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Sustainability: the new element for creating competitive advantage

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Abstract

Businesses have become more concerned about sustainability, which affects both the business world and our society. Sustainability is now seen as a key driver for future development and

innovation, but only for those companies that implement it in their business strategy. With these concerns, the problem statement that this research seeks to answer is "How to implement sustainability in business strategy". The research objectives are to identify the main issues related to business sustainability, how sustainability is changing the business world, how companies can implement sustainability in their business strategy and to correlate the empirical evidence with the interviews. To achieve these objectives, data was collected through 101 interviews from the book "101 Voices for Sustainability, for a Responsible Development". The main findings were that companies in Portugal and worldwide are very concerned about sustainability and megatrends, and that Portuguese companies have megatrend opportunities that can be addressed.

Keywords: Sustainability, Corporate Social Responsibility, Sustainable Development Goals, Megatrends, Sustainable Strategy

1 - Introduction

Today, sustainability has a huge impact on our society and the business world is no exception. Sustainable concerns, practices and actions are taking place in our daily lives and therefore in the concerns, visions and goals of managers, leading to their implementation in corporate strategies. In addition, sustainability is the fundamental key to change, drive and innovate the business world and governments worldwide. These concerns are emphasised because of the current world context, the challenges that governments and companies face in rebuilding their business, economy and social issues due to the COVID-19 pandemic.

However, the COVID-19 pandemic brings an awareness of how companies need to adapt quickly to the environment and changes that they cannot control and here the issue of sustainability has a huge impact because it was thought that sustainable issues would allow companies to face this pandemic and now the business world is more aware of the importance and impact that sustainability has in their business, not only in performance issues but also in consumer perspectives.

As sustainability became a constant element that affects the business world in economic, social and environmental aspects, an urgent concern started to rise in managers' action choices, and a big concern on how to implement sustainability in their business strategy started to be a big issue among all firms (Panchal & Singh, 2022).

Nevertheless, there is a gap in the way managers implement sustainability in their business strategy, most of the sustainability reports made by firms are unbalanced and disconnected from business objectives (Erin et al., 2022). Therefore, the research problem is how firms can implement sustainability in their business strategy.

2 - Literature Review

2.1. Sustainability

The origin of Kuhlman and Farrington's (2010) definition of sustainability is closely related to forestry and natural resources, as they stated that we should never harvest more than the forest produces. However, the United Nations World Commission on Environment and Development (developed by the Brundtland Commission) defined sustainable development as the practice of present actions that meet the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainability concerns take place in our daily lives as citizens as well as in the actions of managers as they make decisions about their business and the strategic management of their business. It is important to clarify that sustainability has three pillars: economic sustainability, environmental sustainability and social sustainability (Sardianou et al., 2022).

According to the European Commission, Corporate Social Responsibility (CSR) is a management concept that defines the way in which companies can achieve a balance and integrate their concerns between the economic, environmental and social issues that are present in their business operations and in their interactions with their stakeholders.

In addition, when companies act in a socially responsible manner, they begin to have a crescendo interest in delivering economic and social value that meets the needs of their stakeholders. This will have multiple effects, such as improving brand image, customer loyalty, reputation, sales, customer acquisition and retention, as well as increasing productivity and reducing operating costs. Concerns regarding the management of social and environmental aspects in the company's value chain have started to increase and have become a key driver for sustainable competitiveness, which is why managers are more aware of their CSR initiatives (Padilla-Lozano & Collazzo, 2022).

In fact, short-term profits and targets do not guarantee the success of a company, and therefore companies need to create a long-term sustainable strategy that leads to long-term performance by balancing its financial, environmental and social outcomes (Jayakrishna & Raj, 2022). In addition, the corporate culture will positively influence the sustainability of the companies if it is used to share values, vision and decision making to change the perspectives, preferences and ambitions of the organisation (Hossain et al., 2022).

The sustainable business models respond to the new service usage and consumption habits that are emerging among consumers. These models have been created to help companies aim for significant positive impacts on society or the environment by implementing changes in the creation, delivery, capture and modification of their value proposition (the benefits of a product or service that a company promises to provide to customers). These sustainable business models need to align business objectives with stakeholder and societal needs (Laukkanen & Tura, 2022).

In the business world, there is a well-known performance measurement framework that helps managers link their strategy to their CSR. This framework is called the Triple Bottom Line (TBL), also known as the 3Ps (people, planet and profit).

2.1.1 Triple Bottom Line

The Triple Bottom Line (TBL) is an accounting framework for measuring performance introduced by Elkington (1994). It is an important tool to support the company's sustainability objective because its focus is different from traditional measures. This means that this tool allows managers to view their company's performance through the triple bottom line and not only, as before, through traditional measures such as profit, return on investment and shareholder investment, to include environmental and social dimensions.

According to (Slaper, 2011), TBL includes three dimensions of performance: economic, environmental and social. This framework is used by companies, non-profit organisations and governments.

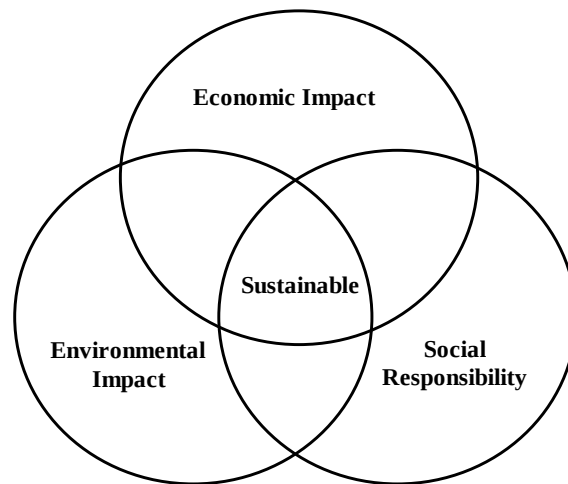


Figure 1 – Triple bottom line. Adopted from (Kabir et al., 2019).

Now that we have analysed the concept of sustainability and the TBL concept and what it means, it is important to look at two major issues: the Sustainable Development Goals and the Megatrends.

2.1.2 Sustainable Development Goals (SDGs)

In order to fight inequality, reduce poverty and ensure inclusive development for all, the United Nations agreed to create the seventeen Sustainable Development Goals, which, in order, are 1. Zero poverty, 2. Zero hunger, 3. Good 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 economies, 12. Responsible consumption and production, 13. Climate action, 14. Life under water, 15. Life on land, 16. Peace, Justice and Strong Institutions, and 17. Partnership for the Goals (Erin et al., 2022).

These SDGs were created in 2015 to replace the Millennium Development Goals (MDGs) and are seen as conventional goals or targets that countries need to meet to achieve the 2030 global agenda. They are seen as the basis for key performance indicators (KPIs) to measure sustainable performance (Erin et al., 2022).

With the emergence of these SDGs, they began to raise serious concerns about the need to develop and create a sustainable future reflected among nations, as at the same time companies, international organisations, began to demonstrate their commitment to the seventeen SDGs by incorporating these goals and sustainability issues and actions in their annual reports, they began to identify SDG targets to incorporate in their business plans and models (Erin et al., 2022).

The issue of sustainability will affect all companies in all industries and sectors, such as automotive, fashion and energy, which need to see sustainability as more than environmental protection, but also social, financial and economic (triple bottom line) issues, as the SDGs consist of, in order to achieve their financial and strategic goals while contributing positively to the environment and society (Lichtenthaler, 2021).

According to the previous authors (Erin et al., 2022), the concept of incorporating the SDGs in corporate reporting started to have a global relevance due to its impact on corporate sustainability as it is a holistic reporting that captures all sustainability issues (environmental, social, governmental) of the SDGs goals.

As stated by the previous authors (Erin et al., 2022), in order to have a report that demonstrates the SDGs, companies need to measure, monitor and hold the organisation accountable for achieving the SDG targets. At the same time, there is a need to link stakeholders' responsibilities to sustainability issues and to include information on the internal and external environment in sustainability reports, as well as to define responsibilities and actions to be taken by stakeholders.

In addition, the authors (Erin et al., 2022) also referred to a study conducted by KPM in 5,200 companies in more than 50 countries and concluded that 80% of companies now report on SDG issues and link their business activities to the SDGs in their corporate reports and that

the most frequently prioritised SDGs by companies are: 8. Decent work and economic growth, 12. Responsible consumption and production, and 13. Climate action, and the least prioritised SDG is 15. Life on land (also known as biodiversity). However, they also conclude that these reports are often unbalanced and disconnected from business objectives.

Nevertheless, a planning methodology called the SDG Compass has been created to help companies create, implement, monitor and achieve these SDGs in their strategy. This plan has 5 (five) dimensions: 1. Understand the SDGs, 2. Define priorities, 3. Set targets, 4. Integrate and 5. Report and communicate. With these plans, companies will also be able to achieve synergies between economic and social issues related to sustainability practices, thus promoting environmental and social development. (Cristina Ferreira Caldana et al, 2022).

As mentioned above, SDG 8. Decent work and economic growth, is one of the SDGs most prioritised by businesses. With this in mind, a group of Portuguese authors (Borrego et al., 2022) conducted a study in Portuguese chartered accountancy firms to understand the role of these firms in supporting small and medium-sized enterprises during the first wave of the COVID-19 pandemic and to understand how these firms perceive their contribution to SDG 8. To this end, the authors interviewed more than 500 Portuguese chartered accountants based in Lisbon, Setúbal and Porto. This study is important for this topic, as it provides a perspective on the types of activities that firms could engage in to achieve SDG8. This study concludes that during the pandemic, these companies increased their number of clients and, therefore, their exercises in the purchase of equipment, training and communication also increased, But despite this increase in expenses and word, 70% of these companies decided not to charge any extra fee and reduced their monthly fees to their clients, in some cases out of solidarity with the difficult situations of his clients and in other cases due to the fear of losing clients due to the pandemic situation, which shows that these companies had a sense of social responsibility towards their clients and society, contributing to economic sustainability and helping to mitigate the possible negative effects in SDG 8.

Despite these mandatory SDGs, there are some targets that companies voluntarily commit to, such as the Zero Deforestation Commitment (ZDC). This commitment arose from the pressure that civil society actors and key non-governmental organisations (NGOs) put on companies to stop tropical deforestation, and today hundreds of companies have committed to adopt the ZDCs. There are different mechanisms to apply the ZDCs, but some of them are: acting directly in the implementation (involving suppliers and producers throughout the supply

chain and working with them, being certified as an eco-certified company), others is integrating sustainability standards in the company's policies (such as standards for sustainable production of palm oil and soy). However, these implementations are not easy and require the allocation of resources, external support and monitoring of on-the-ground presence. In this sense, the key to progress in the field of zero deforestation is to verify, monitor, audit and report on the impact of ZDG implementation by the company (Bager & Lambin, 2022).

2.1.3 Megatrends

As just presented, on the one hand, a very important issue in terms of corporate sustainability is the SDGs, but on the other hand, megatrends are also very relevant, as it is expected that companies will start to address them, as the megatrends will have an impact on organisations (Linthorst & de Waal, 2020).

It is important to understand what megatrends are and which are the global megatrends. Firstly, a megatrend is described as an important or significant social, economic, political and/or technological movement or action in the process of any activity that influences society. A megatrend must have a long duration of importance and deeper effects than normal fashions or trends; it is not something that comes and goes, but rather something that influences society for a long time and can emerge at any time. In summary, a megatrend must reflect a historical context, have a complex nature and have far-reaching effects (Mittelstaedt et al., 2014).

There are 5 (five) major global megatrends: 1. Rapid urbanisation, 2. Climate change and resource scarcity, 3. Shifting global economic power, 4. Demographic and social change, and 5. Technological breakthroughs (Retief et al., 2016).

According to the authors, the rapid urbanisation megatrend is related to the fact that the world's population is increasingly living in cities. As this phenomenon is increasing, this megatrend aims to plan the urban areas to be more sustainable and liveable for the future generations through innovation and sustainable outcomes.

As stated by the authors, the climate change and resource scarcity megatrend is related to the future resource scarcity that humanity will face as the world becomes more urbanised, more populous and the demand for energy, food and water increases, but the earth has a finite amount of natural resources to meet this demand. As a result, this megatrend aims to find ways to innovate and use technology to address the scarcity issues facing society, for example by reducing the use of resources or exploring alternative material solutions.

In addition, the authors also pointed out that the shift in global economic power megatrend aims at the future of an interconnected world without a single dominant player by structuring the global economy and global finance, as well as the power relationship between cities, and increasing access to information. In summary, this megatrend is about global interconnectivity, interdependence and interdependency.

Another megatrend described by the authors is the megatrend of demographic and social change. This megatrend is related to the fact that the world's population is expected to increase to between 9 and 11 billion people by 2050, although this increase will not be constant in all countries because each country has a different demographic profile. However, what will happen is that this increase will have a global impact, and as this increase occurs, people in the more developed countries will live longer and have fewer children, but in the developing countries people will have more children, which means higher demands for quality education, employment, healthcare and resources. As such, this megatrend aims to provide evidence of future policy directions for all nations that take into account these future demographic changes.

