and with the planet. Likewise, it is not essential to opt for all 17 objectives in each project, but rather the organisation decides to join in the achievement of some of them, depending on the line of business or the scope established.

For its part, the strategic SWOT or SWOT analysis seeks a contextual vision of a situation where two realities are contrasted: the internal and the external. The internal vision must consider questions of leadership, processes, strategies, alliances, human talent, so that the most important weaknesses - D - and strengths - F - can be classified in a table. Meanwhile, the external vision studies the elements linked to possible markets, the sector, competitors, public policies, from which the main threats - A - and opportunities - O - are identified, also in a table (Rigotti, n.d.).

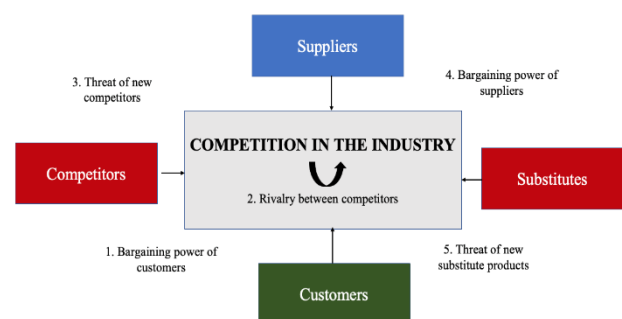
Meanwhile, the SWOT analysis is carried out on the basis of the result of the SWOT analysis, as a pair of complementary tools in the business development strategy. This analysis is also carried out by means of a matrix with the following elements: Correct -C- the weaknesses of the business, Confront -A- the external threats of the market where the business operates, Maintain -M- the strengths of the business, and Exploit -E- the opportunities presented by the business environment (Ruiz Barroeta, 2020). Figure 4 shows the aforementioned conceptualisation and the contents to be developed.



**Figure 4** Strategies of the CAME analysis  
Source: Ruiz Barroeta (2020)

Porter's analysis is the model developed by Michael Porter of Harvard University in the late 1970s to measure the competitiveness of a growing and expanding company. Porter included five forces in his model: 1) Threat of competitors, 2) Threat of new products, 3) Bargaining power of suppliers, 4) Bargaining power of consumers or customers, 5) Rivalry between competitors (Current company, 2022).

In each of these five Porter's forces, shown in Figure 5, the real situation of the product and its positioning in the market, the ability to negotiate with suppliers in the face of fluctuations in the demand for inputs, the threat of the entry of new competitors, but also of new substitute products, the rivalry between competitors and its consequences must be taken into account. All of the above is essential to anticipate various situations that affect your market situation (*Ídem*).



**Figure 5** Porter's Forces of ELE  
Source: Own elaboration based on Ruiz Barroeta (2023)

With this information, efforts were focused on identifying the impact of its processes in terms of sustainability, i.e. what is known as a materiality analysis was carried out for the project.

This analysis of the organisation's material issues, according to GRI (2022), explains the stages through which it was determined which were the most important and how the sustainability standards of each sector were used in this process.

Therefore, ELE's materiality analysis was based on the most relevant issues that reflect economic, social and environmental impacts, or that influence the decisions of its stakeholders.

It should be noted that ELE does not have its own sustainability strategy, nor does it have a Corporate Social Responsibility (CSR) strategy, although it does take action in this regard. This is because ELE is part of a European group that has its own internal policies. ELE Spain only joins the established programmes. Therefore, what is presented in this section includes the expectations and commitments declared by ELE in Spain and by its stakeholders.

With this information, a materiality analysis was developed, which consists of determining the issues and indicators that the company considers most important, according to its stakeholders, to review the impact of its processes in terms of sustainability (Rodríguez Guerra and Ríos-Osorio, 2016).

## Results

This section presents the results of each of the analyses carried out, in the order described in the previous section: SDG analysis, SWOT, CAME, Porter's Forces. Finally, the materiality analysis.

### *Analysis of the SDGs*

Logistics and transport are no strangers to the call to join the SDGs. Their significant impact on the generation of greenhouse gases - GHGs - makes it essential to join in the task of achieving these goals by 2030.

This involves the supply chain, which must strive to be increasingly sustainable, less polluting, react quickly to changes, maintain continuous improvement processes, commit to the circular economy, in short, take advantage of the public policies of the European Union that impact on Spain to carry out actions of benefit to all.

For all these reasons, the following are the seven SDGs that were considered to be directly linked to the development of ELE's sustainability policies, and which would be expanded for the project.



**Figure 6**

SDG 5. Organisations should ensure that the right to non-discrimination against women is respected, that equal opportunities for leadership are provided at all levels of decision-making, and that women's rights are respected.

Recognition of the different needs of women in economic, public and political life is important. For example, in the workplace, their right to have appropriate conditions to raise their children if they decide to have them, so that kind of consideration when generating internal policies of benefits for human resources is important. But also the inclusion of certain equipment they might need in the physical infrastructure of offices and services that would allow them to feel more comfortable during the working day (United Nations, n.d.).

