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“Measuring the level of circular economy accountability in the office and retail furniture sector in Spain: Case study of a sector and Aragonese company”

“Medición del nivel de accountability de economía circular y sostenibilidad en el sector de fabricación de mobiliario industrial y shopfitting en España: Caso de estudio sectorial y de una empresa Aragonesa”

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RESUMEN.

Este trabajo de investigación estudia la información no financiera que las empresas del sector de fabricación de muebles de oficina y establecimientos comerciales en España reportan. Específicamente, se analiza su adopción de prácticas de economía circular, así como su nivel de accountability y sostenibilidad, y como estos factores están relacionados con sus resultados económico-financieros.

El estudio se divide en tres partes. La primera parte implica un análisis de los datos económico-financieros de las empresas seleccionadas para la muestra. La segunda parte se centra en la información no financiera proporcionada por las empresas, especialmente en lo que se refiere a su adopción de prácticas de economía circular y sostenibilidad. En la parte final, se realiza un caso de estudio para examinar el impacto que conlleva la implantación de este tipo de prácticas en una empresa en específico, y se lleva a cabo una entrevista para profundizar en la relevancia del papel de los stakeholders en la presentación de información no financiera.

ABSTRACT.

This research paper examines how much non-financial information do companies in the office and retail furniture industry in Spain report. Specifically, it looks at their adoption of circular economy practices, as well as their level of accountability and sustainability, and how these factors are related to their economic and financial performance.

The study is divided into three parts. The first part involves analyzing the economic and financial data of the companies that were selected for the sample. The second part focuses on the non-financial information provided by the companies, particularly regarding their adoption of circular economy and sustainability practices. In the final part, a case study is conducted to examine the impact of circular economy practices on a specific company, and an interview is conducted to gain insights on the role of stakeholders in the reporting of non-financial information.

Keywords (palabras clave): Sustainability, Circular Economy, Accountability, Stakeholders, Furniture sector, Office and Retail furniture, Retailing, Non-Financial information

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1 Introduction

Business models based on the principles of a circular economy (CE) are gaining importance nowadays and even more if they constitute the basis of sustainability of an enterprise. CE breaks with the traditional take-make-consume-throw pattern that was followed by enterprises and its benefits are widespread among the society, and the company itself as well as its stakeholders and customers. European countries together with the European Commission emphasize on the big importance of this practice and share their concern of establishing this system in every firm along Europe.

CE is mainly based in three principles:

1.- While in the traditional production process of enterprises the waste-products were useless, in CE businesses aim to reuse and repair those existing materials if possible. Firms try to benefit from their implementation on the production cycle while they reduce the consumption of natural resources.

2.- Products designed in such a way that they can be remanufactured and repaired. For this to be possible there should be availability of replacement parts to encourage customers to fix and reuse their items. Standardized components, repair services and affordable component prices are key instruments to entice customers to do so. The banning of the so-called planned obsolescence is one of the first steps on this area.

3.- Grouping the effects of the last two points, CE is focused on reducing negative impacts that the companies' activities can entail. Negative effects towards the environment, the firm itself and the overall society will be reduced. For example, securing the raw material supply and adding value to the same inputs also contribute to lowering CO₂ emissions and energy use, a critical issue that has been taken up by governments and regulatory bodies. (Furn360, 2018)

All the aforementioned effects boost the competitiveness of an enterprise, and we will see that later by analyzing the results a company has when adopting this kind of practices. Environment friendly firms raise awareness not only on their clients or suppliers but in the overall society, so they become more attractive to potential investors and shareholders.

1.1 Industry context towards circular models.

The EU and specifically Spain, have lost the advantageous position previously held as a consequence of several factors. It is mainly due to the international growth and development of foreign producers and industries, along with the improvement in global logistic processes and the reduction on international duty taxes. (Heura, 2022) That explains why the current context encourages further development of CE practices in the furniture sector to be able to recover that leading position previously owned. However, the reality is that this industry is dealing with several other issues that will impede the transition to a CE model. Some of these problems are:

- Weaker durability of recycled materials: The replacement of solid wood and metal for other cheaper or recycled materials, which are generally weaker, reduces the life duration of the products as well as the possibility of having a second life. As a result, there isn't enough demand for recycled materials to justify spending money on a better recovery system.
- Design difficulties: The current design of the products does not encourage reusing or repairing them due to the lack of or difficulty in locating the necessary components. Consumers frequently choose to purchase new products rather than repairing them, even when the necessary parts are available due to the elevated cost that they have.
- Used goods price: In addition to the price of the subparts, the price itself of the used goods also contributes to buyers' decision not to purchase them. Price differences must be significant enough to persuade people to buy them. Design and the waste recovery method must be changed to lower prices, as well as a change in people's knowledge, if we want used things to be appealing.
- Poor investments in reverse logistics: The low investment that there exists in reverse logistics nowadays, complicates the recovery of those goods as well as for other potential reusable waste. An optimal management in logistics will be a key aspect in the development of beneficial circular practices.

- Settling down sustainable business models. During this last decade we have experienced a crucial shift towards a CE. Several reports have pointed out the importance of sustainability on environmental and social scale. There has been such a bombardment of information that, as a result, companies have become aware of its importance and therefore have decided to strengthen and settle on their business ideas. For this reason, the information provided should be of quality, avoiding falling into information covering practices, also known as *Greenwashing*.
- Outline of post-pandemic future scenarios: Kristalina Georgieva, head of the International Monetary Fund (IMF), stated that if the world is to emerge from this crisis, it is our duty to ensure that it is through a circular recovery that will enable us to live in a more resilient world. It is therefore necessary to create an economic model that constantly adapts to change through regenerative and innovative production and purchasing models. (CENFIM, 2022)

Nowadays the European Commission estimates that applying a circular economy model, will suppose a profit of around 0.9 billion euros greater than the actual linear model by 2030 by the Spanish Strategy for CE 2030 (España Circular 2030. Circular Economy Spanish Strategy, 2018)

It also expects the creation of almost 600,000 job positions related to this new model. In the past year, new business models that deviate from the traditional ones we were accustomed to, have emerged as a result of implementing CE practices. Product-sharing platforms are one of the best examples of these recently established business models because they allow people to share their products, such as their cars or motorcycles, which benefits all the agents because the cost and environmental impact of producing these products will be reduced. This idea can also be implemented by offering these products as a service, allowing customers to use whatever product they like without purchasing it outright but rather by paying a fee for the time that they will use it. The owner of the items, namely the firm, will be able to give it a second life after it is no longer interested in using them.

European governments and regulators already know about the big difficulty that these huge structural changes suppose. Implementing innovative activities or shifting to

the use of renewable energies involve very costly transitions which not all the companies can afford. According to the meta-analysis carried out by Eva Horváthová, a researcher in the Institute of the Czech Academy of Sciences in 2010, only 55% of companies going green found a positive result while at the contrary, 15% of the companies studied had a negative outcome (Horváthová, 2010)

Financial situation of the companies and the age of the firms could have an impact to the outcome obtained as not all the businesses have the resources to carry out those large R&D projects or to implement the necessary transformations required by a circular model, which would demand significant investments . For instance, innovation (Aranda-Usón et al., 2019) activities related to the reduction of input material led to short-term gains; however, other more significant changes such as the switch from conventional to renewable sources of energy or organizational changes, will result into a short-term losses situation that will start to see the fruits of the effort in a mid to long-term scenario (Antonioli et al., 2022)

Therefore, the EC and member states must act immediately to prevent the expansion of SMEs from being stifled by giving out aid packages to subsidize the transition to more sustainable models of business and to boost the environmental welfare of all the society.

1.2 Sustainability and non-financial information

As introduced in the previous section, companies are beginning to shape their business models to offer new services aiming for a more efficient use of resources. Increasingly, companies are required to calculate their carbon footprint as a way of monitoring the level of sustainability in the company. Thus, accountability practices allow companies to communicate their sustainability improvements and connect transparently with the agents in the value and supply chain.

When relating to accountability, firms assure that they are working following guidelines that comply with the requirements of commitment, proactivity and responsibility while trying not only to reach but exceed the expectations and objectives initially proposed.

It relates attitude and responsibility and represents an active way of dealing with daily problems by addressing them in the optimal approach (Marco-Fondevila et al., 2018).

Integrity, transparency, and legal compliance are the three main pillars of a corporate accountability by: performing duties honestly and in accordance with moral principles; making goals and methods of achieving them visible to any affected party and by following rules and regulations to comply with the law to demonstrate social responsibility. Companies are starting to recognize and communicate the value of some practices as it is the case of the CE, in response to the Regulation (EU) 2020/852 of the European Parliament and the Council called "European Taxonomy of Sustainable Investments", which represented a relevant change in the information on sustainability disclosed by companies.

It is, on the non-financial information statements, where companies will have to inform about the outgoings of their activities in relation with Environmental, Social and Corporate Governance (ESG) information; the three central components when it comes to measuring sustainability and the societal impact they incur into. Within the environmental information that they must disclose, firms will have to inform about: the actions taken to prevent and reduce carbon emissions, the CE practices developed, the sustainable use of resources and the protection of biodiversity among others.

To check if a company must disclose this kind of information, the 11/2018 Spanish Law (Ley 11/2018, de 28 de Diciembre, 2018) that transposed the EU Directive 2014/95 (European Parliament, 2014), establishes the obligation to prepare the NFR for companies that have more than 500 employees during the last two consecutive financial years. When a company also complies with at least 2 out of the three following conditions, it will have to also prepare this report: consolidated assets over 20 million euros, an annual turnover greater than 40 million euros, or an average number of people employed higher than 250.

Last December The European Parliament enacted the 2022/2464 Directive Corporate Sustainability Reporting Directive ("CSRD"), which extends the scope of the reporting

obligations to those headquartered subsidiary companies operating within the EU, obliging their parent companies to report at group level.

Then, after determining whether a company must disclose NFI or not, it could review the Global Reporting Initiative (GRI). The GRI is a set of global guidelines for sustainable reporting that assist companies and organizations in disclosing non-financial information. When reporting on non-financial information, companies can apply the GRI standards to ensure transparency and accountability. These standards are divided in three main groups. The universal standards, that require some general information about the companies; the Sector standards, which specific information varying among different industries; and the Topic standards, that require communication on very specific themes. These standards offer a comprehensive framework for reporting on various aspects of sustainable development.

1.3 Furniture sector, CE and sustainability

Recent events around the world have led to abrupt changes in consumer habits and behavior, causing a drastic shift in all sectors' sales trends. However, the furniture sector has been affected in a positive way, and after 15 years of following a negative trend, it has finally achieved an increase. Consumers increasingly want to buy products that are socially and environmentally friendly, and sustainability is already a purchasing criterion that is spreading more and more today. In this context, no industrial sector is exempt from implementing sustainability principles, and one of the relevant sectors in this regard is the furniture manufacturing industry, particularly in terms of Circular Economy (CE) due to its impact on material consumption. The CE has been induced by sectoral companies, and furniture manufacturers have a vital role to play in ensuring that their products are sustainable and environmentally friendly.