The final megatrend identified by the authors is the megatrend of technological breakthroughs. This megatrend is related to the acceleration of technological innovation and targets for future technological advances that will provide access to important contributions to human well-being and governance arrangements in dealing with the disruptive technologies.

Taking Europe as an example, the more important megatrends related to European agriculture are climate change and resource scarcity, and demographic and social change. Climate change is crucial for European agriculture because of concerns about water limits, CO₂ fertilisation effects, droughts and many others. Demographic and social change is important because of factors such as the age of farmers and the decline in the working age population. (Debonne et al., 2022).

However, the adoption of these megatrends by organisations it is a difficult process that requires modify or recreate a new business model, which is, for some companies a difficult working to achieve but for others that are more mature, it is a task that can be done successfully since they have the ability to adapt quickly and be flexible to deal with these long-term changes to perform these megatrends (Linthorst & de Waal, 2020).

2.1.4 Business and Digital Ethics

Business ethics is related to the ethical behaviour of the organisation that can determine the success or failure of the business. This ethical behaviour of organisations has been stated to be of great importance as these ethical values of the company can show the commitment and reputation of the organisation among stakeholders, employees and society. (Reck et al., 2021).

The ethical concerns arise from the increasing use of digital technologies and it is important to make companies responsible for the moral implications of the digital technologies that they design, develop, use or produce, since these technologies will have a direct impact on the society that consumes these technologies (D'Cruz et al., 2022).

According to these authors, one way to make companies accountable for the digital technologies they produce is to incorporate corporate policies, norms and rules into the organisation. This means that business ethics should extend ethical assessment to digital technologies and include the decisions made about the outcomes of these digital technologies, such as the choice of technology, the use of data and policies, and all the processes in the development of these technologies. By being accountable for their actions, companies can achieve a better implementation of their digital technologies, leading to efficiency.

Another important aspect referred to by the authors is that the use of digital technologies must be aligned with the company's objectives and the business and digital ethics must also be aligned with these objectives in order to maximise the stakeholders' view of the company as well as its performance, which requires a well known concept of the value of the chosen digital technology.

2.1.5 “Dark side” of sustainability: greenwashing

The "dark side" of sustainability refers to the negative aspects or unintended consequences that can arise from sustainability efforts. One prominent issue in sustainability is greenwashing, which refers to the practice of making false or exaggerated claims about the environmental benefits of a product, service, or company in order to appear more sustainable than they actually are (Bulut et al., 2021).

Greenwashing can undermine the credibility and effectiveness of sustainability initiatives. It can mislead consumers into believing that they are making environmentally responsible choices when, in fact, they are not. This can lead to a sense of complacency and a false sense of accomplishment, as consumers may believe they are contributing to sustainability when they are not (Bulut et al., 2021).

Greenwashing can also create a sense of cynicism and distrust among consumers. When companies engage in greenwashing, it erodes trust in their sustainability claims and can lead to

skepticism about the authenticity of their efforts. This can have a negative impact on consumer attitudes and behaviors towards sustainability, as they may become disillusioned and less willing to support genuinely sustainable products and companies (Westerman et al., 2022).

Furthermore, greenwashing can divert attention and resources away from truly sustainable practices and solutions. When companies focus on creating the appearance of sustainability rather than implementing substantive changes, it hinders progress towards genuine sustainability. This can delay or prevent the adoption of more sustainable practices and technologies that could have a meaningful impact on environmental, social, and economic outcomes (Dietz et al., 2018).

To address the issue of greenwashing, it is important for consumers to be informed and critical of sustainability claims. They should look for credible certifications and third-party verifications to ensure that the products or companies they support are genuinely sustainable. Additionally, policymakers and regulatory bodies can play a role in enforcing transparency and accountability in sustainability reporting and marketing practices (Diouf & Boiral, 2017).

In conclusion, while sustainability is an important goal, it is crucial to be aware of the potential pitfalls and challenges that can arise. Greenwashing is one such challenge that can undermine the credibility and effectiveness of sustainability efforts. By understanding and addressing greenwashing, we can work towards a more genuine and impactful sustainability agenda.

2.1.6 Sustainability “Business Model” in Corporate Strategy and Competitive Advantage

Sustainability can be integrated into business models and corporate strategy in several ways. One important aspect is the alignment of sustainability goals with the organizational culture. Research has shown that ambitious sustainability activities and strategies need to be embedded in the organizational culture in order to be successful (Baumgartner, 2009). This means that aspects of sustainable development should be part of the mindset of leaders and members of the organization. When sustainability is deeply ingrained in the culture, it can effectively influence the core business and lead to more sustainable practices.

Another way to incorporate sustainability into business models is by adopting a sufficiency-driven approach. This approach recognizes that multiple sustainable business model archetypes may need to be combined within one business to have the greatest impact on corporate sustainability (Bocken & Short, 2016). It involves considering sustainability dimensions holistically at the strategic level, rather than addressing them separately at the

operational level. By combining different sustainable business models, companies can create a comprehensive approach to sustainability that considers various stakeholder interests and maximizes the positive impact on sustainability.

The concept of circular economy (CE) is also viewed as a strategy to achieve corporate sustainability. Companies have started integrating CE into their corporate sustainability agenda, but many are still questioning how to adjust their existing business models or create new ones for CE (Khan et al., 2020). This highlights the need for companies to explore and develop business models that align with the principles of circular economy, such as resource efficiency, waste reduction, and closed-loop systems.

Integrating sustainability into corporate strategy requires a strategic approach that goes beyond operational considerations. Managers need to understand how to make their organizations more sustainable and how to integrate sustainability into the strategic decision-making process (Bonn & Fisher, 2011). This involves considering sustainability at the corporate, business, and functional levels of the organization and addressing it as part of the organization's vision and culture. By integrating sustainability into strategy, organizations can identify opportunities for improvement and align their actions with long-term sustainability goals.

Furthermore, technology management plays a crucial role in corporate sustainability performance. Commitment to corporate sustainability requires a strategic approach to ensure its integration into the business strategy and processes (Tasleem et al., 2019). This includes leveraging technology to enhance sustainability performance, such as adopting sustainable technologies, optimizing resource use, and improving environmental and social impacts.

In summary, sustainability can fit into business models and corporate strategy by aligning sustainability goals with organizational culture, adopting a sufficiency-driven approach, integrating circular economy principles, considering sustainability at the strategic decision-making process, and leveraging technology management for sustainability performance. These approaches ensure that sustainability becomes an integral part of the organization's operations, decision-making, and long-term strategy.

2.1.7 Future Sustainable Opportunities and Threats

Sustainable socio-economic concerns occupy an important place in today's society, and current and future business leaders are the most important players in initiating, managing and sustaining these issues at the organisational level and in taking action to combat them. In fact, a big player

that can prepare these future leaders for such an important role is higher education institutions (HEIs) and especially business schools (Csillag et al., 2022).

The authors stated that these HEIs have a huge responsibility and impact in promoting sustainability and shaping the way future generations learn business practices, support sustainable development and address sustainability issues, therefore HEIs must be seen as a sustainable future opportunity.

In addition, education in sustainable development promotes environmental awareness and highlights the need for good habits, encouraging the critical thinking and behaviour necessary for students to build future sustainable communities and societies that have and act with conscious consumer values (Berchin et al., 2021).

According to the previous authors, a social demand for HEIs to adopt social good practices is growing and leads for HEIs to implement these sustainable practices, which is seen as an example for other HEIs and the main practices that these institutions are addressing are in the areas of having basic premises, teaching, research, campus operation, research and communication.

As the authors stated, in order to achieve these areas successfully, they must act and address plans and activities for each area. Starting from the basic premises, HEIs must set goals, have an inclusion and accessibility education, and increase the involvement of students and teachers in university governance; for the teaching field they must have teaching methods and a continuous capacitation and training for students and educators, transform the curricula by creating new and specific disciplines related to sustainability, and they also have the ability to implement e-learning and distance courses. In terms of campus operations, HEIs need to promote initiatives or services with the help of stakeholders to make changes that promote sustainable practices in the community. In the area of research, institutions can support research centres that focus on sustainable studies, promote studies with local impact and use innovative technologies. The last area is communication and here higher education institutions can create spaces to share knowledge in the field of sustainability, such as organising workshops, events, conferences and seminars.

However, there are also some future sustainability threats that managers need to be aware of. Since the implementation and assessment of sustainability in their business managers must ensure that it has a long term perspective, otherwise it will not survive to market changes and social and environmental impacts, so they must ensure that it has a flexible implementation

due to this time and uncertainty changes that may occur in our society. In addition, customer needs, expectations, market conditions (e.g. raw material prices) are also sustainable threats and risks because they are also unpredictable and can change rapidly (Villamil et al., 2022).

An example of a recent global threat is COVID-19, as it has socio-economic consequences worldwide. In fact, the pandemic situation has highlighted sustainability issues and the pandemic itself is an example of a sustainable threat. In fact, with the pandemic, some of the SDGs get a setback, for example, SDG 1. No poverty suffered significant impacts due to the global situation, as well as those in SDG 10. Reducing inequalities What is happening is that social and economic inequalities are increasing (Hörisch, 2021). Below on table 1 we can find a summary regarding the main topics from the actual literature review and an main issues that results from the main authors:

Table 1 - Summary of the mains topic and issues that come from the literature review.

Author, Year	Main Topics (Actual Research)	Main Issues (Future Research)
Kuhlman & Farrington, 2010	Definition and measurement of sustainability.	Clarify the concept of sustainability and address economic and social benefits that comes up with sustainability.
Slaper, 2011	The triple bottom line concept, flexibility, framework for organizations to measure sustainability and take long- term decisions.	Understand how to measure the three categories of the TBL, and which policies contribute to sustainability.
Erin et al., 2022	Organizations' SDGs activities and their contribution to the organization' performance.	Comparative analysis of SDGs activities in organization from different countries.
Lichtenthaler, 2021	Description the relevance of the adoption of multiple types of innovation in business processes to achieve growth from sustainable initiatives and processes.	Understand, the trend impacts in the context of SDGs.
Linthorst & de Waal, 2020	Description of how can HPOs address megatrends to secure sustainable performance and at the same time work on the United Nations (UN) sustainable development goals.	Understand the impact of megatrends in organizations' processes, behaviours, and performance.
Retief et al., 2016	Global megatrends description and their implications for environmental assessment practice	Identify and explore the effects of the effective implementation and measurement of environmental assessments and of strategies to deal with megatrends' implications.
Mittelstaedt et al., 2014	Megatrend's concept and sustainability description.	Fresh research among scholar, practitioners, policy makers, and stakeholders to identify and explore the implications of technology, politics, in the interactions between consumers and institutions and how it can potentiate sustainability.
D'Cruz et al., 2022	Description of the business ethic aspects, and issues of the organizations.	Understand the future business ethics and business ethics education.

Cristina Ferreira Caldana et al., 2022	Description of how companies define, report, integrate, communicate, understand, and implement the SDGs.	Identify the negative and positive impacts of the SDGs in a specific firm, according to the sector and country where this firm is located.
Borrego et al., 2022	The important role of chartered accountant Portuguese firms to the SDG 8 during the COVID-19 pandemic.	Understand the society' awareness for the importance of activities related to the SDGs addressed by companies during the pandemic.
Bager & Lambin, 2022	Definition of the processes, mechanisms, and conditions to companies implement a ZDCs.	Research between private, public, and civil society actors to identify a transformative way of eliminating the deforestation from companies' supply chain.
Debonne et al., 2022	Identification, quantification, and mapping megatrends related to the European agriculture.	Conduct a more qualitative assessment of megatrends and their dimensions.
Hossain et al., 2022	Identification of the effects among corporate sustainability, culture, and leadership.	Research that examines the influence of company size and ownership on the connection between corporate and sustainability.
Laukkanen & Tura, 2022	Identification from a customer and corporate perspective the sustainability impacts, sustainable value proposition and values.	Conduct research that comprehends customers' and suppliers' perspectives in the processing of value creation.
Csillag et al., 2022	Identification of how HEIs (business schools) implement sustainability that influence the future.	Conduct research that identifies the effects of a sustainability education in companies.
Berchin et al., 2021	Identification of how sustainable development is promoted by HEIs.	Conduct qualitative research that involves university managers perspectives regarding the promotion of sustainable development by HEIs.
Reck et al., 2021	Identification of ethical decision-makers and processes conducted by family firms.	Explore ethical and unethical behaviours conducted by firms.
Padilla-Lozano & Collazzo, 2022	Identification of the relationship between CSR, competitiveness, and green innovation.	Explore how green supply chain management relates with suppliers, customers, CSR, and green innovation and identify the variables that drive companies to have an environmental culture, business, and competitiveness.
Villamil et al., 2022	The importance of implement strategic sustainability in products processes.	Explore different industries to aim companies exceed strategic sustainability.
Hörisch, 2021	COVID-19 crisis related to SDGs	Conduct research of a specific example of a newly emerging sustainability issue.