CSR actions can also include programmes to assist in the empowerment of women and girls at all levels. This can be done through awareness-raising strategies, but also through access to resources such as technologies of all kinds, for the development of competencies that include them in other areas.

ELE already carries out actions related to this SDG, as it has a fairly equal proportion of men and women among its staff. It would be necessary to review whether the same ratio is also maintained at executive level, and what other conditions can be incorporated into its sustainability strategy to address this aspect.

It could well include this internal policy in its promotional communication, in order to influence the campaign for the empowerment of girls and women, through their growth in higher education or in the development of skills. *ad hoc*.



Figure 7

ODS 8. Organisations must ensure that they drive the creation of decent jobs at all levels of the value chain. Jobs that are the basis for helping to lift people out of poverty and reduce inequalities.

It is necessary to ensure that a company, its partners and suppliers, comply with decent working conditions, committed to labour rights. This objective is achieved by fostering stable, safe and stimulating working environments. Environments that ensure equal opportunities and promote the professional development of all workers. Avoiding discrimination on the basis of sex, race, age, religion or orientation (United Nations, n.d.).

It is also possible to contribute to SDG 8 by establishing fair selection processes for suppliers, and by promoting training and access to information and communication for all workers, which facilitates the exchange of ideas.

In addition to the above, it is also important to promote research, development and innovation in order to integrate technological improvements into work activities and thus improve the conditions, effectiveness and efficiency of the work performed. It is also essential to have a good occupational health and safety management system for all workers. The benefit is not only the reduction of accidents and occupational diseases, but also the reduction of psychosocial risks.

In this sense, ELE has an internal policy to ensure a balanced life between work and family, which is a good starting point for the analysis of the fulfilment of this objective.



Figure 8

ODS 9. Companies must promote innovation projects at the points of the supply chain, address preventive strategies that reduce negative effects, seek a balance between the development of the business project and environmental protection, rejecting actions that put the environment at risk, in order to create quality and sustainable infrastructures (Ibidem). It is necessary to promote research through collaborations with research centres, innovative companies and scientific bodies, aimed at improving logistics and transport, from packaging to engines and vehicles. To promote the automation of processes by integrating the most advanced technology, such as the internet of things and artificial intelligence, which help to improve sustainability and reduce environmental impact.

ELE supports projects that benefit sustainability, obviously by performing return on investment analysis, including carbon footprint improvement. They already do this by using a digital platform to streamline inbound delivery of products. Such actions should then be integrated into a systemic strategy to incorporate other aspects such as the use of other technologies at other stages of their processes.



Figure 9

ODS 11. The world is becoming increasingly urbanised. That is why the sustainability of cities is vital for the planet. And for this sustainability, the city has to prosper, but be increasingly human, finding a balance between its development and agile, clean, ecological infrastructures (Idem).

The more sustainable the company, the healthier the technology used, the less it will pollute, the better it will manage its waste and recycle more, the more benefits it will bring to the communities where it is located.

It is important for SDG 11 to work closely with local suppliers, encouraging the training of local workers, improving expectations and quality of life. The use of less polluting and more sustainable vehicles in the supply chain reduces the company's impact on the environment. Thus, the sustainability of the routes is enhanced, as well as the circular economy and reverse logistics, which favour the reduction of waste generated.

ELE, as a logistics service company, has as a priority the reduction of its carbon footprint mainly by the road transport service, which is the second most polluting sector, according to Figure 2.

This approach of course benefits the environment of the cities where it operates, which become very important stakeholders for the business. In this sense, the replacement of vehicles with electric vehicles that will be launched on the market in the second half of 2023 is very important.



Figure 10

ODS 12. The aim is to reduce the impact of human activities on the environment by adjusting production and consumption. Always seek design that favours efficient use of energy and natural resources used in its development, favouring reuse and recycling, at all stages of business activity (United Nations, n.d.).

It also helps to innovate to extend the useful life of products. It is important to promote training and implementation of responsible production and consumption practices. Not only as a company, but also through training, in the lives of employees. Sustainability reporting that informs stakeholders about the company's contributions sets an example to encourage practices throughout the supply chain.

Other actions include: encouraging the use of recyclable and/or reusable raw materials throughout the entire process; applying all the advances available to the company to replace more polluting or energy-intensive products and processes; setting clear targets for waste reduction and the environmentally sound use of waste. The important thing is that it is an established programme, not a temporary project.

ELE's work with its suppliers, for example, using certified resources and processes to ensure sustainability, is one of the responsible actions in production. So is the approach to reduce the use of fossil fuels in transport and even for the combustion process in the production of products.

More progress can be made with a more aggressive strategy in the short term where vehicle substitution can be done in conjunction with suppliers at an early stage, or an analysis of Last Mile logistics. (Segura, *et al*, 2020).



Figure 11

ODS 13. Integrating the fight against climate change into the company's DNA, focusing on actions that reduce GHG emissions, aligning the company with the United Nations framework agreement and developing policies and action plans that are congruent with it, is what SDG 13 means (United Nations, n.d.).