Indeed, CE practices reduce total costs, not only by making use of by-waste products but also by avoiding the huge cost that scrapping some materials can suppose. For example, recycled wood is typically 40% less expensive than new wood. Also, due to the nature of panels, drying process is avoided, making it easier to handle. Innovative production processes are also more efficient, not only in material terms but energy.

The current context also allows firms to connect more transparently and communicate traceability data on their products. We are talking about technologies such as the Internet of Things (IoT) or the Internet of Materials (IoM). For example, Blockchain technology makes it possible to know the supply chain of any product.

1.4 Objectives and Research Job Motivation

Nowadays, every firm across every sector is facing growing pressure to adopt sustainable and environmentally responsible practices. As consumers become more aware of the environmental impact of their purchasing decisions, companies in the furniture sector must demonstrate a commitment to sustainability to remain competitive. However, there is a need for a deeper understanding of the challenges and opportunities facing companies in this industry. This research aims to fill this gap by conducting a detailed analysis of the sustainability and environmental practices employed by companies in this sector. The study will focus on identifying the level of accountability among these companies in terms of their environmental practices and examining the potential economic and financial impact of these actions.

This research is also driven by a strong personal interest in environmental issues and sustainable business and practices and new business models ideas. Participating in other projects related with the increasing significance of non-financial and sustainability reporting has made me realize that it is to become one of the fundamental pillars that will lead the success of firms and societies in the near future.

2 Circular economy in the furniture sector and accountability

In a CE context, the furniture sector appears to be particularly important since it is characterized by an intensive use of virgin raw materials and because the large use of materials in furniture production results both in the emission of large volumes of volatile organic compounds and waste production. As concerning the waste issue, in particular, in 2017, the EU28 total amount of furniture waste equated to 10.78 million tons annually, accounting for over 4% of the total municipal solid waste (MSW) stream. Waste arising from commercial sources contributes 18% of total furniture waste generation. Moreover, 80 to 90% of EU furniture waste in MSW is incinerated or sent to landfills. (Barbaritano et al., 2019)

There are several the opportunities and ways to include CE-related practices within the furniture sector, not only to protect the environment and secure the raw material sources in the future but to reduce costs and improve brand image:

- The adoption of a new product life cycle approach that aims to increase the useful life of the products by creating an eco-design that encourages product repair or reuse while limiting the use of hazardous materials in manufacturing. By using for example recycled plastics in the creation of new products, technical features of those products are improved while having a positive effect on the production cost, as the company can benefit from scrap materials obtained in other processes or can buy them at lower cost at the market.
- Waste management policies that, among other things, promote waste prevention and recycling and enable waste traceability to stop it from being dumped in the ecosystems. Improving recovery processes will provide the firm with by-waste that can be implemented in the production process again.
- Returnable packaging is one of the measures applied by firms on its effort to expand the benefits of CE practices. This approach helps reduce the environmental impact of distribution operations while simultaneously lowering cost.
- Innovative production processes to achieve competitiveness within the national firms while achieving a sustainable growth and better results. New modular

designs or other new business opportunities that embrace CE principles will offer enterprises the opportunity to add value and capitalize on synergies.

Communicating the importance that the CE represents and placing emphasis on the significance of everyone's actions in order to create synergies that will boost this positive transformation is essential for every firm nowadays. To measure and communicate sustainability and CE in pursuance of a greater transparency and wider knowledge, the implementation of indicators that are a crucial component for the proper implementation of this CE models is necessary, so corrective steps can be taken, and comparisons made.

2.1 Spanish Furniture Sector

Spain's advantageous situation allows it to become one of the world's leading examples of CE implementation and green development, accounting for 8% of the EU GDP and having a population of over 46 million. That is why the European and Spanish legal frameworks have inspired the strategy "España Circular 2030" which aims to make Spain more competitive while also achieving a sustainable and decarbonized economy (España Circular 2030. Circular Economy Spanish Strategy, 2018). This action plan is aligned with some of the objectives previously established on the "Agenda 2030" such as number 12: "Responsible Consumption and Production"; 8: "Decent Work and Economic Growth"; 9: "Industry Innovation and Infrastructure"; and 11: "Sustainable Cities and Communities". This newly established strategy will focus on promoting a new production and consumption model in an effort to, among other things, cut domestic material consumption in relation to national GDP (base 2010) by 30% and waste by 15%. Additionally, the program aims to a 10% increase water use efficiency and cut greenhouse gas emissions to below 10 million tons of CO₂. (España Circular 2030. Circular Economy Spanish Strategy, 2018)

In this context, the Spanish furniture sector has the challenge to respond to the CE strategy. This sector represents around 0.38% of the National GDP. In terms of employment there are more than 66,000 job positions dedicated to this sector (0.33%

of the total). These two figures allow us to draw the conclusion that this sector is more productive than the average.

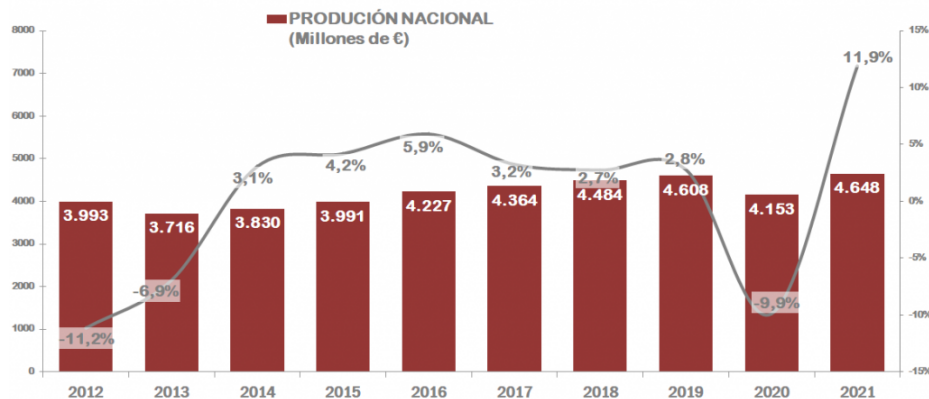


Figure 1: Production in the Spanish furniture sector.⁶

Since 2004 the total number of furniture manufacture enterprises has reduced drastically, from 14,204 to 10,993 in the last year. However, the current expectations are positive and the sector trusts on the huge help that e-commerce can suppose in this increase as well as the implementation of new circular business opportunities.

In 2021, the office and retail furniture manufacturing sector, was integrated by 85 firms dedicated to this economic activity obtained through SABI ⁷ (Sistema Análisis de Balances Ibéricos). The NACE⁸ 3101, which is the code nomenclature for the Economic Activities in the European community (from the French abbreviation NACE: “Nomenclature statistique des Activités Economiques”); in this case dedicated to the manufacturing of office and retail furniture, closed 2021 with a total production that amounts to 418M€. This particular sector was highly concentrated as the 5 biggest firms accounted for the 42% of the total sales, and 58% for the 10 biggest firms.

With respect to the trade balance, total exports (231M€) are larger than total imports (210M€) highlighting the increasing significance of China as an exporter, more than doubling its amount in the last few years.

⁶ Retrieved from: <https://estrategiashabitat.aidimme.es/2022/04/06/informe-anual-sobre-la-industria-del-mueble-en-espana-edicion-2022/> (Accessed: December 2022)

⁷ Retrieved from: <https://sabi.bvdinfo.com/version-20221115/List.serv? CID=32&product=sabineo> (Accessed: January 2023)

⁸ CNAE in Spanish: “Clasificación Nacional de Actividades Económicas”

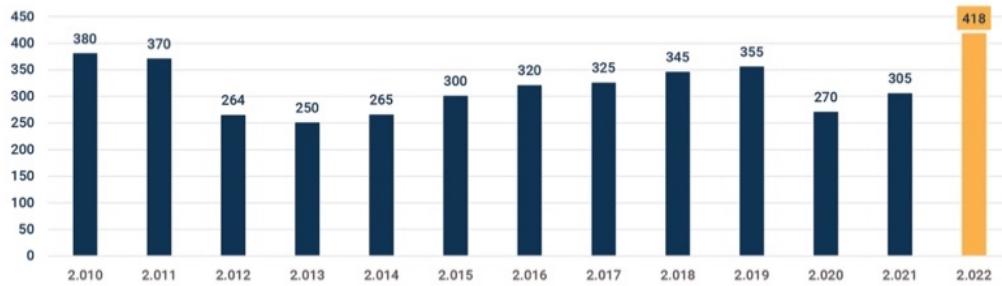


Figure 2: Office and retail furniture sector annual turnover (in million €).⁹

However, compared to the sector's overall, the expectations for this sub-sector are not very optimistic. Office furniture faces important challenges as the increasing tendency to digitalization or remote working as well as the very well-known fear to those increasingly cheaper imports. Thus, the CE can be a solution and this study analyses how CE-related activities are being introduced by furniture sector companies and their level of accountability about sustainability and CE.

2.2 Sample and methods

To achieve the main objective of this study, the sample is integrated by businesses from the CNAE 3101 as this code reflects a collection of businesses engaged in the manufacture of office and retailing furniture. The selection criteria were that the number of employees were more than 50 and only companies located in Spain were chosen. Thus, a total number of fifteen companies were obtained from this research and by eliminating one that closed 2 years ago and another one that was only dedicated to the seating manufacture, the valid sample is integrated by the following 13 companies: Yudigar SL, Actiu Berbegal y Formas SA, AF Steelcase SA, MOINSA, Dynamobel SA, Forma 5 SA, Ofiprix SL, Viccarbe Habitat SL, Industrias Disme SA, Gesab SAU, EUN Sistemas SL, Tecny Farma SL, Arlex Design SL.

A random number was assigned so firms cannot be identified in the results of the analysis carried out through the different methodologies. In a first phase, financial-economic variables were analyzed together with their level of accountability in terms of

⁹ Retrieved from: <https://www.interempresas.net/Madera/Articulos/395208-El-mercado-espanol-del-mueble-de-oficina-recupera-el-ritmo-previo-a-la-pandemia.html> (Accessed: December 2022)

sustainability and CE. Then, a case study on a specific company was performed in order to get a deeper approach on a qualitative analysis.