3 – Methodology

This chapter describes the methodology, techniques and tools used in this research. This research is based on the 101 voices on sustainability book and brings together the expert opinion of a hundred specialists from the most varied sectors of civil society, committed to ensuring responsible development in each of their organisations for the good of people, the country and the planet. The experts concerned are recognised in civil and economic society in Portugal for their academic or professional knowledge on the subject or initiatives they have led within the

17 Sustainable Development Goals defined by the UN: from combating poverty to renewable energies, from education to justice, from health to decent work.

The 101 experts include entrepreneurs, academics, energy specialists, activists, entrepreneurs, researchers, plastic artists, bankers, and architects, and among them respected names in Portugal as António Guterres, António Costa Silva, António Saraiva, Francisco Ferreira, Luísa Schmidt, Bordalo II, Carlos Fiolhais, Pedro Norton de Matos, Teresa Ricou, Roberta Medina, Leandro Ferreira Pereira, and many others. The text document contains 7817 words, 3118 sentences and 2906 paragraphs. The qualitative analysis of this data is described below, according to the types of analysis carried out with the KH Coder tool.

The use of qualitative methodologies, in particular interviews, to analyse how sustainability can contribute to a country's economic and business development is due to several factors. Qualitative interviews allow for a more in-depth and detailed exploration of the topic at hand. They offer the opportunity to understand the perceptions, attitudes and experiences of the interviewees in a more holistic and comprehensive way.

Economic and business sustainability is a complex issue involving multiple stakeholders, such as entrepreneurs, managers, workers, government representatives and experts. Qualitative interviews allow for the collection of information and opinions from these different groups, enabling a more complete view of the topic. Qualitative interviews offer greater flexibility to adapt the questions and approaches according to the answers and insights of the interviewees. This allows for the exploration of new ideas and aspects that may arise during the interview. Understanding a country's economic and business sustainability requires careful analysis of the social, cultural and economic context in which businesses operate. Qualitative interviews allow for the collection of contextual information that is important for understanding country-specific dynamics.

Economic and business sustainability can be influenced by subjective perceptions, values and beliefs of the actors involved. Qualitative interviews allow the exploration of these subjective aspects and help to understand how different views can impact business strategies and practices.

Qualitative interviews can reveal specific challenges and opportunities related to economic and business sustainability in the country, as well as the barriers that hinder or facilitate the implementation of sustainable practices.

Qualitative interviews can be conducted with diverse samples of respondents, allowing for the inclusion of voices from different sectors and hierarchical levels. This results in a broader and more representative analysis of sustainability-related issues.

In summary, qualitative interviews are a valuable tool for exploring the topic of a country's economic and business sustainability, as they provide a deeper understanding, allow for the inclusion of multiple perspectives, and offer flexibility to investigate important aspects of the topic. By using this approach, researchers can gain meaningful insights that help inform policies, business practices and strategies that aim for more sustainable development.

Based on this context, we define a set of Research Objectives (RO):

Research objective 1: Identify the main issues related to business sustainability.

Research objective 2: Identify how sustainability is changing the business world.

Research objective 3: To identify how companies can implement sustainability in their business strategy.

Research objective 4: Correlate the empirical evidence obtained with the beliefs of the more than 100 respected Portuguese names that were interviewed.

The chosen research technique was the analysis of interviews. The aim was to collect information through the interviews are taken from the book "101 Vozes pela Sustentabilidade, Por um desenvolvimento responsável" (Many Authors, 2022), the book deals with sustainability in a strategic perspective for organisations and the country from the perspective of 101 stakeholders. The defined research questions (RQ) are

Research question 1: Why do we need to care about the challenges posed by the sustainability megatrends?

Research question 2: How has your organisation/sector/context addressed the challenges posed by these megatrends?

Research question 3: What has your organisation/sector/context done specifically in terms of products and services to address these challenges?

Research question 4: How do you personally see the future of our planet, what are the major threats and what are the major opportunities?

The research questions and objectives, integrated with the key themes from the literature, are presented in the table below (table 2):

Table 2 - Summary of the mains topic and issues that come from the literature review.

Main Issues (Author, Year)	Research Question	Research Objective
1. Clarify the concept of sustainability and address the economic and social benefits of sustainability. 2. Understand how to measure the three categories of TBL and what policies contribute to sustainability.	RQ1: Why do we need to care about the challenges posed by sustainability megatrends?	RO1: Identify they mains topics related to business sustainability
	RQ2: How has your organization/sector/context addressed the challenges posed by these megatrends?	RO2: Identify how sustainability is changing the business world.

3.Undertake a comparative analysis of SDG activities in organisations from different countries. 4. Understand the positive and negative interdependencies in the context of the SDGs. 5. Understand the impact of megatrends on the processes, behaviour and performance of organisations. 6. Identify and explore the implications of effective implementation and measurement of environmental assessments and strategies to manage the impact of megatrends. 7. New research among academics, practitioners, policy makers and stakeholders to identify and explore the impact of technology, policy, consumer and institutional interactions and how they can enhance sustainability. 8. Understanding the future of business ethics and business ethics education. 9. Identify the negative and positive impacts of the SDGs in a specific company, according to the sector and country where this company is located. 10. Understand society's awareness of the importance of activities related to the SDGs that companies are addressing during the pandemic. 11.Research between private, public and civil society actors to identify a transformative way to eliminate deforestation from companies' supply chain. 12. Undertake a more qualitative assessment of the megatrends and their dimensions. 13. Research exploring the influence of company size and ownership on the link between business and sustainability. 14. Undertake research that includes customer and supplier perspectives in the value chain. 15. Undertake research that identifies the impact of sustainability education in companies.	RQ3: What has your organisation/sector/context done specifically in terms of products and services to address these challenges?	RO3: Identify how can companies implement sustainability in their business strategy.
	RQ4: In personal terms, how do you see the future of our planet, what are the main threats and what are the great opportunities?	RO4: Correlate the empirical evidence obtained with the beliefs of the 100+ respected Portuguese names that were interviewed.

16. Undertake qualitative research that includes the perspectives of university managers on the promotion of sustainable development by higher education institutions. 17. Investigate the ethical and unethical behaviour of companies. 18. Explore how green supply chain management relates to suppliers, customers, CSR and green innovation and identify the variables that drive companies to have an environmental culture, business and competitiveness. 19. The importance of implementing strategic sustainability in product processes. 20. COVID-19 Crisis related to SDGs.		
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To prepare the research instrument (“interview script”) and the specific questions to the interviewees, the following questions were elaborated and tested in a pre-test with three experts (table 3):

Table 3 - Prototype of the research instrument integrated with the research objectives.

Research Objective	Question	Type of Question
RO1: Identify the main topics related to business sustainability.	Why do we need to care about the challenges posed by sustainability megatrends?	Interpretive Question Descriptive Question Exploratory Question
RO2: Identify how sustainability is changing the business world.	How has your organization/sector/context addressed the challenges posed by these megatrends?	Interpretive Question Descriptive Question
RO3: Identify how can companies implement sustainability in their business strategy.	What has your organisation/sector/context done specifically in terms of products and services to address these challenges?	Interpretive Question Descriptive Question
RO4: Correlate the empirical evidence obtained with the beliefs of the 100+ respected Portuguese names that were interviewed.	In personal terms, how do you see the future of our planet, what are the main threats and what are the great opportunities?	Interpretive Question Descriptive Question

4 - Data Analysis

4.1 Word Frequency List

The first analysis is the word frequency list, with this analysis it is possible to identify the most frequent (and relevant) words presented in the book/interviews, the command carried out in KH Coder shows us the following table:

Table 4 - Word Frequency List Analysis: Top words Output from KH Coder.

Word	POS (Part Of Speech)	Term Frequency	Word	POS	Term Frequency
sustainability	Noun	777	author	Noun	206
company	Noun	489	reduce	Verb	204
development	Noun	482	value	Noun	203
sustainable	Adj	470	take	Verb	202
climate	Noun	466	example	Noun	201
change	Noun	458	transition	Noun	201
social	Adj	445	system	Noun	200
energy	Noun	431	need	Verb	199
new	Adj	422	promote	Verb	198
economic	Adj	405	technology	Noun	197
world	Noun	380	most	Adv	195
make	Verb	360	policy	Noun	194
economy	Noun	357	issue	Noun	192
challenge	Noun	355	develop	Verb	191
environmental	Adj	353	european	Noun	191
impact	Noun	350	opportunity	Noun	191
planet	Noun	342	such	Adj	190
business	Noun	318	use	Noun	190
year	Noun	317	water	Noun	189
society	Noun	312	solution	Noun	188
global	Adj	310	waste	Noun	187
sector	Noun	295	service	Noun	185
resource	Noun	286	health	Noun	182
people	Noun	275	management	Noun	180
time	Noun	274	need	Noun	180
country	Noun	270	material	Noun	175
action	Noun	269	natural	Adj	170
life	Noun	258	generation	Noun	168
level	Noun	257	achieve	Verb	167
product	Noun	256	know	Verb	164
way	Noun	254	production	Noun	163
model	Noun	253	increase	Verb	162
only	Adv	252	already	Adv	161
public	Adj	251	environment	Noun	161
good	Adj	249	activity	Noun	159
portugal	Noun	248	innovation	Noun	159
term	Noun	241	today	Noun	159
well	Adv	241	use	Verb	159
great	Adj	234	project	Noun	154

carbon	Noun	230	ensure	Verb	153
area	Noun	225	strategy	Noun	153
human	Adj	225	organization	Noun	152
create	Verb	224	nature	Noun	150
future	Noun	218	growth	Noun	148
emission	Noun	217	important	Adj	147
consumption	Noun	215	market	Noun	146

According to the output (Table 4), we can conclude that the TOP 5 most frequently mentioned words by the interviewers are "sustainability" (TF=777, i.e. about 10% of all words), "company" (TF=489, i.e. about 6.2% of all words), "development" (TF=482, i.e. about 6.1% of all words), "sustainable" (TF=470, i.e. about 6% of all words) and "climate" (TF=466, i.e. about 5.9% of all words). We can conclude that the TOP 5 words represent about 34.2% of all words.

In the KH Coder tool it is possible to analyse the data in two different ways: the first is to extract the whole list by clicking on "Single column" (previous table number 1), and the second way is to analyse the data from its category (Noun, Adj, Adv and Verb) by clicking on "By POS tags".

The second option ("By POS tags") shows the words divided into the following categories Noun, Adj, Adv and Verb, according to table 5.

Table 5 - Word Frequency List Analysis: by category Output from KH Coder

Noun	TF	Adj	TF	Adv	TF	Verb	TF
sustainability	777	sustainable	470	only	252	make	360
company	489	social	445	well	241	create	224
development	482	new	422	most	195	reduce	204
climate	466	economic	405	already	161	take	202
change	458	environmental	353	very	146	need	199
energy	431	global	310	increasingly	115	promote	198
world	380	public	251	now	111	develop	191
economy	357	good	249	still	109	achieve	167
challenge	355	great	234	always	106	know	164
impact	350	human	225	therefore	93	increase	162
planet	342	such	190	just	82	use	159
business	318	natural	170	thus	72	ensure	153
year	317	important	147	particularly	64	base	144
society	312	future	137	especially	62	change	144
sector	295	same	130	far	60	live	141
resource	286	different	129	however	60	become	140
people	275	digital	129	together	56	see	137
time	274	financial	125	almost	54	contribute	128
country	270	various	117	long	54	give	127
action	269	necessary	113	often	53	face	122

life	258	high		112	currently	52	lead	122
level	257	long		107	then	51	want	121
product	256	circular		103	too	46	allow	120
way	254	possible		102	namely	43	provide	118
model	253	current		101	here	42	support	117
Portugal	248	national		101	only	252	make	360

Table 2 - Word Frequency List Analysis: by category Output from KH Coder.

The previous table 5 shows us the top 25 word and its TF, by the following categories Noun, Adj, Adv and Verb. For each category it is possible to identify the top 5 words. For the category "Noun" the top 5 words are: sustainability, company, development, climate and change. For the 'Adj' category the top 5 words are: sustainable, social, new, economic and environmental. For the 'Adv' category the top 5 words are: only, well, most, already and ready. Finally, for the 'Verb' category the top 5 words are: make, create, reduce, take and need.

4.2 Frequency Distribution

The second analysis is the term frequency distribution, and with this analysis we can identify in all the interviews (101) how many type of words were examined, and we can conclude that there are 7817 types of words target for analysis, we can also identify the mean of these words, that is the mean term frequency (TF) that as a value of 11.36, and we can also identify the minimum TF of words that should be included in the scope of analysis. The following table 6 shows the distribution of the term frequency on the TOP 50 frequency.

According to the output (Table 6), we can conclude that there are 3112 types of words that occur only once (TF=1) and that this is the minimum frequency of words that should be included in the scope of analysis.

Furthermore, by excluding words with $TF \leq 5$, the number of analysis targets can be reduced by 5565 types (about 70%).