It is necessary to invest in research and development of increasingly sustainable and cleaner technology, progressively transforming the entire structure into a fully sustainable one. Improve energy efficiency, using renewable energies. Reduce the use of fossil fuels. Measure and monitor the carbon footprint and establish programmes for its reduction and the evaluation of its effects. Offset CO2 emissions.

ELE, with its focus on reducing the carbon footprint of road transport, is clearly working for the benefit of the climate. By focusing on an electric truck substitution project, it is possible to experience the experience of contributing to climate benefit. In addition to the reforestation project to compensate for the impacts, which is one of the actions integrated into its sustainability strategy.



Figure 12

ODS 17. Working for the planet is not something that can be done in isolation and no one should be left out. In order to contribute to the maximum potential, alliances must be established between civil society, entrepreneurs, managers and investors, as many actions require the participation of multiple actors (Idem).

To address SDG 17, it is necessary to be open to proposals for collaboration with other actors, and to be proactive, taking the initiative in developing programmes and proposing synergies. To this end, it is necessary to contemplate these possibilities in the sustainability plans of companies and administrations.

With this in mind, work must be done internally within the company, raising awareness and training all employees individually and in all departments on the SDGs, their importance and the need for everyone to contribute. However, volunteer programmes can also be developed with sustainability objectives in mind, encouraging the participation of all staff and setting a clear example for the organisation's surrounding community. The company's commitment to the SDGs should include partnerships, to show the true dimension of shared commitment with other organisations. The partnerships that ELE has been making with its suppliers and customers are fundamental to the consistency of its actions. An example of this is the Lean & Green Award for sustainable logistics (AECOC, n.d.).

### SWOT analysis

This SWOT technique involves the review of the main factors influencing the internal and external contexts, weaknesses and strengths for the internal environment, and threats and opportunities in the organisation's environment.

It should be noted that for this strategic analysis it is essential to clearly identify the company's stakeholders. In the case of ELE Spain, these are: customers, suppliers, different governmental bodies of the State and the Autonomous Communities, non-governmental organisations that promote and recognise sustainability, the societies in the environment where the service is provided, the internal community of ELE Spain employees, and the ELE Europe corporate community.

Some of these factors emerged from the analysis of the SDGs, others from the systemic internet review of ELE and its business environment, but others from the interviewee's knowledge and experience of ELE's internal context.

Table 1 presents the most important factors of the internal context, seven of them as weaknesses and eight as strengths. Similarly, Table 2 shows the six main threats and seven important opportunities of the external context.

INTERNAL FACTORS	
Weaknesses	
D1.	ELE does not have its own sustainability strategy.
D2.	ELE does not have a sustainability report.
D3.	Limited resources to implement further CO2 reduction actions.
D4.	Limited supply, which makes it necessary to move products from one maintenance centre to another, even to customers from long distances.
D5.	Lack of information for some processes, such as product collection routes from suppliers.
D6.	Difficulties in retrieving products at return points, and retailers.
D7.	Investment in digital technologies has been limited, neither in talent nor in suppliers.
Strengths	
F1.	Circular economy processes.
F2.	Lean & Green award since 2018 for sustainable logistics.
F3.	Some actions to offset and reduce CO2.
F4.	Registration of carbon footprint with MITECO (Spanish Ministry for Ecological Transition and Democratic Challenge).
F5.	Suppliers dedicated exclusively to ELE (maintenance centres).
F6.	Flexibility to reconcile work and family life for employees.
F7.	ELE maintains gender equality in the staff hired, with 57% women and 43% men.
F8.	CSR actions such as volunteering.

Table 1 Factors of the internal context of ELE.

Source: Own elaboration

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EXTERNAL FACTORS	
Threats	
A1.	Rising commodity prices.
A2.	Low supply of multimodal transport in Spain.
A3.	No supply of alternative fuels in Spain.
A4.	Low supply of electric trucks and infrastructure for recharging.
A5.	Black market for the sale and purchase of the main product.
A6.	Competition advances in sustainability.
Opportunities	
O1.	Increased volume of customers due to lack of competing products.
O2.	Search for multimodal transport providers with routes in ELE needs.
O3.	Opening of bids for contracting transport to other strategic suppliers.
O4.	Public policies focused on promoting the use of electric trucks and chargers.
O5.	Alliances with transport providers to expand the supply of Duo-Mega trucks.
O6.	Analysis of improvement possibilities in the Last Mile ecosystem.
O7.	Collaborative work to improve technologies in digital platforms.

**Table 2.** Factors in the external context of ELE.

Source: Own elaboration

### *Porter's forces analysis*

From the diagram shown in Figure 5, the most important elements of competition in the market, according to Porter, are: customer requirements, competitors in the market, new entrants, suppliers and the need to negotiate with them, and the threat of substitute products. Each of these will be analysed in the following sections.

### *Customers*

ELE is a European group with approximately 530 customers in Spain, with more than 60 million product movements during 2022. The clients are all manufacturers of food products such as: groceries, fresh food and beverages. The reason for working only with customers in this sector is to avoid contamination of the pallet due to food restrictions. The only exception allowed is with customers in the textile sector as they do not generate any additional contamination.