Firstly, the economic-financial analysis was carried out for all the 13 companies in order to better understand the overall and individual situation of the industry sector and the companies. The variables that were examined throughout this analysis are listed below:

| | Variables¹¹ | Description |
|------------|--|---|
| AGE | Company's age (<i>Dis</i>) | Foundation date of the firms |
| GRO | Company group (<i>Dic</i>) | Whether the firm belongs to a company group or not |
| EMP | Workforce (<i>Dis</i>) | Number of employees |
| GRA | Subsidies (<i>Dis</i>) | Number of subsidies received |
| INC | Operating income (<i>Con</i>) | Adjusted revenue after all expenses of operation and depreciation are subtracted (in thousand €) |
| SAL | Sales (<i>Con</i>) | Sales (in thousand €) |
| ROE | Financial profitability (<i>Con</i>) | Own resources capacity to generate profit $ROE = \frac{\text{Net Income}}{\text{Shareholder's Equity}}$ |
| ROA | Economic profitability (<i>Con</i>) | Asset's capacity to generate profit $ROA = \frac{\text{EBIT}}{\text{Total Assets}}$ |
| LIQ | Liquidity (<i>Con</i>) | Firm's capacity to cover its short-term debts $\text{Liquidity} = \frac{\text{Current Assets}}{\text{Current liabilities}}$ |
| SOL | Solvency (<i>Con</i>) | Firm's capacity to cover its total debt $\text{Solvency} = \frac{\text{Total Assets}}{\text{Total Liabilities}}$ |
| IND | Indebtedness (<i>Con</i>) | Financial leverage of the company. Funding structure of the company $\text{Indebtedness} = \frac{\text{Total Liabilities}}{\text{Total Equity}}$ |

Table 1: List of economic-financial variables studied. (Source: own elaboration)

In order to measure accountability, a specific methodology was applied using an external analysis of the information collected from the websites and sustainability reports, or similar documents, of the companies in the sample. The variables used for this external analysis are detailed in the following table:

¹¹ Dic: Dichotomous variable; Dis: Discrete variable; Con: Continuous variable

| Section | Subsection | Assessment elements |
|--|--|---|
| SUST Sustainability information reporting. | SUST_SEC: A specific section devoted to reporting sustainability information within the company's website. | 2 = A specific section dedicated to sustainability information is present. 1 = Information on sustainability is regularly presented under the news section. 0 = No sustainability information is present within the website of the company. |
| | SUST_STAT: Disclosure of annual non-financial information statements. | 1 = Non-financial information statements are disclosed. 0 = Non-financial statements are not disclosed. |
| | SUST_CERT: Ownership of certain sustainability related certificates. | 1 point is given for each of the following certificates owned (ISO 9001, ISO 14001, FSC and PEFC). |
| ENV Level of disclosure of environmental information. | ENV_PROD.ECOD: Eco-design practices and principles | 2 = Very detailed information on eco-design. Actual data, evolution and goals settled. 1 = Partial information on eco-design. Actual data. 0 = No information on eco-design is presented. |
| | ENV_PROD.INNOV: Innovative changes that allow firms to reduce the impact to the environment of their manufacturing processes and improve the overall efficiency. | 1 = Innovate changes applied on the manufacturing processes are presented. 0 = No changes on manufacturing processes are presented. |
| | ENV_ENE: Energy consumption and its sources. Use of energy during the manufacturing and other activities of the firm. | 2 = Very detailed information on energy consumption. Actual sources, evolution and goals settled. 1 = Partial information on energy consumption. 0 = No information on energy consumption is presented. |
| | ENV_MAT: Information on the materials used during the manufacturing processes, including information about quantities and sources of them. | 2 = Very detailed information on materials consumption. Actual sources, evolution and goals settled. 1 = Partial information on materials' consumption. 0 = No information on materials' consumption is presented. |
| | ENV_WAS: Waste management information. | 2 = Very detailed information on waste management. Actual data, evolution, goals settled, and actions taken. 1 = Partial information on waste management. 0 = No information on waste management is presented. |
| | ENV_EMI: Pollution emissions. Air, water, and landfill contamination. | 2 = Very detailed information on emissions. Actual data, evolution, goals settled, and actions taken. 1 = Partial information on emissions. 0 = No information on emissions is presented. |
| | ENV_EXT: Extra information on actions towards environmental protection. Participation on environmental projects, or initiatives that promote the protection of the environment are applied, etc... | 1 = Extra information on environmental projects is presented. 0 = No information on the participation of environmental projects is presented. |

Table 2: Research's contents classification and assessment criteria. (Source: own elaboration based on (Moneva et al., 2022))

So, to assess the information disclosed by every company related with NFI reporting, an assessment matrix was established together with the criteria on mark's assignments.

It consisted of two parts, the sustainability section and the environmental one. The sustainability section assigns marks to the previously mentioned aspects under *Section 2.4*. The second part, focus its attention to five main subsections on environmental aspects, which are: **production**, **energy**, **materials**, **waste**, and **emissions**. The

significance importance of the sustainability section amounts to 37% while the environmental section accounts for the remaining 63%.

2.3 Economic-Financial analysis

The age of the companies comprising the final sample selected was the first variable examined. With the help of this analysis, it could be determined if the companies were recently started or had a long history. As a result, we could make distinctions and pronounce judgments based on how newly founded companies had evolved or how long-established ones had developed, or their size and main characteristics.

Together with some very broad characteristics of a firm, the belonging to a group of companies is critical to understand the way firms disclose information and how much of it they should present. Those companies that in fact, make part of a group of companies will have to follow some rules at the moment of publishing information and even more if they need to present consolidated financial statements.

| | Foundation date | Type of enterprise | Group | SIZE | Nº employees |
|----------------|-----------------|--------------------|-------|----------------|--------------|
| Firm 1 | 1978 | Very old company | Yes | Large company | 857.2 |
| Firm 2 | 1983 | Very old company | No | Medium company | 295 |
| Firm 3 | 1988 | Very old company | No | Medium company | 351.8 |
| Firm 4 | 1966 | Very old company | Yes | Small company | 159 |
| Firm 5 | 1974 | Very old company | Yes | Medium company | 251.6 |
| Firm 6 | 1986 | Very old company | Yes | Small company | 104.2 |
| Firm 7 | 1997 | Less old company | No | Small company | 105 |
| Firm 8 | 1998 | Less old company | No | Small company | 53.75 |
| Firm 9 | 1971 | Very old company | No | Small company | 97.2 |
| Firm 10 | 1991 | Very old company | No | Small company | 68 |
| Firm 11 | 2010 | Less old company | No | Small company | 64.4 |
| Firm 12 | 2003 | Less old company | No | Small company | 58.25 |
| Firm 13 | 2004 | Less old company | No | Small company | 74.25 |

Table 3: Firm's distribution according to its foundation date (being "Less old" less than 30 years; "Very old" more than 30 years) and its belonging to a group of companies. (Source: own elaboration)

Only 3 of the companies, were founded in the last century. However, the majority of the enterprises in the sample were past businesses founded decades ago that have experienced the various scenarios that the furniture industry has gone through.

The sample collected was made of companies with at least 51 employees during the last year. Considering the average number of employees during the last 5 years, the sample was classified as “small companies” (less than 250 employees); “medium companies” (between 250 and 500 employees); and “large companies” (more than 500 employees).

The vast majority of the firms studied appeared to be small companies, some of them even approaching the size threshold applied in the selection of the sample. Firm 1 stands out significantly from the rest of the sector with an average of more than 800 employees during the preceding five years.

This information is helpful in demonstrating how this industry, the Office, and Retail Furniture Sector, is highly concentrated in terms of employment among a small number of companies; however, as we shall see later, the concentration rates on market shares exhibit a similar pattern, with a small number of very large companies that accounted for the vast majority of the market share.

Later, the subsidies received by the businesses were examined, as well as their source and purpose, in order to get a clear picture of the financial help that they have received over the last five years to support their operations.

| | Tot subsidies 17/22 | Subsidy level | Location | Size |
|----------------|------------------------|-------------------|-----------|----------------|
| Firm 1 | 10 | Highly subsidized | Zaragoza | Large company |
| Firm 2 | 10 | Highly subsidized | Alicante | Medium company |
| Firm 3 | 0 | Non-subsidized | Madrid | Medium company |
| Firm 4 | 2 | Lowly subsidized | Madrid | Small company |
| Firm 5 | 5 | Lowly subsidized | Navarra | Medium company |
| Firm 6 | 15 | Highly subsidized | Sevilla | Small company |
| Firm 7 | 4 | Lowly subsidized | Barcelona | Small company |
| Firm 8 | 40 | Highly subsidized | Valencia | Small company |
| Firm 9 | 2 | Lowly subsidized | Barcelona | Small company |
| Firm 10 | 4 | Lowly subsidized | Barcelona | Small company |
| Firm 11 | 17 | Highly subsidized | Gipuzkoa | Small company |
| Firm 12 | 3 | Lowly subsidized | Burgos | Small company |
| Firm 13 | 14 | Highly subsidized | Barcelona | Small company |
| Total | 126 | | | |

Table 4: Total subsidies received years 2017-2022. (Source: own elaboration)

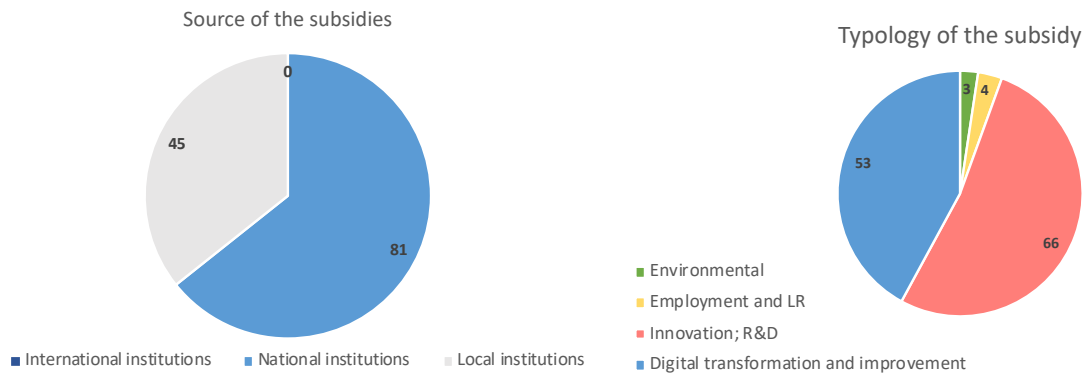


Figure 3: Subsidies 'distribution according to its source and typology. (Source: own elaboration)

As it can be seen, the relation between the size of the company and the quantity of subsidies received is unclear. Within the detailed data (see Annex 1.-) it is possible to see that both, largest and smallest companies tend to receive the majority of their subsidies from national sources. However, medium-sized businesses typically receive a higher percentage of their funding from local or autonomous organizations.