Table 6 - Term Frequency Distribution Analysis Output from KH Coder

TF	Term Frequency	%	Comulative Frequency	Comulative %	TF	Term Frequency	%	Comulative Frequency	Comulative %
1	3112	39.81	3112	39.81	26	19	0.24	7093	90.74
2	1132	14.48	4244	54.29	27	18	0.23	7111	90.97
3	599	7.66	4843	61.95	28	26	0.33	7137	91.30
4	382	4.89	5225	66.84	29	18	0.23	7155	91.53
5	340	4.35	5565	71.19	30	17	0.22	7172	91.75
6	220	2.81	5785	74.01	31	15	0.19	7187	91.94
7	202	2.58	5987	76.59	32	17	0.22	7204	92.16
8	147	1.88	6134	78.47	33	21	0.27	7225	92.43
9	115	1.47	6249	79.94	34	13	0.17	7238	92.59
10	97	1.24	6346	81.18	35	11	0.14	7249	92.73
11	91	1.16	6437	82.35	36	15	0.19	7264	92.93
12	92	1.18	6529	83.52	37	14	0.18	7278	93.10
13	69	0.88	6598	84.41	38	9	0.12	7287	93.22
14	60	0.77	6658	85.17	39	12	0.15	7299	93.37
15	52	0.67	6710	85.84	40	8	0.10	7307	93.48
16	47	0.60	6757	86.44	41	13	0.17	7320	93.64
17	49	0.63	6806	87.07	42	13	0.17	7333	93.81
18	43	0.55	6849	87.62	43	13	0.17	7346	93.97
19	33	0.42	6882	88.04	44	13	0.17	7359	94.14
20	37	0.47	6919	88.51	45	9	0.12	7368	94.26
21	27	0.35	6946	88.86	46	8	0.10	7376	94.36
22	32	0.41	6978	89.27	47	9	0.12	7385	94.47
23	41	0.52	7019	89.79	48	8	0.10	7393	94.58
24	26	0.33	7045	90.12	49	6	0.08	7399	94.65
25	29	0.37	7074	90.50	50	13	0.17	7412	94.82

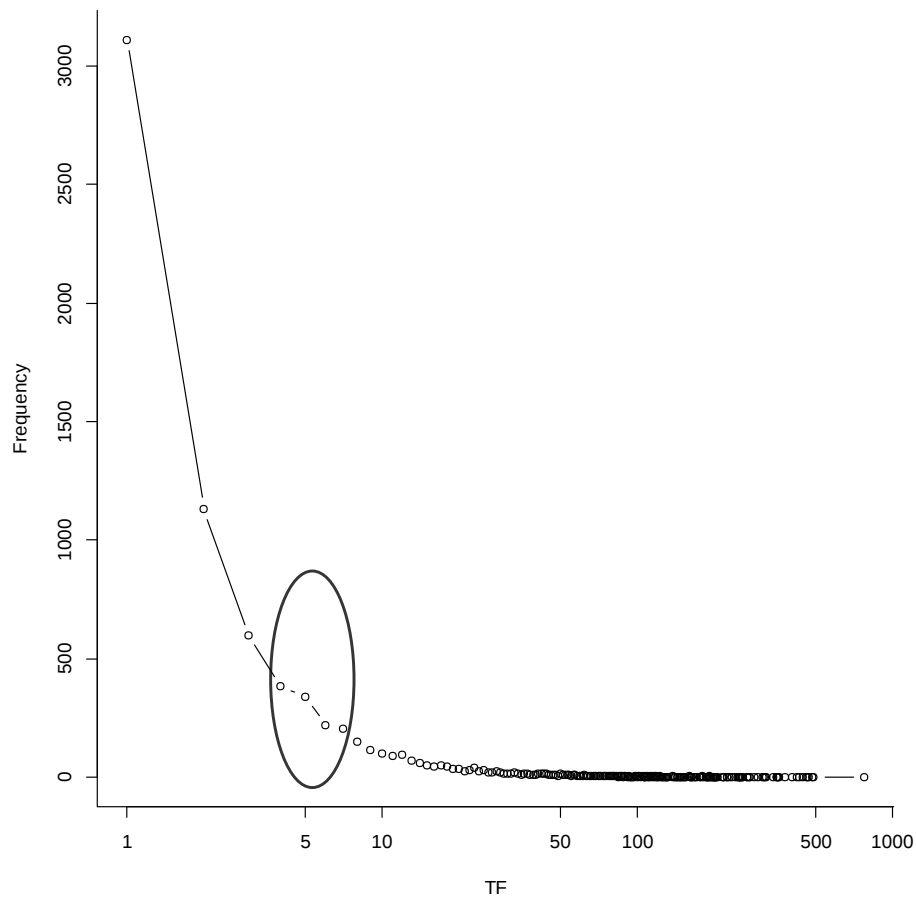


Figure 2 - Frequency distribution plot of the terms

The previous Figure 2, represent the frequency distribution plot of the terms, the horizontal axis (x-axis) shows the frequency of the terms, while the vertical axis (y-axis) shows the number of types of words corresponding to each TF (the scale is a logarithmic scale). In addition, it is possible to analyse that for the $TF > 5$, the frequency starts to stabilise. This term frequency distribution plot helps to visualise the term frequency distribution in a more practical way.

4.3 Document frequency Analysis

Once the analysis for how many types of words were examined was conducted for all the interviews (Term Frequency), the same analysis will now be conducted for each individual interview – this type of analysis is named Document Frequency (table 7).

Table 7 - Document Frequency Distribution Analysis Output from KH Coder.

Analysing the output (Table 7), we can conclude that the author/interview number 1 has 3542 types of different words, what represents a 45% of the different words from all the

DF	Frequency	%	Comulative Frequency	Comulative %	DF	Frequency	%	Comulative Frequency	Comulative %
1	3542	45.31	3542	45.31	26	25	0.32	7359	94.14
2	1122	14.35	4664	59.66	27	19	0.24	7378	94.38
3	586	7.50	5250	67.16	28	22	0.28	7400	94.67
4	378	4.84	5628	72.00	29	21	0.27	7421	94.93
5	296	3.79	5924	75.78	30	14	0.18	7435	95.11
6	195	2.49	6119	78.28	31	16	0.20	7451	95.32
7	173	2.21	6292	80.49	32	14	0.18	7465	95.50
8	137	1.75	6429	82.24	33	15	0.19	7480	95.69
9	103	1.32	6532	83.56	34	20	0.26	7500	95.94
10	108	1.38	6640	84.94	35	12	0.15	7512	96.10
11	83	1.06	6723	86.00	36	20	0.26	7532	96.35
12	76	0.97	6799	86.98	37	18	0.23	7550	96.58
13	62	0.79	6861	87.77	38	7	0.09	7557	96.67
14	73	0.93	6934	88.70	39	12	0.15	7569	96.83
15	58	0.74	6992	89.45	40	15	0.19	7584	97.02
16	51	0.65	7043	90.10	41	13	0.17	7597	97.19
17	34	0.43	7077	90.53	42	11	0.14	7608	97.33
18	38	0.49	7115	91.02	43	14	0.18	7622	97.51
19	43	0.55	7158	91.57	44	13	0.17	7635	97.67
20	33	0.42	7191	91.99	45	5	0.06	7640	97.74
21	33	0.42	7224	92.41	46	9	0.12	7649	97.85
22	33	0.42	7257	92.84	47	13	0.17	7662	98.02
23	21	0.27	7278	93.10	48	6	0.08	7668	98.09
24	24	0.31	7302	93.41	49	3	0.04	7671	98.13
25	32	0.41	7334	93.82	50	7	0.09	7678	98.22

interviews.

It is also possible to conclude that the first 5 interviews/authors, represents or contains approximately 76% of the different types of words in the book.

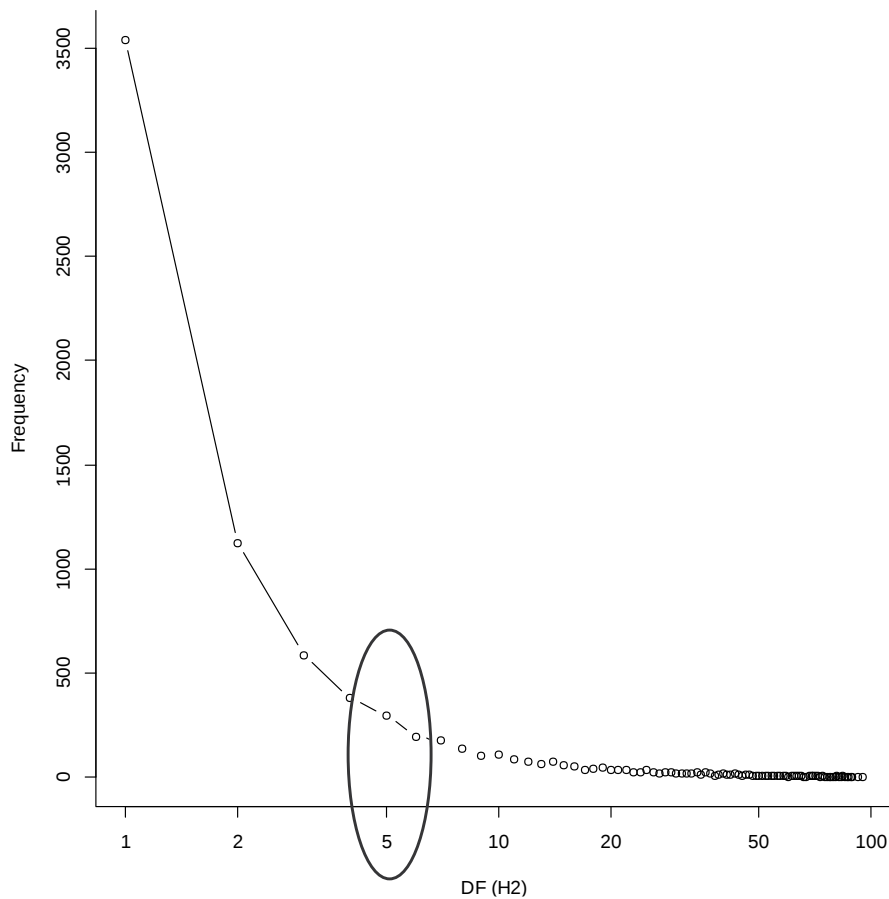


Figure 2 - Document Frequency Distribution Plot Analysis Output from KH Coder.

The previous Figure 3, represents the document frequency distribution plot, the horizontal axis (x-axis) shows the document frequency, while the vertical axis (y-axis) shows the number of word types corresponding to each TF (the scale is a logarithmic scale). In addition, it can be analysed that for $DF > 5$ the frequency starts to stabilise, i.e. from the fifth (5th) interview to the 101st interview the frequency of different word types starts to stabilise, i.e. these approximately 96 interviews have very similar words or thoughts in their context. This document Frequency Distribution Plot helps to visualise the term frequency distribution in a more practical way.

Another conclusion that we can draw is that the interview/author number 1 is the one that has the most different words associated, this is justifiable since this first interview is also the introduction note of the book and because of this it has a different type of words associated since is the first to appear in the book so the insights/words named by the author are the first to appear.

For the interviews/authors numbered 2, 3 and 4, it is the case that these three authors wrote the preface to the book, so as with author number 1, the text associated with these authors also contains new insights and differs from the introductory note.

In addition, with the 5th author, the interviews start here, so it is to be expected that the text from this author to the 101st and last author will be more coherent. As could be concluded earlier, the frequency starts to stabilise from this 5th interview and the first 5 interviews account for approximately 76% of all words in the book, based on this analysis it is possible to conclude that the 101 authors have very similar insights regarding the topic of the book.

4.4 TF-DF Plot

The TF-DF analysis allows to evaluate the correlation between TF (number of occurrences of each term in the whole book) and DF (number of interviews in which the terms are used). Using the KH Coder tool, it is possible to analyse this correlation.

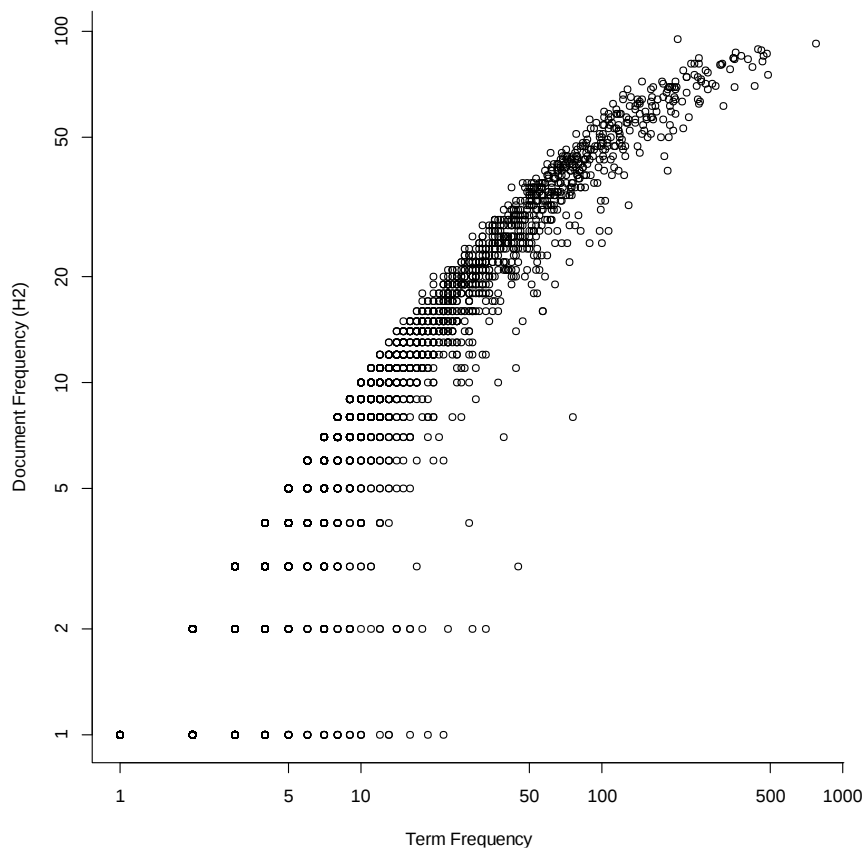


Figure 3 - TF-DF Plot Analysis Output from KH Coder.