Currently, ELE, due to the lack of supply from competitors and increases in raw materials, has the possibility to expand its market by introducing new customers. However, product losses must be reduced in order to remain competitive.

Competition. ELE is currently the second largest product group in its competitors' market with 21.1% market share, second only to C1 with 60.2%, followed by C3 with 16.7% and C4 with 2.0%.

C1 is a leading company in the sector in 54 countries, with 60 years of experience. It is present in the Spanish market throughout the territory. Its sustainability programme is based on: 1) carbon neutral programme, a carbon offset that aims to mitigate emissions generated by operations such as pallet management by financing projects that capture GHGs; 2) CSR programmes with 14 charities and non-governmental organisations; 3) Zero waste world, a global collaboration programme that co-creates and delivers innovation, zero waste and scalable solutions that work with the world's leading retailers and manufacturers to meet consumer demand in a smarter and more sustainable way.

C3 is a Spanish company with 26 years of experience, focused on serving supermarkets. Its operating model is underpinned by the circular economy and CSR and includes: 1) since 2005 its foldable, washable and reusable containers and plastic products. It works with eco-design, which enables a reduction in the volume transported; 2) since 2011 it has been committed to the SDGs and actively participates in various social foundations; 3) since 2017 it has been automating one of its facilities; 4) since 2021 it has had a sustainability report.

C4 is the growing competitor with the largest presence in the UK and France. Their products are made of wood and are certified, they also have other types of products. The most important feature is the technology they have added to their operating model.

C4's sustainability programme is 10 years old and is based on the circular economy. It has: 1) certifications such as PEFC and FSC for their sustainable timber; 2) they take care of their carbon footprint, Lean & Green recognition, and support a tree planting project with Land Life Company; 3) they are committed to the SDGs, they have inclusion projects; 4) they use technology to innovate, they have tracking systems for some of their products.

*New entrants*

At the moment there are no other competitors with significant presence in the market, apart from those mentioned above.

*Suppliers*

ELE's main suppliers are: (1) 14 domestic manufacturers; (2) 15 maintenance centres and 12 depots; (3) suppliers of product transport; (4) suppliers of raw materials such as wood whose manufacture has no restrictions beyond compliance with PEFC certification; (5) the wood repair service has three suppliers, however, barring supply problems, only one of them is used; 6) 3 suppliers of approved nails and rivets; 7) 2 suppliers for painting; 8) MITECO, Centre for carbon footprint certification; 9) AECOC as a supplier for the Lean & Green Award, as well as being a key company within the logistics sector to share with customers; 10) SGS, as a certifying company for international standards ISO 9001: 2015; 11) CO2 Reforestation as a company for reforestation partnerships.

*Substitutes*

Some substitute products for the main ELE product are already on the market. For example, competitors are using plastic instead of wood, and a technology for localisation, but at a higher cost. In any case, the cost benefit and the interest of ELE's customers in these products could be assessed in order to invest in research and development of new technologies and materials.

Based on the above, an analysis of Porter's forces in the market shows that: (a) customers are sustained with a good base and, given competitive conditions, it is feasible to increase them; (b) competing companies each have their own market segment and with differentiating elements, although in some cases they share space as in the case of food products; (c) new entrants do not have significant weight at the moment; (d) suppliers have performed well, in synergy with ELE's projects; (e) substitute products are more expensive, but competitors' will have to be followed up and perhaps invest in design engineering.

*CAME analysis*

This section presents the most important elements of the initial response to the analysis of the internal and external context of ELE through the CAME analysis. According to Ruiz Barroeta (2020), this analysis is a complement to the matrix of strengths, weaknesses, opportunities and threats - SWOT - already carried out and aims to give a structure to the business strategies.

It is a confrontation with each of the aspects of the SWOT in order to propose actions to be carried out. To this end, questions are asked such as: if the strength is accentuated, to what extent can the opportunity be better exploited, and to what extent is the threat minimised; if the weakness is overcome, to what extent can the opportunity be better exploited, and to what extent is the threat minimised (University of Cantabria, 2014).

Then, the elements of the SWOT analysis are taken up again and threats and opportunities are linked to weaknesses and strengths, according to the relationships between each of them. The following scale was used for the assessment: 10 for a high relationship, 5 for a medium relationship, 1 for a low relationship and 0 for no relationship (Idem).

By completing the confrontation matrix with all the factors set out in tables 1 and 2, the five factors from each of the categories with the highest ratings were chosen, as shown in Table 3. In the columns of Table 3, the external factors: Opportunities and Threats are presented in the columns, while the internal factors: Strengths and Weaknesses are shown in the rows.