The 126 subsidies that were given to the enterprises under study over the last five years had as their main goals: innovation and research and development (52.38%) and digital transformation and improvement (39.68%). Innovation and R&D subsidies were primarily focused on giving businesses capital so they may cover a portion of the costs associated with their R&D initiatives that were meant to boost their competitiveness in the market. On the other side digital transformation and improvement aids were mainly related with the implementation of COVID safety measures within the workplace. The first mentioned were mainly given by local and autonomous organizations while the last ones had a more national approach.

Only three of the subsidies were made with the intention of implementing environmental policies, which is a factor that all local, national, and international organizations should cover in order to encourage their companies to adopt more sustainable business practices. The other 4 subsidies were offered with the intention of increasing staff welfare and employing disabled workers.

Moving on to the financial results, we could observe within the operating income that the firms exhibited a similar pattern on its evolution. Although 2018's revenues were largely up from 2017, it is also clear that this industry was severely hit by the COVID 19 pandemic that occurred in 2020. Only half of the firms were able to recover from this

drop in the operating income in 2021. It is important to draw attention to the stark differences between the top firms and those with lower operating incomes, being almost forty times greater.

Afterwards the sales figure is an important variable to show, as mentioned in the analysis of the employees, due to the high concentration that exists in this particular sector.

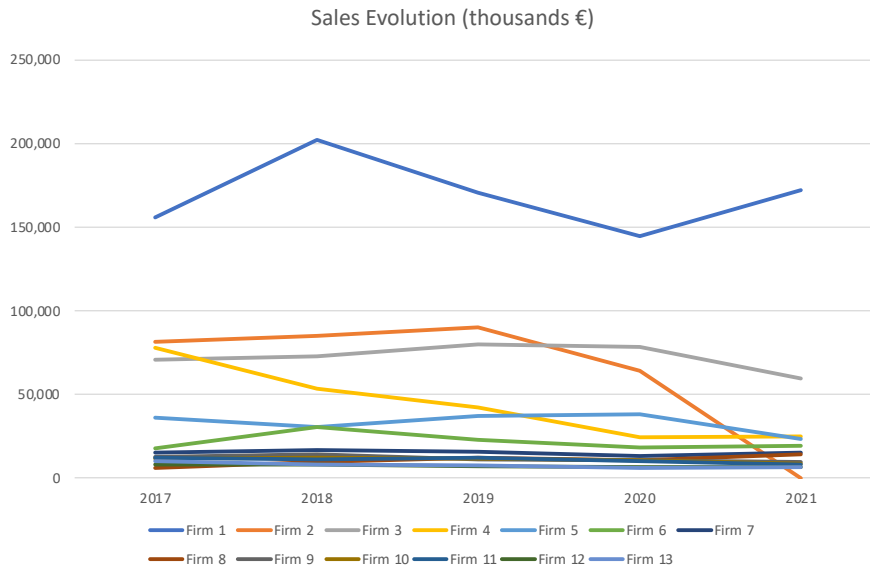


Figure 4: Sales evolution. (Source: own elaboration)

Given that the concentration rates¹² 3 and 5 (CR₃ and CR₅) are 66.13% and 80.43%, respectively, it can be observed that this industry is highly concentrated. The market share percentages owned by the biggest specified number of firms in an industry were added to determine the concentration ratio. The largest five firms control more than 80% of the market.

Since significant differences were observed among the firms examined, an analysis of sales growth in relative terms was conducted to evaluate each company's progress in recent years.

¹² Concentration rate definition. Retrieved from: <https://www.oecd.org/competition/market-concentration.htm> (Accessed January 2023).

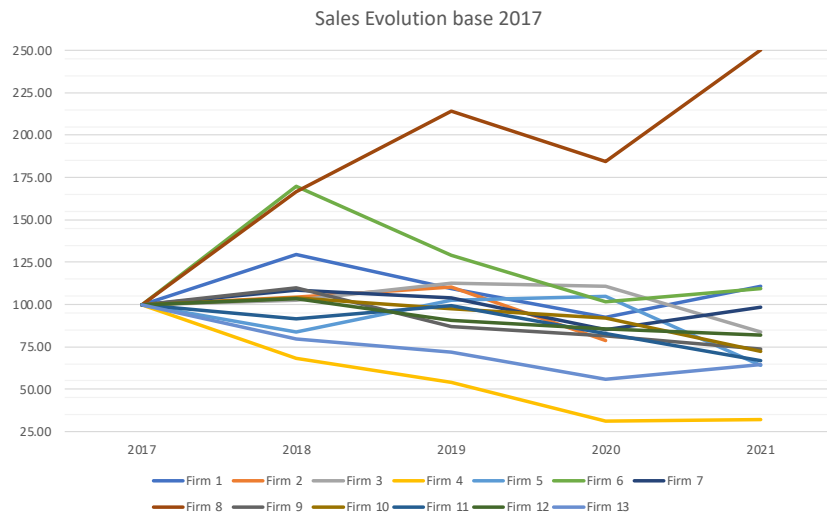


Figure 5: Sales evolution base 2017. (Source: own elaboration)

In comparison to the baseline year (2017) all companies showed similar figures during the last years except for firms 4 and 13, that had a steady decline. It is also important to mention the very positive evolution in the sales figure of Firm 8, that nearly trebled its sales figure in only 4 years.

Next, Return on Assets (ROA), one of the main instruments to assess an individual company's performance, was calculated to assess the capacity that firms have to create profit based on their fixed investments¹³. For a better understanding, ROA is a measure of profitability that could be also explained as the percentage of benefit that each monetary unit of the assets provides. It is calculated as the EBIT divided by the total assets of the company.

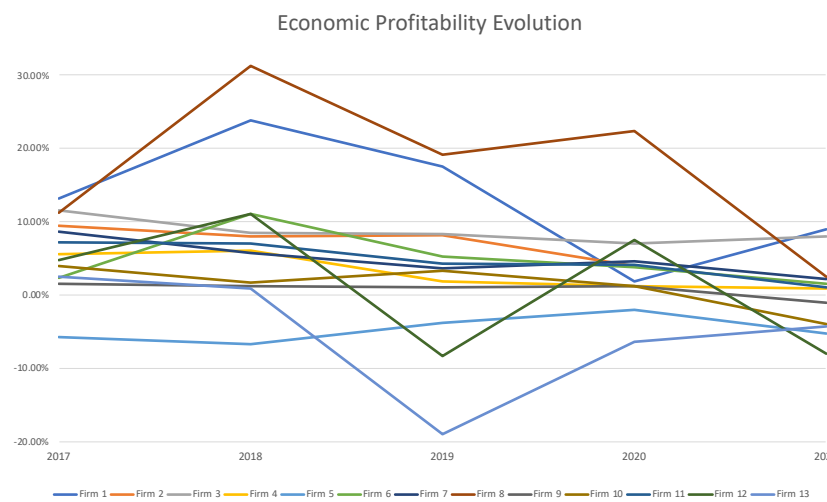


Figure 6: Return on Assets evolution. (Source: own elaboration)

¹³ Retrieved from: <https://www.businessinsider.com/personal-finance/return-on-assets> (Accessed January 2023)

The ROA of the firms followed a similar pattern to the ROE (Return on Equity; same measurement of the company's ability to generate benefits but based on the Shareholder's Equity) obtained during the last years. A positive but decreasing general trend is observed for the majority of the firms, while some of them reflect higher and more aggressive fluctuations.

After examining these profitability ratios, a review of additional fundamental factors such as liquidity, solvency, and indebtedness, was conducted.

Starting with a study of the liquidity, the current ratio, the most common way of measuring liquidity, was calculated. It determines a company's capacity to use current assets to cover its short-term obligations, or obligations that must be paid within a year.¹⁵

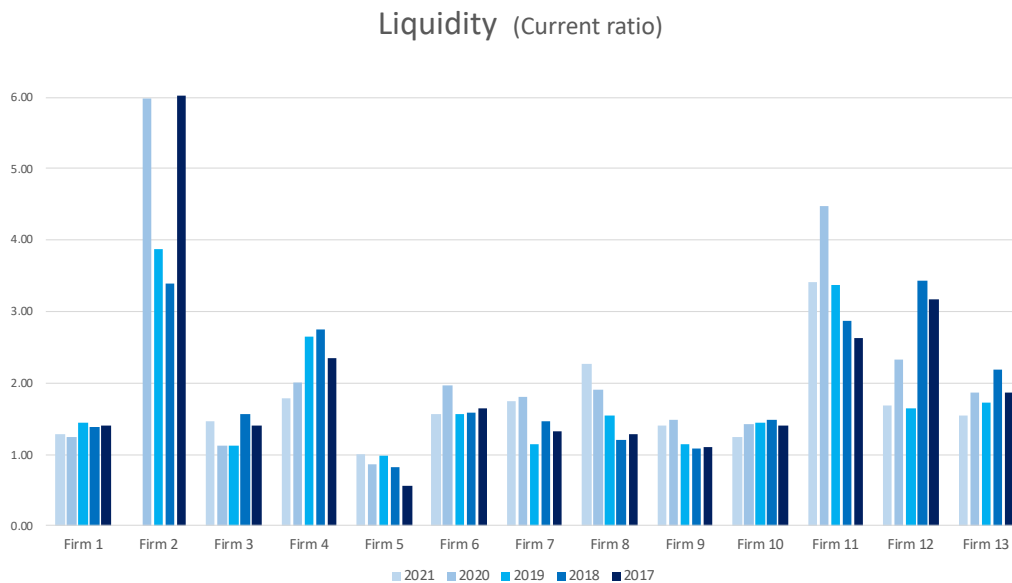


Figure 7: Liquidity evolution. (Source: own elaboration)

Among all the firms studied, only Firm 5 had liquidity problems over the last years, whose situation improved but only to a level in which they can roughly cover its actual short-term debts, without any kind of margin to react to unexpected events. Some firms could be in a situation of excessive liquidity, which is neither recommended, as excessive liquidity can be a source of failure to fully exploit the profitability potential of the companies.

¹⁵ Retrieved from: <https://corporatefinanceinstitute.com/resources/accounting/current-ratio-formula/> (Accessed January 2023)

Secondly, in order to assess the total capacity to cover its debts, not only in the short-term but also in the long-term, the solvency of the firms was calculated. It allows firms to evaluate their capacity to cover its total debts with the assets they own.