The previous Figure 4, represents the TF-DF plot, the horizontal axis (x-axis) shows the term frequency, while the vertical axis (y-axis) shows the number of document frequencies, and the scale is a logarithmic scale.

This correlation matrix represents the expected strong correlation between the values, the higher the DF, the higher the TF, i.e. a word or term that appears frequently in all the interviews also appears in most of them.

4.5 Key Words in Context Concordance

With the KH Coder and the KWIC (Key Words in Context) Concordance command, it is possible to analyse how the extracted word is used in the target file (the book/all interviews). When searching for key words, we have the results according to the context (sentence, paragraph, interview) in which the word was mentioned and their order of appearance in the text, which is very useful when the intention is to obtain a deeper research on the term and to analyse in which and in how many interviews the term was mentioned (table 8).

Table 8 - KWIC Concordance Analysis: word sustainability Output from KH Coder.

Previously in the frequency analysis was possible to conclude the TOP 5 words for the analysis. Now, the KWIC Concordance analysis was conducted for the word “sustainability” that is the

Index	Left	Key Word	Right
2,3,4	... it's not just about	sustainability	It is about people who become...
5	... and development networks. The	sustainability	of our society has a clear and objective ...
6	... consequences for our long term	sustainability	such as in food production, obtaining ...
7	... market issue have to do with	sustainability	? Because no activity works without its ...
9	... care about the challenges posed by	sustainability	megatrends? The challenges posed by ...
10	... that they are considering	sustainability	as a critical factor in their purchasing ...
11	... Two examples closely related to	sustainability	are, one, climate change...
12	 absolutely unavoidable trends in	sustainability	and that mark the times in which we live...
14	... about mega trends linked to	sustainability	can be gauged from the outset by the red ...
17	... focus, work and legislate on the	sustainability	of the three fundamental pillars...
19	... care about the challenges posed by	sustainability	megatrends? The challenges posed ...
24	... a businessman who seeks the	sustainability	of his organisation and his country...
25	... of the Capgemini Group is	sustainability	The organization is concerned with...
28	... constituting an indispensable	sustainability	Tools. The last few years have been ...
30	... When we see these	sustainability	megatrends, we have to be cautious ...
31	... global concern, because the	sustainability	of the planet can only be done with ...
32	... about the challenges posed by	sustainability	megatrends ' It is clear from the ...
33	... and because talking about	sustainability	is like holding a skein of many...
34	... our health when we talk about	sustainability	? Just like with the carbon footprint...
35	... the pandemic has also placed	sustainability	at the top of the organizations ' ...

most frequency as analysed before. The results showed in Table 9 are a sample of all results of the KWIC analysis of the word “sustainability” in KH Coder.

Table 9 - Interview Index and Number of Occurrences with the word: sustainability

Interview Index	Number of occurrences	Interview Index	Number of occurrences	Interview Index	Number of occurrences
41	33	56	9	58	4
61	27	89	9	101	4
52	25	94	9	5	3
71	25	98	9	12	3
50	24	33	8	15	3
90	20	34	8	19	3
13	19	65	8	24	3
54	19	69	8	32	3
55	19	85	8	39	3
64	19	99	8	43	3
9	18	100	8	48	3
91	18	16	7	62	3
63	17	17	7	72	3
66	17	28	7	76	3
26	16	59	7	79	3
42	16	60	7	84	3
40	14	81	7	6	2
14	13	20, 21, 22	6	10	2
25	13	53	6	11	2
75	13	67	6	45	2
97	12	70	6	78	2
38	11	77	6	27	1
46	11	86	6	51	1
47	11	96	6	73	1
57	11	18	5	74	1
68	11	35	5	75	1
88	11	37	5	80	1
7	9	87	5	82	1
31	9	2,3,4	4	83	1
44	9	30	4	91, 93	1
49	9	36	4	95	1
Total of Index interviews: 98			Total of number of occurrences: 777		

In order to be able to draw better conclusions from this first analysis, Table 10 was created. From this it can be concluded that the word "sustainability" was mentioned by 98 people in 101 of the interviews, which represents approximately 98% of the interviewers, so it can be concluded that this is a very important word for the interviews.

From this analysis it can also be concluded that the word "sustainability" was more frequent for the following top 5 authors: author 41 (33 times), author 61 (27 times), author 52 (25 times), author 71 (25 times) and author 50 (24 times). We can also conclude that the word

'sustainability' is more important for these authors compared to the other authors, as this word was mentioned more often in the interviews with these authors.

As analysed before, the TF of the word "sustainability" is 777 and, as expected, taking into account all the interviews in which this word is mentioned, we can conclude that in total this word is mentioned 777 times.

Now that an overall analysis of the most frequent word has been carried out, we can analyse this word itself in more detail and try to understand which are the most important words associated with this word "sustainability".

To do this, we will run the Collocation Stats command to understand which words occur frequently before and after the target word, and which words are most associated with this target word.

For this target word "sustainability", the collocation statistics in Table 10 show that the word "environmental" is the word that appears most often directly before the target word (L1=27) and the word "issue" is the word that appears most often directly after the target word (R1=20). We can also conclude that the top 5 words most often used in connection with "sustainability" are "environmental" (total=53), "challenge" (total=45), "issue" (total=44), "sustainability" (total=36) and "economic" (total=35). From this, it can be concluded that "environmental sustainability" and "sustainability issue" are the most important combinations of words with the word "sustainability" for the 98 authors (table 10).

Table 10 - Collocation Stats word: sustainability from KH Coder

Index	Left	Key Word	Right
13	... to ensure environmental	sustainability	but also, economic and social...
17	... reducing environmental	sustainability	by abandoning the management ...
25	... and environmental	sustainability	In the context of this third pillar ...
26	... strategy and environmental	sustainability	will now be taken into...
28	... in social and environmental	sustainability	believes that the success and future ...
36	... or positive, with environmental	sustainability	, social justice and economic growth ...
39	... ensuring greater environmental	sustainability	This is a deep issue of fierce political ...
42	...around social and environmental	sustainability	The adoption of standards should ...
47	... values of environmental	sustainability	seems to be increasing ...
52	... improving its environmental	sustainability	This suggests that we are not doing well...
60	...of humanity environmental	sustainability	and combating climate change...
66	... the jargon as environmental	sustainability	economic sustainability or even social ...

68	..competitiveness and environmental	sustainability	The excessive consumption of raw ...
76	...economic, social or environmental	sustainability	Thus, Nestlé has implemented ...
84	... three components: environmental	sustainability	economic sustainability and socio ...
86	...to turn threats to environmental	sustainability	and stability into opportunities...
90	...financial and environmental	sustainability	it should be noted that it is not enough ...
91	...in terms of environmental	sustainability	particularly on two topics that seem ...

Table 11 - KWIC Concordance Analysis: word environmental (L1) of sustainability Output from KH Coder.

N	Word	POS	Total	LT	RT	L5	L4	L3	L2	L1	R1	R2	R3	R4	R5
1	environmental	Adj	53	40	13	1	3	7	2	27	0	3	4	4	2
2	challenge	Noun	45	23	22	3	0	12	8	0	14	0	2	6	0
3	issue	Noun	44	19	25	3	1	3	11	1	20	3	0	0	2
4	sustainability	Noun	36	18	18	1	11	3	2	1	1	2	3	11	1
5	economic	Adj	35	20	15	6	2	4	1	7	0	4	4	2	5
6	social	Adj	32	19	13	3	2	6	1	7	2	2	1	4	4
7	author	Noun	29	1	28	1	0	0	0	0	1	12	3	0	12
8	megatrend	Noun	28	10	18	2	0	5	3	0	12	3	2	0	1
9	planet	Noun	27	8	19	2	1	1	3	1	0	0	14	2	3
10	business	Noun	21	9	12	1	3	2	2	1	0	4	5	1	2

Now that it was possible to conclude that the most important word to the left of the word "sustainability" is "environmental", it is interesting for any analysis to get a deeper insight into the behaviour of these two words in this sequence.

Table 10 shows the results of the analysis carried out on the word "sustainability", and it was also possible to conclude that the word "environmental" appears 27 times to the left of the word "sustainability" in all the interviews. With this KWIC concordance analysis, shown in Table 12, this result was expected and confirmed.

In order to get a better conclusion with this analysis, table 11 was made. From this it can be concluded that the sequence "environmental sustainability" was mentioned in 18 out of 101 interviews, which represents about 17.8% of the interviewers.

With this analysis it is also possible to conclude that this sequence was more frequent for the following top 3 authors: author 52, 68 and 90, all of whom referred to this sequence of 2 words 3 times. We can also conclude that this sequence is more important for these authors than for the other authors, since this word was more frequent in these authors' interviews.

The last and curious conclusion that can be made is that for author 52, in both tops, the authors who frequently used the word "sustainability" also appear for those who used the sequence "environmental sustainability". From this we can conclude that for this particular author these two words are very important and have been mentioned a lot compared to the other authors.

Now that the analysis of the most important word to the left of the word "sustainability" has been carried out, it is time to carry out the analysis of the most important word to the right of the word "sustainability", i.e. "issue", since it is interesting for all analyses to get a deeper insight into the behaviour of these two words in this sequence "sustainability issue" (table 12).

Table 12 - Interview Index and Number of Occurrences word environmental (L1) of sustainability.

Table 13 - Interview Index and Number of Occurrences word issue (R1) of sustainability

Index	Left	Key Word	Right
7	... will always pass through	sustainability	issues. The economic forecasts ...
9	...ISCTE has underlain	sustainability	issues, long before we call it as such ...
16	...have towards environmental and	sustainability	issues Political cycles of four or five...
28	... and other stakeholders to	sustainability	issues environmental, social and ...
34	...From a personal point of view,	sustainability	issues are taken into account to the ...
38	... people are aware of current	sustainability	issues, and through the United Nations...
41	...includes the need to address	sustainability	issues, both material and non-material...
61	... Portuguese in relation to	sustainability	issues, namely the trend in some sectors...
64	...The growing weight of the various	sustainability	issues on the business agenda reflects...
87	... Catholic Church 's vision on	sustainability	issues comes from Pope Francis '...
91	... In Portugal,	sustainability	issues are also increasingly present...
97	... It is one thing to say that	sustainability	issues are opening up new economic ...
68	3	17	1
90	3	26	1
25	2	28	1
47	2	36	1
91	2	39	1
Total of Index interviews: 18		Total of number of occurrences: 27	

Interview Index	Number of occurrences	Interview Index	Number of occurrences	Interview Index	Number of occurrences
64	4	41	2	38	1
9	2	61	2	87	1
16	2	7	1	91	1
34	2	28	1	97	1
Total of Index interviews: 12			Total of number of occurrences: 20		

Table 13 shows the results of the analysis carried out on the word 'sustainability' and it was also possible to conclude that the word 'issues' appeared 20 times to the right of the word 'sustainability' across the interviews. This result was expected and confirmed by the KWIC concordance analysis presented in Table 9.

In order to get a better conclusion with this analysis, table 14 was made. From this it can be concluded that the sequence "sustainability issue" was mentioned in 12 out of 101 interviews, which corresponds to approximately 11.8% of the interviewers.

From this analysis it can also be concluded that this sequence was more frequent for the author 64, who referred to this sequence 4 times. We can also conclude that this sequence is more important for this author than for the other authors, since this word was more frequent in the interviews of these authors.

Table 14 - "sustainability issue" was mentioned in 12 out of 101 interviews

The last and curious conclusion that can be made is that for author 41, appears in both of the analyses in the top authors that made frequent use of the word "sustainability" as well as for those that used the sequence "sustainability issue". In the analysis of the sequence "sustainability issue", there is no top author, but a second top author who refers to this sequence twice. From this we can conclude that these two words are very important for this particular author and have been referred to a lot compared to the other authors.

4.6 Word Association

Word association analysis allows you to find words that are closely associated with a specific word by performing a graph with the selected word for analysis. Since the most common word in the sample is "sustainability", a word association graph is performed on this word.