	O1	O3	O4	O6	O7	Σ	A1	A2	A4	A5	A6	Σ	T
F1	5	1	5	5	5	21	5	5	5	1	10	26	47
F2	5	10	10	10	5	40	5	5	10	0	10	30	70
F3	10	10	10	10	5	45	10	5	10	1	10	36	81
F4	10	5	10	10	5	40	5	10	10	1	10	36	76
F5	10	10	5	10	5	40	10	5	10	5	10	40	80
Σ	40	36	40	45	25		35	30	45	8	50		
D3	10	10	10	10	5	45	10	5	10	1	10	36	81
D4	10	10	10	10	5	45	10	5	5	10	5	35	80
D5	10	5	5	10	10	40	10	10	10	10	10	50	90
D6	5	5	5	1	5	21	10	1	5	10	5	31	52
D7	5	5	10	10	10	40	10	5	5	10	10	40	80
Σ	40	35	40	41	35		50	26	35	41	40		
T	80	71	80	86	60		85	56	80	49	90		

**Table 3** SWOT confrontation matrix.

Source: Own elaboration based on University of Cantabria (2014)

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Table 3 shows the sum values for each line by category and the totals. In the latter, it is possible to order by weight in the relationship of each one with the different factors. Thus, the most important weakness is: D5. There is a lack of information for some processes, such as routes for collecting products from suppliers, which should be addressed immediately in order to minimise it. Whereas, the strongest threat is: A6. Competition is advancing in sustainability, which must be addressed as a priority and in a comprehensive manner in order not to lose competitiveness. Based on the ranking of these results by their evaluation in the confrontation, it was decided to prioritise the strategies and actions in order to concentrate them on those factors that had the minimum 80% of impact on the project. Table 4 shows the actions or strategies proposed to correct each of the weaknesses mentioned and to confront each of the threats selected, in ascending order of evaluation, for the four factors with the highest scores in Table 3.

INTERNAL FACTORS Correcting Weaknesses
D5. Lack of information for some processes, such as routes for collecting products from suppliers. CD5. Analyse with the most important suppliers the routes for the collection of products and use technology to keep the information up to date.
D3. Limited resources to implement more CO2 reduction actions. CD3. Analyse possible returns on investment for the implementation of CO2 reduction measures.
D4. Limited supply forcing the transfer of products from one maintenance centre to another, even to customers from long distances. CD4. Analyse in economic terms the impacts of increasing the number of days of supply, in order to find an optimal break-even point.
D7. Investment in digital technologies has been limited, neither in talent nor in suppliers. CD7. Assess the return on investment for increasing technological capacity.
EXTERNAL FACTORS Addressing Threats
A6. Competition is advancing in sustainability. AA6. Improve benchmarking to generate a competitive sustainability strategy.
A1. Rising raw material prices. AA1. Carry out a financial analysis to seek alternative suppliers to enable competitiveness, including a greater supply of plastic and steel.
A4. Reduced supply of electric trucks and infrastructure for recharging. AA4. Generate alliances with expert transport companies for investment alternatives in electric trucks, considering recharging.
A2. Low supply of multimodal transport in Spain. AA2. Maintain the search for and analysis of alternatives in new lines for product movement.

**Table 4** Remediation and coping strategies  
*Source: Own elaboration*

In the same way as in the previous case, Table 5 shows the first four strengths of the business, in order to define the strategy for its maintenance, as well as the four most highly valued opportunities that should be exploited to take advantage of them.

INTERNAL FACTORS Maintain Strengths
F3. Some actions for offsetting and CO2 reduction.MF3. Follow-up of actions to ensure compliance with targets.
F5. Suppliers dedicated exclusively to ELE (maintenance centres). MF5. Maintain good relations with suppliers and motivate their continuous improvement.
F4. Register carbon footprint with MITECO (Spanish Ministry for Ecological Transition and Democratic Challenge). MF4. Monitor actions to ensure compliance with objectives.
F2. Lean & Green Award since 2018 for sustainable logistics. MF2. Follow up on actions to ensure compliance with objectives.
EXTERNAL FACTORS Exploit Opportunities
O6. Analysis of possibilities for improvement in the Last Mile ecosystem. EO6. Integrate the Last Mile ecosystem analysis team to design the project.
O4. Public policies focused on promoting the use of electric trucks and chargers. EO4. Continued monitoring to take advantage of public policies in favour of electric trucks.
O1. Increase in customer volume due to lack of competing products. EO1. Conduct an economic analysis of the business to propose options to take advantage of the situation.
O3. Open bids for contracting transport from other strategic suppliers. EO3. Analyse the transport ecosystem to opt for new suppliers that benefit the projects.

**Table 5** Maintenance and operation strategies.  
*Source: Own elaboration*

A definition of the strategies in view of the CAME analysis presented in the previous tables is shown in tables 6 and 7.

EXTERNAL ANALYSIS Threats Defensive strategy
Carry out a return on investment analysis for proposals for change in a sustainable direction (new suppliers of raw materials and transport, pilot project using electric trucks, ongoing research into new alternatives in sustainable freight transport). Take advantage of ELE's sustainability programmes, actions, recognitions and certificates to promote them.
Survival strategy
Improve benchmarking to generate a competitive strategy in sustainability, optimising available resources and expanding suitable alliances.