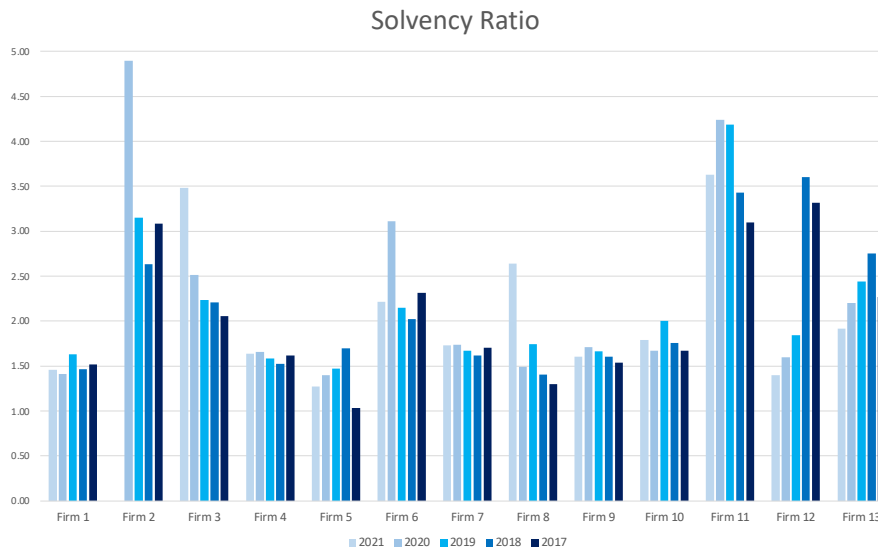


Figure 8: Solvency evolution. (Source: own elaboration)

As it can be observed, no company had been in a suspension of payments during the studied years, which is in fact a positive thing. However, we notice that many of the companies are hovering around the 1.5 value. This figure indicates that companies may pay their debts up to 1.5 times their worth. A more cautious value could possibly be around 2, although it depends on every case. Similar to what happened with the liquidity, a high value could suggest that companies are not taking enough debt, which would minimize its potential development and profitability.

And finally, the last variable examined in this economic-financial research was the debt to equity rate¹⁶. It describes a company's funding structure and the financial leverage it uses to finance its activities. It is computed as the division of company total debt by its shareholder's equity.

A value less than one indicates that the company primarily uses equity financing rather than taking on debt to fund its operations, and the opposite is true. Of course, optimal values differ between sectors, but generally speaking, a manufacturing-sector firm, as it

¹⁶ Retrieved from: <https://corporatefinanceinstitute.com/resources/commercial-lending/debt-to-equity-ratio-formula/> (Accessed January 2023).

is with the enterprises in this sample, would feel at ease with values around 2 or 2.5. A company's objective may not always be to have the lowest ratio as it can be a sign that the resource allocation is not optimal and growth opportunities are not sought.

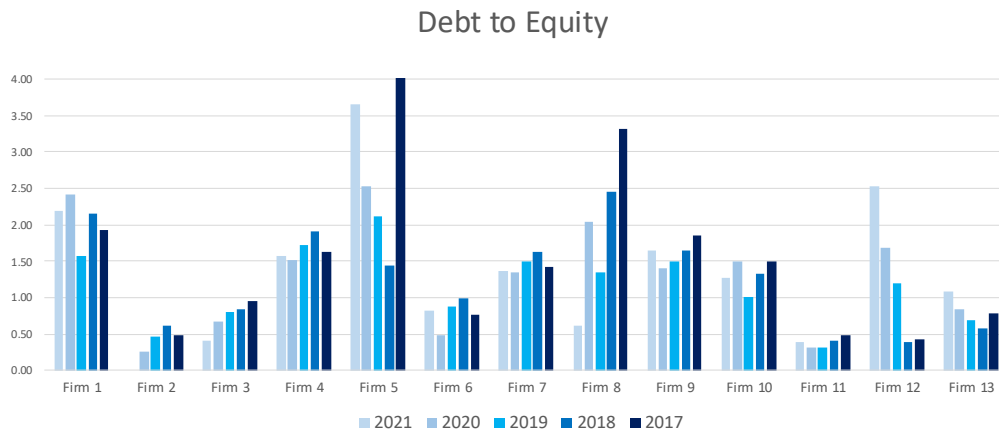


Figure 9: Debt to Equity rate evolution. (Source: own elaboration)

The general value was around the optimal for this kind of firms, ranging from 1.5 to 2.5 in most of the cases. What in fact is very interesting that those companies with values lower than 1 were the same ones that as explained in previous sections, can have problems of loss of growth opportunities due to both, excessive liquidity and solvency and insufficient level of debt. On the contrary, the high level of indebtedness of company 5, which could be considered to be excessive, may be linked to the liquidity problems they had during the last 5 years.

2.4 Non-Financial Information analysis and accountability

Companies' growing tendency to report non-financial information was the first element studied. This trend has emerged due to the increasing emphasis placed by capital market participants on such information. Companies now devote greater attention to reporting this data, with a focus on annual increments and adherence to standards to enhance its clarity and comparability.

To assess the importance given to non-financial information by businesses, their websites were examined. Of the 13 companies analyzed, 10 had a dedicated section for environmental information, which will be further analyzed. Some companies had a sub-section while others devoted a significant portion of their website to NFI. Two

companies did not have a separate section but shared updates under "News" with easily identifiable tags.

A more significant assessment was focused on whether the companies disclosed NFI Statements, as outlined in *Section 1.2.*, or not. When applying these requirements to the sample study, it was found that only three of the firms were required by law to do so, since none of them were considered a Public Interest Entity. It is needed to consider that the requirements applied did not correspond to those of the last enacted the 2022/2464 Directive Corporate Sustainability Reporting Directive, but to the 11/2018 Spanish Law, as these recent changes won't be applied before 2023 reports, and the annual reports analyzed within this study are those of 2021.

| During last 2 consecutive years: | Firm 1 | Firm 2 | Firm 3 |
|--|------------|------------|------------|
| Average number of employees higher than 250 | 770 | 342.5 | 357.5 |
| Consolidated Assets over 20M€ | 152,947 | 142,577 | 36,469 |
| Annual turnover greater than 40M€ | 172,405 | 64,272 | 59,367 |
| Obligation to prepare NFI Statements | YES | YES | YES |

Table 5: Obligation to prepare NFI statements. (Source: own elaboration)

For the rest of the companies, this was the distribution on whether they reported this information or not.

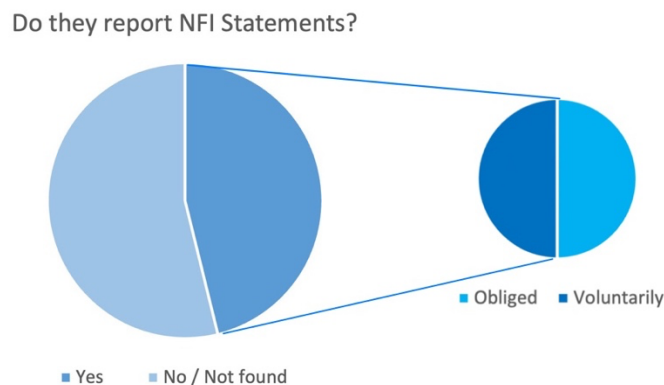


Figure 10: Do companies report NFI Statements? (Source: own elaboration)

It could be observed that apart from the 3 companies that were obliged to, only 3 decided to do it voluntarily. Among these 6 companies, it is interesting to highlight that the reports of 5 of them could be found at the United Nations Global Compact website as members of this UN initiative. For the other 7 firms, any information further than that disclosed on their websites was found, and it has been considered that they do not

report any NFI statements. Firm 11 surveyed stakeholders about NFI reporting and plans to disclose over it in upcoming years due to positive feedback¹⁷. Firm 12 is affiliated with the pharmaceutical industry and does not report on NFI on their website but contributes to a FENIN (*Federación Española de empresas de Tecnología Sanitaria*) report that aggregates such information.¹⁸

The certification is the process carried out by an external entity that acts independently of its stakeholders. This process confirms that a given company complies with the requirements contained in technical regulations or specifications. In order to have an overall result on the certifications that firms own, a list of some of the most important certifications when it comes to environmental and circular economy aspects has been selected:

- **ISO 9001:** Sets the criteria for a QMS (Quality Management System) applicable to any organization, regardless of its size. It enables organizations to ensure consistent delivery of high-quality products and services, resulting in satisfied customers, management, and employees, among other benefits.¹⁹
- **ISO 14001:** It is a critical certification, alongside ISO 9001. It offers guidelines on best practices for an EMS (Environmental Management System) to reduce a firm's environmental footprint. It assures stakeholders that the company is measuring and improving its environmental impact²⁰.

Then it was analyzed whether the companies had the two most well-known international forest certification schemes:

- The **Forest Stewardship Council (FSC)**²¹. promotes ethical forestry practices and is certified based on traceability of timber and adherence to international principles for sustainable forest management

¹⁷ Retrieved from: <https://www.eungroup.com/es/articulo/encuesta-triple-a-los-ggii-de-eun> (Accessed February 2023)

¹⁸ Retrieved from: <https://www.fenin.es/documents/document/971> (Accessed December 2022)

¹⁹ Retrieved from: <https://www.iso.org/iso-9001-quality-management.html> (Accessed January 2023)

²⁰ Retrieved from: <https://www.iso.org/iso-14001-environmental-management.html> (Accessed January 2023)

²¹ Retrieved from: <https://es.fsc.org/es-es/sistema-fsc/principios-y-criterios-fsc> (Accessed January 2023)

- And the **Programme for the Endorsement of Forest Certification (PEFC)**²³. It is similar to the FSC, but when this last has specific benchmarks and standards, the PEFC is a mutual recognition agency, in which standards are set among the stakeholders and not by the organization alone.

The following graph shows the certifications owned by the firms studied:

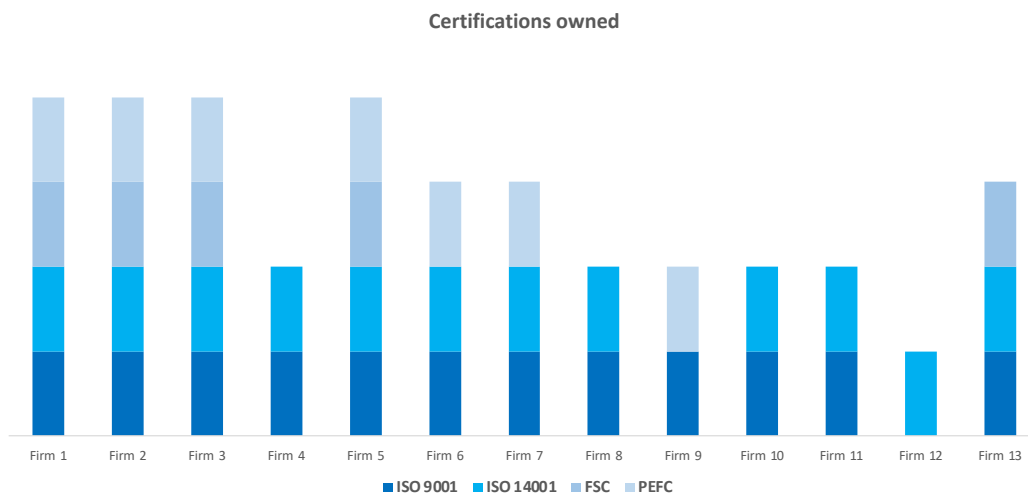


Figure 6: Certifications owned by the firms studied. (Source: own elaboration)

Apart from the widely known ISO 9001 and ISO 14001, owned by the majority of the firms of the sample, some of them have additional certificates such as ISO 14024 and ISO 14006. Only two firms have ISO 50001, which establishes energy consumption and efficiency standards²⁵. It is surprising that more firms do not have this certification.