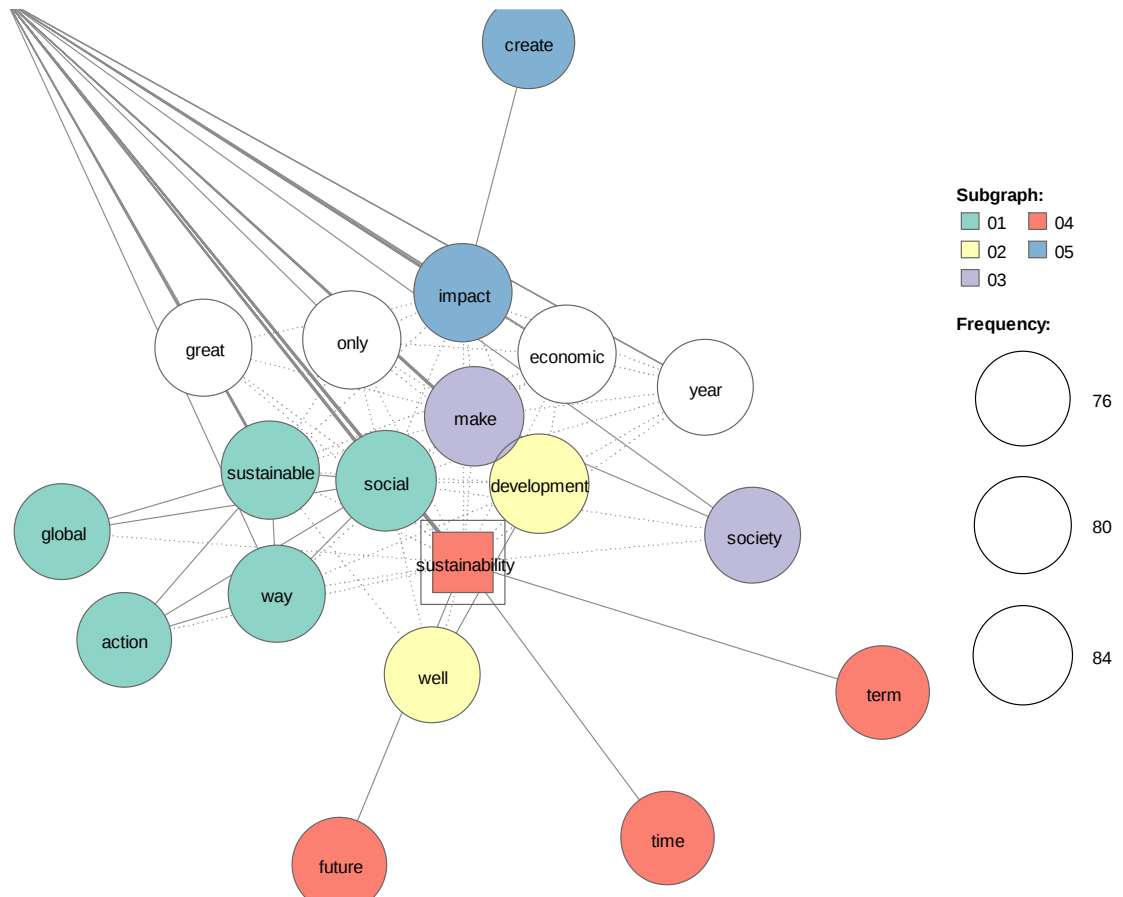


Figure 4 -Word Associations Analysis: word "sustainability" Output from KH Coder.

The previous output (Figure 5) represents a network of words most associated with the word 'sustainability'. The darker lines represent the stronger associations and the graph scale is a Jaccard scale, as this is the most accurate scale to use when performing an association analysis.

It is also possible to conclude that there are five (5) groups of words related to the word "sustainability", the groups are differentiated by colours and the groups are Group 1 (green colour, words "social", "sustainable", "way", "action" and "global"), Group 2 (yellow colour, words "development" and "well"), Group 3 (purple colour, words "make" and "society"), Group 4 (red colour, words "future", "time" and "term") and Group 5 (red colour, words "impact" and "create").

4.7 Correspondence analysis of words

The Correspondence Analysis of Words command is used to explore what kind of words have a similar appearance pattern by performing a correspondence analysis and creating a two-dimensional scatter plot to visualise the results.

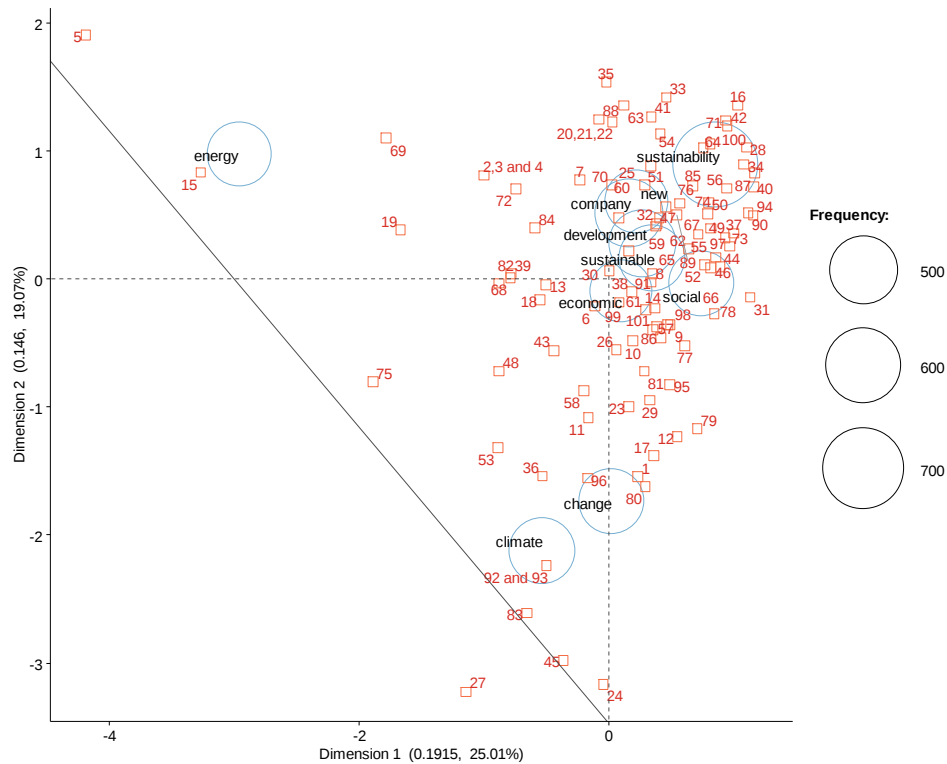


Figure 5 - Correspondence Analysis of words (word x documents) Output from KH Coder

Figure 6, was made with the top 10 words that are more frequent in the sample, and as seen before, these words are "sustainability", "company", "development", "sustainable", "climate", "change", "social", "energy", "new" and "economic".

By analysing Figure 5, it is possible to understand the correspondence between the authors and these words. It is possible to conclude that the authors have a stronger correspondence to the words "sustainability", "company", "development", "sustainable", "social", "new" and "economic", which makes sense since these words are the top most frequent words.

A final and curious conclusion that can be drawn from this analysis is that the word "energy" is one of the most frequent words, but not all authors referred to these words, or in other words have a strong correspondence with this word, but the author 15 have a strong correspondence with this word and it is also possible to conclude that this author was the one who referred to this word the most.

4.8 Multi-dimensional analysis of words

The Multidimensional Scaling of Words command allows you to perform multidimensional scaling on words and plot the results in 1 to 3 dimensional scatter plots. This analysis makes it possible to find combinations of groups of words that have similar patterns of appearance.

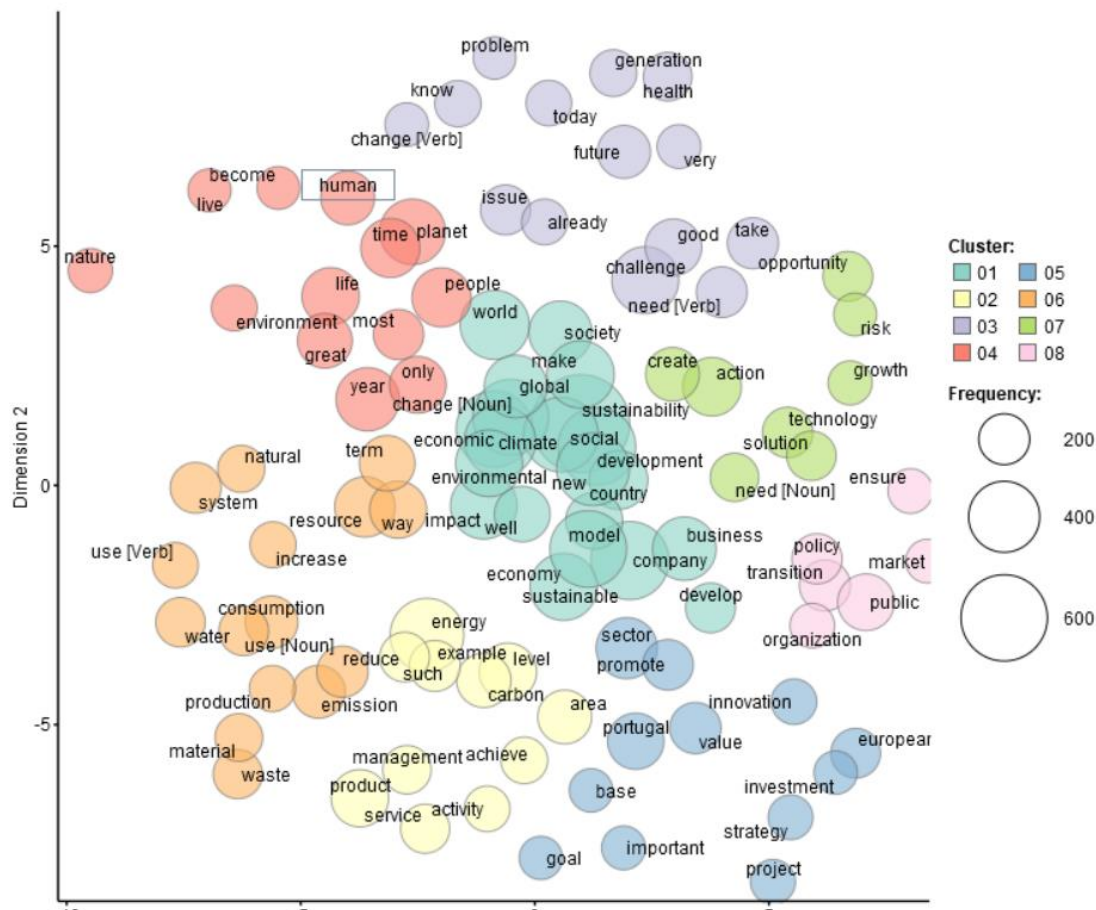


Figure 6 - Correspondence Analysis of words (word x documents)- 2 dimensions Output from KH Coder.

Figure 7 shows the top 100 words, divided into five (8) groups of words that are most frequently mentioned in the interviews. This analysis is very interesting and important for the data analysis, because with this graph it is possible to answer the question "What are the main topics mentioned by the interviewers?"

This figure 9 makes groups of themes that summarise/signify the interview context. Thus, it is possible to conclude and resume that the context and most of the words mentioned in the interviews are represented in these 8 groups of words..

4.9 Hierarchical cluster

The Hierarchical Cluster Analysis of Words command can be used to find and analyse which combinations or groups of words have similar patterns of appearance.