**Table 6** Defence and survival strategy.  
*Source: Own elaboration*

EXTERNAL ANALYSIS
<b>Opportunities. Offensive strategy</b>
Advance with a sustainable vision in manufacturing and maintenance processes, and design new projects for logistics processes with the incorporation of new technologies, emphasise the analysis of the Last Mile ecosystem, seek alliances with logistics suppliers to use electric trucks or alternative energies.
<b>Reorientation strategy</b>
Optimise logistics processes using new technologies, to take advantage of opportunities to improve the Last Mile ecosystem and the expansion of new transport options, using public policies and the opening of options in product demand.

**Table 7.** Offensive and reorientation strategy.  
Source: Own elaboration

In the same sense, ELE should take advantage of both European and Spanish trends in particular to rethink its sustainability actions. This could start with the elaboration of a report that allows to make visible and contrast what has been achieved with the progress of the competition, both in the Iberian country itself and in Europe.

However, almost immediately, ELE can contribute to the reduction of its carbon footprint by gradually replacing fossil fuel trucks with electric ones. The transition from one to the other requires a project where synergies with stakeholders, both customers and suppliers, are essential, even though this technology will only be available in the second half of 2023.

*Materiality analysis*

Based on all the factors analysed in the previous sections and the sustainable vision, Table 8 shows the material issues and their positive or negative impact. The assessment of the scale or contribution to the processes, the scope of each material issue in the organisation's mission, and the probability of occurrence were integrated. The assessments were made by combining the vision of a senior executive of the company and the analysis of the context.

Positive impacts were considered on a scale of 1 to 3, according to the level of presence of the issue in the collective imagination of the project's collaborators, in any of the aspects of sustainability.

The scope -A- was rated from 1 to 3, if it concerns a very low proportion of the business operations, regular, or very high. The likelihood of occurrence - P - was also measured from 1 to 3, ranging from very unlikely to very likely.

Negative impacts, marked with red in Table 8, were similarly quantified. The contribution to the impact - EC - was measured with the following scale: 3 for that which causes the issue, 2 for that which contributes to causing the issue, and 1 for that which is linked to the impact of the issue. Scope A was rated similarly to the case of positive impacts, only here it is 3 for the irremediable nature of the scope and 1 for a minor scope. The probability P of occurrence is similar in scale, 3 for a very high probability of 80-100%, 2 for a probability from 60% to before 80%, and 1 for a probability of less than 60%.

ELE Material topics		Impacto		
		EC	A	P
1	Circular economy	3	3	3
2	Sustainability strategy	3	3	3
3	Carbon footprint register	3	3	3
4	Switching to renewable energy	3	3	2
5	Lack of electric vehicles	3	3	2
6	Sustainable transport	3	3	2
7	Sustainability report	3	3	2
8	Product recycling	3	2	2
9	PEFC certification	2	2	2
10	CO2 offsetting actions	2	1	3
11	Last Mile Ecosystem	2	2	1
12	Product loss	2	2	1
13	Partnerships with transporters	2	3	2
14	Partner development	2	2	3
15	Gender equality	2	1	3
16	CSR projects	3	2	1
17	Agile and robust digital platform	2	3	2
18	Lean & Green recognition	2	3	2
19	Product eco-design	2	2	2
20	Good governance, ethics, transparency	1	3	2
21	Brand and reputation management	2	2	1

Black colour: positive impact  
Red colour: negative impact.  
EC = Contribution to impact  
A = Scope of the issue  
P = Probability of occurrence

**Table 8** Impact of material issues.  
Source: Own elaboration

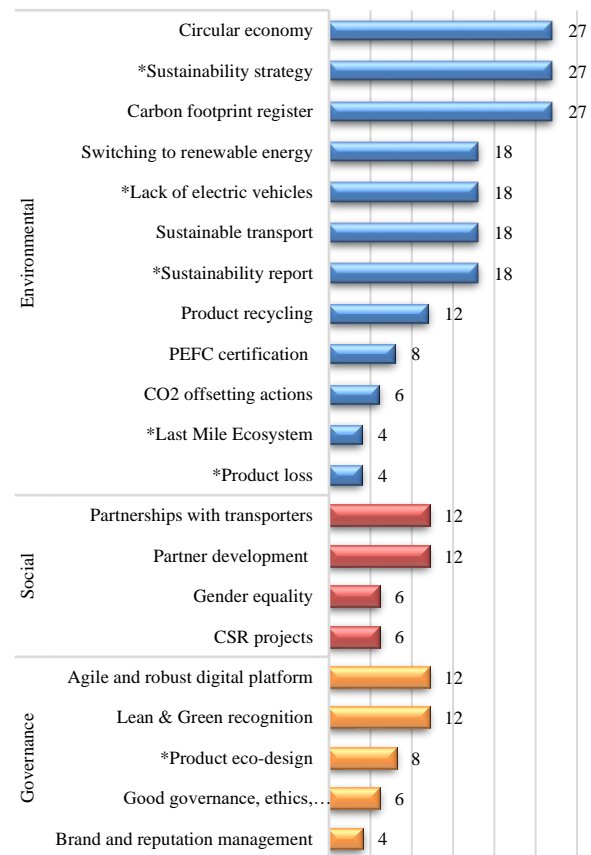
The material issues were classified by area of impact on sustainability: environmental, social or governance (ESG). This materiality analysis is shown in Table 9 with the indicator generated by Formula 1.

$$ASG = EC * A * P \tag{1}$$

The totals in Table 9 show the outstanding presence of environmental material issues, with 70% of the total score, including positive and negative. The environmental material topics with the highest impact: circular economy, own sustainability strategy, and carbon footprint registration - 27 points - at the maximum possible. Of which the first and third are already practised and monitored. The second and the seventh in Table 9, as an own purpose of ELE Spain, have not been properly initiated.