It could be also located the *ISO 45001*, which is comparable to *OHSAS 18001*, an International Occupational Health and Safety Management Standard that helps prevent workplace accidents and enhance safety procedures. It is widely held by businesses, and although it is not tied to environmental concerns, it is worth mentioning.

Forestry certificates were not as spread as ISOs. Only 61.5% of the companies held at least one of these certificates. This can be due to the high difficulty and internal cost that can suppose their obtention, and it explains why it is only obtained by the biggest firms (and unexpectedly Firm 13).

²³ Retrieved from: <https://pefc.org/discover-pefc> (Accessed January 2023)

²⁵ Retrieved from: <https://www.iso.org/iso-50001-energy-management.html> (Accessed January 2023)

Apart from the mentioned certificates, the companies were recognized with other certificates or were awarded with other recognitions such as the *Ecovadis Gold Seal*, an entity that assesses corporate social responsibility and sustainable procurement of businesses; or *Well V2* and *Leed* green certifications among many others.

This are the results obtained after having applied the assessment criteria, analyzing the level of information disclosed by each of them.

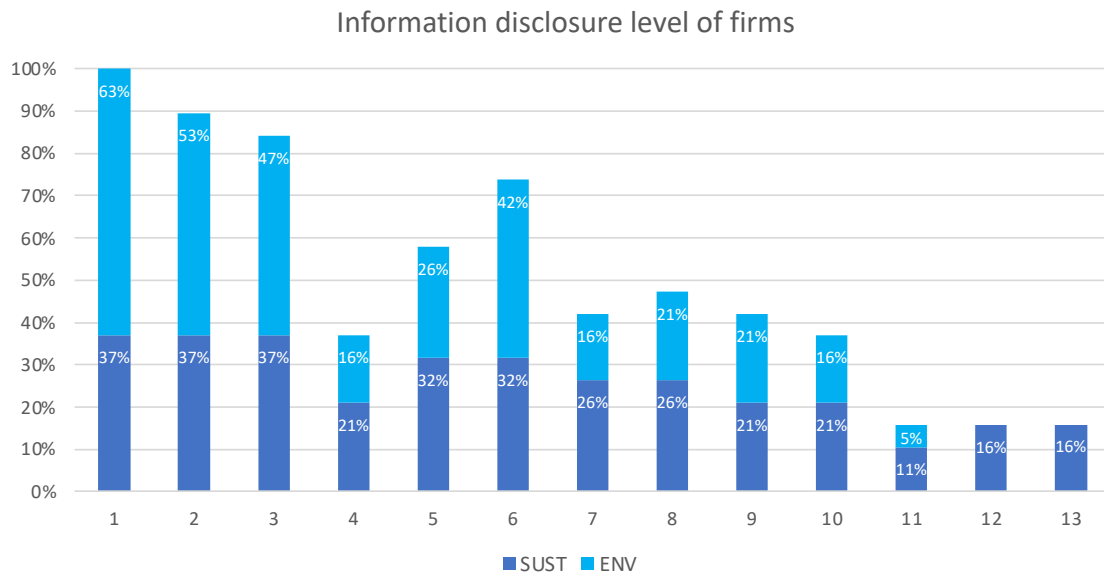


Figure 12: Level of NFI disclosure of the studied firms. (Source: own elaboration)

The huge differences observed within the firms that make up the sample indicates the unfavorable situation that this sector has when it comes to the disclosure and publication of non-financial information. On the next section, data obtained from this mark assignment was crossed with other business characteristics.

Once all the economic-financial variables were analyzed together with the level of reporting of non-financial information within all the firms, the results obtained were crossed in order to verify if there is any kind of relationship.

To ease the comparability, the following criteria was established:

- **High** Level of disclosure: +67% information disclosed
- **Medium** Level of disclosure: From 33% to 67%
- **Low** Level of disclosure: less than 33% of the total information disclosed

| | Very old company | Less old company | Total |
|----------------------|------------------|------------------|-----------|
| High | 4 | | 4 |
| Medium | 4 | 2 | 6 |
| Low | | 3 | 3 |
| Total general | 8 | 5 | 13 |

Table 6: Age of the firm and level of disclosure relationship. (Source: own elaboration)

As it can be observed, firms tend to report more detailed information throughout the years, as the companies that received a higher mark following the evaluation system established, coincided to be former companies with more than 35 years. In addition, it is shown that companies tend to disclose more information as its size increases. Larger companies tend to present more detailed reports when it comes to sustainability and specifically environmental sustainability. It is also worthy to mention that companies that belonged to a company group also reported more detailed information on these topics, and that could be due to both; to match the reporting schemes of the other companies of the group or to the social pressure exerted by the shareholders of the parent company.

| Size | Belongs to a company group | | | Does not belong to a company group | | Total general |
|----------------------|----------------------------|----------|----------|------------------------------------|----------|---------------|
| | Large | Medium | Small | Medium | Small | |
| High | 1 | | 1 | 2 | | 4 |
| Medium | | 1 | 1 | | 4 | 5 |
| low | | | | | 3 | 4 |
| Total general | 1 | 1 | 2 | 2 | 7 | 13 |

Table 7: Size of the firm, company group belonging and level of disclosure relationship. (Source: own elaboration)

The sales figure or operating income generated by the firms during the last years, could not be directly compared to the level of detail of the information disclosed. The differences on this data came from the size differences shown by the firms of the sample. Subsidiaries' data could neither be attributed to the degree on which companies presented this kind of information, because this depends, as aforementioned, on the region where they operate.

3 Case study

As the third phase of the methodology analysis, we analyze a sample firm through a case study. The firm studied is Yudigar, a firm located in Cariñena, Aragón (Spain) that makes part of HMY group, an international company group since 1998.

HMY is a leading group in the engineering, manufacturing, and fitting of retail furniture. In addition, it offers brands and retail consulting, design & architecture services, site & project management, and general contracting and tech solutions. Founded in 1998 by the merge of Hermès-Metal, a French company established in 1960 and Yudigar, a Spanish company founded in 1978; HMY has expanded internationally, and it is now present in more than 160 countries and has more than 90 sales offices across the world. They have worked for luxury brands, wholesalers, large supermarket chains and in recent years, it has opened its activities to the banking and automotive sector among others. In order to adapt to each market and its culture, they have business units based in each continent. It manages 12 production units in France, Spain, UK, Turkey, Brazil, Malaysia, India, and Mexico.

HMY has a solid commitment to sustainability in all its activities. By using these methods, they are carrying out a long-term commercial initiative while considering their partners and resources. They want their business to have a good impact on everyone and everything, including the environment, its workers, clients, and end users.

The firm is committed to UN Global Compact 10 principles and the 17 SDGs. The firm looks after for its workers by the respect of human rights and by the appliance of safety and health measures at the workplace, together with several training courses and its online platform where employees can benefit with hundreds of educational programs. The company also includes activities that expand the life cycle of their products and that promote energy savings and efficiency. As could be seen in the certificates' section, HMY currently possesses certificates such as PEFC, FSC, ISO 9001, ISO 14001, ISO 50001, EMAS and OHSAS certifications.

For National seal systems such as the "Calculate" seal, HMY Yudigar has already registered its carbon footprint for the last 5 years. Its next step will be to receive the "Calculate and Reduce" seal, by means of quantifying and verifying the reduction of

greenhouse emissions. For the last step in this seal granted by the Spain's Ministry of Agriculture, Food and Environment; the company will take actions voluntarily in efforts to fight climate change. The firm hasn't stopped replacing machinery to take a better advantage of the productive processes and available resources. Not only the factory in Spain has been granted with this kind of certifications as the one in France has recently received some of the same certifications Yudigar owned.

3.1 CE adoption and reporting

This section analyzes the non-financial data that the company disclosed in its sustainability reporting over the previous three years, especially in the environmental section.

HMY, through its project "SmartEco 2025", wants to demonstrate and make effective its commitment towards the sustainable development of retail furniture. Via a model based on the principles of circular economy driven by eco-design, this project focuses on integrating cutting-edge technologies and eco-friendly materials to create a new generation of retail spaces that are efficient, sustainable, and environmentally friendly.

The SmartEco project offers a range of solutions to help retailers reduce their carbon footprint and improve the overall sustainability of their operations. These solutions include:

1. Smart lighting: The SmartEco project uses energy-efficient LED lighting systems that automatically adjust the brightness and intensity of the lights based on the natural light available in the store.
2. Energy-efficient refrigeration: The project incorporates the latest in energy-efficient refrigeration technologies to reduce the energy consumption of refrigeration units in retail stores.
3. Sustainable materials: SmartEco utilizes eco-friendly materials in the construction and design of retail spaces, including recycled and upcycled materials.

4. Waste management: The project provides retailers with solutions to reduce waste production, increase recycling rates, and dispose of waste in an environmentally responsible manner.
5. Green transportation: SmartEco also offers solutions to reduce the environmental impact of transportation, including electric vehicle charging stations and bike parking.

In summary, the SmartEco project by HMY group aims to help retailers create more sustainable and eco-friendly retail spaces that reduce energy consumption, waste production, and carbon emissions.

Within the objectives settled in this plan, as strategic axes of their innovation, the following goals aligned with the Agenda 2025 have been settled:

- 15% reduction of the carbon footprint.
- 100% product made from recycled material or controlled origin.
- 100% of the projects based on the eco-design principles.
- Zero waste in all of its factories and manufacturing processes.
- 80% of the customer residue managed is recycled or reused.
- 50% of the products made with its own waste or its customers'.

These goals were settled at the beginning of 2020 (within the 2019 Statements), when HMY established its specific strategic plan around sustainability; the SmartEco plan.

In the following table, the annual results together with its evolution and completeness of its goals are shown. It offers insights into the growth and success of the company's objectives throughout the year.