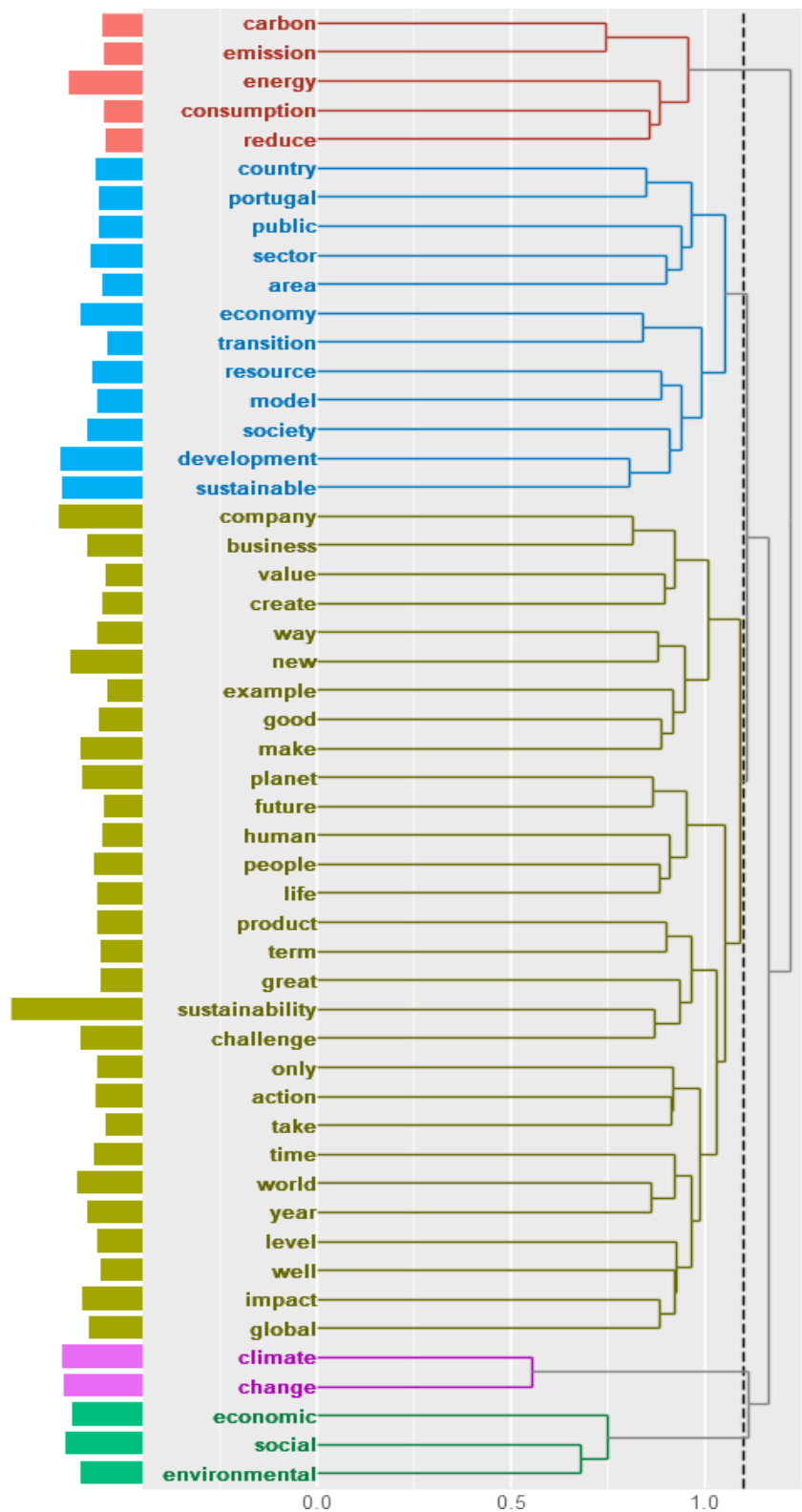


Figure 7 - Cluster Analysis Output from KH Coder

Figure 8 is a dendrogram showing the 5 clusters that represent the top 50 most mentioned words in the interviews.

This cluster analysis is important to carry out as it can be easier to interpret than the graph 6 when the data to be analysed starts to be in greater quantity or it is important to analyse more data.

4.10 Co-occurrence network

With the Co-occurrence Network of Words command, it is possible to analyse a diagram showing the words with similar appearance patterns, with a high degree of co-occurrence, connected by lines.

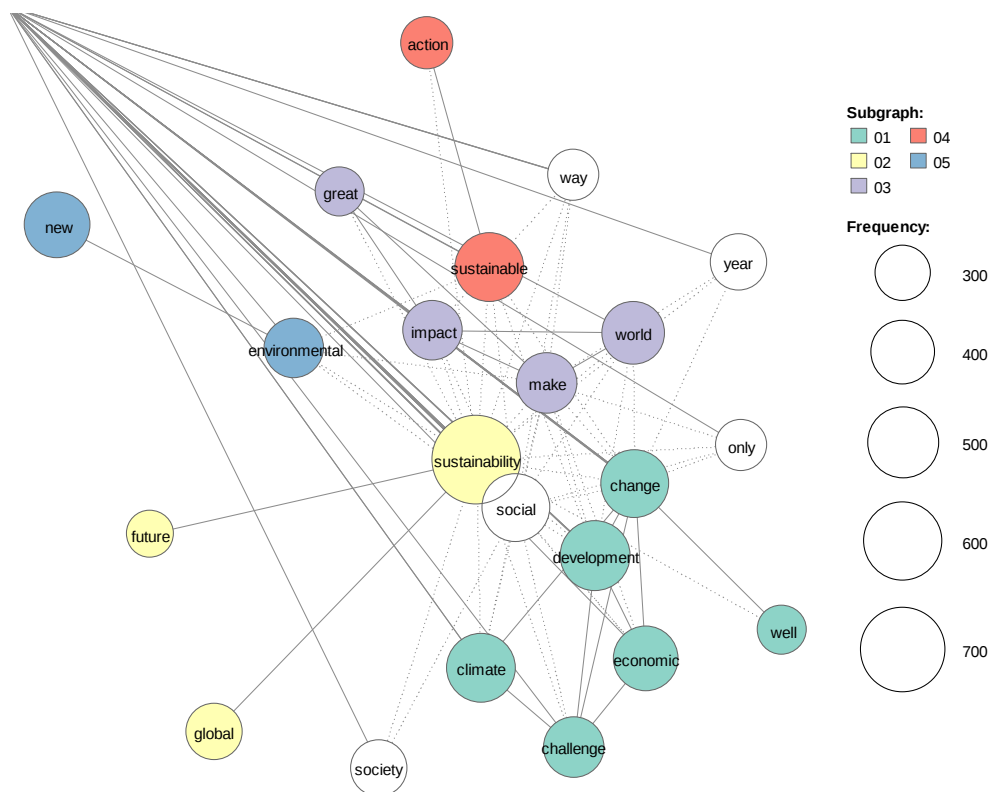
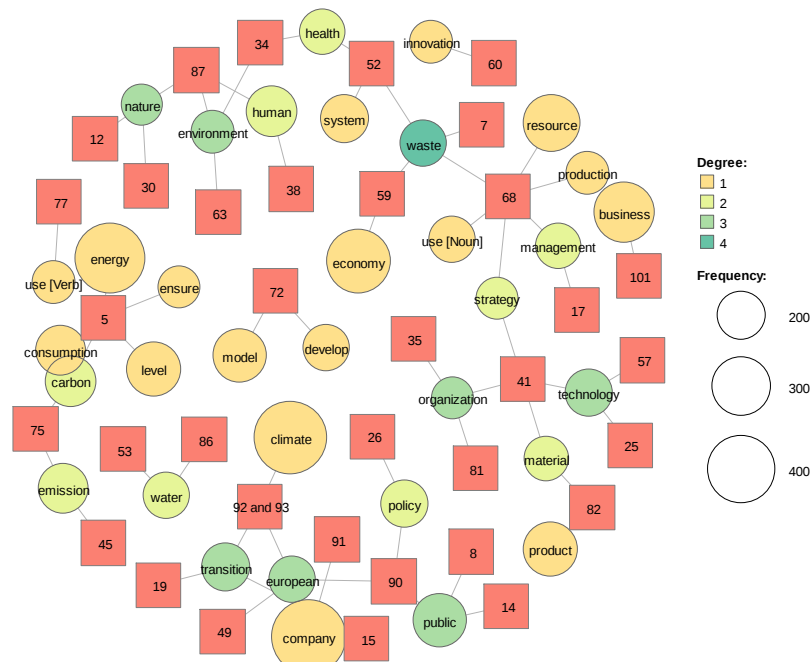


Figure 8 - Co-occurrence network: words-words

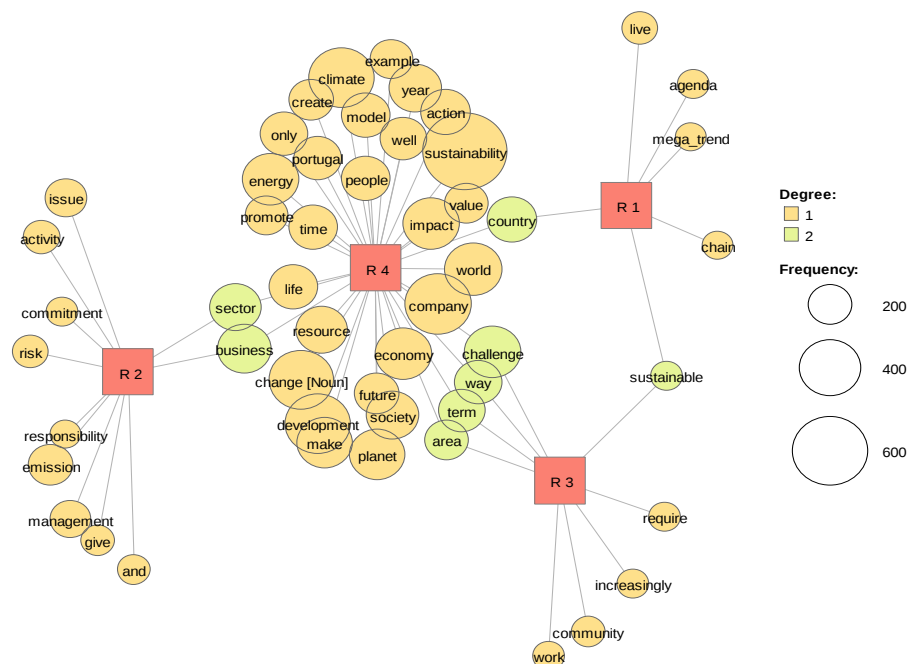
This co-occurrence analysis is important to carry out as it can be easier to interpret and analyse than graph 6 when the data to be analysed starts to be in greater quantity or it is important to analyse more data.

In Figure 9 it is possible to analyse words that have a high degree of co-occurrence.

In Figure 10 it is possible to analyse the high degree of co-occurrence between words and interviews.



In Figure 11 it is possible to analyse the high degree of co-occurrence between words and questions. R1 is related to the RQ1, R2 is related to the RQ2, R3 is related to the RQ3, and R4 is related to the RQ4.



4.11 Self-organizing map

The self-organizing map of word command enables to explore associations between words by creating a self-organizing map.



Figure 11 - Self-organizing map output KH Coder

This self-organising map is important to carry out as it can be easier to interpret and analyse than Figure 12 when the data to be analysed starts to be in greater quantity or it is important to analyse more data.

5 - Discussion and Findings

The data analysis conducted in the research project identified the top 10 most frequent words in the book/interviews analyzed. These words were sustainability, company, development, sustainable, climate, change, social, energy, new, and economic. The high frequency of these words suggests that they are key themes in the book/interviews and that the authors and interviewees are concerned with the role of sustainability in business, economic development, and social justice.

The word "sustainability" was the most frequent word identified in the analysis, which suggests that it is a central theme in the book/interviews. The high frequency of words such as "company", "development", and "economic" suggests that the authors and interviewees are

concerned with the role of business and the economy in achieving sustainability. This is consistent with the idea that sustainability is not just an environmental issue, but also an economic and social issue that requires attention from a variety of stakeholders.

The frequent use of words such as "social" and "world" suggests that the authors and interviewees are also concerned with the social and global implications of sustainability. This is consistent with the idea that sustainability is a complex and multifaceted issue that requires attention from a variety of perspectives.

Overall, the findings of the data analysis suggest that achieving sustainability will require significant changes in the way we think about and approach economic development, social justice, and global cooperation. The authors and interviewees in the book/interviews analyzed are clearly aware of the challenges and opportunities associated with sustainability, and are actively engaged in exploring ways to achieve a more sustainable future.

5.1 Discussion

RQ1: Why do we need to care about the challenges posed by sustainability megatrends?

In order to better answer this question, it is important to first conclude that the topic of sustainability is of great importance to the authors of the existing literature and to the interviews. In fact, according to the literature review chapter, it is possible to conclude that this topic has a huge importance, the analysed authors stated that this topic has changed the business world, since managers are more aware and put into practice the CSR (Padilla-Lozano & Collazzo, 2022).

In fact, through the literature review, it was also possible to conclude that managers use sustainability business to create value that responds to customer needs, new services, creating innovation (Laukkanen & Tura, 2022), all this by aligning economic, social and environmental concerns in the company culture (Hossain et al., 2022), and this will affect companies in all sectors (Lichtenthaler, 2021).

In addition, through the data analysis done on the interviews, it is also possible to conclude that for the interviewees, the topic of sustainability has a great impact on their answers, so on their beliefs, as it was the most frequent word in all the interviews and "company" was the second most frequent word. This means that both authors (from the literature and the interviews) consider the topic of sustainability to be relevant and important in this business context.

In the literature review chapter, the authors stated that the megatrends have a global impact on society and companies in social, economic, political and technological areas, and that in order to successfully adopt the megatrends, companies need to restructure their processes and business models (Linthorst & de Waal, 2020). The data analysis chapter also concludes that the topic of megatrends has an impact on the interviewers, as it is one of the top 10 words most often associated with the word sustainability.

Furthermore, in the literature review chapter, the authors also stated that megatrends are related to urbanisation, climate, global economic, demographic, social and technological issues (John D. Mittelstaedt, Clifford J. Shultz, II, William E. Kilbourne, and Mark Peterson 2014). In fact, when analysing the frequency of words in the interviews, it could be concluded that the words 'climate, social, economic' were very common in all the interviews, showing that the interviewees were also aware of these issues.

Furthermore, in the data analysis chapter, due to the co-occurrence network: words-QRs, it is also possible to conclude that for the interviewers the main words related to this issue are "live, agenda, megatrend, sustainable and country".