However, electric vehicles have a high negative impact - in red in Table 9 because they are not available. If the company carries out its synergy activities to negotiate with suppliers and customers a package of routes, it is possible to make progress.

On the other hand, in the area of governance, the eco-design of new products is still a pending issue.



Graphic 1 Graph of the impact of material issues  
Source: Own elaboration

	ELE	Nivel		
		A	S	G
1	Circular economy	27		
2	Sustainability strategy	27		
3	Carbon footprint register	27		
4	Switching to renewable energy	18		
5	Lack of electric vehicles	18		
6	Sustainable transport	18		
7	Sustainability report	18		
8	Product recycling	12		
9	PEFC certification	8		
10	CO2 offsetting actions	6		
11	Last Mile Ecosystem	4		
12	Product loss	4		
13	Partnerships with transporters		12	
14	Partner development		12	
15	Gender equality		6	
16	CSR projects		6	
17	Agile and robust digital platform			12
18	Lean & Green recognition			12
19	Product eco-design			8
20	Good governance, ethics, transparency			6
21	Brand and reputation management			4
	Totales	187	36	42

Black colour: positive impact  
Red colour: negative impact.  
A = Environmental S = Social G = Governance

Table 9 Level of impact of material issues.  
Source: Own elaboration

According to Table 9, the bar chart shown in Figure 6 was generated. Those material issues that have a negative impact for ELE in each of the ESG areas are shown with an asterisk.

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Conclusions

Through the SWOT, CAME and Porter's Forces analysis, in addition to the inclusion of the SDGs in the ELE actions, the most important material issues for the logistics company chosen for the study have been determined.

Based on the determination of the impact that each of them has on the different aspects of sustainability in companies, which are environmental, social and governance, from the perception of the researcher and in conjunction with the interviewee, a table of material issues has been established, with their weight in the company's performance. These values were then combined to construct a composite indicator showing the influence of each material issue, both positive and negative, on the company's performance.

In this table of material issues ordered according to their weight in the perception of those involved in the project, and categorised by the scope of sustainability, the negative and positive elements that will impact on the company's decision-making in this regard are highlighted.

In summary, this analysis shows the importance of the circular economy, the organisation's sustainability strategy and the awareness of the organisation's carbon footprint. But also the need for partnerships with suppliers and employee development, as well as the requirement for a robust digital platform and the achievement of Lean & Green recognition. All to advance the company's competitiveness in terms of sustainability.

In this initial analysis of materiality, it is necessary to go deeper, as other stakeholders have not been consulted, nor has a participatory exercise been carried out so that everyone can be heard and have the opportunity to assess the importance of the actions within the processes.

This exercise could well be the diagnosis with which the project's internal communication plan is prepared, as long as it also includes a PESTEL analysis to complement and update it.

## References

AECOC. (s.f.). *¿Qué es Lean & Green?* Recuperado el 11 de noviembre de 2023, de Lean & Green España: <https://www.aecoc.es/servicios/leangreen-espana/>

Comisión de las Comunidades Europeas. (18 de julio de 2001). *Libro Verde. Fomentar un marco europeo para la responsabilidad social de las empresas.* Recuperado el 28 de noviembre de 2023, de EUR-Lex: <https://eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:52001DC0366&from=ES>

Comisión Europea. (2010). *Europa 2020. Una estrategia para un crecimiento inteligente, sostenible e integrador.* Bruselas: Comisión Europea. Recuperado el 30 de noviembre de 2023, de <https://eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:52010DC2020&from=ES>

Empresa actual. (28 de abril de 2022). *Las cinco fuerzas de Porter.* Recuperado el 30 de noviembre de 2023, de Empresa actual: <https://www.empresaactual.com/las-cinco-fuerzas-de-porter/>

Gobierno de España. (2022). *Informe de situación de la economía española.* Recuperado el 10 de diciembre de 2023, de Indicadores e informes macroeconómicos: [https://portal.mineco.gob.es/RecursosArticulo/mineco/economia/macro/Informe\\_Situacion/InformeSituacion2022.pdf](https://portal.mineco.gob.es/RecursosArticulo/mineco/economia/macro/Informe_Situacion/InformeSituacion2022.pdf)

GRI. (2022). *GRI 3: Temas Materiales 2021.* Recuperado el 11 de noviembre de 2023, de Estándares GRI: <https://www.globalreporting.org/how-to-use-the-gri-standards/gri-standards-spanish-translations/>