HMY Goals for the 2025 Agenda

| Description | Goals settled | 2020's results | 2021's results |
|---|---|----------------|--|
| Carbon footprint's reduction | 15% reduction | 12.02% | 13.06% |
| Material used with a recycled or controlled origin | 100% of the products made with controlled or recycled sources | 25.3% | 23.3% |
| Projects based on eco-design principles | 100% projects | 8% | 45.9% |
| Waste generation in factories and manufacturing processes | Zero waste | 4% | 2% (Certified as Zero Wastes factory) |
| Management of the customers' residue generated | 80% waste is recycled or reused | 1% | 97.4% |
| Products made with own waste or customers | 50% products | 9% | 8.5% |

Table 7: HMY 2025 Agenda. Goals and 2020 & 2021's results (Source: own elaboration)

We can see that the evolution shown by the company in the objectives settled at the start of 2021 is very favorable, except for the aspects relating to the inclusion of recycled materials within its products catalogues. HMY and other companies face important challenges when including recycled materials in their products due to the availability and quality of recycled materials, cost, complexity of the supply chain, and design and engineering challenges. Despite these obstacles, incorporating recycled materials is an important step towards creating more sustainable products; and that is why HMY insists on its commitment and devotion to eco-design.

Also, it is important to comment on other aspects, such as energy consumption. Despite the 11.3% decrease in absolute energy consumption in 2020 compared to the previous year (2019), there was a 12.3% increase in relative energy consumption in light of the impact of COVID-19 on turnover and industrial operations. The company emphasizes on the importance placed on this matter and provides a list with more than 10 changes and actions applied in order to reduce it. It happens the same with the loss suffered in water efficiency of +10% (12.1%) with respect to turnover, which has been masked with an overall saving of 11.4%.

On the following year, 2021, the firm confirms the effectiveness of the measures applied, by sharing the achievement of:

- Energy consumption decrease in terms of sales of 7.8% with respect to 2020.
- Water consumption saving in relative sales values of 19.1% with respect to 2020.

We can be confident that HMY is now more dedicated than ever to environmental protection given all of its accomplishments and projects. The expectations of all parties involved are helping drive this beneficial evolution, with changing customer needs serving as one of the major driving forces. Remodeling retail spaces and stores, which serve as the primary point of display for customers, is one of the key strategies used by businesses today as they transition to green practices growth models.

3.2 Stakeholders analysis. Internal actions and plans towards CE implementation.

In order to get a better understanding on the value that businesses place on accountability and the reporting of the adoption of CE practices, HMY offered the chance to interview the person in charge of Product Innovation and Environment for the final section of this study. The interview was an in-person interview carried out in the offices of the firm and lasted for about 30 minutes.

Section A: CE in the firm and sector

In this section, the questions were aimed at having a deeper knowledge on the topic of CE and its relevance to the interviewed company, and its thoughts about its implementation within the company and overall sector.

- **In terms of business competitiveness (cost reduction, increase on sales, market share improvement, operating result ...) Do you consider that CE is a relevant factor for your firm?**
- I totally consider it to be an important aspect, I would rate it a 10
- **Within the CE framework, which activities do you consider the most relevant for your company?**

- Develop CE projects that provide solutions to our clients enabling them to transform their waste into new resources that can be used to manufacture products reintroduced into their own projects. To do so, it is necessary to know the type of waste generated by each client and based on this, to be able to offer different solutions adapted to their needs. Each customer generates different types of waste, with different characteristics and typology, so CE solutions must be tailored to each case.
- **In your opinion, since what year does the company specifically report on its CE and sustainability activities and why did it start reporting?**
- At HMY we defined a specific strategic plan around sustainability in 2019, our SmartEco plan, which defines a series of objectives for sustainability. This is not to say that HMY was not committed to sustainability before, as for example in 1998, we already obtained EMAS Environmental Management recognition.
- **Do you know of any company in the sector that applies, and designs activities related to the CE in a very proactive way?**
- Less than 5 companies in the sector, for example ITAB.
- **In your opinion, how soon can the CE be widely implemented in most of the entities/companies in the sector?**
- More than 10 years

Section B: CE implementation and reporting

- **In your opinion, why does the company report on CE through the Group's sustainability reports? Is it reported through other channels at territorial level from its headquarters in Spain?**
- On the one hand, it is a requirement that large companies report and make public their environmental reports. On the other hand, HMY has several channels of internal communication to its employees on environmental actions, we carry out internal awareness campaigns and periodically communicate actions carried out around sustainability.
- **Do you consider it important to communicate sustainability and CE activities through the website? Do you consider that CE is comprehensively reported through the website?**

- Yes, it is very important to communicate it through our website and we are proud on the comprehensive reporting we publish, highlighting our commitment and progress.
- **To what extent do you consider the following stakeholders relevant for the implementation of these circular economy measures?**
- All groups of stakeholders are very relevant and will have a great impact in our path to a CE model. Perhaps, I would highlight the greater importance and influence of competitors, clients and our shareholders; as the most interested parties that they are, they will require more CE-based products and information reporting.
- **Considering the indicators that could be measured in HMY for the implementation of specific circular economy measures, which indicators have been implemented in the entity or could be implemented in the near future?**

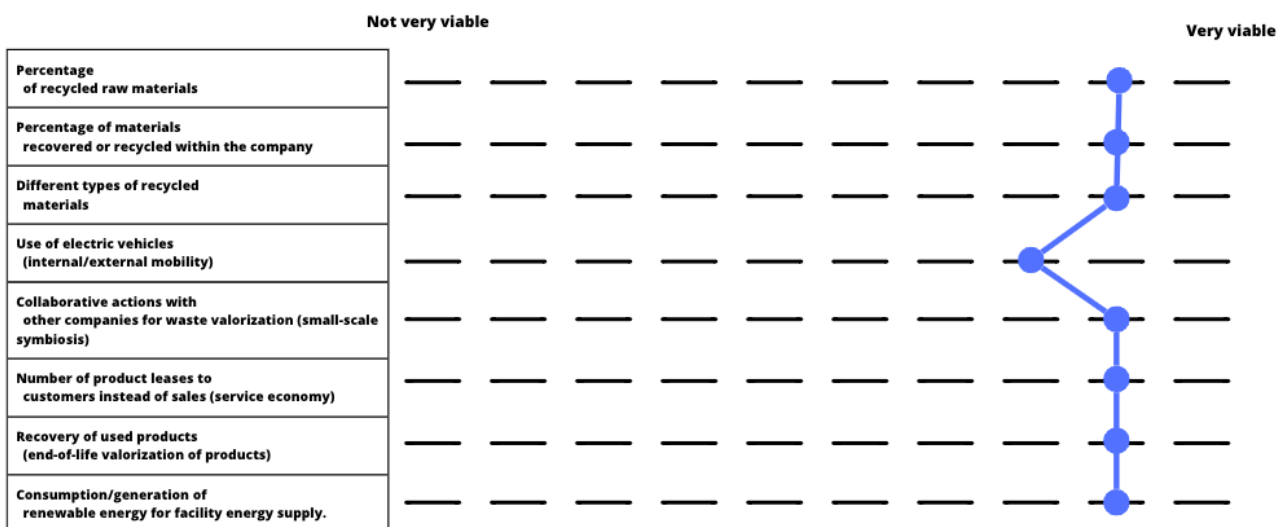


Figure 13: Viability on indicators implementation and measurement. (Source: in-person interview, own elaboration)

Section C: Internal processes for CE

In the last section of the interview, questions related to the internal processes and policies regarding CE were discussed, aiming to gain insight into the company's approach and funding methods on them.

- To what extent do you agree with the following statements?

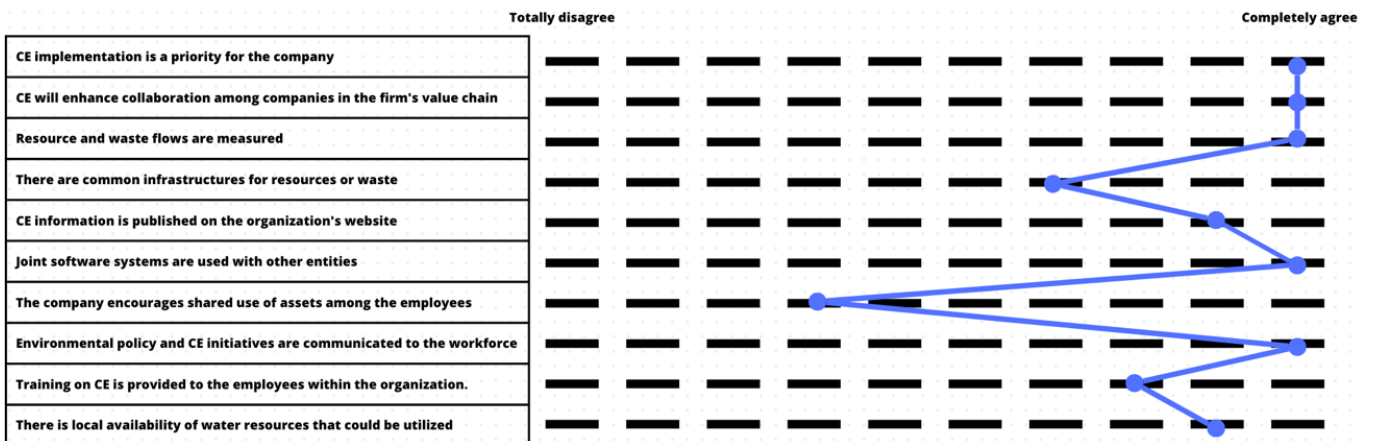


Figure 14: Interviewee's perception about CE-related processes. (Source: : in-person interview, own elaboration)

- Order, from 1 to 6 (being 6 the most used and 1 the least) the following financial resources according to their actual use within the company to achieve CE implementation

- Own financing (6); Internal financing (5); Public aids (4); External financing (3); Alternative financing (2).

- Does the company carry out any of the following accounting practices?

| | YES | NO |
|---|-----|----|
| The expenses necessary to reduce environmental pollution (measurement and detection of emissions and/or waste) are recorded in specific sub-accounts for these differentiated expenses from the rest. | ✓ | |
| Provisions and contingencies for environmental actions and future risks are accounted for. | ✓ | |
| Circular economy activities are measured through specific indicators. | ✓ | |
| The entity provides specific information about investments and expenses related to the circular economy. | ✓ | |
| Measurement and calculation of specific costs for waste recycling. | ✓ | |
| Detailed measurement and accounting of material flow costs. | ✓ | |
| The UNE-EN ISO 14051 for material flows is implemented. | | ✗ |
| Tools for life cycle analysis (LCA) are implemented and/or used. | ✓ | |
| Recycled materials are valued at the cost of substitute materials or the cost of valorization. | ✓ | |
| Specific inventories are recorded for internally recycled materials and eco-friendly materials. | ✓ | |

Table 8: Accounting practices carried out in the company. (Source: : in-person interview, own elaboration)

4 Conclusions

Throughout this study, an analysis of the financial results together with the extent of NFI disclosed in the office furniture and retail sector in Spain has been carried out, seeking to put in value the importance of the NFI and CE practices in the companies' results. The case study conducted in one company of the sample studied, to enhance the results, has provided the research with valuable insights into the current situation of the CE in Spain and in Europe in general, as well as the main challenges and opportunities specific to the furniture sector.