RQ 2: How has your organization/sector/context addressed the challenges posed by these megatrends?

In Chapter 1, with the existing literature, it is possible to conclude that for companies to adopt megatrends, they need to face the challenge of recreating their business processes, which can be a more or less difficult task depending on the maturity of the company. In fact, to be successful in this implementation, companies need to be flexible and quick to adapt to changes in the world (Linthorst & de Waal, 2020).

Some examples given by the existing literature are that companies need to be aware of the urbanisation changes and create plans for the urban areas, be aware of the climate and resource scarcity and find ways to combat it through innovative technology, be aware of the economic power and the importance of the interconnectedness of the world, be aware of the economic power and the importance of the interconnectedness of the world's economies and therefore improve access to information, be aware of the demographic changes and ensure that people have quality and equitable access to education, employment and health resources, and finally be aware of the technological changes and be able to provide and implement innovative technologies that contribute to the improvement of society (Mittelstaedt et al. , 2014).

However, in order to better answer this question, it is important to look at the existing literature on the SDGs. The authors pointed out that companies claim to be more aware of the sustainable future, and have started to demonstrate their commitment to the SDGs and the challenges they pose to companies. In order to better face these challenges, companies need to include the SDGs in their reports and include all the environmental, social and economic issues that they are targeting, but in order for this implementation to be successful, it is important to measure, monitor and hold organisations accountable. (Erin et al., 2022).

Moreover, another issue that is important to address to better answer this question is related to business and digital ethics, because when companies are accountable for the technology they use, they incorporate policies, norms and rules that drive their processes and implementation that are aligned with their goals (D'Cruz et al., 2022). Another important aspect is that because companies are accountable for their technologies, it has an impact on their reputation and therefore they are more aware of the technologies they use and produce, and by addressing these responsibilities, companies have a greater sense of ethics and commitment to society (Reck et al., 2021).

Nevertheless, when analysing the interviews, in the word association analysis it was possible to conclude that there are five groups of words that are more associated with the word "sustainability" (group 1 - words "social", "sustainable", "way", "action" and "global"; group 2 - words "development" and "good"; group 3 - words "make" and "society"; group 4 - words "future", "time" and "term"; and group 5 - words "impact" and "create"). Furthermore, the word correspondence analysis showed that the Portuguese interviewers had a stronger correspondence with the words "sustainability", "company", "development" and "sustainable". With this, it is possible to conclude that the interviewers understand that the most issues related to business sustainability are time, development, social, economic, sustainable, and due to this, it is possible to understand and conclude that the Portuguese interviewers see these issues as the main challenges, as these words are the words with a stronger correspondence.

Furthermore, in the data analysis chapter, due to the co-occurrence network: words-QRs, it is also possible to conclude that for the interviewers the main words related to this question are "issue, activity, commitment, risk, responsibility, emission, megatrend, sector and company".

RQ 3: What has your organisation/sector/context done specifically in terms of products and services to address these challenges?

Following the existing literature and state of the art, the authors pointed out that there are some practices that can be done specifically to address sustainability challenges. In Europe, some agricultural companies are acting in water waste or drugs used in the production of their products to combat climate change and resource scarcity (Debonne et al., 2022).

Moreover, other specific actions that can be addressed, including the universities, is the implementation of e-learning education, creating specific disciplines related to sustainability or even promoting sustainable initiatives in the campus that have an impact on society (Berchin et al., 2021).

On the other hand, with the Portuguese interviews, it was possible to analyse their answers in groups of words that have similar patterns of appearance, carrying out a multidimensional analysis of words and a cluster analysis. With the first analysis it was possible to divide the words into eight groups and one of these groups had as similar appearance patterns words such as "resource, consumption, material, waste, emission, reduce, natural, system". With the second analysis it was possible to divide the words into 5 clusters and one of these clusters has words like "carbon, emission, energy, consumption, reduce".

In addition, in the chapter on data analysis, thanks to the co-occurrence network: words-QRs, it is also possible to conclude that for the interviewers, the main words related to this question are "need, increasing, community, work, area, notion, way, and challenge".

RQ 4: In personal terms, how do you see the future of our planet, what are the main threats and what are the great opportunities?

Chapter 1 helps to understand that an opportunity for the future of our planet is the sustainable future agents. These agents are the universities and they are considered as an opportunity because these institutions are able to implement, develop and promote an environmental awareness in future business leaders (Berchin et al., 2021).

The main threat presented in Chapter 1 is related to the unpredictable circumstances that can occur, such as social and environmental changes, customer needs, expectations and market conditions, which can change the market in a rapid way and cause companies to adapt themselves and their sustainable strategy, which is also a reason why, when they decide to implement a sustainable strategy, they need to focus on a long-term perspective (Villamil et al., 2022).

With the analysis of the interviews it was possible to conclude with a co-occurrence network (words-interviews) the words most mentioned by the interviewer and it is possible to conclude

in a global perspective that the top words were "climate, energy, company, economy, business, resource".

In addition, in the data analysis chapter, through the co-occurrence network: words-QRs, it is also possible to conclude that for the interviewers, the main words related to this question are "sustainability, climate, company, development, planet, change, promote, economy, society, resource, country, business, challenge, energy, create, model, action".

5.2 Findings

The first finding is that regarding the challenges posed by sustainability megatrends an interesting conclusion is that the Portuguese interviews do not refer to demographic and technological words as much as the other words, which can be a signal to the Portuguese companies, and awareness is more focus on the climate, social and economic fields and not such in demographic and technological (as for the author in the literature review), which is an opportunity for companies as well as an awareness for them.

The second finding relates to addressing the challenges posed by the megatrends, and here it is possible to conclude that the authors from the existing literature and the Portuguese interviews are in agreement, since both understand that challenges exist and that these challenges are related to the environmental, social and economic issues that companies must address in order to be successful in their implementation through innovative and important ways that lead them to a sustainable business and with a future or long-term perspective. However, the Portuguese interviewees do not refer in as much detail to how they address these challenges and do not refer to as many issues as the authors from the existing literature.

The third finding is in terms of what is specifically being done in terms of products and services to address these challenges, it is possible to conclude that Portuguese interviewees are more aware of environmental challenges and actions to be addressed and the global authors from the literature are more aware of technological, digital and entrepreneurial actions. From this it is possible to conclude that these are possible actions to be addressed in Portugal.

The fourth finding is related to the main threats and opportunities for the future of our planet, and it is possible to conclude that for the authors from the literature review, a great opportunity is the sustainable education given by the universities, and a future threat is all the unpredictable circumstances that may occur in customer needs, market changes, as well as social and environmental changes.

The last, and de main finding is that this research has a point of view of important Portuguese names and the different background of each interviewer since there are a lot of different background areas (political, economic, artistic, educational) and is a new paper to add to the literature since there is no paper with this so important insight and data analysis.

Author, Year	Main Topic	Main Theoretical / Pratical Contribution
Padilla-Lozano & Collazzo, 2022	Identification of the relationship between CSR, competitiveness, and green innovation.	RQ1: Importance of sustainability and CRS.
Laukkanen & Tura, 2022	Identification from a customer and corporate perspective the sustainability impacts, sustainable value proposition and values.	RQ1: Importance of sustainability and managers value creation through sustainability
Hossain et al., 2022	Identification of the effects among corporate sustainability, culture, and leadership.	RQ1: Importance of sustainability and the introduction of economic, social, and environmental issues in company's culture.
Linthorst & de Waal, 2020	Description of how can HPOs address megatrends to secure sustainable performance and at the same time work on the United Nations (UN) sustainable development goals.	RQ1: Global impact of megatrends as well in business processes and models. RQ2: Importance of companies be flexible and quickly to adapt to change to recreate business processes connected to megatrends.
Mittelstaedt et al., 2014	Megatrend's concept and sustainability description.	RQ1: Megatrends' connection with urbanization, climate, global economy, demographic, social and technological issues. RQ2: Urbanization, climate, resource scarcity, innovative technology, economic power, and demographic actions that can be addressed by companies.
Erin et al., 2022	Organizations' SDGs activities and their contribution to the organization' performance.	RQ2: The importance of incorporate the SDGs in company' reports.
D'Cruz et al., 2022	Description of the business ethic aspects, and issues of the organizations.	RQ2: Business and digital ethics and the incorporation of norms, politics, and rules.
Reck et al., 2021	Identification of ethical decision-makers and processes conducted by family firms.	RQ2: Companies' reputation and more sense of ethic and commitment to the society.
Debonne et al., 2022	Identification, quantification, and mapping megatrends related to the European agriculture.	RQ3: Specific sustainable action done in European agriculture.
Berchin et al., 2021	Identification of how sustainable development is promoted by HEIs.	RQ3: Specific sustainable action addressed by HEIs. RQ4: HEIs as sustainable future agents and future opportunities.
Villamil et al., 2022	The importance of implement strategic sustainability in products processes.	RQ4: Sustainable future threats.

Table 3 - Discussion and Finding Resume

6 – Conclusion

Following the previous analysis of the data collected from the interviews and the discussion with the previous authors from the literature review, this chapter aims to briefly answer the key research question, briefly describe the key findings, describe theoretical and practical contributions, and suggest future lines of research.

First, let us recall the key research question: "How can sustainability be implemented as a business strategy?". The research concluded that there are some key issues that managers need to be aware of when implementing sustainability in their business strategy. For a successful implementation it is crucial that managers think in their strategic management, they must complete each step and have their goals and vision in mind and recognise that this is a process with long term goals.

When defining the strategy, it is crucial for managers to include in the first step of defining their vision, mission and objectives the sustainability issue they want to address or implement. If they keep in mind from the first step that they want to implement the sustainability theme, it will be much easier to achieve a sustainable strategy.

In order to choose which sustainability topic they want to address in their strategy, companies need to look at their culture, their products, their services, they need to look at their supply chain and see where they are failing in terms of sustainability and try to develop their business to start implementing sustainability topics, and these topics need to be in line with the triple bottom line and the SDGs created by the UN and also need to be included in their reports. In addition, companies can also implement megatrends are incorporated into their strategy, these megatrends, in fact, megatrends are starting to have a global expansion and importance in the business world.

An important aspect of implementing sustainability in business strategy is related to business and digital ethics, because when companies make a commitment to be more sustainable, they change their reputation and customers' perspectives about their business change as well, so companies must always follow an ethical behaviour to be consistent with they are performing and creating.

To conclude, for a good implementation, companies need to look to the future and recognise all future possibilities of implementing sustainability and a huge possibility is about employees behaviours and since HEIs are agents of future change due to the fact that are implementing a sustainable education in future leaders it is important for companies to recognise and understand that sustainability is not only related to environmental and innovation

issues it is also related to mind changing and those future leaders knowledge and sustainable mindset that can help develop a more sustainable culture and processes that can influence in a positive way the society.

With this research it was possible to conclude a key finding. The key finding is that there is a huge importance related to sustainable megatrends, not only for the authors of the existing literature, but also for the Portuguese respondents. However, there are some opportunities to be addressed in Portugal regarding with the megatrends related to demographic and technological as well as specific activities that can be done in Portuguese companies related to these topics. Moreover, from a general point of view, megatrends have a huge importance in companies worldwide and Portugal is no exception, in fact in Portugal there is a sustainable mindset among companies from different sectors, which also recognise the implications that a sustainable strategy will have on the company's future.

The adoption of sustainability practices can have different impacts on each of the industries mentioned in Portugal. In the textile and clothing industry, replacing conventional materials with organic or recycled fibres can reduce the environmental footprint by decreasing pollution and consumption of natural resources. In addition, adopting more efficient production processes and reducing waste can improve industry efficiency and reduce environmental impact.

In the automotive sector, the transition to the production and use of electric or hybrid vehicles can significantly reduce greenhouse gas emissions and dependence on fossil fuels. In addition, implementing more sustainable manufacturing practices, such as reducing energy consumption and recycling materials, can decrease the environmental impact of the automotive industry.

In the tourism industry, promoting sustainable tourism practices, such as preserving natural areas, supporting local culture and using natural resources responsibly, can help protect the environment and the community. In addition, obtaining sustainability certifications can attract more tourists concerned about the environment and social responsibility.

In the wine and beverage industry, adopting sustainable agricultural practices, such as efficient water use, responsible waste management and protection of biodiversity, can ensure the long-term viability of vineyards and production areas. In addition, reducing the use of non-recyclable packaging materials and using more sustainable transport options can reduce the industry's environmental footprint.

In the technology and software industry, implementing energy-saving practices and using renewable energy sources can decrease the environmental impact of data centres and

technology facilities. In addition, tech companies can develop innovative solutions to environmental problems, such as using artificial intelligence technologies to optimise the use of natural resources.

In summary, adopting sustainability practices in each of these industries can bring significant benefits, such as reducing environmental impact, improving operational efficiency, attracting sustainability-conscious customers and investors, and complying with increasingly stringent environmental regulations. These practices not only help protect the environment, but can also boost companies' competitiveness and contribute to a more sustainable future.

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