GRI. (2023). *A Short Introduction to the GRI Standards.* Recuperado el 12 de noviembre de 2023, de Global Reporting Initiative: <https://www.globalreporting.org/media/wtaf14tw/a-short-introduction-to-the-gri-standards.pdf>

Madgavkar, A., Smit, S., Krishnan, M., Russell, K., Anderson, R. J., Woetzel, J., . . . Francis, T. (25 de agosto de 2023). *From poverty to empowerment: Raising the bar for sustainable and inclusive growth.* Obtenido de McKinsey Global Institute: <https://www.mckinsey.com/mgi/our-research/from-poverty-to-empowerment-raising-the-bar-for-sustainable-and-inclusive-growth?stcr=57B97925F93A49858406C69072278305&cid=other-eml-alt-mip-mck&hlkid=a199112128364d268550ddacee182323&hctky=13802398&hdpid=9d10619d>

Markley, M. J., & Davis, L. (2007). Exploring future competitive advantage through sustainable supply chains. *International Journal of Physical Distribution & Logistics Management*, 37(9), 763-774. Recuperado el 28 de noviembre de 2023, de [https://www.researchgate.net/publication/230770946\\_Exploring\\_Future\\_Competitive\\_Advantage\\_Through\\_Sustainable\\_Supply\\_Chains](https://www.researchgate.net/publication/230770946_Exploring_Future_Competitive_Advantage_Through_Sustainable_Supply_Chains)

Naciones Unidas. (s.f.). *La Agenda para el Desarrollo Sostenible.* Recuperado el 11 de diciembre de 2023, de Objetivos de Desarrollo Sostenible: <https://www.un.org/sustainabledevelopment/es/development-agenda/>

SOTO-HERNÁNDEZ, Ana María, ALDAPE-CASTILLO, Zaida, MALDONADO-SOTO, Otilia Georgina and BETANZOS-TLAPA, Brenda Aracely. Case studio of material topics for a Spanish logistics enterprise. *Journal of Business and SMEs*. 2023

Rigotti, T. (s.f.). *Análisis DAFO: ¿Qué es y para qué sirve?* Recuperado el 03 de noviembre de 2023, de EAE Business School. Blog: <https://www.eaprogramas.es/blog/negocio/empresa/analisis-dafo-que-es-y-para-que-sirve>

Rodríguez Guerra, L. C., & Ríos-Osorio, L. A. (2016). Evaluación de sostenibilidad con metodología GRI. *Dimensión*, 14(2), 73-89. doi:10.15665/rde.v14i2.659

Ruiz Barroeta, M. (10 de agosto de 2020). *¿Qué es análisis CAME, como estrategia de negocio?* Recuperado el 12 de noviembre de 2023, de Análisis CAME: <https://milagrosruizbarroeta.com/analisis-came/>

Ruiz Barroeta, M. (8 de septiembre de 2023). *Guía sencilla para hacer el plan estratégico de una empresa.* Recuperado el 10 de diciembre de 2023, de Ruiz Barroeta Consulting: <https://milagrosruizbarroeta.com/guia-para-hacer-plan-estrategico-de-empresa/>

Sharma, V., Raut, R. D., Mangla, S. K., Narkhede, B. E., Luthra, S., & Ravindra, G. (2021). A systematic literature review to integrate lean, agile, resilient, green and sustainable paradigms in the supply chain management. *Business Strategy and de Environment*, 1191-1212. doi:10.1002/bse.2679

Segura, V., Fuster, A., Antolín, F., Casellas, C., Payno, M., Grandío, A., . . . Muelas, M. (Febrero de 2020). *Logística de Última Milla. Retos y soluciones en España.* Recuperado el 10 de diciembre de 2023, de Deloitte: <https://www2.deloitte.com/es/es/pages/operations/articles/logistica-de-ultima-milla.html>

Sharma, V., Raut, R. D., Mangla, S. K., Narkhede, B. E., Luthra, S., & Ravindra, G. (2021). A systematic literature review to integrate lean, agile, resilient, green and sustainable paradigms in the supply chain management. *Business Strategy and de Environment*, 1191-1212. doi:10.1002/bse.2679

Tasdemir, C., Gazo, R., & Quesada, H. J. (2020). Sustainability benchmarking tool (SBT): theoretical and conceptual model proposition of a composite framework. *Environment, Development and Sustainability*, 22, 6755-6797. doi:10.1007/s10668-019-00512-3

Universidad de Cantabria. (16 de enero de 2014). *Definición de alternativas estratégicas.* Recuperado el 18 de noviembre de 2023, de Gestión de procesos: <https://web.unican.es/unidades/serviciopdiretribuciones/Gestionporprocesos/PDIPLA-03%20DEFINICI%C3%93N%20DE%20ALTERNATIVAS%20ESTRAT%C3%89GICAS.pdf>

Zak, A. (2015). Triple Bottom Line Concept in Theory and Practice. *Social Responsibility of Organizations. Changes and their Directions* (385), 251-264. doi:10.15611/pn.2015.387.21.