In light of the findings, it is evident that the furniture sector is committed to transitioning towards sustainability and circularity despite the challenges it encounters. To achieve this goal, it is crucial to identify the driving forces of change and make strategic decisions at both, corporate and sectorial levels. All stakeholders, including businesses, governments, and consumers, acknowledge the benefits of transitioning to circular models, but it is everyone's responsibility to turn these principles into reality for the benefit of society and the Spanish economy.

Collaboration, trust, and shared economic value are essential in achieving stability, and substantial R&D investments are necessary to address current issues. Given that businesses are currently hesitant to invest large amounts in R&D due to the unfavorable near-term outlook, government aids would be necessary to successfully address the challenges confronting the furniture sector. Such measures would stimulate investment, foster innovation, and ultimately lead to the development of sustainable solutions.

On the consumer side, generating sustainable demand requires education and awareness-raising efforts. These initial steps will motivate manufacturing companies to focus their efforts on sustainable-oriented production, contributing to the overall sustainability goals.

The results of this study can be instrumental for the private sector, providing a deeper understanding of society's main concerns regarding sustainable practices within firms. Additionally, the study offers insights into the level of reporting by direct competitors, enabling the company to make corrective and strategic decisions to enhance value creation and improve brand image. By identifying the areas to focus on and correcting

weaknesses, such as establishing new specific indicators to be measured and reported in annual reports, the company can progress towards its sustainability objectives.

While this study encountered certain limitations, such as the difficulty in finding non-financial information reporting by companies and the limited sample size, the interview conducted with the department supervisor helped partially overcome these challenges. The direct contact and information provided by an individual responsible for CE and environmental sustainability practices proved remarkably valuable.

In the future, expanding this study to include the broader furniture sector or other international territories will enhance the conclusions and results achieved in this research. It will allow for the exploration of a wider range of improvement ideas and opportunities.

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| | Importe neto Cifra de Ventas mil EUR Últ. año disp. | Importe neto Cifra de Ventas mil EUR Año - 1 | Importe neto Cifra de Ventas mil EUR Año - 2 | Importe neto Cifra de Ventas mil EUR Año - 3 | Importe neto Cifra de Ventas mil EUR Año - 4 | Resultado Explotación mil EUR Últ. año disp. | Resultado Explotación mil EUR Año - 1 | Resultado Explotación mil EUR Año - 2 | Resultado Explotación mil EUR Año - 3 | Resultado Explotación mil EUR Año - 4 | Tot subv 17/22 | Tipo nacional | Autonomica local | Internacional | Medioambiente | Empleo Y RRLL | Innovación I+D+i | Tranf digital y mejora |
|----|---|--|--|--|--|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|----------------|---------------|------------------|---------------|---------------|---------------|------------------|------------------------|
| 1 | 172,405 | 144,524 | 170,785 | 202,279 | 155,933 | 13,324 | 2,381 | 21,580 | 28,740 | 15,185 | 10 | 9 | 1 | | | 1 | 3 | 6 |
| 2 | 64,272 | 90,116 | 85,067 | 81,592 | 71,123 | 5,749 | 12,711 | 12,836 | 15,221 | 12,142 | 10 | 8 | 2 | | | 1 | 9 | |
| 3 | 59,367 | 78,462 | 79,832 | 72,662 | 70,824 | 3,013 | 2,929 | 3,402 | 3,182 | 4,187 | 0 | | | | | | | |
| 4 | 24,839 | 24,310 | 42,163 | 53,111 | 77,684 | 677 | 1,000 | 1,588 | 5,417 | 5,038 | 2 | 2 | | | | | | 2 |
| 5 | 23,030 | 37,799 | 36,966 | 30,256 | 36,021 | -2,755 | -1,165 | -2,260 | -3,863 | -3,148 | 5 | 5 | | | | | | 5 |
| 6 | 19,415 | 18,020 | 22,919 | 30,163 | 17,746 | 278 | 734 | 1,259 | 2,385 | 426 | 15 | 2 | 13 | | 3 | 2 | 6 | 4 |
| 7 | 14,940 | 12,923 | 15,728 | 16,409 | 15,154 | 218 | 458 | 383 | 609 | 885 | 4 | 4 | | | | | | 4 |
| 8 | 14,204 | 10,472 | 12,159 | 9,444 | 5,675 | 226 | 1,774 | 1,148 | 1,441 | 399 | 40 | 18 | 22 | | | | 23 | 17 |
| 9 | 9,429 | 10,385 | 11,099 | 14,037 | 12,775 | -90 | 113 | 101 | 113 | 146 | 2 | 2 | | | | | | 2 |
| 10 | 8,380 | 10,621 | 11,282 | 12,032 | 11,567 | -421 | 126 | 327 | 170 | 409 | 4 | 4 | | | | | 1 | 3 |
| 11 | 8,169 | 10,157 | 12,171 | 11,209 | 12,231 | 129 | 510 | 537 | 911 | 919 | 17 | 12 | 5 | | | | 17 | |
| 12 | 6,403 | 6,676 | 7,085 | 8,065 | 7,810 | -309 | 249 | -271 | 441 | 205 | 3 | 2 | 1 | | | | 2 | 1 |
| 13 | 6,579 | 5,708 | 7,372 | 8,153 | 10,222 | -202 | -291 | -971 | 52 | 157 | 14 | 13 | 1 | | | | 5 | 9 |
| 14 | | | | | | | | | | | | | | | | | | |

Annex 2.- Tables of contents: Analysis of the NFI reported.

| | | |
|---------------|---|------------|
| Firm 1 | Production: Highly devoted to eco-design. Comment about their actual situation regarding eco-design, evolution, and future objectives. Innovative changes to improve production processes' efficiency. | 2+1 |
| | Energy and material consumption: Deeply informs about the source of the materials consumed, evolution and future objectives. Energy use, evolution and goals settled. Energy efficient actions taken. | 2+2 |
| | Waste management: Actual data on waste management, evolution and goals settled. Waste recycling actions settled. | 2 |
| | Emissions: Data on emissions, evolution, and future objectives. Actions taken to reduce them. | 2 |
| | Others: Social actions to compensate carbon footprint, tree planting projects. Promotion of environmentally friendly practices among their workforce. Rainwater harvesting system. | +1 |
| Firm 2 | Production: Devoted to eco-design. Innovative changes to improve production processes' efficiency. | 1+1 |
| | Energy and material consumption: Inform about the source of the materials consumed. Energy use and its evolution. Actions taken to reduce its consumption. | 2+1 |
| | Waste management: Actual data on waste management and its evolution. | 2 |
| | Emissions: Data on emissions and its evolution. Actions taken to reduce them. | 2 |

| | | |
|---------------|--|-----|
| | Others: Technology Park with large solar panel installations. Rainwater harvesting system. | +1 |
| Firm 3 | Production: +400 products with positive environmental impact due to its composition. Innovative changes to improve production processes' efficiency. | 1+1 |
| | Energy and material consumption: Informs about the source of the materials consumed. Energy use, evolution and goals settled. Energy efficient actions taken. | 2+1 |
| | Waste management: Actual data on waste management, evolution and goals settled. Waste recycling actions settled. | 2 |
| | Emissions: Data on emissions, evolution, and future objectives. | 2 |
| Firm 4 | Production: Information not provided. | 0 |
| | Energy and material consumption: Some achievements are mentioned (both energy and material consumption) | 1+1 |
| | Waste management: Some achievements are mentioned | 1 |
| | Emissions: Information not provided. | 0 |
| Firm 5 | Production: Devoted to eco-design. Detailed instructions on the product care and recycling. | 1+1 |
| | Energy and material consumption: Informs about the source of the materials consumed. Informs about the source of the energy consumed. | 1+1 |
| | Waste management: Some practices are mentioned. | 1 |
| | Emissions: Information not provided. | 0 |
| Firm 6 | Production: Devoted to eco-design. Innovative changes to improve production processes' efficiency. | 1+1 |
| | Energy and material consumption: Informs about the source of the materials consumed. Energy efficient actions taken. | 1+1 |
| | Waste management: Actual data on waste management. | 1 |
| | Emissions: Data on emissions and its evolution. | 2 |
| | Others: Technology Park with large solar panel installations. | +1 |
| Firm 7 | Production: Devoted to eco-design. | 1 |
| | Energy and material consumption: Informs about the source of the materials consumed. | 1 |
| | Waste management: Waste recycling actions settled. | 1 |
| | Emissions: Information not provided. | 0 |

| | | |
|----------------|---|------------|
| Firm 8 | Production: Information not provided. | 0 |
| | Energy and material consumption: Informs about the source of the materials consumed and its evolution. Energy use and its evolution. | 1 |
| | Waste management: Actual data on waste management and its evolution | 1 |
| | Emissions: Information not provided. | 0 |
| Firm 9 | Production: Devoted to eco-design. Innovative changes to improve production processes' efficiency. | 1+1 |
| | Energy and material consumption: Slightly informs about the source of the materials consumed. | 1 |
| | Waste management: Waste recycling actions settled. | 1 |
| | Emissions: Information not provided. | 0 |
| Firm 10 | Production: Innovative changes to improve production processes' efficiency. | 1 |
| | Energy and material consumption: Information not provided. | 0 |
| | Waste management: Waste recycling actions settled. | 1 |
| | Emissions: Actions taken to reduce them. | 1 |
| Firm 11 | Production: Devoted to eco-design. | 1 |
| | Energy and material consumption: Information not provided. | 0 |
| | Waste management: Information not provided. | 0 |
| | Emissions: Information not provided. | 0 |
| Firm 12 | Production: Information not provided. | 0 |
| | Energy and material consumption: Information not provided. | 0 |
| | Waste management: Information not provided. | 0 |
| | Emissions: Information not provided. | 0 |
| Firm 13 | Production: Information not provided. | 0 |
| | Energy and material consumption: Information not provided. | 0 |
| | Waste management: Information not provided. | 0 |
| | Emissions: Information not provided. | 0 |

Annex 3.- Results obtained from the NFR assessment.

| Firm | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|----------------|---|---|---|---|---|---|---|---|---|----|----|----|----|
| SUST | | | | | | | | | | | | | |
| SUST_SEC | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 0 | 2 | 0 |
| SUST_STAT | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| SUST_CERT | 4 | 4 | 4 | 2 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 3 |
| ENV | | | | | | | | | | | | | |
| ENV_PROD.ECOD | 2 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |
| ENV_PROD.INNOV | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| ENV_ENE | 2 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| ENV_MAT | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| ENV_WAS | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 |
| ENV_EMI | 2 | 2 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| ENV_EXT | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |