

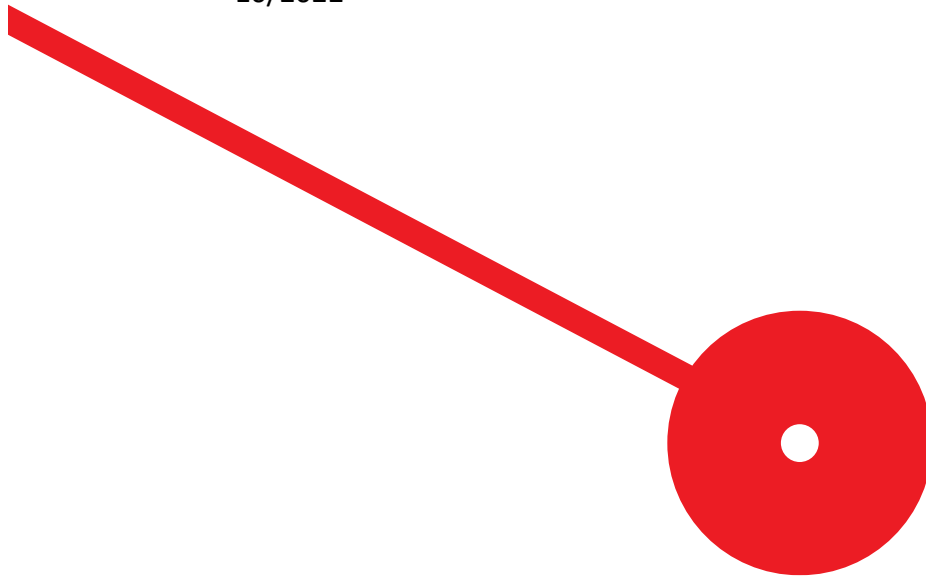


The role of Entrepreneurial Orientation in Environmental Sustainability Strategy and Internationalisation of SMEs.

Analysis of the Portuguese Furniture sector.

Luís Carlos Tavares de Oliveira Leça

10/2022



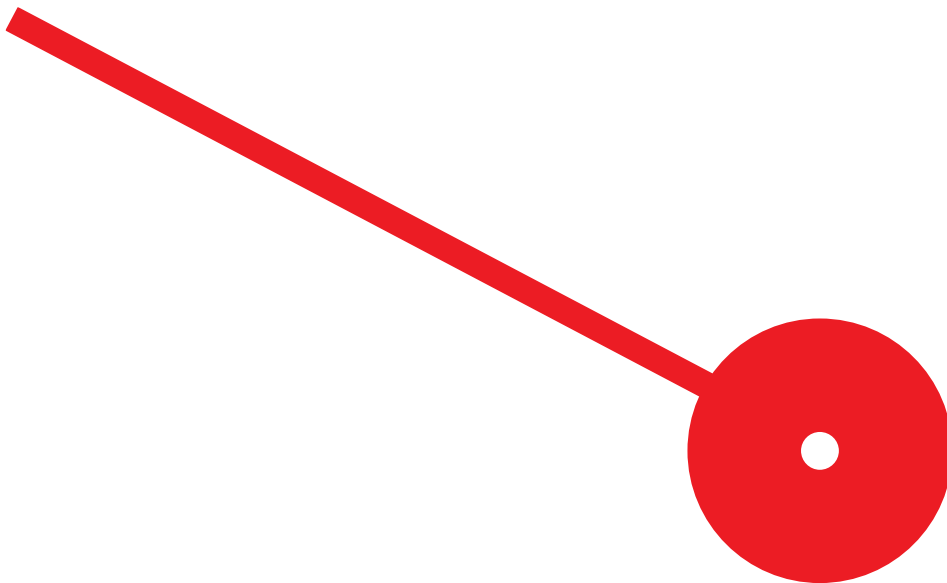
M Master in
Entrepreneurship & Internationalisation

The role of Entrepreneurial Orientation in Environmental Sustainability Strategy and Internationalisation of SMEs.

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Luís Carlos Tavares de Oliveira Leça

**Master's dissertation presented to Instituto Superior de
Contabilidade e Administração do Porto to obtain a master's degree
in Entrepreneurship and Internationalization, under the guidance of
teacher Ricardo Silva.**



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"Gratitude is the only treasure of the humble." William Shakespeare

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Abstract:

The main objective of this study is to analyse the role of Entrepreneurial Orientation in the Portuguese furniture sector, the response to the challenges posed by Environmental Sustainability and the impacts in terms of the Internationalisation of SMEs. The literature review was carried out in relation to Entrepreneurship, focused on the logic of developing companies and expressed in the construct of Entrepreneurial Orientation, but also Environmental Sustainability and Internationalisation, which structured the survey conducted to the managers of SMEs in the furniture sector (Economic Code of Activity Rev.3: 31-; 46-; e 47-) and, whose results, were the basis for the empirical study.

The study is innovative, firstly, by analysing the concept of Entrepreneurial Orientation and its application to SMEs in the Portuguese furniture sector, formed in 2021 by 4,413 companies, more than 6% of the manufacturing industry and that presents, in 2021, an international trade balance of US\$723 million (UN COMTRADE, 2022). Secondly, for analysing the impact of Entrepreneurial Orientation on the dynamics of Environmental Sustainability and Circular Economy, reinforcing the relevance of the theme given the time of climate urgency that the world is facing, in a critical area for natural capital, such as the forest and its derived products.

The results obtained allowed validating the construct of Entrepreneurial Orientation - measured by 8 items of Innovativeness (3), Proactiveness (2) and Risk-Taking (3) - in the SME managers of the sample, with a mean of 3.396 and a minimum of 2.869, on a scale of 5 (statistically validated). It also allowed confirming the existence of a positive relationship between Entrepreneurial Orientation and sustainability strategy, evaluated by the scale of the Sustainable Development business model. The sector has effectively started a sustainable development strategy, less than 1/3 reports inaction before this change of paradigm (29.9%), and there are companies with a very advanced and implemented sustainable business model, 47.7% are already at the Sustainable Product and Service Design level. It was also demonstrated, at the level of Internationalisation, that EO and the dynamics of the business model in terms of Sustainability anticipate the high scale of internationalisation of companies in the furniture sector.

Key words: Entrepreneurial Orientation, Sustainability, Portuguese, SMEs, Portuguese Furniture Sector

Resumo:

Este estudo tem como principal objetivo analisar o papel da Orientação Empreendedora (OE) no sector de mobiliário português, da resposta aos desafios colocados pela Sustentabilidade Ambiental e dos impactos em termos de Internacionalização das PME's. Procedeu-se à revisão literária em relação ao Empreendedorismo, centrado na lógica de empresas em desenvolvimento e expresso no construto da Orientação Empreendedora, mas também da Sustentabilidade Ambiental e da Internacionalização, que estruturaram o inquérito realizado aos administradores das PME's do sector do mobiliário (CAE REV.3: 31-; 46-; e 47-) e, cujos resultados, fundamentaram o estudo empírico.

O estudo é inovador, em primeiro lugar, pela análise do conceito Orientação Empreendedora e aplicação a PME's do sector mobiliário português, formado (2021) por 4.413 empresas, mais de 6% da indústria transformadora e que apresenta, em 2021, um saldo comercial internacional de 723 milhões de dólares americanos (UN COMTRADE, 2022). Em segundo lugar, por analisar o impacto da Orientação Empreendedora nas dinâmicas de Sustentabilidade Ambiental e Economia Circular, reforçando a pertinência da temática face à época de urgência climática que o mundo enfrenta, numa área crítica para o capital natural, como a floresta e seus produtos derivados.

Os resultados obtidos permitiram validar o construto da Orientação Empreendedora – medida por 8 itens de Inovação (3), Proactividade (2) e Propensão ao Risco (3) – nos gestores das PME's da amostra, com uma média de 3,396 e um mínimo de 2,869, numa escala de 5 (validada estatisticamente). Permitiu confirmar, ainda, a existencia de uma relação positiva entre a Orientação Empreendedora e a estratégia de sustentabilidade, avaliada pela escala do modelo de negócios de Desenvolvimento Sustentável. O setor efectivamente já iniciou uma estratégia de desenvolvimento sustentável, menos de 1/3 reporta inação perante esta mudança de paradigma (29,9%), havendo empresas com modelo de negócio sustentável bastante avançado e implementado, 47,7% já está no nível do Design de Produtos e Serviços Sustentáveis. Foi demonstrada, também, ao nível da Internacionalização que a OE e a dinâmica do modelo de negócio em termos de Sustentabilidade antecipam a escala elevada de internacionalização das empresas do sector de mobiliário.

Palavras chave: Orientação Empreendedora, Sustentabilidade, Internacionalização, PME's, Setor Mobiliário Português

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List of Abbreviations and Acronyms

AICEP– Agência para o Investimento e Comércio Externo de Portugal

CE – Circular Economy

ECA – Economic Activities Code

CSR – Corporate Social Responsibility

DFR – Design for Recycling

EO – Entrepreneurial Orientation

EU – European Union

EU27 – 27 members of the European Union

GAP – Green Action Plan

GDP – Gross Domestic Product

GEM – Global Entrepreneurship Monitor

GEO – Green Entrepreneurial Entrepreneurship

MS – Member States

MSP – Managerial Sustainable Practices

PLE – Product Life Extension

R&D – Research and Development

ROA – Return on Assets

RPO – Retain Product Ownership

SCE – Structural Conditions of Entrepreneurship

SD – Sustainable Development

SDS – Sustainable Development Strategy

SE – Sustainable Entrepreneurship

SMEs – Small and Medium-sized Enterprises

INTRODUCTION

In recent decades the world has become increasingly globalised, with interconnected countries open to international trade having value and supply chains integrated, based on the import and export of components and products from markets where these are more competitive and of better quality, turning companies more efficient in any market. As the evidence confirms, also more vulnerable to external shocks and global trends. The result of this sudden evolution, one of the main scourges facing humans in the 21st century has also developed, climate change and global warming, which have been threatening human living conditions, the world economic system with the volatility of raw material prices and natural ecosystems (Leonidou, et al., 2017). Through this phenomenon, Humanity felt the consequences of increased CO₂ emissions, deforestation, melting polar ice caps and acid rain, which have compromised the survival of the human species (Jackson T. , 2009), (Rockström, et al., 2009).

The beginning of the millennium brought awareness of the importance of fighting climate change by seeking better management and allocation of resources, reducing economic and social inequalities and promoting the welfare of society and systems as a whole (Lu, et al., 2008), (McGregor, & Pouw, 2016). Additionally, institutions and governments are putting environmental issues on the table for discussion and have evolved in terms of implementing and creating environmentally friendly measures, however, they are still scarce given the severity of the problem (Brennan, Tennant, & Blomsma, 2015). This new context of combining economic development and Environmental protection is the ideal scenario for the promotion of entrepreneurial skills and entrepreneurship which, according to Sarkar (2009) is the *"process of identifying, developing and bringing to life an idea, and that vision can be an innovative idea, an opportunity or simply a better way of doing something"*.

Entrepreneurs are a vital driving force in the development of new businesses and response to problems facing society, bringing together a set of innovative and dynamic

characteristics, and they continuously study and analyse opportunities and make moderately risky decisions to innovate (Fillion, 1999).

Within entrepreneurship, in recent years a branch of study has emerged, Sustainable Entrepreneurship (SE) or Ecopreneurship, represented as the key to solving environmental and social problems, as evidenced by O'Neill, Hershauer, & Golden (2006), (Schaltegger & Wagner, 2011), (Lawal, Worlu, & Ayoade, 2016), , intersecting the areas of Sustainable Development (SD) and Entrepreneurship. SE provides a complete and holistic vision of the various components - Economy, Society and Environment - balancing interests and creating a continuum of chains, relationships and benefits for the entrepreneur and society.

To face these challenges and achieve company profits while fulfilling the SD objectives, managers and entrepreneurs must be increasingly bold and have a strategic vision, that is usually associated with Entrepreneurial Orientation (EO) which can be defined as the *ability of organisations and managers to determine and use innovative ideas to attract new markets and promote the creation of competitive advantages for the firm* (Arshad, et al., 2020). EO represents a strategic vision capable of improving firms' performance (Covin, et al., 2006) and helps them to enter the inventive business environment, improving their efficiency and the operationalisation of their processes.

EO can be divided into three study variables, namely *Innovativeness* (Lumpkin and Dess (1996)), *Proactiveness* (Venkatraman (1989)), and *Risk-Taking* (Miller and Friesen (1978)). They are essential for companies that want to position themselves in the markets as environmentally friendly and that effectively want to become efficient, sustainable internationalised. Consumers are increasingly informed and are looking for products and services whose production process does not harm the environment, so managers must constantly innovate in new products, and manufacturing processes, choose more sustainable raw materials or new ways of packaging fewer polluting products (Barbaritano & Savelli, 2021).

In addition, they must be proactive and willing to take risks to modify the installed processes of their companies and their infrastructure in order to adopt a Sustainable

Development Strategy (SDS), which includes the implementation of a Circular Economy (CE) that can be characterised as "*A restorative and regenerative industrial economy by design or intention*" (Ellen MacArthur Foundation, 2013). Through CE, companies can reduce costs due to increased recycling and reuse of resources, decreased purchase of raw materials and reduced waste and reckless spending, enabling them to price more competitively and position themselves differently in international markets, allowing them to reach new markets and especially niche markets concerned with environmental issues.

As strategies to reduce the resources consumed and promote circularity in companies, *Product Life Extension*, *Retain Product Ownership* and *Design for Recycling* can be highlighted, which when efficiently applied, allow the reuse of the final products for inclusion in new products or to make use of their components.

This research aims to study the impact of Entrepreneurial Orientation on the adoption of Sustainable Development Strategies and evaluate its impact on the internationalisation of SMEs. The study of SMEs is quite important and results in a gap in the authors' research, since they represent the majority of the countries' business fabric and present very specific conditions, being influenced by external factors and dependent on international markets. Paradoxically to large companies, SMEs do not have as many financial conditions, market share and influence to dominate the market, so they have to diversify from the strong competition through competitive advantages and may see sustainability as a development opportunity.

The research focuses on SMEs in the Portuguese furniture sector since it is one of the sectors that contribute most to the national Gross Domestic Product (GDP), and because the sector has a high ecological footprint due to the raw material they usually use, wood. It is intended to analyse the state of the sector and check what efforts have been made to make the sector more sustainable and efficient, as well as to captivate more conscientious international markets.

It is organised into several chapters that are grouped into two fundamental areas, theoretical background and empirical study. The theoretical background is composed of Chapter I which addresses issues such as Entrepreneurial Orientation, Sustainable Development Strategies and Internationalization, proceeding to the characterisation of the

sector chosen for this study. Chapter II refers to the empirical study and the methodology used to operationalise the research model described in this chapter.

Furthermore, this chapter also describes the structure of the questionnaire survey, the operationalisation and measurement of the variables, the population and sample, and the data collection process. Chapter III results in the analysis and discussion of the data, applying statistical procedures to present the results obtained. Finally, the main conclusions and general observations are presented, seeking to summarise and reflect on the results obtained, considering the hypotheses raised, as well as the limitations of the study and the recommendations for future research.

CHAPTER I - BACKGROUND THEORY

A- ENTREPRENEURIAL ORIENTATION

The concepts associated with Entrepreneurship (1.) are approached, in general terms, not losing sight of the characteristics of the entrepreneur personality and a brief clarification of the gaps in entrepreneurship in Portugal, a starting point for the analysis of Corporate Entrepreneurship (2.) and, in the end, the literature focus on a central element of this work, the Entrepreneurial Orientation (3.) of the management of developing companies.

1 Entrepreneurship

1.1. Concept

Currently, there is a constant evolution of countries and societies, promoted by the incessant spirit of search and improvement, which many associate with Entrepreneurship and entrepreneurial spirit. The term *Entrepreneurship* has never been heard so much as nowadays, however, a clear and objective definition of the concept still lacks consensus among researchers, as it is a multidisciplinary, dynamic and quite comprehensive field. The study of entrepreneurship aggregates several areas of study, namely economics, management, psychology, sociology and philosophy, demonstrating the plurality and multidimensional nature of the subject (Fillion, 1999), (Audretsch, 2003), (Carlsson, et al., 2013). The origin of the concept reminds us of the French term *Entrepreneur*, which means to undertake, used since the twelfth century.

It has been changing along the times, having been characterized by Cantillon (1755) as the *person capable of taking advantage of opportunities to obtain profits, and for that is willing to take risks* and Say (1816) included the word entrepreneur *as a part of a chain of producers – the scientists who made the discoveries about raw-materials and invented things, the entrepreneurs who converted this knowledge into useful purposes and the workers who manufactured the final product*. In this definition with a more economic slant, the role of risk and opportunities in the definition of entrepreneurial activity is already denoted.

In 1934 Schumpeter, defined entrepreneurship, as a slant of innovation and economic growth, saying that the *entrepreneur was the force that destroys the balance and economic order, through the exploration of new products and services, the creation of new processes or the exploration of new resources* (Schumpeter, 1934). For the author, it was in the constant creative destruction, in the change and innovation that grew and promoted economic development. In 1968, in his seminal work " *Entrepreneurship in Economic theory* ", William Baumol felt that there was a gap in the definitions of entrepreneurship, stating that entrepreneurs were different people and that there were two undefined types of entrepreneurs (Butler-Bowdon, 2017).

- **Replicative entrepreneurs** - any person who starts a business, even if their field, product or services already exist in the market and are performed by other competitors.
- **Innovative entrepreneurs** - People responsible for revolutionary growth, the type of people who are leaders and who are creative and inventive. Innovative entrepreneurs are suppliers of inventions on the market, providing new products, new processes and product inventions that increase the well-being of society and its members in various aspects. This type of entrepreneur usually has no idea that their inventions can be applied and generalized in the mass market.

Peter Drucker defined entrepreneurship *as an innovative activity that has as its main purpose the creation of changes in society and the economy* (Drucker P. , 1986). Currently, entrepreneurship develops a preponderant role in societies, being one of the main driving tools for economic growth, innovation, and consequently the increase of employment in developed societies, leading to an increase in the quality of products and goods offered in society, as referred by Archana & Kumari (2018). It may be a tool to promote social equality, as a factor of economic development and improvement of living conditions, however, it depends on the availability of resources, environmental conditions and economic, social and financial factors, leading to great disparities in entrepreneurial activity between the various economic potentials and between continents, with greater emphasis on the dual relationship between developed

and developing countries, demonstrating that there is no recipe or standardised entrepreneurial activity capable of being applied to any economic context or country (Barbosa, 2015).

The most complete definition of this concept could be that defined by Sarkar (2009) who states that it is the *process of identifying, developing and capturing an idea for life, and that vision can be an innovative idea, an opportunity or simply a better way of doing something*.

For an entrepreneurial activity to exist, the creation of ideas and their applicability is not enough, so innovations must be disseminated to the market to be used by consumers and be able to solve their needs. The constant synergy and interaction between agents such as universities, industry and the state play a leading role in the development of entrepreneurial activity and innovations. Etzkovitz & Leydesdorff (2000) to explain the central role of these relationships developed the *Triple Helix model of Innovation* which is based on the three actors described above and their relationships as factors promoting social and economic development. Entrepreneurs and universities, as scientific and inventive knowledge hubs, are responsible for the creation of innovations that will meet the needs of industry, with the need for close collaboration and direct contact to articulate scientific theory and its applicability in a real and working context.

The authors of the theory focus on the relevance of bilateral knowledge transfer as a key factor for the advancement of innovations. On the other hand, the government plays a preponderant role in the relationship with universities and industry. Regarding universities, the government, as a general rule in western countries, is one of the largest funders of public higher education, so it is the main funder of research and inventive activity carried out in the country. It can award grants or specific funding depending on the areas it considers most relevant and crucial to invest in for national development. About the state-industry synergy, Etzkovitz & Leydesdorff (2000) argue that the government may have a more active or regulatory role in the economy and, as such, guide the companies' actions, sometimes preventing market failures.

Additionally, it has a preponderant role in the development of the intellectual property, being able to foster and create legal systems that favour the intellectual property of entrepreneurs, universities and industry.

1.2. Entrepreneurial Characteristics

The behavioural approach to entrepreneurship stems from areas such as Psychology, Sociology and other specialists in human behaviour according to Fillion (1999). The study area of the behavioural approach developed a lot in the post-2nd World War period, with McClelland being the first psychologist in 1961 to present empirical studies on Entrepreneurship, defining an entrepreneur as *someone who exercises control over production and is not intended only for his consumption*. According to the author, the needs for power and achievement are factors that promote social development and prosperity and people who are more sensitive to these factors are more likely to make changes in society and identify economic opportunities.

The behavioural approach to entrepreneurship, over time, has guided its area of study in the characteristics of entrepreneurs and their personality traits (Carlsson, et al., 2013). In table 1 it can be observed the main characteristics and personality traits usually identified in the profiles of entrepreneurs, according to studies conducted by Fillion (1999).

Table 1 - Personal Characteristics of Entrepreneurs

Entrepreneurs' Characteristics and Personality Traits		
Aggressiveness	Flexibility	Need for Achievement
Self-confidence	Ability to lead situations	Results orientation
Self-awareness	Ability to manage resources	Originality
Risk-taking	Independence	Optimism
Learning ability	Initiative	Sensitivity towards others
Creativity	Innovation	Tenacity
Energy	Leadership	Tendency to trust people
Long-term Involvement	Profit as a measure of performance	Tolerance to ambiguity and uncertainty

Source : Adapted from (Fillion, 1999)

In 1985, Peter Drucker defined that successful entrepreneurs do not display a cadre of unmatched characteristics, but rather a personal commitment to the systematic practice of innovation. Mark Casson (1982) and Peter Drucker (1985) state that an entrepreneur *is a person who makes decisions about the coordination (not just allocation) of scarce resources in an uncertain environment, where characteristics such as the ability to identify and exploit opportunities are essential*. In this way, it can be affirmed that entrepreneurs are creative

people, with a clear capacity to define and pursue objectives and maintain a high awareness of the environment where they operate, using it to identify business opportunities. Additionally, they continuously study and analyse opportunities taking moderately risky decisions with the aim of innovation (Fillion, 1999).

1.3. Contextualization of Entrepreneurship in Portugal

Entrepreneurship is a necessary feature in the business fabric of the countries, being very conditioned by aspects of cultural, financial, economic and sociodemographic order, among others. Since it is a diverse area, several indicators aim to measure entrepreneurship and study the respective variables that integrate it.

To obtain a solid and periodic study of entrepreneurship in countries, an indicator, the *Global Entrepreneurship Monitor (GEM)* was developed to measure entrepreneurial attitudes and aspirations, as well as the conditions that promote or limit entrepreneurial actions. The first GEM assessment was carried out in 1997 with a sample of 10 countries. Currently, it measures the degree of entrepreneurship in over 100 countries, including Portugal, being the main instrument to study and understand entrepreneurship on a global scale, guided by values such as integrity, innovation and excellence. The first study carried out in Portugal took place in 2001 and the most recent report refers to 2019 (GEM, 2019).

To monitor the degree of entrepreneurship, the GEM study uses a set of factors called Structural Conditions of Entrepreneurship (SCE) which can be found in Appendix I. The (GEM, 2019) allowed researchers to define the current Portuguese paradigm of entrepreneurship, highlighting which are the most favourable and unfavourable SCEs present at the current juncture. As the most favourable Portuguese SCE it can be highlighted:

_Access to physical infrastructures - Indicator with the best rating by the specialists (7.1/10) denoting that in Portugal some several institutions and incubators foster entrepreneurship and that these are distributed throughout the various areas of the country, creating a quite diversified network that covers the entire national territory.

_Commercial and Services Infrastructure - The second most favourable indicator (4.9/10), recognising the existence in Portugal of several services and consultants sufficient to help new and growing companies to expand and pursue their entrepreneurial activity.

_Financial support - Third most favourable condition (4.8/10) highlighting that the Portuguese business environment presents numerous Business Angels ready to invest in new and growing companies.

As less favourable factors regarding SCE Portugal presents:

_Government Policies - Indicator with the worst rating by the experts (3.2/10) denoting that this indicator is very retractive to entrepreneurship in Portugal where most new and growing companies cannot solve their legal issues and attribution of authorizations and licenses in less than a week.

_Cultural and Social Norms - Second least favourable indicator (3.6/10), with specialists recognising that the national culture does not stimulate entrepreneurial risk-taking very much.

_Education and Training - Third least favourable condition (3.7/10) highlights there is insufficient attention given to entrepreneurship and the creation of new companies in primary and secondary education.

In figure 1 a comparison and evolution of the GEM in the triennium 2016-2019 can be found where points of improvement can be seen in certain indicators and regression in others. These results demonstrate the need for greater national investment in these SCEs, as well as the creation of a culture more aligned with entrepreneurship. It should be noted that in 2019 4 indicators were below the midpoint of the scale (2.5) being them:

- Market Burdens or Entry Regulation – 2.4 / 2.5
- Entrepreneurial Education at School Stage – 1.94 / 2.5
- R&D Transfer – 2.43 / 2.5

Figure 1 - Portuguese Entrepreneurial Framework Conditions 2016- 2019



Source: (GEM, 2019)

2 Corporate Entrepreneurship

Corporate Entrepreneurship is an informal concept to describe the behavioural entrepreneurship described in the previous topic and is commonly associated with large organisations, which generally seek to gain competitive advantage by promoting innovation at all organisational levels, namely the corporate level, divisional, business units, functional or project team levels (Burns, 2013). Several authors in the 1980s considered that entrepreneurial activity had no place or could not be applied to organisations due to their high bureaucratic burden having Zahra (1991) defined the concept as "*Activities aimed at creating new businesses in established companies*". Later (Zahra, et al.,1999) added additional information to the definition suggesting that there are many combinations of entrepreneurship at the firm level namely:

- Content of entrepreneurship – corporate venturing, innovation and proactivity
- Sources of entrepreneurship – both internal and external
- Focus of entrepreneurship – formal or informal

Activities inherent to corporate entrepreneurship include the *creation of new business units by an established firm, the development and implementation of entrepreneurial strategies* and the *emergence of new ideas from various levels in the organisation* (Burns,

2013). The existence of several visions and literatures on the topic led to the creation of 4 strands of the concept which comprise *Corporate Venturing*, *Intrapreneurship*, *Bringing Market Inside* and *Entrepreneurial Transformation*. Focusing on *Bringing Market Inside* which looks at the changes required for behavioural entrepreneurship that foster a strategy of resource allocation and people management systems using market-based techniques such as spin-offs and venture capital operations.

Entrepreneurial Transformation states that large organisations need to adapt to an ever-changing environment if they want to survive in the marketplace. To do so, they have to adapt their structures and culture by promoting entrepreneurial activity and orientation in their employees. Entrepreneurs define the organisations they are part of and employ many of the personal traits and characteristics (mentioned in the previous point) in the organisations and in their jobs.

They have a particular and characteristic approach to managing businesses and organisations, and their management style is an influential factor in the culture of the organisation. Several authors consider that entrepreneurs and business owner-manager generally share the same set of characteristics, although this may not be the case individually. In the case of the business owner-manager, these characteristics may be associated with the survival instinct, whereas the entrepreneur may hold a set of characteristics that are more associated with the growth instinct. These two aspects form the entrepreneurial DNA (figure 2) line of thought that should be applied to organisations in order to be well-managed and successful (Burns, 2013).

Figure 2- Character traits of owner-managers and entrepreneurs



Source : Own composition based on (Burns, 2013)

3 Entrepreneurial Orientation

3.1 Concept

The concept of Entrepreneurial Orientation is quite broad and dynamic, having been changed and improved over the years. It was developed by Miller (1983) who stated that *An entrepreneurial company seeks product-market innovation, is predisposed and willing to engage in risk-taking adventures and uses and is the first to come up with proactive innovations, thereby defeating the competition.* He defined EO as a set of three variables, namely *Innovativeness, Proactiveness and Risk-Taking.*

Currently, it can be characterised as *the capacity of organisations to determine and use innovative ideas to attract new markets and promote the creation of competitive advantages for the company* (Arshad, et al., 2020). It represents a strategic vision capable of improving companies' performance (Covin, et al., 2006) and helps them to enter the corporate inventive environment, leading them to improve their efficiency in the operationalisation of their processes. Miller in his publication in (1983) analysed the EO and to define its variables used several studies where the variables described above had already been defined separately.

The first authors and studies that defined the variable Innovativeness were (Schumpeter, 1934), (Cole, 1946), (Cooper, 1973), Lumpkin and Dess (1996), who defined the variable *as the propensity of a company to engage in and support new ideas, the exploration of new processes in creative ways that may lead to the creation of new products, processes, concepts and technological inventions.* Proactiveness was initially described by (Mintzberg, 1973) and (Miller & Friesen, 1978) having evolved the concept and according to Venkatraman, (1989) *is the constant search for new opportunities that may or may not be directly related to the companies' operational processes and area of activity.* It also focuses on introducing new products and brands before the competition, strategically eliminating operations that are in the mature or declining phases of the life cycle. Risk-taking was firstly characterised by (Collins & Moore, 1970), (Kets de Vries, 1977) and Miller and Friesen (1978), having described the variable as being *the level at which managers are willing to make large and risky resource commitments, i.e., those that have a reasonable probability of costly failure.*

In a competitive global market, EO is essential to succeed and stand out, being the concept applied to several areas of the internal and external environment of companies and has been increasingly associated with sustainability and environmental protection, promoting an evolution from the concept of EO to green entrepreneurial orientation (GEO). Jiang et al. (2018), argue that GEO refers to a proactive strategic inclination at the enterprise level to identify and seize the environmentally friendly business opportunity based on the comprehensive consideration of risks and benefits.

The Green aspect of EO has been widely adopted by companies around the world, namely SMEs that aim to find in environmental protection a differentiating factor from their competition and thus attract the attention of new niche markets, new international markets and at the same time reduce raw materials and production costs.

3.1.1 Innovativeness

Innovation radically alters the economy and society by providing technical and organisational improvements that can be easily diffused and accepted in the market. In addition, it has the potential to bring about change and create opportunities for all businesses by developing new and more sustainable products with higher profit margins, bringing greater added value to the environment, the market and their consumers (Cho & Pucik, 2005), (Kuratko, 2009), (Wiklund, et al., 2009).

Regarding the business context and in particular SMEs, innovation facilitates the development of new organisational routines and the discovery of firm-specific approaches that enable the creation of new products, technologies and processes (McGrath, 2001). In the free markets, SMEs seek leadership and competitive advantages through constant research (R&D) and the pursuit of innovation of their products (Qian & Li, 2003). Within this spectrum, there are various profiles of business orientation, highlighting two main cultures of SMEs, *Innovative and Conservative firms*, based on high or low degrees of innovation. *Conservative SMEs* show a lower level of innovation in their newly launched products, which are usually "me too" products, i.e. imitations of products already launched by competitors, thus revealing a reduced power of adaptation, low market leadership and a low level of EO (Avlonitis & Salavou, 2007).

Paradoxically, *Innovative SMEs* show greater capacity and investment in innovation and differentiation of their new products launched in the market, achieving market leadership through investment in competitive advantages and using the most efficient processes at their disposal, thus reducing their operating costs, and increasing the profit margin of the products sold (Dess, et al., 2003). (Morris et al., 2011) state that *innovative firms* continually introduce new products and services that are better suited to the needs of current and emerging markets and can quickly enter new markets that may represent a better strategic fit for their innovation-based capabilities. These types of companies can identify the challenges of current markets, using their gaps and scourges as a source of opportunity for innovation and the development of new concepts.

Market innovations, especially those focused on SD, do not occur by chance and therefore depend on the innovation capacity and business orientation of leaders who place innovation as one of the pillars of their core business (Schaper, 2010). Furthermore, sustainability has been one of the drivers of innovation for companies, which have relentlessly sought new strategies, new production methods or the creation of more sustainable raw materials, to reduce the ecological footprint of companies and to benefit from the growing market demand for this type of products and companies.

Through innovation, often called eco-innovation, better efficiency and management of resources is promoted, reducing production costs in the medium to long term and meeting the objectives of SD. This type of innovation-based strategy, particularly product innovation, entails other costs for the firm, financial or non-financial, such as the ability to take a proactive view and to take risks (Miller, et al., 2017). While innovation has very significant effects on improving product and firm performance, it requires financial capacity and a continuous effort of constant research and improvement and employment of resources.

Therefore, not all SME's will have access to these opportunities as they have limited financial resources or difficult access to short-term finance due to their instability and/or lack of strategy and financial orientation (Rosenbusch, et al., 2013). Innovation costs in the context of SMEs often relate to initial investments in the development of firm-specific innovation capabilities, as well as R&D expenses that accompany the early stages of innovative activity. This suggests that SMEs are only likely to break even when the real benefits of innovative

activity begin to outweigh the initial costs associated with innovation, which for many can be a difficult period in terms of financial performance (Branzei & Vertinsky, 2006), (Rosenbusch, et al., 2013)

3.1.2 Proactiveness

Proactiveness is an essential characteristic for businesses, especially SMEs, to succeed in competitive markets and gain differentiated competitive advantages over their competitors. Two main groups of SMEs can be profiled, *Active Entrepreneurs and Passive Entrepreneurs* (Avlonitis & Salavou, 2007). *Active Entrepreneurs* are guided by the constant search for new markets and adaptation to all market variables that may directly or indirectly affect their performance, assuming an active role in controlling and prospecting the environment that surrounds them (Lumpkin & Dess, 2001).

By assuming an attitude of strategy setting and proactive behaviour, they take a leading role, setting trends, defining consumption patterns and satisfying customers' needs, promoting a growing market share and eliminating competition (Lumpkin & Dess, 2001) and (Smith & Cao, 2007). Moreover, they can create new opportunities for themselves by regularly redefining which markets to target and abandon, benefiting from high consumer demand and better quality of their customer base, which is generally more loyal - reducing customer retention and prospecting costs (Covin & Miles, 1999). According to Smith & Cao (2007), they disrupt the *status quo* in the industry, thus effectively changing the strategic basis underlying market competition. A significant example of proactive companies is the brands that have made a disruptive bet on changing their core business and manufacturing processes to a more alternative and environmentally friendly side.

The proactivity of allying themselves to environmental protection leads these companies to be pioneers in adopting new strategies, researching new products, processes and techniques, standing out markedly from their competitors in the markets and exploring new market niches firsthand. Proactiveness entails costs for SMEs that are related to initial investments required to develop favourable market entry conditions, leading SMEs to only net profits from these actions when the actual benefits of proactivity outweigh the entry costs. Furthermore, when they move from low to moderate levels of proactiveness, they are expected to experience negative financial returns due to substantially higher initial costs. Paradoxically, when SMEs

move from moderate to high levels of proactiveness, financial returns are already positive, as they already have a more defined structure and some presence already implemented in the markets, thus avoiding higher initial costs.

3.1.3 Risk-Taking

Of the three EO components, Risk-taking is the most complex, which may reveal a more pronounced duality of effects (both positive and negative) on SME's performance. On the one hand, there are entrepreneurial SMEs that are constantly investing in product innovation and over time learn from processes, leading to cost savings as the learning curve increases, as demonstrated in the product learning curve, so they take on daily controlled risks that in the long run will bring financial returns and competitive advantages to the firm (Eisenhardt, 1989), (Covin & Slevin, 1989), (Zahra, et al .,1999), (De Clercq, et al., 2005), (Wiersma, 2007).

Therefore, the risk associated with the performance of an entrepreneurial SME decreases as the innovativeness of the product and its entire production process increases. Several SMEs have adopted a strategy of investing in high-risk green projects, through research in more environmentally friendly products and new designs that are less polluting or that use less raw materials. This attitude may be quite risky in terms of initial investments, however, they have proven to be very fruitful and profitable in the medium and long term.

Generally speaking, companies should be cautious in the level of risk-taking they intend to undertake, since the relationship between risk-taking and a company's Return on Assets (ROA) has a curvilinear shape where up to a certain point profit realization is increasing and from that point onwards it is constantly decreasing, which can be very damaging to the performance and financial stability of companies, as demonstrated by Begley & Boyd (1987). If they want to maximize their performance, they should adopt a moderate and rational approach to risk-taking, avoiding excessive exposure to risk and financial losses or the opposite scenario of not being subject to risk (Conservative SMEs) and bearing high opportunity costs by not accepting certain projects or innovations in their products (Hughes & Morgan, 2007).

B – ENVIRONMENTAL STRATEGIES

The analysis of Sustainability Strategies involves the clarification of the associated concepts, with main relevance to the environmental aspect, object of analysis in this work, hence the reference to Sustainability (1.) Ecopreneurship (2.) the Business Models of Sustainable Development (3.) and, finally, the dynamics associated with the Circular Economy (4.) are analyzed.

1 Sustainability

Currently, the global business environment is in a dynamic and constantly changing state due to the environmental issues that plague us daily, namely the effects of global warming and climate change, the constant lack of resources and their waste and the incessant levels of environmental pollution created by the industrialized societies and nations (Afum, et al., 2022), (Del Giudice, et al, 2021). Climate change poses inescapable challenges to SD and the promotion of entrepreneurship and economic activity. They threaten to completely undermine decades of societies' innovation and development, both economically and socially since they have been compromising the basic rights and living conditions of human beings, such as the right to life, water, housing, among others.

The disparity in the use of natural resources is increasing in favour of developed countries, so there is a need for a better distribution of resources and the expansion of their life cycle. Systems such as the Circular Economy have been developed in the hope of better management of resources and promotion of an equitable and fair system regarding the preservation of resources for future generations and meeting the values advocated in the SD theory (Suarez-Eiroa, et al., 2019). All members should be involved in this mission to combat climate change and promote SD thinking, with governments and companies having a prominent role in this decision-making and implementation of measures.

1.1. Concept

The concept of Sustainable Entrepreneurship arose from the need to create a new conceptual model suited to urgent environmental problems. It aims to reflect the new vision of companies and society on the paradigm in question (Schmidpeter & Weidinger, 2014).

SE is presented as the solution and the key to solving both problems, those of an environmental nature, as well as those of a social nature, as evidenced by O'Neill, et al., (2006). This concept is still not subject of a consensus within the research community, and there are two strands or theories to define it. According to some authors such as (Lawal, et al., 2016), (Schaltegger & Wagner, 2011) SE is a new science that gathers the areas of entrepreneurship and sustainable development.

On the other hand, authors such as Schmidpeter & Weidinger (2014) say that SE is based on a management strategy that keeps pace with changing times and the needs of the market and society. Despite being a concept still in its infancy, SE gives primacy to SD and provides a complete and holistic vision of the various components - Economy, Society, Environment - balancing various interests and creating a continuum of currents, relationships and benefits for the entrepreneur and society.

This concept is in accordance with Jacobs (1995) conducted and based on the normative objectives of SD and is a process that creates enterprises capable of contributing to and restoring the balance between the environment and the human condition, namely societies and economic development. SE has demonstrated the importance of the topic and of this new approach from the point of view of market opportunities that may arise at the expense of environmental protection, due to existing market failures such as market inefficiencies, externalities, monopolies and government regulations that endanger the environment and may well be an opportunity to change the market and find new areas of activity through :

- Developing new, greener products and services;
- Improving business efficiency;
- New marketing methods and positioning of companies;
- Reconfiguration of new business models and practices;

1.2. The Fundamentals of Sustainable Entrepreneurship

1.2.1. Individual Level Factors

The field of SE is researched globally, with a particular focus on developed and developing countries, establishing the importance of a cause-focused entrepreneur for good implementation of sustainable practices in companies (Jamali, 2007), (Paradas, 2007).

The entrepreneur's profile, training, experiences and ideologies directly affect the entrepreneur's perception of the world and the market where they operate, as well as their ability to manage the businesses they coordinate. In the case of sustainable entrepreneurs, they show sensitivity to sustainable management and a great concern for environmental protection. Moreover, they are the first to identify SD opportunities and act to implement them before the competition since this proactivity generates profits and creates value for the company, also ensuring financial viability that allows investment in ecological actions in the company (Shapiro, 2002) (Longo, et al., 2005).

These types of entrepreneurs are agents of change who prefer long-term sustainability to short-term profit and are constantly challenging paradigms to do more with less (Egri & Herman, 2000), (Dees, 2001). In what concerns the entrepreneur's personality and more intrinsic characteristics, the entrepreneur presents a high level of affiliation and power, a high level of achievement and high intelligence and emotional maturity (Egri & Herman, 2000). Additionally, they are persistent, not overcome by any obstacle and adapt easily to new situations and circumstances (Dess, et al., 2003).

1.2.2. Organizational Level Factors

The establishment of SE requires the application and adoption of Managerial Sustainable Practices (MSP), which implies the existence of control and monitoring systems, reporting procedures and maintenance of sustainable activities. These types of activities constitute a formal process of adoption and promotion of SD in companies, which are not always at the same level or have the same type of resources to adopt these sustainability strategies. SMEs end up being disadvantaged in the implementation of these systems, according to Jenkins (2004) since this formalisation and hierarchisation goes against their

nature, which presents a weak formalisation of its management practices, often based on experience and intuition rather than on rational terms and empirical data (Lima, 2010).

Moreover, SMEs often exercise these sustainable practices and Corporate Social Responsibility (CSR) without knowing that they are doing so. Recent studies show that smaller SMEs are starting to implement more formal regimes of management practices, especially in processes of globalisation and internationalisation and in quality norms and standards (Messeghem, 2003).

Since the implementation of sustainable management and green practices follows a similar process to quality standards, it opens up an easier path to the diffusion and implementation of SE in SMEs that were facing more difficulties. They are of particular interest for this branch and for the development of innovations and more sustainable products, since they represent the vast majority of the business fabric in all developed and developing countries, so they are the economic engine of nations and markets, being directly involved in the process of SE and the objectives of SD.

Paradoxically to large companies, which already have their processes well defined and hold a large market share, these, due to much fiercer competition in the market and little expressiveness in it, try to diversify and differentiate through these processes and new trends always trying to solve market gaps to acquire and dominate new ecological market niches and new customers more aware of the environmental paradigm and the urgent need to reduce the ecological footprint.

The implementation of SE in companies is directly related to high levels of EO, given that entering the areas of sustainability is a proactive decision that often entails risks in being a pioneer, as the market and institutional organizations do not yet have an SD orientation (Quairel & Auberger, 2005). In turn, proactive companies promote and present high levels of innovation that are directly linked to the adoption and integration of sustainable practices in SMEs (Larson, 2000). In terms of Risk-Taking, companies that engage in SE strategies present higher levels of risk, since the investments are quite high and with low short-term returns compared to the sustainable development objectives they are predisposed to in the long term.

The SD market, despite having evolved a lot in the last decades, is still in a development phase and is based on small niches and emerging segments especially located in developed countries, which despite their consumers having strong convictions on social and environmental issues, are still reluctant to convert these into effective purchases and adoption of products from production based on sustainable practices, as the products are often more expensive compared to those produced in the "traditional" process (Peattie, 2001).

1.2.3. Contextual Level Factors

The context surrounding a company's environment directly affects its performance, stability and growth over time. It plays an extremely important role and may jeopardise the company's entire performance if it is unfavourable at certain moments. Several authors such as Paturel (2007) argue that *"The overall implementation of the entrepreneur's project will happen only if the context is favourable"*. The context is a central actor in strategic and organisational decision-making. It assumes several dimensions, from sociocultural, demographic, macro and microeconomic, among others. Companies whose context is favourable to expansionist economic policies based on the business fabric and focused on SD will have a more accelerated and sustained development process compared to countries that do not adopt this type of strategy.

The level of confidence of the population in the policies adopted by the state will also determine the role of the company in these policies. Companies may have a passive role in adopting measures just to comply with legal requirements or adopt a proactive stance and proliferation of SD and ecological measures because the market seeks this in companies and to obtain competitive advantages (Rice, 2006).

On the other hand, subsidies to promote sustainable practices may lead to opportunistic practices by companies when there is no demand and interest from consumers. Stricter laws and higher consumer standards and expectations challenge companies and entrepreneurs to adopt responsible attitudes and corporate social responsibility practices. In the environmental context, a country's integration in blocks such as the European Union may condition the context of companies in the face of this reality.

To establish a common working model and the adoption of sustainable practices and EC models at the scale of the EU member countries, several instruments were created, such as the Circular Economy Package and the Green Action Plan for SMEs. These documents were the first strategy adopted by the European Commission to help and guide the process of adoption and implementation of sustainable practices through the EC.

The Circular Economy Package

The way the EU handles its waste and manages the resources at its disposal has been the subject of constant study and revision to increase its efficiency and consequently reduce the ecological footprint of the union as a block (European Commission, 2010). In December 2015, the Commission published *The Circular Economy Package* which sought to implement a course of action through measures covering the entire life cycle of resources, from production, consumption and waste management, as well as the market for secondary raw materials. The actions described in the package support and strengthened the CE at each stage of the production process and each step of the value chain, namely from production to consumption, repair, remanufacturing, waste management and secondary raw materials that will be reintegrated into the cycle again (Hughes R. , 2017).

Green Action Plan for SMEs

To include SMEs in the transition to a sustainable world the *Green Action Plan (GAP) for SMEs* was developed by the European Commission in 2014. Together with the *Circular Economy Package*, it enables SMEs to turn environmental challenges into business opportunities and competitive advantages. The Green Action Plan is based on two structural documents before its publication, the *Europe 2020 strategy* (which sets out objectives for the EU to become a sustainable economy) and *The Small Business Act* (which states that the EU should help SMEs to seize the opportunities of the new sustainable economic paradigm) (Rizos, et al., 2015). The GAP results in a set of environmental protection measures and actions that are grouped into 5 basic areas, namely:

- Greening SMEs for more competitiveness and sustainability
- Green entrepreneurship for the companies of the future
- Opportunities for SMEs in a greener value chain

- Access to the market for green SMEs
- Governance

Through this program, it is intended to increase the allocation of resources and their efficient use in the various sectors that make up the business fabric of the EU member states since currently there is still a wide disparity regarding the adoption and support for the implementation of green measures. With the standardization of strategies throughout the EU, it will be possible to create and increase the competitive advantage of SMEs (Rizos, et al., 2015).

Based on the legal context that companies must comply with to protect the environment it was gathered in table 34 (presented in the Appendix II) a set of European regulations that were consequently transposed to the national legal framework, as well as national and international quality-standards related to the wood and forestry sector, one of the sectors that contribute most to environmental degradation and which faces a challenging period of adaptation and change of practices.

2 Ecopreneurship

2.1 Concept

Ecopreneurship, results from the combination of the words *Ecological* (Eco) + *Entrepreneurship* and comprises all those entrepreneurial activities that look at the market through an "*environmental lens*", i.e. all those entrepreneurial activities that are less oriented towards the management of technical systems or procedures and more towards the personal initiative, convictions and beliefs of the entrepreneur or the team (Schaper, 2010). Ecopreneurship has its roots in the mid-1970s, when the greening of management began to be studied, through a pioneering article published by the *Harvard Business Review* which argued that the Ecology movement was responsible for creating new markets for expanding businesses, rather than adopting the traditional, economic method (Quinn, 1971).

At the beginning of the 90s, several authors such as (Blue, 1989), (Bennett, 1991), (Berle, 1991) and deepened the study of this area, having materialized for the first time the Ecopreneurship terminology, a concept derived from several terms such as *environmental*

entrepreneur and *green entrepreneur*. The concept has been the subject of constant analysis by several authors, among which it is highlighted studies promoted by (Isaak, 1998), (Taylor & Walley, 2002), (Cohen & Winn, 2007), (Dean & McMullen , 2007).

2.2 Ecopreneur's Characteristics

Becoming an ecopreneur is an existentialist commitment in which the entrepreneur knows he or she will never reach the ideal but that very ideal of sustainability gives meaning to everything the ecopreneur does upon the earth (Isaak, 1998). Ecopreneurs are entrepreneurs with a very pronounced aspect and concern for sustainability and environmental protection. Paradoxically to ordinary entrepreneurs, ecopreneurs' main objective is, through their business, to promote a significant improvement in the environment and protect terrestrial ecosystems, through the creation of a sustainable business model with added value. They have the potential to play a key role in developing a more sustainable economic and trading system. According to Schaper (2010) an ecopreneur can be characterised as a person who undertakes green business to radically transform the economic sector in which they operate.

These are countercultural or social entrepreneurs who want to make a social statement and not just money. They, through the creation of their projects and companies, benefit from free publicity of their company and the cause they defend, as well as an extra motivation compared to ordinary businessmen or entrepreneurs since they employ their ecological values and purposes as a flag and the only way of acting of their companies. Although there are no blueprints or standards that characterise ecopreneurs (they come in different forms, personalities and many different business areas), to be successful they need certain conditions, namely:

- Access to a business management and consultancy support platform, which may be of private or public origin;
- Existence of a sustainable market niche;
- Access to suitable Human Resources;
- Access to capital to finance the creation of sustainable projects with a reduced ecological footprint;
- Leadership vision and motivation of individuals and teams that make up the project.

Based on the concept of creative destruction, presented by (Schumpeter, 1934), an ecopreneur can be considered a perfect example since it breaks with conventional production methods, products, processes, market structures and consumption patterns. He changes them for more sustainable products and services with higher quality and a smaller ecological footprint. Table 2 shows a summary of the characteristics and actions that differentiate an entrepreneur from an ecopreneur and allows for consolidation of the analysis carried out previously.

Table 2 - Comparison between an Entrepreneur and Ecopreneur

Entrepreneur	Ecopreneur
Makes living by risking other's people money (investors, crowdfunding) and resources	Makes living by fighting for environmental causes and invents through accidental experimentation
Aims to get things as cheap as possible to make business grow	Saves money and promotes efficient processes in an environmentally responsible way
Free-rider motivation - enables his business to survive a bit longer	Gets free advertising and his business survives in the long term by being identified with a worthy social cause from the media and consumers

Source : Own composition based on (Schaper, 2010)

2.3 Green companies and Green-green companies

According to Schaltegger (2002) companies are the main agents of change in economies and societies for considerable environmental progress. They, through their products and processes, adopt more sustainable practices, the mass markets on domestic or international markets will follow their example and adopt small gestures in their routines that will also promote sustainable development. To Isaak (2002) some companies want to become sustainable and change their products and processes to be more ecological, paradoxically, some businesses were born ecological from the start and were designed to minimize in all their actions the company's ecological footprint. Given the above (Isaak, 2002) distinguished two types of business categories concerning Ecopreneurship: Green Companies and Green-Green Companies:

Green Companies - Conventional companies that are already implemented in the market, with well-defined processes and products recognised and accepted by the public.

They discover through R&D that making their processes environmentally friendly allows them to cut costs and increase their awareness among consumers.

Furthermore, it allows them to explore new market niches, both in the domestic and international markets, since certain countries are very conscious of these environmental trends and there is a high demand from their consumers. By orienting their production towards more sustainable processes and by modifying their products, these green companies manage to increase their sales and markets. These businesses generally move towards SD for economic and strategic reasons rather than for ethical or environmental concerns.

Green-Green Companies - Businesses created from scratch with the main objective of promoting SD. For this in their genesis, start-ups and new businesses plan all processes, products and areas of operation to be the least harmful to the environment. These have social and ethical purposes in the first place, rather than the pursuit of economic profit as the path to company growth.

In addition, these companies aim to be a driver for change in their market and industry, generally being an agent of good practice associated with greener and more efficient innovations and manufacturing processes. For the market and industry, they are a model of SD to be followed. Generally, these companies, due to their innovative and differentiated character, achieve rapid internationalisation.

3 Sustainable Development Business Models

The adoption of SD practices has brought to companies around the world new challenges and opportunities for the development of new business models, however, it is still far from being commonly accepted and applied, since it is usually associated with risky activities and with little financial return in the short term. There is still a preconception among company managers that the transition to a sustainable business model will undermine and reduce their competitiveness against their competitors (Nidumolu, et al., 2009).

One of the main fears of companies in developed countries when accepting the transition to greener value chains and products is loss of competitiveness against companies in developing countries, which have lower product sales costs because they are not concerned with environmental regulations, the origin of raw materials and their supply and production chain. Sustainability has already begun to bring about changes in the competitive environment, forcing companies to rethink the way they act about their products, technologies, processes and business models aimed at balancing environmental protection and obtaining economic profit (Teixeira, et al., 2016).

The adoption of circular practices paves the way for the creation of sustainable business practices and allows for an improvement in the quality management systems of companies (Barros, et al., 2021). Additionally, innovation is one of the drivers of progress and development of companies, especially in adverse situations, economic crises or in scenarios of instability such as the post-COVID-19 era and the current war between Ukraine and Russia. The early movers companies, when betting on innovation and facing sustainability as a strategic goal, will develop new competencies and competitive advantages that their competitors will not follow, so they will stand out in the markets and prepare for a more promising future since environmental sustainability will always be an integral part of the development (Nidumolu, et al., 2009).

According to studies developed by (Nidumolu, et al., 2009) companies embarking on this path generally face five levels of development, as shown in Table 3.

Table 3 - Stages to become Sustainable

Stage	Description
1 st	Viewing Compliance as an Opportunity
2 nd	Making Value Chains Sustainable
3 rd	Designing Sustainable Products and Services
4 th	Developing New Business Models
5 th	Creating Next – Practice Platforms

Source: Own composition based on (Nidumolu, et al., 2009)

1st Stage: Viewing Compliance as an Opportunity

The first step towards the adoption of a sustainability strategy is to comply with the existing standards and laws in the markets where companies operate. Thus, they embark on sustainable practices to comply with existing legal standards and gain access to more profitable production practices or even the allocation of subsidies or tax benefits provided by governments and institutions.

Additionally, by complying with the applied standards they can operate in several markets and reach more eco-friendly and environmentally conscious market niches. Each market presents a set of distinct norms and regulations, becoming a barrier for many SMEs that cannot adapt their processes to such requirements. In addition to the imposed governmental and institutional norms, companies at the first level of transition also tend to comply with the legislation of environmental entities or protocols created by sectorial organizations such as the *Greenhouse Gas Protocol* or the Forest Stewardship Council Code.

These types of legislation sometimes tend to be more restrictive than certain national laws but are more uniformly applied in international trade (Nidumolu, et al., 2009). Many companies are reluctant in the voluntary application of these regulations, so they delay until they are obliged to comply with such standards.

However, companies that are considered early movers can explore innovations and markets with more time and less competition to operate, gaining a competitive advantage and the opportunity to improve their processes and technologies. When companies choose to comply with the minimum standards required by law, they are limited in their competitiveness in the international arena, as they have to adapt and manage their components, product raw materials, production process, and logistics according to the markets in which they are selling due to the different legal and regulatory systems in force (Nidumolu, et al., 2009).

2nd Stage: Making Value Chains Sustainable

Once companies get beyond the first level of compliance with regulations, they will evolve in terms of environmental standards and become proactive in analysing and improving the weaknesses that the company has regarding environmental issues. Moreover, they need to analyse their value chains objectively and critically to list all their inefficiencies and address them. These can be changes in non-renewable raw materials, energy costs in factories, offices, and waste management, among others... In this way, they should work directly with their suppliers to choose the best renewable raw materials and all the components necessary for the production of eco-friendly products that allow for easy recycling and a reduction to the minimum possible of waste (Nidumolu, et al., 2009).

Making sustainable value chains is the first step toward renewing a company's image, opening doors to new markets and niches, as well as demonstrate that the company is concerned about CSR and aims to deliver higher quality products to consumers. Moreover, by taking this kind of initiative, companies will end up reducing their cost chain, since they are not only reducing the waste generated in the production process but also avoiding raw materials and components acquisition costs. In situations of crisis or scarcity of components in the market, promoting price increases, as happened during the COVID-19 pandemic and currently in the war crisis between Russia and Ukraine, reusing materials and making the value and supply chains more self-sufficient allows companies to save and grow economically.

All components and stages of the value and supply chain are central to the achievement of this second level, and their agents have a fundamental and added value in reducing the ecological footprint of products or services. Only the direct articulation between companies, suppliers and customers can improve the quality of products and contribute to this much-needed transition.

A practical example of it is the case of *Unilever* and *Cargill*, which, aware of the concerns of environmental deforestation and its impact on the environment, allocated funds and subsidies to their suppliers, so that they could renew their practices and agricultural systems, making them more sustainable and allowing to maximise production and drastically reduce their environmental footprint (Nidumolu, et al., 2009).

The concern with operational innovations, such as the adoption of renewable energies, should also be privileged in this phase, as they allow companies to decrease expenses such as fossil fuels, increasing the efficiency of companies and reducing their dependence on intermediaries and price fluctuations.

Hybrid or remote working also plays a point of improvement in companies' value chains and has been discussed more recently during and after the COVID-19 pandemic as a consequence of the successive confinements of workers and closure of companies. Many companies have transitioned most of their employees to remote or hybrid work and have identified numerous advantages in this working system, in terms of productivity and in economic and environmental terms, namely the reduction of transportation costs, travel time to work, the amount of CO₂ emissions, as well as costs inherent to office work, such as electricity or water use. Studies prove that remote work up to 3 days a week increases workers' productivity by 10% and employee satisfaction by 20% (Nidumolu, et al., 2009).

The awareness of the role of waste results in a final analysis of the value chain where end-of-life products can be returned to companies and these can use their components to be included again in the production process of new products. Although this circularity of the process is still a recent element for many SMEs, it can be highly profitable and efficient in terms of resource use and cost reduction, adding value for the customer who can easily return and dispose of their products, as well as adding value to the new product itself by being made through more environmentally friendly processes. For this, it is necessary to rethink and adapt the production process of the products as well as the choice of components, an activity that is based on the design of sustainable products, which is the third level of the scale.

3rd Stage: Designing Sustainable Products and Services

Authors such as Barbaritano & Savelli (2021) state that consumers are increasingly informed and concerned about environmental issues, making conscious decisions and choosing brands and products they consume taking into account the environmental aspect and brand policy concerning sustainability, so it becomes imperative to adapt products to this new reality and for this one should rethink the production processes and their design to include renewable raw materials or make the product modular so that later when it is returned or recycled it is easier to separate and reuse. To differentiate themselves from their competitors, the companies that have already implemented the actions should invest at this stage in the innovative design of their product, investing in a differentiating way, both in the raw materials and components of the product and in its design, which should be based on a thought of saving and using resources.

Generally, companies are afraid to investigate which products are less environmentally friendly for fear of losing revenue from their sales. However, the secret is to invest in product innovation and design so that the product becomes more profitable and environmentally friendly. To change the design of products, the company will have to listen and assess thoroughly what the needs of consumers and their concerns are, and then analyse the life cycle of their products. Additionally, they will have to take an original approach and articulate different marketing skills throughout the life cycle while increasing the efficiency of the choice of raw materials and the distribution of products.

The entry into new conservative markets with eco-friendly design products should be integrated with reference institutions such as environmental Non-Governmental Organisations that know the consumers and the communication strategies that best adapt to them to have a favourable initial adoption in that market. The company's communication and public relations team has a preponderant role in the dissemination of these products since a good communication strategy for the company's values and its environmental values is one of the main factors for achieving a high market share in the future (Nidumolu, et al., 2009).

4th Stage: Developing New Business Models

The development of a new business model based on sustainability and environmental protection is far more complex than most companies consider. For them, the creation of new ways of adding and delivering value propositions to customers is the main function and mode of action of a new business model. However, this cannot be based only on the value to be delivered, so it should contemplate new ways of generating revenue and income, as well as collaborative work through the delivery of services with other companies, allowing a greater diversification of services and better efficiency.

Entrepreneurial attitudes such as proactivity or thinking outside the box promote the creation of new business models, exploring new alternatives to the current ways of producing and managing the business. The models in place should be continuously analysed critically and should be recurrently questioned as a means of evolution and improvement (Nidumolu, Prahalad, & Rangaswami, 2009). As companies move forward in new business models and through the experience curve, they will be able to advance to the ultimate level of sustainable innovation where the impact caused by the products and services developed goes beyond a single market and has a global impact.

5th Stage: Creating Next-Practices Platforms

The creation of new practices requires an evaluation of current practices and paradigms and a constant challenge of the same to break with old prejudices and implicit assumptions. Sustainability, being such a general theme, presents a wide range of research and the creation of new platforms and practices. The growing concern with the topic has led to constant research and development, contributing to new advances in the area and reducing the waste of resources. A practical example of the interaction of sustainability with the internet and energy management area, which formed the next practice platform, is according to (Nidumolu, et al., 2009) the creation of the *Smart Grid*, a platform that uses technology to manage, transmit and distribute all types of sources along the consumer demand chain.

This concept allow companies to control the energy level of their devices, optimising the energy used by computers, machinery, telephones and network devices.

In addition, a partnership between companies enable cross-industry platforms to manage the energy needs of companies, buildings, households and cities. The creation of these new platforms does not depend only on the availability of resources and the will of the entrepreneur, but also on the conditions of the environment where the company operates and its productive factors, namely human resources. These increasingly seek to identify themselves with the company where they work and its values, so new platforms associated with sustainability require skilled workers in key areas such as quality management, and environmental engineering, among other skilled professionals who have specific knowledge so that the application of new platforms runs as efficiently and productively as possible.

According to (Nidumolu, et al., 2009) studies show that three-quarters of entry-level workers in the United States were concerned about the values and corporate social responsibility of their employers, so early adoption of environmental values and changing business practices to more sustainable ones is an excellent way to retain motivated and skilled workers and, consequently, to establish and sustain new platforms for new practices.

4 Circular Economy

4.1 Concept

Circular Economy has been the subject of increasing study and literature review, being an object of concern to companies and governments (Brennan, et al., 2015). The concept of CE is very diverse and comprehensive, falling within the scope of SE, as it contributes to economic growth and SD (Zamfir, et al., 2017). CE can be characterised as *A restorative and regenerative industrial economy by design or intention* (Ellen MacArthur Foundation, 2013).

This model is based on a resource balance (Kneese, et al., 2016) on the basis that the circulation and use of matter and energy will reduce the use of new resources and inputs in the product manufacturing process. In recent years, the literature on this topic has developed markedly, due to advances and constant studies by Chinese researchers such as (Yap, 2005), (Geng & Doberstein, 2009), since the country, as one of the world's largest economic powers, has high levels of consumerism and pollution, presenting one of the largest ecological footprints worldwide.

This is reflected in social and environmental terms in the country, being one of the main motivations for the adoption of new practices and models that reflect this need and promote constant improvement and significant advances in the long term. The first studies on CE appeared with Pearce and Turner (1989) who argued that the traditional model based on the studies of (Boulding, 1992) where the economy was an open economic system, based on the "Take, Make & Waste" paradigm, which did not take into account the environmental issues that plague our society, nor the recycling of materials that can enter the manufacturing and consumption processes.

This system showed a lot of waste in the process and excessive expenditure on materials, unnecessarily. Given the above, Pearce and Turner (1989) developed a closed cyclical model where there was no loss of materials and which promoted a balance between economic and sustainable development.

Further studies by Yuan, et al., (2008) reinforced that the basic system of this model resides in the cyclical factor, in the flow of resources and the reuse of raw materials and energy phase by phase through the multiple stages of the process. This model allows researchers and managers to put an end to the notion of the limited lifetime of products, by presenting a new life for them through recycling, reuse and recovery of materials in the manufacturing and consumption processes.

In Figure 3, developed by the European Parliament (2021) a schematic conceptualisation of the studies mentioned can be observed, where a closed cyclical model can be verified that can lead to a reduction in the dependence on natural resources and thus avoid problems for companies such as constant changes in the prices of raw materials that can jeopardise their competitive advantage (Ellen MacArthur Foundation, 2013). A brief characterization of the factors affecting the implementation of Circular Economy can be found in the Appendix III.

Figure 3 - The Circular Economy Model



Source (European Parliament, 2021)

4.2 Approaches to Circular Economy

The adoption of measures that promote the implementation of CE in companies has been uniform throughout the world, such as the *EU Circular Economy Package*, the measures adopted by the U.S. Chamber of Commerce and even the measures imposed by the Chinese government on this issue (Atasu, et al., (2018)).

The implementation of a CE by companies continues to be a fractious issue in their internal environment since companies face several factors that inhibit them, namely:

- i. Lack of access to markets for used products;
- ii. Expensive cost of recycling or refurbishing used products;
- iii. Products are not thought and designed with circularity in mind;
- iv. Customers do not associate value with recycled or refurbished products;

To overcome these barriers, several academics and practitioners have seen in product recovery economics and life cycle asset management the way to better implement CE, as indicated in the study developed by Atasu, et al., (2018). Three strategies for circularity were then described - *Retain Product Ownership (RPO)*; *Product Life Extension (PLE)* and *Design for Recycling (DFR)* - supported also by studies developed by Atasu, et al., (2021).

4.2.1 Retain Product Ownership

This strategy consists of the producer renting or leasing the product instead of selling it to the consumer until the consumer no longer needs it. Once the product's useful life is over, the customer returns it to the producer, who owns the product throughout the process. RPO allows products to be recycled and reconditioned, avoiding the purchase of new raw materials and the poor recycling of products by consumers. This measure can be adopted in a wide range of products, from the most expensive and with higher embedded value to the simplest and of less frequent use.

This strategy encourages companies to invest in after-sales services, to provide agile and effective service to consumers to return products and ensure the conservation status of products so that they can be included in the company's production process again. Although it is a costly investment in the short term, compared with the current system of buying and selling products, RPO in the medium and long term will reduce operating costs for companies and recover the investment made (Atasu, et al., 2018).

The leasing strategy encourages the creation of a steady flow of products back for refurbishment and can prevent (through scalable leasing programmes) competition from third-party resellers through full control of assets. In addition, it can reduce turnaround logistics and refurbishment costs by ensuring companies retain the residual value of outboard products and making products significantly cheaper for customers (Atasu, et al., 2018). Dumas, & Van Wassenhove (2021) describe in their study practical examples of success such as the case of the company *Xerox* that leased its printers and photocopiers to client companies instead of promoting the single purchase of its products.

A practical example of RPO to implement could be the Office and Coworking renting Programs, a new business model where a company, through an office furniture renting contract, may implement fully functional workspaces for the assembly of call-centers or open-offices, where, through this renting service, furniture may be renewed on a cyclical basis, promoting spaces and work environments always modern, easily complying with the regulatory standards of the countries (ergonomics of the products such as chairs and lift desks, as well as acoustics of the materials of the furniture) and creating motivating and pleasant work spaces for the workers, without having to spend enormous financial resources for the

creation of these spaces, or waste resources and raw material when renewing the office furniture periodically.

4.2.2 Product Life Extension

Increasing the lifespan of products, through their composition and design, is one of the ways to apply circularity. Companies that promote long-lasting products pave the way for new markets for used products. PLE allows increasing the time spectrum of products, substantially reducing the purchase of components over time, thus avoiding the waste of resources and raw materials.

Paradoxically, it will inversely decrease the sales of component manufacturers who will have to adapt to this new challenge that PLE brings (Atasu, et al., 2018). Durability is the key word in this strategy and will allow companies to gain a competitive advantage over their competitors who do not adopt it, as they will be able to implement a high-quality positioning imposing a premium price to consumers who will recognise the added value of the products. Dumas & Van Wassenhove (2021) use the example of the clothing brand *Patagonia* or the luxury-home appliances producer *Miele* as reference brands that have invested in product quality and in increasing the life cycle of products to stand out in the market where they operate and as examples of good practices in terms of sustainable development.

4.2.3 Design for Recycling

Companies opting for this strategy should redesign their products and production processes to optimise the recoverability of the materials included in the manufacture of new products. To this end, it is essential to look for business partners who have cutting-edge technology or expertise to produce these same resources in the most efficient way possible.

Through the articulation between companies and the pooling of synergies, it is possible to optimise production processes and reduce the environmental impact. A case study was presented in the research of Dumas & Van Wassenhove (2021) who described the partnership between the company *Adidas* and *Parley for the Oceans* where the latter company provides *Adidas* with plastic it collects from the oceans and *Adidas* includes these necessary resources

in its trainers' production, avoiding buying plastic for the production of the trainers and consequently eliminating plastics from the seabed and the increasingly frequent rubbish islands.

Another option that could be included in this strategy is modularity, i.e. designing products through modules where it is easy to identify the components to be replaced, in case of need, instead of replacing the whole product. In this way, it becomes easier and affordable for the producer to recycle and recondition the products, since it will only replace a component in bad condition. Additionally, recycling or reconditioning a product can be very expensive for the company, so modularity allows for lowering these costs and reducing the disassembling time of the products (Atasu, et al., 2018).

Modularity allows also for better logistics in the packaging and transport of goods, through efficient storage and transport in containers, the frequency of shipments can be reduced and the number of goods dispatched per container can be increased. These measures reduce the frequency of scheduled transports producing less CO₂ emission gases and avoiding maritime pollution in the case of sea or inland waterway transport. In general, companies that cannot adapt their reality to the CE choose to initially adopt some of these measures as a way to initiate circularity, being unlikely to implement all three simultaneously according to Atasu, et al., (2018). A good strategy and implementation of these measures will allow the adoption of the CE to scale up.

C - SMEs & INTERNATIONALIZATION

With the increasing globalisation and opening of economies and global markets, the role of SMEs¹ in the economic growth of developed countries is becoming unquestionable. The analysis of Internationalization strategy involves the analysis of the SMEs´ and internationalization strategy (1.) the Transnational Management theory (2.) and, finally, an analysis of the furniture sector worldwide(3.) and specifically the Portuguese furniture sector case (4.).

1 SMEs & Internationalization

1.1. SMEs´ Motivations for Internationalization

Internationalization enhances organic growth, increases competitiveness and creates conditions for the long-term sustainability of enterprises (AICEP,2013).

The world is currently witnessing very challenging times for the international business of SMEs, facing fast-changing global developments that have created great and complex challenges for the management of organisations. They result in a panoply of limitless opportunities for companies to grow and evolve, but they have to be seized and recognised. The internationalisation of companies is a complex process that must be carried out safely and gradually, so as not to jeopardise their viability and financial liquidity. There are numerous motivations for companies to internationalize, namely:

Need to secure key supplies - to guarantee the existence of raw materials of the best quality and at the best price. Additionally, it plays a key role in the search for international suppliers with better production practices and that provide SMEs with high-quality raw materials and reduced environmental footprint. The diversification of suppliers and intermediaries allows the creation of more international and efficient supply and value chains promoting the creation of more productive and ecological products and processes (Bartlett & Beamish, 2018).

¹ See definition of SMEs on Appendix IV

Market-seeking behaviour – is directly associated with companies that have intrinsic advantages (related to their technology and Brand Recognition) that give them competitive advantages in offshore markets. The initial steps of these companies are associated with opportunistic acts that begin with an unexpected export request.

By internationalising SMEs achieve additional sales and large-scale markets, obtaining economies of scale and scope that would not be possible in the domestic market alone. Many companies, the so-called green-green companies, due to their competitive advantage of sustainability and its associated values can easily internationalise and be proactive in seeking new markets and consumers, who easily adopt their products and processes because they are sustainable and efficient with a small ecological footprint compared to competing companies operating in the same markets (Bartlett & Beamish, 2018).

Access to low-cost factors of production - Since the 1960s, when powers such as the US and Europe began to lower tariffs and barriers, companies have begun to diversify their markets and suppliers to reduce production costs through lower labour costs. By diversifying production locations or the origin of production factors, companies can become more competitive in their market and obtain a higher profit margin.

1.2. Internationalization processes of SMEs

The internationalisation of SMEs is a complex process with numerous variables that, in general, is rarely well outlined and consolidated before entering in foreign markets. Additionally, these processes are usually a mixture of rational analyses, opportunism and some thoughtless attitudes. Despite the above and the subjective nature of the companies, it is possible to highlight some common patterns of corporate behaviour by mentioning two models: *the Learning Process* and *the Investment or Acquisition of local Partners*.

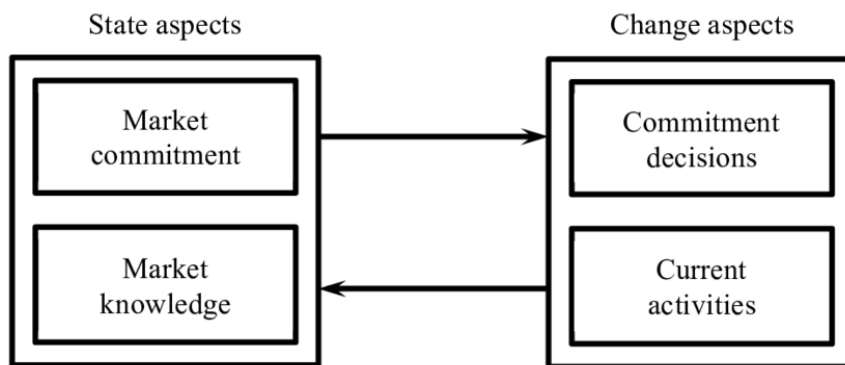
1.2.1. Learning Process

The learning process is a model designed by two Swedish academics based on the Uppsala studies which stated that entering international markets was a continuous learning process. This process is characterised by an initial commitment of resources by the firm in international markets and through this commitment, it acquires local market knowledge about

customers, competitors and regulatory conditions (Bartlett & Beamish, 2018). Through this market knowledge, the company starts to redefine its activities, commitment level and market opportunities, to evaluate the need or not for reinvestment in the market.

Subsequently, with increased experience and knowledge of the market, companies can evolve to the acquisition of a local distributor or supplier in the foreign market, allowing an evolution in market knowledge through direct contact. Along this gradual process, several investment cycles are carried out allowing the company to gain local capability and market knowledge to become a significant competitor in the foreign market. Figure 4 represents the model developed by Johanson & Vahlne (1977).

Figure 4 - Internationalization process of a firm



Source: (Johanson & Vahlne, 1977)

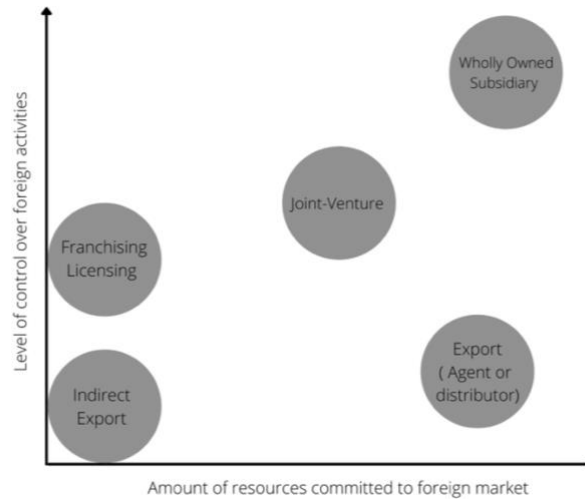
1.2.2. Investment and Acquisition of Local Partners

Although many companies internationalise through the incremental model based on the Uppsala model, others prefer to skip some steps in the internationalisation process and gain market knowledge by acquiring or investing in a local foreign partner.

This type of approach requires a greater commitment at an early stage through an investment of higher monetary amounts than the previous process. The acquisition of market knowledge involves the acquisition of local partners who have direct knowledge of the business environment (Bartlett & Beamish, 2018). This process needs a specific and coordinated control of the company in several areas such as the international market in question, control of international operations and control of entry timings and cultural and social issues of the market. In this approach, there are several forms of entry (present in figure

5) which must be highlighted: *Indirect Export, Export, Franchising or Licensing, Joint Venture, or the highest level of commitment to the Wholly Owned Subsidiary.*

Figure 5 - Models of Internationalization



Source: Own composition based on (Johanson & Vahlne, 1977)

1.3. SMEs' Limitations on Internationalization

SMEs, given their size and characteristics, namely the competitive market they face, present several limitations and barriers to internationalisation that large companies, given their scale and economic power, do not suffer daily. A study promoted by the European Commission (2010) identified numerous factors that influence the decision-making and internationalisation of SMEs:

- i. International activity and age of the SME - the older a company is, the more internationalised it will be;
- ii. Price of products;
- iii. Internationalization costs;
- iv. Lack of funding and information;
- v. Lack of state support and subsidies;
- vi. SMEs that use e-commerce are more active internationally;
- vii. Most SMEs start their international activity through imports;
- viii. The smaller the country, the larger the number of internationalised companies;

- ix. Larger companies have a higher degree of internationalisation than smaller ones;

2 Transnational Strategy

The internationalisation of companies has undergone a long evolution over the centuries, with distinct strategies in force and evolving over time. Literature can highlight four visions of internationalisation - *International, Multinational, Global and Transnational* (Bartlett & Beamish, 2018) - that result from this evolutionary process and that still today characterise companies and their operational or management processes.

The choice of a particular strategy over time has considered the volatile characteristics of the business environment and of the company itself, focusing on the transnational strategy, which argues that *a company to achieve global competitive advantage must simultaneously balance and combine its costs and revenues without neglecting the importance of efficiency and innovation* (which can come from any level of the organization) (Bartlett & Beamish, 2018).

The current international context is very competitive and challenging and companies need to become more active and responsive to local needs while promoting efficient operations on a global scale. A company, especially an SME designed and organised with an international mindset and motivation is always looking for a global scanning and learning capability. Additionally, a company that operates across borders and performs its sourcing and sales to foreign markets is better able to choose diverse and best raw material suppliers and gets the best alternatives at the lowest cost and with the highest quality in foreign markets all over the world. On the other hand, a company operating in international markets is up to date with new market technologies and consumer needs, promoting the development of product innovations and greater selectivity in the choice of products in sourcing operations.

The increasing exposure of SMEs to foreign markets and the growing importance of sales, procurement and profits derived from these international sources have gradually convinced managers that international activities can bring profitable business opportunities beyond their marginal significance. In view of the above, transnational strategy encourages companies to exploit each and every goal-means combination to develop layers of competitive

advantage through values such as efficiency, flexibility and learning (Bartlett & Beamish, 2018).

Moreover, transnational companies develop sophisticated and differentiated configurations of assets and skills, which in order to better promote efficiency and better manage costs and revenues, should choose and evaluate which fundamental resources must be centralized in the company's country of origin, given its originality, significance or whether it is a core activity of the company or not. These key differentiating factors of the company should remain in the country of origin due to better management control and security of the resources (e.g., innovations resulting from the R&D process). Other resources whose significance or importance for the company's activity is lower do not need to be centralized in the country of origin of the organization, but can be located in any external market, which is often referred to as an ex-centralization process.

For example, the production of raw materials and labour-intensive products may be centralized in countries where labour is cheaper, production costs are lower and production efficiency is higher, as it happens in several developing countries like India or Bangladesh. Paradoxically, when companies feel the need for more developed components and with greater technical competence, which they cannot achieve in their country of origin, they can centralize production in markets where innovation and research in the area are more advanced (such as Japan or Germany) and may obtain the best quality-price relationship, making imports or sourcing the best way to achieve a balance between costs and income.

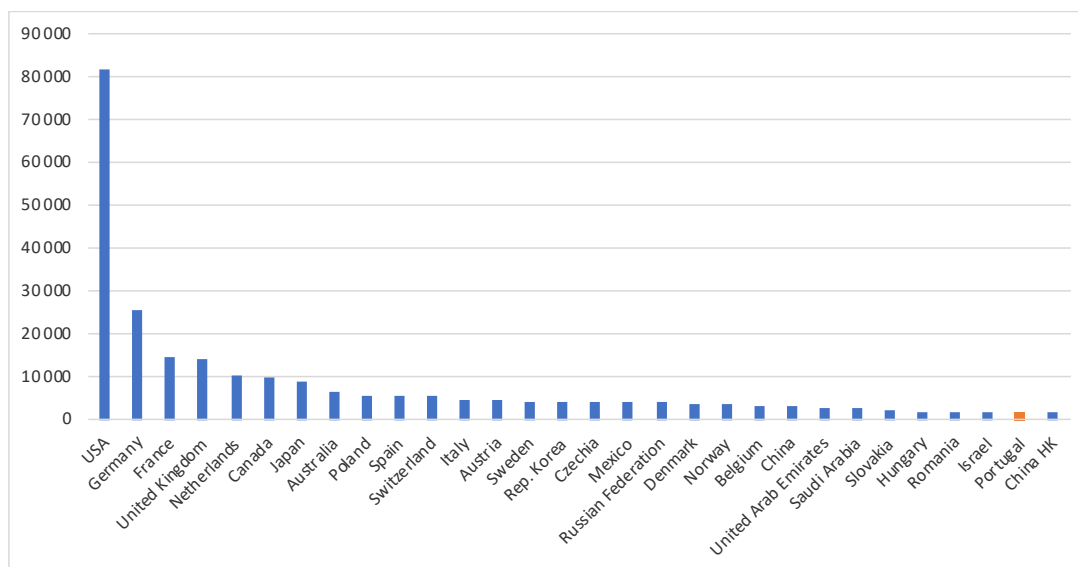
Flexibility is fundamental in a transnational strategy, allowing companies to choose several markets and articulate their supply and value chains between them, combining similar production units in different countries depending on the existence or not of economies of scale in that market. Additionally, the flexibility strategy allows the diversification of markets which avoids several problems, namely exchange rate flows between markets, strikes, adverse weather conditions (such as fires, floods, and hurricanes) which are quite recurrent and above all reduce costs and logistics operations managing closely and efficiently the cost structure. This strategy is an effective vision for the internationalization of companies that promotes efficiency and cost reduction and meets the strategy of SD (Bartlett & Beamish, 2018).

3 Furniture Sector Trade

The furniture industry is well recognized and prominent internationally, being one of the main industries in terms of Environmental responsibility, due to the problems associated with the extraction of its raw materials (deforestation) and the relevant role it has in promoting SD, through innovation and renewal of the sector to become less polluting. Internationally, these products are classified in terms of the Harmonized System with Code 94 - *Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified or included; illuminated signs, illuminated name-plates and the like; prefabricated buildings* (UN COMTRADE, 2022).

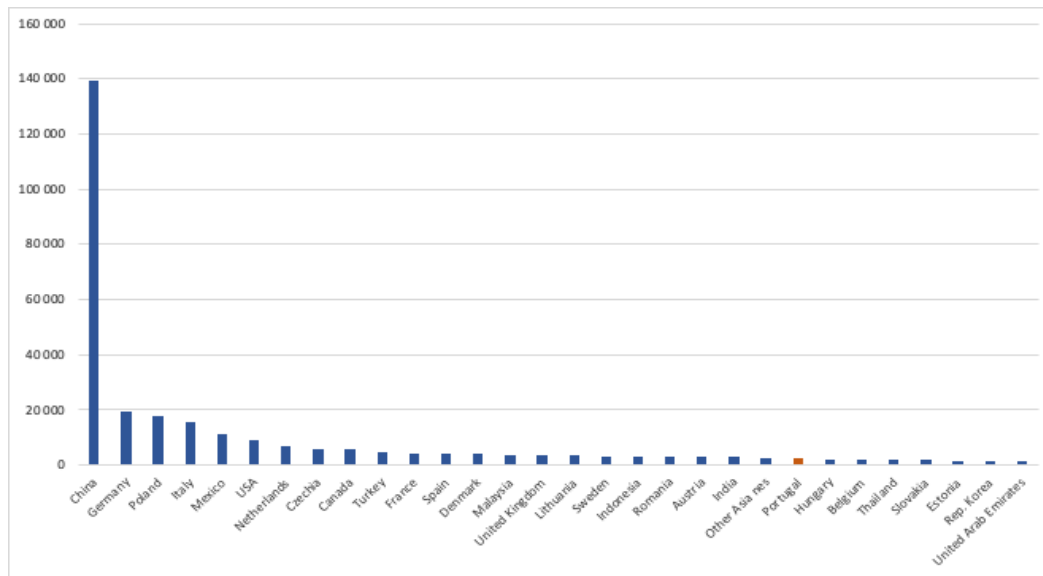
In 2021, the sector at the global level showed a positive trade balance of \$36 696 766 151. Exports worldwide were led by China (with a 45% market share) and Germany (6.6%), and imports were led by the United States of America (29%), followed by Germany (9.9%). Figures 6 and 7 show the distribution of the 30 largest importers and exporters worldwide and their respective market shares.

Figure 6 - Top 30 Furniture Exporters Worldwide



Source: Own Composition based on (UN COMTRADE, 2022)

Figure 7- Top 30 Furniture Importers Worldwide



Source: Own Composition based on (UN COMTRADE, 2022)

The Portuguese furniture sector is present in the top 30 of international exports and imports, occupying the 25th position, representing 0.74% of world exports. Regarding imports, Portugal is in the 29th position, representing 0.56% of world imports. In Appendix V you can find the complete tables with the largest importers and exporters worldwide.

4 Portuguese Furniture Sector

4.1 Characterization and Evolution

The wood industry, more specifically the Portuguese furniture sector, is already quite old, with a long tradition in the art of woodworking and a working style of the craftsmen unique, which despite having developed and followed trends over time, has always maintained a very specific and distinctive record. Although it has been inspired by some European trends and styles, it has always maintained a more robust style, focusing on more compact woods and materials and very elaborate ornamentation, according to Ernesto Veiga de Oliveira and Fernando Galhano, two very prestigious researchers versed in the areas of architecture and furniture (General Directorate of Economic Activities, 2017).

The Portuguese furniture industry uses wood for the manufacture of almost all its furniture, since it is an excellent material for its manufacture, as it has extremely valuable mechanical characteristics, such as malleability, resistance to rotting, density and ductility, easing the work of the craftsmen who work the material (General Directorate of Economic Activities, 2017).

The sector, despite being quite traditional, had to reinvent and innovate in recent years, given the constant globalisation and increased demand for international markets, which promoted updating and constant investment in innovation. Given the above, there was a gradual change in production methods, where the role of the craftsman, in some cases, became played by machines and workers, leading to a change in manufacturing options and assembly lines. Priority was given to mass-produced goods, allowing profit maximisation using economies of scale and learning curves. In this way, the industry's technical capacity has kept up with trends and consumer demand, adopting the trend of local production with national raw materials and exclusive design, thus adding value to the pieces produced.

In global terms, the furniture industry is quite fragmented, a phenomenon that does not occur in Portugal, where the industry is concentrated almost entirely in the northern region of the country (General Directorate of Economic Activities, 2017). This factor led to the creation of a Furniture cluster in Portugal that brings together several entities, to boost companies in the sector. The main entities involved in the promotion of the cluster across the years were (Abrantes, 1995):

- i. AIMMP - Associação das Indústrias de Madeira e Mobiliário de Portugal;
- ii. APIMA - Associação Portuguesa das Indústrias de Mobiliário e Afins;
- iii. CTIMM – Centro Tecnológico para a Indústria da Madeira e do Mobiliário;
- iv. CFPIMM – Centro de Formação Profissional das Indústrias da Madeira e Mobiliário;
- v. AEPF – Associação Empresarial de Paços de Ferreira;
- vi. ASEP – Associação Empresarial de Paredes;

The constant investment in innovation, training and qualification of the sector's human resources has allowed companies to increase their competitive advantage in international markets over recent years, where Portuguese furniture has begun to be associated with

characteristics such as quality, excellence, innovation and design. This positioning is partly responsible for the cluster's joint communication strategy and its presence at the sector's main world fairs.

4.2 Characterization of the Business Fabric

The Furniture industry, represented by the classification of Economic Activities Code (ECA) (Rev.3) ECA 310 and 47, includes the manufacture of furniture and mattresses, highlighting the following subclasses:

- 31010- Manufacture of office and shop furniture;
- 31020- Manufacture of kitchen furniture;
- 31030- Manufacture of mattresses;
- 31091- Manufacture of other furniture (wood, metal, other materials and finishes).
- 47591 - Retail sale of furniture and lighting equipment in specialized shops;
- 47781 - Retail sale of machinery and other office equipment in specialized shops.

Table 4 shows the distribution of the number of companies in the sector (%) according to their ECA.

Table 4 - Distribution of number of companies by ECA (%)

Code of Economic Activities	Distribution of the N° of Companies
Manufacture of office and shop furniture	3%
Manufacture of kitchen furniture	13%
Manufacture of mattresses	1%
Manufacture of other furniture (Wood, metal, other materials and finishes).	83%

Source: Adapted from (General Directorate of Economic Activities, 2017)

The furniture and mattresses industry are one of the most prominent sectors of the Portuguese business fabric, being composed according to data from 2021 by 4413 (PORDATA, 2022) companies in the form of a sole proprietorship, limited liability or another legal form.

This sector employed in 2021 about 34 222 workers with a fairly marked dispersion in terms of the national territory, existing a pole or cluster of this industry in northern mainland Portugal, especially in the geographical areas of *Paços de Ferreira, Felgueiras and Paredes*.

The northern region is the most responsible for employment in the sector, employing a total of 22 025 workers which represents 64% of the employment rate of the furniture and mattresses sector. This sector is mainly composed of SMEs, as shown in table 5, with a growing trend for new players to enter the sector, which has made it more dynamic and increased its quality and positioning in the domestic and international markets.

Table 5 - Companies distribution (%) according to the size of company in 2020

Size of Company	% of the sector
Micro and Small Enterprises	95,9%
Medium Enterprises	3,5%
Large Enterprises	0,5%

Source : Adapted from (Nunes, 2020)

On average each company in the sector is composed of 13 workers with an investment rate of 13.7% in 2020. The average payment term of this industry is 88 days and of receivables 85 days, triggering a ratio of financial autonomy in the order of 41.7%. This industry has an annual turnover in 2020 of €1830 million and a global value-added of €636 million. Table 6 shows the ten largest companies in the furniture sector in Portugal in 2016.

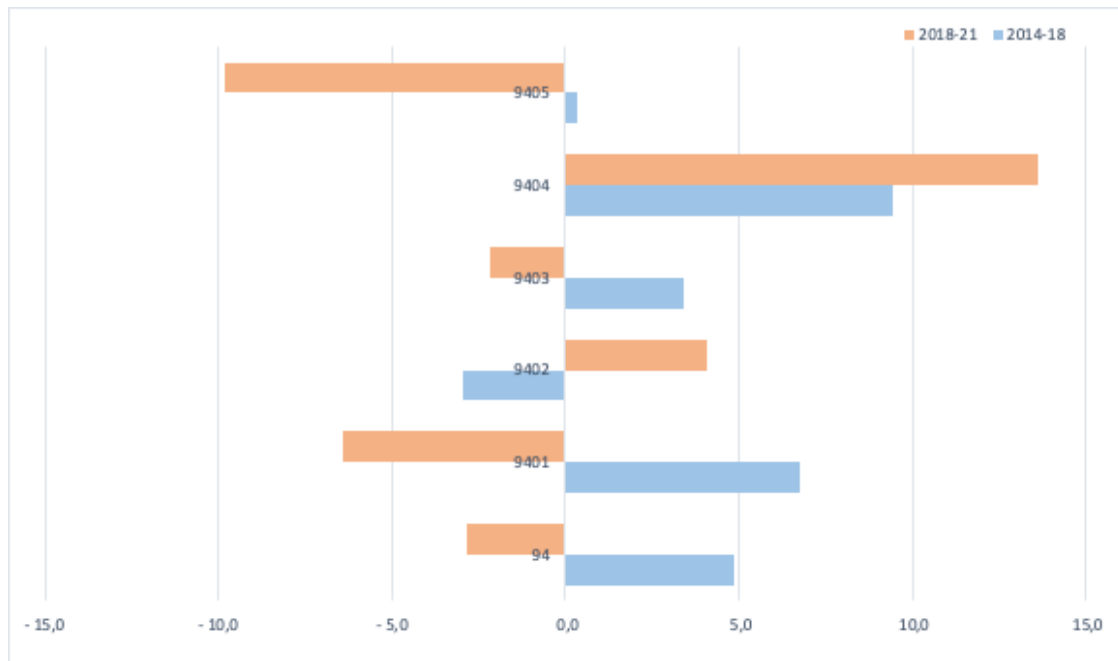
Table 6 - Ranking of the top ten furniture companies in Portugal, 2016

Ranking Position	Company
1	IKEA Industry Portugal, S.A.
2	Aquinos, S.A.
3	J.J. Louro Pereira, S.A.
4	Novaqui – Equipamentos e Mobiliário de Conforto, S.A.
5	Haworth Portugal – Mobiliário de Escritório, S.A.
6	Molaflex – Colchões, S.A.
7	Lusocolchão, S.A.
8	VVV – Soluções para Hotelaria, S.A.
9	Iberoperfil – Perfis Postformados, S.A.
10	Movecho, S.A.

Source: Adapted from (General Directorate of Economic Activities, 2017)

The period from 2014 to 2018 was a period of growth for the sector worldwide, with Portugal following this growth trend, as can be seen in figure 8. The period from 2018 to 2021 was marked by negative growth rates, resulting from the pandemic period faced where markets practically closed the activity and the degree of exports decreased drastically. Associated with this are the long periods of confinement and teleworking, which in this branch is practically impossible given the nature of the same and being a manual and manufacturing craft leading companies to close and adopt layoff measures.

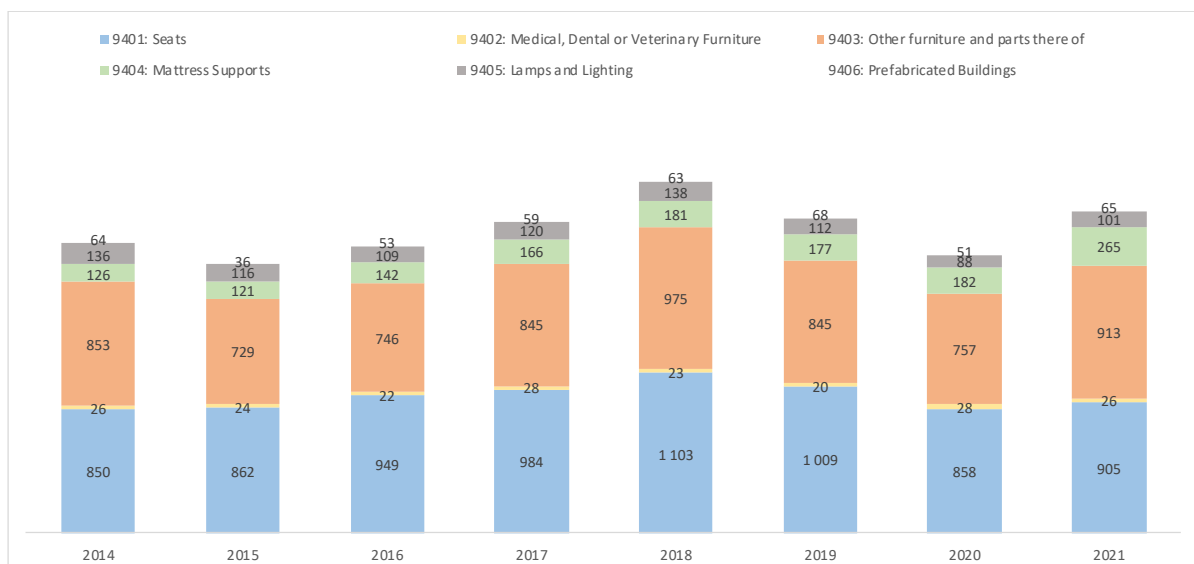
Figure 8 - Evolution of growth rate of the sector between 2014 and 2021



Source: Own Composition based on (UN COMTRADE, 2022)

In figure 9 we can see an analysis of the sector balance trade between 2014 and 2021 denoting that the strongest areas within furniture are the seats and other type of furniture where office furniture is included. In 2021 the sectors with the highest post-pandemic growth were Mattresses and supports and other furniture.

Figure 9 - Balance trade between 2014 and 2021



Source: Own Composition based on (UN COMTRADE, 2022)

4.3 Exports and Imports

The furniture sector has been growing steadily and solidly over the last few years. 2019 marks the best year for this sector, reaching a record export figure of €1840 million, representing 2% of Portuguese exports that year. The last decade was one of particular development and focus on innovation and positioning of the sector in international markets, resulting in better export performance.

Indicators such as Export Intensity prove such efforts, having increased 17 percentage points between 2010 and 2017, going from 35.93% to 51.68%, highlighting that the sector's production is oriented almost equally to the domestic and foreign markets. About the sector's coverage rate, it increased by about 30 percentage points between 2010 and 2019, from 154% to 184% (Nunes, 2020). Figure 10 shows the main export markets for the Portuguese furniture sector in 2021.

Figure 10 - Main export markets for the Portuguese furniture sector in 2021

	Export Value (US\$)	%	% Acum	Import Value(US\$)	%	% Acum	Exp/ C.Imp (%)
	2 274 815 705	100,0		278 538 418 358	100,0		
1 France	779 759 701	34,3	34,3	14 742 431 371	5,3	5,3	5,3
2 Spain	581 402 242	25,6	59,8	5 551 098 032	2,0	7,3	10,5
3 Germany	124 457 080	5,5	65,3	25 607 497 686	9,2	16,5	0,5
4 USA	118 437 355	5,2	70,5	81 386 654 542	29,2	45,7	0,1
5 United Kingdom	105 054 170	4,6	75,1	14 173 062 287	5,1	50,8	0,7
6 Slovakia	74 606 673	3,3	78,4	2 175 063 071	0,8	51,6	3,4
7 Netherlands	48 178 382	2,1	80,5	10 229 922 559	3,7	55,2	0,5
8 Poland	39 842 859	1,8	82,3	5 707 858 357	2,0	57,3	0,7
9 Angola	36 538 973	1,6	83,9	116 861 794	0,0	57,3	31,3
10 Switzerland	34 214 845	1,5	85,4	5 325 920 481	1,9	59,2	0,6
11 Belgium	32 382 199	1,4	86,8	3 223 668 482	1,2	60,4	1,0
12 Czechia	26 634 964	1,2	88,0	4 057 954 489	1,5	61,9	0,7
13 Italy	26 631 881	1,2	89,2	4 713 326 307	1,7	63,6	0,6
14 Sweden	24 544 146	1,1	90,2	4 308 127 991	1,5	65,1	0,6
15 Canada	16 932 433	0,7	91,0	9 903 752 496	3,6	68,7	0,2
16 Russian Federation	13 020 795	0,6	91,6	3 886 075 178	1,4	70,0	0,3
17 Saudi Arabia	11 534 469	0,5	92,1	2 651 057 673	1,0	71,0	0,4
18 United Arab Emirates	10 998 099	0,5	92,5	2 712 049 996	1,0	72,0	0,4
19 Israel	9 127 275	0,4	92,9	1 597 236 000	0,6	72,5	0,6
20 Mozambique	8 745 971	0,4	93,3	91 768 810	0,0	72,6	9,5
21 Luxembourg	8 521 313	0,4	93,7	455 729 918	0,2	72,7	1,9
22 Mexico	8 209 898	0,4	94,1	4 053 974 376	1,5	74,2	0,2
23 Cabo Verde	7 289 989	0,3	94,4	n.a.		74,2	n.a.
24 Morocco	7 031 531	0,3	94,7	615 185 406	0,2	74,4	1,1
25 Qatar	6 186 429	0,3	95,0	845 322 817	0,3	74,7	0,7
sub-total 1-25	2 160 283 672	95,0		208 131 600 119	74,7		1,0
sub-total 26-167	114 532 033	5,0	100,0	70 406 818 239	25,3	100,0	0,2

Source: Own Composition based on (UN COMTRADE, 2022)

Figure ten shows that the sector's main export markets are European and intra-Community, with France being the main export market with a 34.3% share in 2021. It can be observed that the sector was responsible for 5.3% of total furniture imports by France, being a very relevant market for the national economy.

The USA has in the last few years strengthened its position as an export market and the sector has considerably increased its sales, currently representing 5.2% of total Portuguese exports. In terms of imports, the Portuguese sector represents 0,1% of North American furniture imports. The total exports of the Portuguese sector were in 2021 US\$ 2 274 815 705 with 95% of exports concentrated in only 25 markets. There is a margin for the sector to diversify more in the markets in order to not be dependent of strong markets and indicating equally, according to figure 10, that in several markets the Portuguese furniture import quota has a margin to grow as for example Saudi Arabia.

Figure 11 - Main import markets for the Portuguese furniture sector in 2021

	WLD	Import Value (US\$)	%	% Acum	Export Country Value(US\$)	%	% Acum	Import PT % Exp
		1 551 051 527	100,0		307 242 554 577	100,0		
1 Spain	ESP	654 862 767	42,2	42,2	4 340 071 734	1,4	1,4	15,1
2 China	CHN	177 423 251	11,4	53,7	139 481 265 773	45,4	46,8	0,1
3 France	FRA	168 267 732	10,8	64,5	4 358 448 929	1,4	48,2	3,9
4 Germany	DEU	115 333 853	7,4	71,9	19 448 597 004	6,3	54,6	0,6
5 Poland	POL	115 150 312	7,4	79,4	17 641 655 627	5,7	60,3	0,7
6 Italy	ITA	97 065 150	6,3	85,6	15 772 923 629	5,1	65,4	0,6
7 Netherlands	NLD	43 399 179	2,8	88,4	6 672 715 782	2,2	67,6	0,7
8 Belgium	BEL	31 353 914	2,0	90,4	1 881 482 994	0,6	68,2	1,7
9 Hungary	HUN	18 437 521	1,2	91,6	2 129 867 256	0,7	68,9	0,9
10 Romania	ROU	17 225 736	1,1	92,7	2 932 229 078	1,0	69,9	0,6
11 Turkey	TUR	10 541 812	0,7	93,4	4 787 311 411	1,6	71,4	0,2
12 United Kingdom	GBR	8 860 778	0,6	94,0	3 346 857 773	1,1	72,5	0,3
13 Lithuania	LTU	8 108 213	0,5	94,5	3 345 558 353	1,1	73,6	0,2
14 Denmark	DNK	7 956 218	0,5	95,0	3 912 827 655	1,3	74,9	0,2
15 India	IND	6 247 190	0,4	95,4	2 785 512 427	0,9	75,8	0,2
16 Austria	AUT	6 103 084	0,4	95,8	2 847 050 763	0,9	76,7	0,2
17 Czechia	CZE	5 039 936	0,3	96,2	5 812 151 185	1,9	78,6	0,1
18 Slovakia	SVK	4 736 828	0,3	96,5	1 692 457 764	0,6	79,2	0,3
19 VietNam (1)	VNM	4 732 588	0,3	96,8	11 982 026 304	3,9	83,1	0,0
20 Bulgaria	BGR	4 369 962	0,3	97,0	1 037 596 514	0,3	83,4	0,4
21 Ukraine	UKR	4 193 197	0,3	97,3	1 029 120 959	0,3	83,7	0,4
22 Thailand	THA	3 861 728	0,2	97,6	1 826 902 045	0,6	84,3	0,2
23 Sweden	SWE	3 639 676	0,2	97,8	3 097 179 706	1,0	85,3	0,1
24 Croatia	HRV	3 623 485	0,2	98,0	643 953 190	0,2	85,5	0,6
25 Brazil	BRA	3 225 071	0,2	98,2	1 088 578 914	0,4	85,9	0,3
sub-total 1-25		1 523 759 181	98,2	100,0	263 894 342 769	85,9	100,0	0,6
sub-total 26-106		27 292 346	1,8		43 348 211 808	14,1		0,1

Source: Own Composition based on (UN COMTRADE, 2022)

Figure 11 shows the structure of markets where the Portuguese furniture sector imports, highlighting Spain as the main import destination of Portuguese sector with a significant share of 42%, corresponding to more than US\$600 million of imports. Portuguese purchases represent about 15% of Spain's total exports and Portugal is a very important asset for Spain.

Portugal's main import markets are European and intra-Community, similarly to exports, with the exception of the second largest destination of Portuguese imports, China with an import share of 11%, which only represents 0.1% of Chinese exports. Similarly to exports, the structure of imports is concentrated in the first 25 import markets (98%), with room for growth in the other markets. Additionally, the total imports of the Portuguese sector were in 2021 US\$1 551 051 527.

The pandemic period was very challenging for the sector, drastically reducing international business and sales. The sector suffered a 14% drop in international sales in 2020. The first three months of the pandemic resulted in successive falls in exports from the sector by about 32% in March, 75% in April and 52% in May 2020 (Larguesa, 2021).

The sector had to reinvent itself, becoming more flexible, modern and dynamic, both in the design of its products, supply chains, and production, as well as in the image and positioning of Portuguese furniture products and brands in international markets. Attending international fairs and visiting customers became impossible in 2020, leading companies in the sector to modernise their websites and redirect their communication towards new communication channels and new ways of contacting customers.

One of the sector's adaptations was the creation of showrooms and virtual stands that made up for the lack of international fairs (Larguesa, 2021). 2022 will be a particular year for this sector, which will again have to reinvent itself, due to the war conflict between Russia and Ukraine, which will affect the sector directly in terms of supply chains, raw materials, transport costs and because they are two very appealing markets for internationalisation and which were growing.

CHAPTER II- METHODOLOGY, HYPOTHESIS AND RESEARCH MODEL

The methodology followed (1.), the variables under analysis (2.), the main characteristics of the sample and the information collection work (3.), the structure of the survey (4.), the investigation model (5.), the questions (6.) and hypotheses (7.) associated are presented next.

1 Methodological Approach

In the first part of this study, a bibliographical review was conducted that served as the basis for the definition of core concepts and objectives that guided the research and determination of variables and their conceptual model. Concepts such as Entrepreneurial Orientation, Circular Economy, Ecopreneurship and SME's Internationalization were addressed due to their relevance within the scope of this research.

The second part of the paper will present the empirical research carried out, through the observation and treatment of the data collected through the previously defined research orientations. The practice of an empirical study requires, after concluding the literature review, to move on to the empirical study, usually called "*fieldwork*" allowing for a connection and cohesion between theory and practice.

The innovative nature of the study, arising from the application of the topic to the Portuguese furniture sector and its SMEs, means that there is a lack of secondary sources to serve as a basis and information for this study, so it is necessary to resort to primary information to obtain data. These will be obtained through a quantitative and exploratory methodological approach, namely through a questionnaire survey.

This type of methodology was adopted because it allows relationships to be found between the variables and the hypotheses defined in the conceptual research model designed earlier to be tested. In addition, this type of method is usually used when it is intended to measure the opinions, habits and attitudes, reactions and sensations of a target audience through a statistically representative sample (Manzato & Santos, 2018). The measurement instrument defined for this study was the questionnaire survey since there was no manipulation of the variables chosen and all data related to them were obtained at the same time (Bryman

& Cramer, 2011). According to Sousa, Martínez-López, & Coelho (2008), the choice of this instrument is the most appropriate for the study, given the need to question a large number of people and the existence of a problem of representativeness. This will be aimed at top managers of Portuguese Furniture SMEs responsible for strategic decision-making in the company and who have promoted sustainable strategies, in particular the CE and deeply involved in the internationalization process.

The option to study and analyse SMEs companies was based on the importance they play in the Portuguese business fabric and because, in general, they are a driving force of the economy and innovative, being more willing and open to the search for new market trends and especially environmental issues. Moreover, they have more difficulty in internationalizing due to their lack of financial and human resources, or due to their fragility in the market, being more susceptible to internal and external shocks, defining an excellent object of study (Jarillo, 1989), (Knight, 2000), (Amal, Miranda, & Filho, 2008).

2 Measurement of Variables

2.1 Entrepreneurial Orientation

The implementation and pursuit of EO values and practices in a company requires a considerable investment of resources (Covin & Slevin, 1991), be they financial, time investment and openness of all involved in the process so that change and progress can effectively occur. Thus, it is beneficial for companies to assess the possible impact of EO on sustained company performance in the long term or whether it will only have an impact in the short term (Wiklund, 2006).

To evaluate the concept of EO, the studies of Covin & Slevin (1989) were the basis for the elaboration of the core of all the questions. Based on the studies carried out by Miller (1983) Three variables were identified, namely: *Innovativeness*, *Proactiveness* and *Risk-Taking*. These three variables were chosen for this study, in line with the literature review carried out in the theoretical analysis, which confirms that these are the most usual ones to be studied in empirical research. The scale used was the one developed by Covin & Slevin (1989) which is based on nine response items, 3 for each variable identified previously, using a Likert scale from 1 to 5, where 1 means " *Totally disagree*" and 5 " *Totally agree*".

To meet the research theme (Environmental Sustainability Strategy) new concepts were added to the response items previously studied by (Covin & Slevin, 1989). The studies of (Asadi, et al., 2020) and (Chen Y. , 2008) have contributed to this, allowing the introduction of the variables of concepts such as sustainable models, circular model, among others...

2.1.1 Innovativeness

Table 7 - Innovativeness measurement scale

Authors	Variable
(Covin & Slevin, 1989) (Asadi, et al., 2020) (Chen Y. , 2008)	INOVI1 – In general, SME managers value and invest in R&D, technological leadership and sustainable innovation.
	INOVI2 - In the last five years the company has launched new products based on the circular model.
	INOVI3 - In the last five years, in general, sustainable changes in the production line have been quite significant.

Source : Own elaboration

Note: All variables were considered

2.1.2 Proactiveness

Table 8 - Proactiveness measurement scale

Authors	Variable
(Covin & Slevin, 1989) (Asadi, et al., 2020) (Chen Y. , 2008)	PROA1 - The SME has introduced changes in the market to which competitors have reacted.
	PROA2 - In relation to competition, SMEs are the first to introduce new sustainable models, management techniques, operating technologies...
	PROA3 - The company actively seeks to have competitors exit the market.

Source : Own elaboration

The variable PROA3 was excluded from the questionnaire, since in Portugal there is no aggressive competition policy as a rule, which might had induced respondents to answer randomly and bias the results obtained.

2.1.3 Risk-Taking

Table 9 - Risk-Taking measurement scale

Author	Variable
(Covin & Slevin, 1989) (Asadi, et al., 2020) (Chen Y. , 2008)	RISK1 - In general, SME managers have a strong preference for high-risk and sustainability-promoting projects (with very high but uncertain profitability possibilities).
	RISK2 - In general, SME managers believe that given the nature of the market, bold actions and high impact are required to achieve objectives.

	RISK3 - The SME, when faced with making decisions involving uncertainty, adopts a bold and aggressive stance in order to exploit potential opportunities to the maximum.
--	---

Source : Own elaboration

All variables were considered

Note: It should be noted that this variable presents a similar behaviour to the variables mentioned above, whereby the higher the value on the Likert scale, the greater the risk propensity of the manager. This indicator should not be confused with risk aversion, which would force an opposite reading of the scale.

2.2 Environmental Strategy

The research of Sustainable Development Strategy (SDS) was based on the studies promoted by (Zeng, et al., 2017) that intended to assess the motivations and main challenges to the application of Circular Economy systems in the Chinese industrial system. The authors used a 5-level Likert scale where 1 was "Not at all important" and 5 "Very important". In the present study, to verify which ones were effectively applied in the Portuguese furniture sector reality, it was decided to use the checkbox methodology, where respondents could choose which variables/ factors would apply to their reality/priority. The variables used to assess the SDS were the following:

Table 10 - Variables for Motivations towards SDS and CE practices

Author	Motivations towards SDS and CE practices
(Zeng, et al.,2017)	Reduction of the environmental impact of manufacturing processes
	Reduction of risks related to dependence on raw materials
	Gaining a competitive advantage compared to competitors
	Greater possibilities in order to obtain public funding
	Reduction of the total amount of costs, thus enhancing efficiency
	Improve people and workers' health conditions
	Increasing total amount of sales, especially among consumers aware of sustainability and related issues

Source : Own elaboration based on (Zeng, Shi, & Lou, 2017)

Table 11 - Variables for Enabling factors for implementing SDS and CE practices

Author	Enabling factors for implementing SDS and CE practices
(Zeng, et al., 2017)	Fiscal and economic incentives for investments in R&D
	Efficient differentiated waste collection system
	Possible use of artificial intelligence systems in production/distribution processes
	Adequate degree of awareness about environmental issues among consumers

Source : Own elaboration based on (Zeng, Shi, & Lou, 2017)

In order to monitor the level/path that companies were following concerning the implementation of a SDS, a multiple-choice question was used based on (Nidumolu, et al., 2009), as shown in Table 12.

Table 12 - Measurement Scale - Stages for implementing SDS and CE practices

Author	Stages for implementing SDS and CE practices
Nidumolu, et al., 2009	Level 1 - The company complies with the imposed environmental standards and regulations, using them as an opportunity for innovation.
	Level 2 - The company seeks to increase efficiency through changes in the value chain.
	Level 3 - The company seeks to become environmentally friendly and as such redefines the designs and composition of its products to become more sustainable.
	Level 4 - The company develops new business models from the circular economy in order to deliver value and differentiate itself from its competitors.
	Level 5 - The company creates new sustainability-related platforms aimed at creating sustainable products, developing new, more efficient technologies and customer and supplier relationships based on efficient resource management.

Source : Own elaboration based on Nidumolu et al., (2009)

2.3 Internationalization Strategy

The internationalization variable was measured through the turnover of the company's exports and imports in relation to its total turnover. Given the importance of these indicators in international activity and as a mean of obtaining profit and competitive advantage (Bartlett & Beamish, 2018), it was decided to adopt this measurement variable, which can be added together given the similarity of the data, giving rise to a variable $X+M$ that represents the total volume of invoicing of international activity in the company's turnover. To assess this indicator, it was decided to use the checkbox strategy due to the limitation of the software used, Google Forms, which by default built this type of table with checkboxes instead of single-answer multiple-choice questions for import and export.

Table 13 - Measurement Scale – International activity – X+M

Author	% of turnover	Imports (M)	Exports (X)
(Bartlett & Beamish, 2018)	Less than 5%	M1	X1
	Between 5% and 25%	M2	X2
	Between 26% and 50%	M3	X3
	Between 51% and 75%	M4	X4
	More than 75%	M5	X5

Source : Own elaboration based on (Bartlett & Beamish, 2018)

3 Population, sample and data collection

This study was based on the Portuguese furniture sector, one of the most dynamic and which contributes the most to the Portuguese trade balance. Associated with this factor, is its CSR towards sustainability since it is one of the industries that consume more natural resources and where it is more urgent to apply measures to reduce the ecological footprint and the waste of resources. The sample of this study based on SMEs of the furniture sector, both in the production and in the commercial side, having focused on SMEs managers of the branches of activity mentioned previously on chapter C of the thesis, according to the classification ECA rev.3 To obtain the contacts, a search was conducted in the SABI database introducing the aforementioned ECA codes as a data selection criterion, obtaining a total of 11436 contacts primarily eligible for this study.

After that, a selection of viable contacts for the study was carried out, eliminating all the companies that were no longer in business or did not have contact forms. In the end, the representative sample of the study was around 10846 companies. SMEs were contacted via email where the study in question was presented, the questionnaire to be answered through a link to the *Google Forms* platform.

In the email sent, the confidentiality of all data entered by the companies was ensured, as well as it was stated that if they so wished, at the end of the study all data obtained and its conclusions would be sent to the companies as a complement to the information available to the sector. To cover the maximum spectrum of companies and to ensure a significant response rate, help was requested from various business associations in the sector so that they could divulge the questionnaire to their associates.

The business associations contacted included:

- AIDA - Câmara de Comércio e Indústria de Aveiro;
- AIMMP – Associação das Indústrias da Madeira e do Mobiliário de Portugal;
- AEPF – Associação Empresarial de Paços de Ferreira;
- APIMA – Associação Portuguesa das Indústrias de Mobiliário e Afins;
- ASEP – Associação Empresarial de Paredes;
- CFPIMM- Centro de Formação Profissional das Indústrias da Madeira e Mobiliário.

The questionnaire was made available to companies between 20th June 2022 and 10th September 2022 with a total of 107 responses resulting in a response rate of $\approx 1\%$.

4 Structure of the Questionnaire

The questionnaire survey (see Appendix VI) consists of 4 parts which were based on the main concepts of this study namely:

- Part 1 - Company's characterization
- Part 2 - Entrepreneurial Orientation
- Part 3 - Sustainable Development Strategy
- Part 4 - Internationalization Strategy

The questionnaire in its entirety is composed of around 33 questions of a mostly closed nature through multiple-choice answers, selection or through answers with Likert scales of 5 levels. The non-mandatory open answers were related to the identification of the companies' import or export markets, where they should insert the three markets with the greatest influence on their respective imports and exports. The first part of the questionnaire characterise the target company based on the following variables: region of the country where the company's head office is located, postal-code, legal form, ECA, company size, year of foundation, strategic planning and sustainable development strategy.

The second part intends to identify the profile of the company's manager and its position in the market through the variables of Entrepreneurial Orientation, Innovativeness, Proactiveness and Risk-Taking. The 3rd part comprises the study of the company's sustainable development activity, integrating issues related to its strategic vision and issues oriented towards the implementation of circular economy programs and/or adaptation to sustainable development policies.

The last part concerns the company's internationalisation strategy, intending to assess its level of internationalisation, its context and the positioning of consumers in the face of new sustainable development trends and demand for more environmentally conscious products/services.

5 Research Model

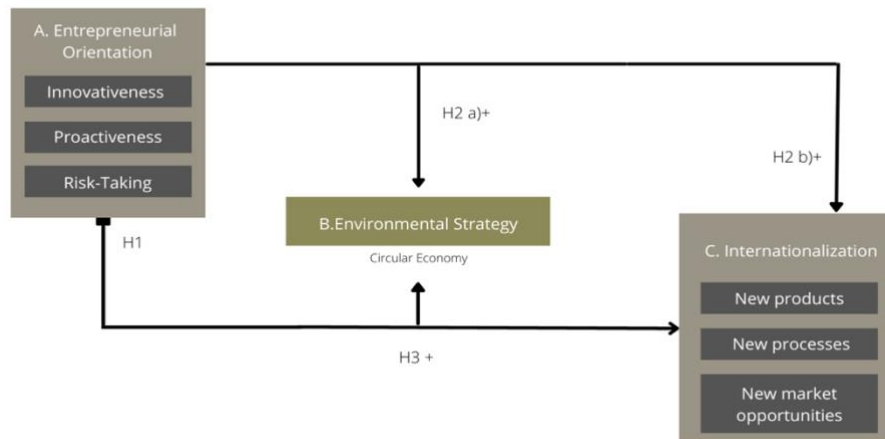
The construction of a research model consists of outlining a plan of action and thought translated through language and forms, allowing the systematic work of analysis and collection of observed or experienced data, according to Campenhoudt, et al., (2019).

The main objective of this study is to identify the role of the EO in the implementation of an adaptation plan to the Environmental Sustainability Strategy by SMEs. Subsequently, it is intended to study the impact of Environmental Sustainability Strategies on the internationalisation strategy of SMEs. The specific objectives were translated into the following:

- Assess the general level of Entrepreneurial Orientation of managers and their sensitivity/knowledge about adaptation plans to Environmental Sustainability Strategy /Circular Economy in SMEs.
- Observe the relationship between the adoption of an Environmental Sustainability Strategy /Circular Economy and the performance of SMEs in internationalisation.
- Evaluate the role of Entrepreneurial Orientation in the internationalization of SMEs.

Bearing in mind the objective and the literature review performed and its concepts, the present conceptual model represented in figure 12 was defined.

Figure 12 - Research Model



Source: Own Composition

6 Research Questions

A research question is a narrow, challenging question addressing an issue, problem, or controversy that is answered with a conclusion based on the analysis and interpretation of evidence (Lipowski, 2008). After a clear definition of the concepts to be addressed, through the analysis of studies on the subject and reflection by the most notable authors, the following research questions were defined:

Table 14 - Research Questions

Hyp.	Research Question	Authors
H1	Does the Entrepreneurial Orientation construct is validated and applicable to the SMEs companies of Portuguese furniture sector	(Lumpkin & Dess, 1996) ; (Chang & Chen, 2013); (Liu, et al.,2016); (Leonidou, et al. ,2017); (Das & Rangarajan, 2020); (Guo, et al., 2020); (Guo & Wang, 2022); (Wach, Maciejewsk, & Glodowska, 2022)
H2 a)	How does Entrepreneurial Orientation affect the implementation of an Environmental Sustainability strategy on SMEs?	
H2 b)	How does Entrepreneurial Orientation influence the internationalization strategy on SMEs?	
H3	How does EO and Environmental Sustainability Strategy influence in the international performance on SMEs?	(Ellen MacArthur Foundation, 2013); (Rizos et.al.,2015); (Hamaguchi & Fujita, 2016); (Paduraru, et al., 2016); (Chen, et al.,2017); (Barbaritano & Savelli, 2021)

Source : Own elaboration

7 Research Hypothesis

Currently, environmental issues have put the world under threat regarding ecological aspects and economic growth (Leonidou, et al., 2017). Climate change is an issue in the decisions of governments and nations around the world, which have been united and have been striving to adopt SD measures and promote environmentally friendly strategies and processes in business fabrics to become more competitive and greener (Das & Rangarajan, 2020), (Liu, et al., 2016). Business managers need to be predisposed and have the vision and boldness to adopt SDS that lead SMEs to be more competitive in domestic and international markets.

EO (through its components *Innovativeness, Proactiveness and Risk-Taking*) plays a key role in how managers define the organization and management of their companies facing scenarios such as internationalization and sustainable development. Several authors such as Zahra & Dennis (2000) argue that EO is a key factor in gaining competitive advantage and success in both domestic and international markets. Guo, et al. (2020) argue that EO, applied to SD, allows companies to discover new business opportunities combining economic profit and environmental protection.

Innovativeness plays a vital role in the development of new products with more environmentally friendly resources. Additionally, it improves company and brand positioning in the marketplace by conveying a greener image, and product diversity and in the long-term increases market share and profitability. It focuses on the continuous improvement of production processes, on the implementation of new practices, new business models and systems such as the CE and the improvement of the company's efficiency and the resources used, as well as on the elimination of error and waste.

The Proactiveness applied to the implementation of the company's SD strategy encourages it to pursue leadership within its market, through the development of new ideas for products or services that the market does not yet have, filling market gaps and anticipating possible actions of its competitors regarding the development of sustainable products (Lumpkin & Dess, 1996), (Woldesenbet, et al., 2011),.

Additionally, a proactive attitude allows companies to deliver to the market products differentiated from all their competition acquiring in this way a competitive advantage (Guo & Wang, 2022). Associated with the two aforementioned components, Risk-Taking plays a vital role in the implementation of sustainable practices since it encourages companies and their managers to embark on sustainable projects with associated risk, even if they are unaware of the practical consequences of adopting such projects and measures.

Risk-Taking leads companies to face risk as a business opportunity capable of generating high profits and allows exploring environmentally friendly projects (Guo & Wang, 2022). The analysis of the construct and its variables will be applied to SMEs in the furniture sector in order to verify the behaviour of Entrepreneurial Orientation applied to their management and for that purpose the following hypothesis will be tested:

H1 : EO construct is validated and applicable SMEs companies of Portuguese furniture sector

Moreover, the adoption of SD practices has brought to companies around the world new challenges and opportunities for the development of new business models, evaluated through the (Nidumolu, et al., 2009) 5 levels Likert-scale model. To sum up, sustainability has already begun to bring about changes in the competitive environment, forcing companies to rethink the way they act about their products, technologies, processes and business models aimed at balancing environmental protection and obtaining economic profit (Teixeira, et al., 2016). For this purpose, the following hypothesis will be tested:

H2: a) EO positively and significantly influences the implementation of a Sustainable Development business model in SMEs

The internationalisation of SMEs has become a crucial point of study for authors in recent years, combining the role of competitiveness and sustainability in firms' internationalisation strategies, in their ways of market entry, new strategies and product adaptation, knowledge enhancement and search for new environmental competitive advantages (Hitt, et al., 2006) , (Gittins & Fink, 2015), (Hamaguchi & Fujita, 2016), (Paduraru, et al., 2016), (Chen, Chang, & Hsu, 2017).

Internationalization is not only a way to increase the organizational competitiveness and financial performance of the company in the long term (Kok, 2007), but it is also a way of innovation and survival in the face of environmental and global challenges that the world and markets have to face (Cerrato & Piva, 2012; Chen, Chang, & Hsu, 2017). This increasingly involves the existence of vital factors such as EO and Innovation capacity (Wach, Maciejewsk, & Glodowska, 2022). Knight (1997) was one of the first authors to correlate EO with the internationalisation strategy of companies, verifying its role in the presence of international settings and diverse cultures. He argued that the three-dimensional construct of EO is the main responsible for the performance and results that the company presents in international markets.

The decision to invest in new international markets and expand the firm's borders and resources internationally into one or more markets involves a high sense of entrepreneurship and EO, as the firm will have to adapt its products and services to the needs and standards of international consumers.

Companies with high standards of EO are predisposed to experiment and take the risk of promoting new ideas and products in markets unknown to them (Wach, Maciejewsk, & Glodowska, 2022). The internationalisation performance of SMEs will be analysed by the weight of imports and exports in terms of annual turnover, using a joint and summed analysis of the two variables. Given the above, this study aims to study the following hypothesis:

H2: b) EO positively and significantly influences the internationalisation of SMEs

Currently, there has been a reorientation of habits and practices at the business level through the adoption of Sustainable Development and Circular Economy measures. National and international consumers are increasingly opting for sustainable products and green business models, pressuring the business sector to this change (Barbaritano & Savelli, 2021).

At the international level, several studies such as the one by Stern et al. (1999) show that there is a positive relationship between consumers' environmental responsibility and their proactive behaviour to achieve it. Niche markets related to sustainability have appeared, highlighting the female gender that is more familiar with this concept and presents a consumer behaviour more oriented towards this reality.

Additionally, millennials are more likely to buy sustainable products and do not mind paying a premium price for them. All these factors have triggered companies to rethink their business models and adopt CE systems, which in itself is a restorative or regenerative economy by intention or design (Ellen MacArthur Foundation, 2013) and which is a very useful tool in the promotion of sustainable development (Ness, 2008).

This adoption of new sustainable strategies has led companies that wish to maintain or increase their competitive advantage in the market to change their production processes in order to make them more sustainable and thus be able to reach these niche and new international markets (Cralis & Vereeck, 2004). To establish and study the direct impact of the adoption of an Environmental Sustainability strategy on SME internationalisation, it is aimed to prove the following hypothesis:

H3: EO and Environmental Sustainability strategy and influence the international performance of SMEs.

CHAPTER III – ANALYSIS AND DISCUSSION OF RESULTS

In this chapter the results obtained are analyzed and discussed(1.), based on reliability tests (2.) produced and the results of multiple regressions developed (3.).

1 Descriptive Analysis

Companies' characterization

After administering the questionnaire and validating the replies obtained, the study sample was set at 107 replies, resulting in a response rate of $\approx 1\%$. Of the 107 companies, 98% are commercial companies and 2% are sole proprietorships and are regionally distributed, mainly in the *Norte* (65%) and *Centro* (23%), keeping with the regional distribution of the sector and the existence of more prominent manufacturing centres in these regions. The geographical distribution can be analysed in greater detail in Table 15 and figures 16-21 (presented in the Appendix VII) .

Table 15 - Geographical Distribution of the Sample

Region	N	Relative %
Norte	70	65%
Centro	25	23%
Lisboa e Vale do Tejo	10	9%
Alentejo	1	1%
Algarve	1	1%
Total	N=107	100%

Source : Own Composition

With regard to the size of the companies in the sample, most of them are small companies (considering the number of workers criterion) (52%) followed by micro-companies (32%), following the trend of the sector and of the Portuguese business fabric. 49% of the surveyed companies were founded more than 25 years ago, with the companies with the longest longevity in the sample having 76 years of activity in the sector.

Of the 107 companies surveyed, 36% fell within the ECA Rev.3 31091 - *Manufacture of wooden furniture for other purposes* and 47591 - *Retail sale of furniture and articles of furniture and lighting fixtures, in specialised shops* (24%). Table 16 represents a more detailed breakdown of companies by ECA.

Table 16 - Distribution of companies by ECA

ECA.Rev3	1 st Option		2 nd Option		3 rd Option	
	N	Rel.%	N	Rel.%	N	Rel.%
3101	10	9%	-----	-----	-----	-----
3102	16	15%	2	2%	-----	-----
3103	2	2%	-----	-----	-----	-----
31020	1	1%	-----	-----	-----	-----
31091	38	36%	6	6%	2	2%
31092	2	2%	-----	-----	-----	-----
31093	6	6%	1	1%	-----	-----
31094	-----	-----	1	1%	-----	-----
36130	-----	-----	1	1%	-----	-----
46470	1	1%	-----	-----	-----	-----
46720	1	1%	-----	-----	-----	-----
47591	26	24%	1	1%	2	2%
47593	3	3%	-----	-----	-----	-----
71110	1	1%	-----	-----	-----	-----

Source : Own Composition

The study assessed the position of companies regarding medium/long-term strategic planning, obtaining a very favourable rate in this indicator where 68% (73/107) of the companies surveyed state that they have a formal strategic plan defined for the medium/long term.

Of the universe of companies with implemented formal strategic planning, 86% of these (table 17) have already started the process of adaptation to the CE and SDS. As far as companies without formal strategic planning are concerned, 35% of these have also started the process of CE implementation, showing a very positive attitude of the sector towards the Sustainability challenges that the world is facing.

Table 17 - Relation between formal Strategic Planning of SMEs and the adaptation process to the CE

PLANEST	N	ECINIC	%ECINIC
0	34	12	0,353
1	73	63	0,863
All Grps	107	75	0,701

Source: Own Composition

Entrepreneurial Orientation

EO is widely used not only in the approach related to entrepreneurship, but also extended to a management style. It constitutes a scientific construct on the basis of which a stable body of knowledge has been developing (Rauch et al, 2004), illustrated by the numerous articles on this topic published in various scientific journals over the last 20 years (*Strategic Management Journal, Management Science, Journal of Management Studies, Academy of Management Journal*, among others), as referred to by some authors (Basso, et al., 2009).

The “entrepreneurial orientation” approach is essentially based on the integration of two 'adaptations' at company level: the three variables of the entrepreneurship phenomenon (proposed by Miller), and the partial re-use of a questionnaire (developed by P. Khandwalla) which made it possible to develop a construct and define a management style described as 'entrepreneurial' (Covin and Slevin, 1989, p. 78, as referred by Olivier Basso, Fayolle, & Bouchard (2009).

In the survey, questions A to H (Part II) led to the definition of the Innovativeness variables - INOV1, INOV2 and INOV3 -, those of Proactiveness - PROA1 and PROA2 - and finally Risk-taking - RISK1, RISK2 and RISK3, for a total of 8 items. Tables 18 to 21 demonstrate the behaviour of the variables belonging to this indicator where it can be seen that all variables have a mean value above 2.5 (mean value of the scale adopted), showing that respondents take entrepreneurial orientation into account and are already aware of its role in the management of companies and their growth process.

Table 18 - Item Statistics

	Average	Standard-deviation	N
INOV1	3,73	0,784	107
INOV2	3,34	1,009	107
INOV3	3,28	0,960	107
PROA1	3,14	0,905	107
PROA2	2,87	0,870	107
RISK2	3,87	0,802	107
RISK1	3,48	0,975	107
RISK3	3,47	0,974	107

Source : Own Composition

Table 19 - EO variables Distribution

Variable	N	1		2		3		4		5		Min	Max
		Fr.	%	Fr.	%	Fr.	%	Fr.	%	Fr.	%		
INOV1	107	----	----	7	7	30	28	55	51	15	14	2	5
INOV2	107	6	6	18	17	23	21	54	50	6	6	1	5
INOV3	107	4	4	20	19	31	29	46	43	6	6	1	5
PROA1	107	4	4	18	17	51	48	27	25	7	7	1	5
PROA2	107	4	4	33	31	46	43	21	20	3	3	1	5
RISK1	107	3	3	2	2	18	17	67	63	17	16	1	5
RISK2	107	3	3	19	18	18	17	58	54	9	8	1	5
RISK3	107	4	4	15	14	25	23	53	50	10	9	1	5

Source: Own Composition

Table 20 - Scale Statistics

Average	Variance	Standard-deviation	No. of items
27,17	23,651	4,863	8

Source : Own Composition

Table 21 - Item-total statistics

	Scale Mean if item is deleted	Scale variance if item deleted	Total item correlation corrected	Squared multiple correlation	Cronbach's alpha if the item is deleted
INOV1	23,44	19,418	0,524	0,374	0,803
INOV2	23,83	17,575	0,598	0,490	0,791
INOV3	23,89	17,667	0,628	0,510	0,787
PROA1	24,03	18,405	0,570	0,422	0,796
PROA2	24,30	20,363	0,323	0,198	0,828
RISK2	23,30	19,249	0,534	0,319	0,801
RISK1	23,69	18,479	0,504	0,581	0,805
RISK3	23,70	17,419	0,649	0,669	0,783

Source : Own Composition

Sustainable Development Strategy

The sector's concern with sustainability is evident, with 70% of the surveyed companies having already started or about to start the process of adaptation to the Circular Economy/Sustainable Development Strategy. These state that the main objectives before the implementation of the adaptation plan to the CE are: *Reduce operational waste* - RESO (47%), *Use resources more efficiently* - EFIC (42%) and 11% *Reduce the carbon footprint of your products* - CARBO.

Table 22 - Relationship between the process of adaptation to the circular economy and its objectives

ECOBJ	N	ECINIC	%ECINIC
EFIC	45	31	0,689
RESO	50	37	0,740
CARBO	12	7	0,583
All Grps	107	75	0,701

Source : Own composition

Observing table 22 it can be concluded that 74% of the companies that have chosen RESO as a CE objective have already started or are in the process of starting the process of adaptation to the CE/SDS.

To reach these objectives, 52% of the surveyed companies believe that the most plausible strategy for the sector will be *Product Life Extension* and 42% opt for *Design for Recycling*, being *Retain Product Ownership* the least eligible strategy (6%) in the opinion of the surveyed entrepreneurs. When questioned about which are the main agents that make companies aware of the adaptation to CE, companies expressively indicated (54%) that *Top Management Orientation* was the main factor in this change, empirically demonstrating the need for a good entrepreneurial orientation as a driving force in the implementation and promotion of sustainable development.

The sequence of factors most referred to by the companies, in order of priority was *Top Management Orientation*, *Proposals from Suppliers regarding raw materials and components e Design and Innovation Process*, with 90% of the companies that opted for this order of agents having already started the CE process (see AppendixVIII).

When asked about the main obstacles/factors hindering the adaptation to CE, companies considered as their first choice (45%) the difficulties inherent to *Materials and components used in the production process* (19%). As the second factor, the *Poor waste collection and treatment system* was highlighted, followed by the factor *Lack of financial and technological resources* (12%).

With regard to the main motivations of entrepreneurs for adapting the CE in their company, the main motivation was the *Reduction of the environmental impact associated with the production process* (59%), demonstrating the sector's concern with environmental issues and its awareness and responsibility as shown in table 23.

Table 23 - Motivations for the implementation of CE in SMEs

Variable	N	1 st Option		2 nd Option		3 rd Option		4 th Option	
		Freq	%	Freq	%	Freq	%	Freq	%
ENVIRONM_IMPACT	107	63	59	---	---	---	---	---	---
RAW_MAT_RISK	107	18	17	15	14	---	---	---	---
COMPET_ADVANTAG	107	11	10	18	17	8	8	1	1
EUROP_PUB_FUNDS	107	2	1	13	12	9	8	3	3
OPERATIONAL_COST	107	7	7	21	20	12	11	6	6
WORKERS_HEALT_C	107	5	5	7	7	22	21	6	6
SALES_SUSTAINABLE	107	1	1	1	1	9	8	18	17

Source: Own Composition

Regarding the factors that would lead the company to invest in SD products and processes, the respondents unanimously (79%) elect that *Fiscal and economic incentives for R&D investments* is the primary factor as can be observed on table 24.

Table 24 - Enabling Factors of CE

Variable	N	1 st Option		2 nd Option		3 rd Option	
		Freq	%	Freq	%	Freq	%
FISCAL_INCENTIVES	107	84	79	1	1	---	---
ARTIFICIAL_INTELIG	107	5	5	3	3	---	---
CONSUM_KNOWLEDG	107	18	16	28	26	1	1

Source: Own Composition

The topic of waste management resulting from the production process is quite relevant and of urgent analysis of the current panorama, so it can be inferred through the sample that the main destination of waste in the sector companies with 38% is the *Collection by third parties with commercial value*, and a first analysis can verify that alternatives such as

Collection by third parties without commercial value (25%) or Landfill (22%) are alternatives quite viable and used by the sector.

This starts to give a new use to the residues of the productive process, avoiding waste and obtaining added or economic value from their sale or reuse. In this field several companies chose the third option - *Use of waste in new products* - showing that, still in a very preliminary manner, the sector is changing its production processes and supply chains to include circularity and thus adapt the design and composition of its products to make them more sustainable.

When questioned about the changes to the production process already implemented by companies, these were quite responsive, listing more than one already implemented change, indicating that the sector is seeing sustainability as a priority issue and has already undertaken various efforts and attitudes to promote sustainable development and adapt to circularity.

Of these changes, the one most implemented by respondents was *Substitution of raw and auxiliary materials by others more environmentally adequate (37%)*. *Efficiency in the use of resources in the manufacturing of products and processes* was the second most identified change, followed by the *Separation of Waste Streams and Replacement of obsolete and energy-intensive equipment*.

In light of the above, we conclude that the current situation of companies in relation to CE is already favourable and already presents some awareness and standards applied for this sustainable transition, demonstrating that the sector as a whole has been investing in sustainable development and in reducing the ecological footprint of its products and services. As far as the level of implementation of the CE or SDS is concerned, most companies (48%) consider themselves to be at Level 3 - *"The company seeks to become environmentally friendly and as such redefines the designs and composition of its products to become more sustainable"*.

Table 25 - Sustainable Development business model distribution

	N	Freq.	%
Level 1 - Viewing Compliance as an Opportunity	107	26	24
Level 2 - Making Value Chains Sustainable	107	23	21
Level 3 - Designing Sustainable Products and Services	107	51	48
Level 4 - Developing New Business Models	107	6	6
Level 5 - Creating Next – Practice Platforms	107	1	1
Min	1		
Max	5		

Source: Own Composition

Table 26 - Relation between CE level and CE implementation

ECNIV	N	ECNIC	%ECNIC
Level 1	26	14	0,538
Level 2	23	15	0,652
Level 3	51	42	0,824
Level 4	6	4	0,667
Level 5	1	0	0,000
All Grps	107	75	0,701

Source: Own Composition

Internationalization strategy

Of the universe of 107 companies that responded to the survey, 51% import raw materials and components, carrying out this activity for an average of 20 years (see table 37 in the Appendix VIII). In what concerns the raw materials import markets, the companies of the sector have primacy for intra-community markets being the main import destination France, followed by Spain and Italy and Germany. In the table 27 it can be observed a summary of the main import markets of Portuguese companies.

Table 27 - Import markets of the sample surveyed

Market	1 st Market	2 nd Market	3 rd Market
	Relative %	Relative %	Relative %
Germany	6%	7%	2%
China	3%	5%	2%
Spain	24%	5%	2%
France	10%	13%	-----
Greece	-----	-----	1%
Italy	7%	7%	5%
Poland	-----	-----	1%
Turkey	-----	1%	-----

Source : Own Composition

Table 28 shows the % of international activity (Imports) in the total turnover of the company in 2021, which shows that 36% of importing companies have a value of imports between 5 and 25% of their total turnover.

Table 28 - Weight of Imports in the turnover of the companies in the sample in 2021

% of turnover	N	Relative %
Doesn't Import	41	38%
Less than 5%	15	14%
Between 5% and 25%	39	36%
Between 26% and 50%	7	7%
Between 51% and 75%	4	4%
More than 75%	1	1%

Source : Own Composition

With regard to export activity, 82% of respondents export their products, with an average start of export activity of 17.5 years. Table 38 presented in the Appendix VIII shows the distribution of companies according to the N° of years of exporting products and services abroad. Similarly, to the import markets, the export markets are led by intra-Community markets, with France, Spain and Germany as the main export destinations. However, in relation to exports, there is a greater diversity of international markets, with growing relevance for the sector with the United States of America or African markets such as Mozambique, Green Cape or South Africa. A more detailed analysis of the markets is presented in Table 29.

Table 29 - Export Markets of the Sample Surveyed

Market	1 st Market	2 nd Market	3 rd Market
	Relative %	Relative %	Relative %
South Africa	-----	1%	-----
Germany	3%	7%	5%
Latin America	-----	-----	1%
Angola	2%	3%	2%
Belgium	3%	1%	2%
Green Cape	1%	1%	1%
China	-----	1%	1%
South Korea	-----	1%	-----
Denmark	-----	-----	1%
Spain	13%	6%	7%
USA	7%	5%	3%
Europe	1%	-----	-----
France	39%	21%	7%
India	-----	1%	-----
Lebanon	-----	-----	1%
Luxembourg	3%	1%	3%

Mexico	-----	1%	-----
Mozambique	-----	2%	-----
Poland	-----	-----	1%
United Kingdom	7%	7%	5%
Czech Republic	1%	1%	-----
Russia	-----	1%	-----
Switzerland	1%	2%	4%

Source : Own Composition

Regarding the internationalization model (table 30) applied by the companies in the sample, the first option is Export in the Buyer's currency (44%), followed by Export in the Seller's currency (35%) and Indirect Export (8%).

Table 30 - Internationalization Model

Model	1 st Option	2 nd Option	3 rd Option
	Relative %	Relative %	Relative %
Direct Export_Buyer´s currency	44%	-----	-----
Direct Export_Seller´s currency	35%	28%	1%
Indirect Export	8%	6%	1%

Source : Own Composition

Table 31 shows the weight of exports in the total turnover of the company in 2021, which shows that 36% of exporting companies have a value of imports between 5 and 25% of their total turnover. Paradoxically to imports which were mostly distributed at this level (5% and 25%), exports present groups of companies with a high % of exports in total turnover, indicating that the sector is very receptive to internationalisation and the search for new markets.

Table 31 - Weight of Exports in the turnover of the companies in the sample in 2021

% of turnover	N	Relative %
Doesn´t Export	12	11%
Less than 5%	14	13%
Between 5% and 25%	39	36%
Between 26% and 50%	27	25%
Between 51% and 75%	2	2%
More than 75%	13	12%

Source : Own Composition

When asked about the influence of internationalisation in the adaptation to the CE and sustainable development strategy, the companies pointed out as the main change the *Change in product concept/design* (47%), also having great expressiveness the *Use of new materials and components* (27%).

The *Change in the production process (greater energy efficiency, water use, among others)* was the second most highlighted factor by the companies, followed by *New product development*. When questioned about the pressure from markets and consumers to change products for more sustainable alternatives, 61% of respondents said they had already felt that pressure, showing that the market itself is increasingly aware and demanding in relation to environmental issues and corporate and social responsibility policies of companies.

To the final question in the questionnaire, regarding end consumer demand and awareness, 35% of respondents agree with the statement "*International consumers are increasingly looking for environmentally friendly products and are more selective in their choice of producers and their ecological footprint*".

2 Reliability Test

In order to verify the reliability and consistency of the variables, the stability and internal consistency was estimated through Cronbach's Alpha (α) indicator. As shown in table 32, the variables have an α value of 0.820, which translates into a Good level of internal consistency of the sample, according to the Cronbach's scale of Acceptability presented in table 33.

Table 32 – Internal consistency test (Cronbach's alpha)

Cronbach's alpha	Cronbach's alpha based on standardised items	No. of items
0,820	0,820	8

Source : Own Composition

Table 33 – Cronbach's Alpha Scale of Acceptability

Cronbach's Alpha	Internal Consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Source: Own Composition based on (Statistics How To, 2022)

3 Multiple Linear Regressions

Entrepreneurial Orientation vs Sustainable Development Strategy

This linear regression of function $Sustainability = f(EO)$ relates and studies the impact of OE – represented by the variables (INOV1, INOV2, INOV3, PROA1, PROA2, RISK1, RISK2, RISK3) – on the sustainability strategy of companies, represented by variable ECNIV2.

Regression Summary for Dependent Variable: ECNIV2

Multiple R	Multiple R ²	Adjusted R ²	F(8,98)	p	Std.Err. of Estimate
0,402434	0,161953	0,093541	2,367319	0,022517	0,901550

	b*	Std.Err. of b*	b	Std.Err. of b	t(98)	p-value
Intercept			0,998324	0,562187	1,77579	0,078872
INOV1	0,024648	0,116899	0,029773	0,141206	0,21085	0,833443
INOV2	0,150499	0,129525	0,141259	0,121573	1,16193	0,248086
INOV3	0,091787	0,132057	0,090584	0,130326	0,69505	0,488667
PROA1	-0,12851	0,121665	-0,1344	0,127242	-1,05626	0,293448
PROA2	-0,10541	0,103234	-0,11477	0,112406	-1,02106	0,30974
RISK2	0,056975	0,11205	0,067277	0,132309	0,50848	0,612258
RISK1	0,254762	0,142815	0,247518	0,138754	1,78386	0,077542
RISK3	0,037555	0,160644	0,036497	0,156119	0,23378	0,815646

Source: Own Composition based on the questionnaire

The regression variables presented an expectable behaviour, showing a positive correlation, unlike the variables PROA1 and PROA2 which paradoxically the expectations of the study and the literature review carried out have a negative correlation.

Sustainable Development Strategy vs Internationalization Strategy

This linear regression model $Internationalization = f(EO; Sustainability)$ aims to combine the variables Entrepreneurial Orientation (INOV1,2,3/PROA1,2/RISK1,2,3), Sustainable Development Strategy (ECNIV2) and Internationalization Strategy (MX_Q). The MX_Q variable resulted from the sum and merger of the two variables concerning the share of imports and exports in the firms' turnover (present in tables 28 and 31). This merger was due to the similarity of the behaviour of the two variables and the values presented by them, thus allowing for a better way of handling and treating the data.

Model 0

Regression Summary for Dependent Variable: MX_Q

Multiple R	Multiple R ²	Adjusted R ²	F(9,97)	p	Std.Err. of Estimate
0,413653	0,171109	0,094202	2,224871	0,02655	1,602066

	b*	Std.Err. of b*	b	Std.Err. of b	t(98)	p-value
Intercept			-0,02813	1,014959	-0,02771	0,977947
INOV1	0,11389	0,116882	0,244556	0,250982	0,974397	0,332283
INOV2	-0,02404	0,130367	-0,04011	0,21752	-0,18439	0,854093
INOV3	0,023338	0,132334	0,040943	0,232161	0,176358	0,860381
PROA1	-0,0615	0,122311	-0,11433	0,227395	-0,5028	0,616248
PROA2	0,010094	0,103743	0,019538	0,200806	0,097296	0,922692
RISK2	0,123497	0,112157	0,259228	0,235424	1,101109	0,273574
RISK1	0,139585	0,145062	0,24108	0,250539	0,962245	0,338319
RISK3	0,061338	0,16063	0,105967	0,277503	0,381861	0,7034
ECNIV2	0,182672	0,100978	0,32473	0,179505	1,809024	0,073545

Source: Own Composition based on the questionnaire

Model 1

Regression Summary for Dependent Variable: MX_Q

Multiple R	Multiple R ²	Adjusted R ²	F(9,97)	p	Std.Err. of Estimate
0,403494	0,162807	0,129976	4,958936	0,001078	1,57011

	b*	Std.Err. of b*	b	Std.Err. of b	t(98)	p-value
Intercept			0,406229	0,881826	0,460667	0,646018
ECNIV2	0,177335	0,09828	0,315242	0,174709	1,804377	0,074123
Inov	0,053715	0,114554	0,039832	0,084948	0,468907	0,640137
Proa	-0,04208	0,105437	-0,04737	0,118698	-0,39912	0,690643
Risk	0,287312	0,111046	0,210743	0,081452	2,587319	0,011082

Source: Own Composition based on the questionnaire

In model 1, the model validated for this study, it was decided, similarly to previous studies and authors, to join the sub-variables and work with the main variable so as to reduce the number of items under study and better articulate the data. Thus the variables INOV1, INOV2, INOV3 gave place to the variable *Inov*, the variables PROA1 and PROA2 were replaced by *Proa* and the variables RISK1, RISK2 and RISK3 were replaced by *Risk*. Similarly, to the previous regressions, the variable *Proa* was the only one that showed a negative correlation deviating from the patterns and readings in the literature.

CONCLUSION

General Conclusions

Taking into consideration the existing literature review and the growing importance of the sustainability theme, the main objective of this work was to study the relationship between Entrepreneurial Orientation and Sustainability Strategy of SMEs as well as to analyse the relationship between Entrepreneurial Orientation and Sustainability Strategy into their internationalization process. The results showed a positive relationship between the variables, so that all the hypotheses put forward and supported in the literature review were proven entirely.

The construct of Entrepreneurial Orientation was validated and positively applied to sector SMEs management, having a good level in the reliability test (Cronbach's alpha = 0.82). The variable Proactiveness showed values below those expected and a behaviour deviated from the other variables and from the statements in the literature review. However, it was decided to keep the variable in the construct, following the theoretical basis and since, there was no significant reduction in the significance of the linear regression after removing the variable.

With regard to Sustainability and its strategy by the companies, it was evident that the vast majority (70%) of companies have already started or are in the process of the transition and adaptation to the Circular Economy and SD, having as main objectives the reduction of the carbon footprint, reduction of operational waste and a more efficient management of resources. The strategy preferred by the sample for the implementation of a SD model is the product life extension, showing that it may be the strategy that will bring the least changes in the production process and as such will be the first path to the development of a sustainable business model.

The top management orientation was the main responsible agent for the adaptation to CE and SD. With regard to the sustainable development business model 48% of the companies consider to be at Designing Sustainable Products and Services (level 3), denoting that they are already aware of the need to become eco-friendly, seeking to do so through changes in

products and their composition, as in process operations. Given the above, it was possible to verify in the model the existence of a positive correlation between Entrepreneurial Orientation and the Sustainable Development Strategy.

With regard to the internationalization of the companies, these showed a high international activity with 51% importing and 82% exporting, and the preferred way is to export directly in the seller's currency. The average turnover, in the SMEs companies, associated with exports and imports is 36% and these have already felt, in general, the need and pressure from international consumers to adapt to more sustainable products. It can be stated that the internationalization model tested that Entrepreneurial Orientation and Sustainability Strategy as explanatory variables was proven and verified with a good explanatory capacity.

Theoretical and Practical Implications

The present study results in a relevant addition to the existing literature review related to Entrepreneurial Orientation, Sustainability Strategy and Internationalisation, aggregating in one study the 3 areas, which previously in the literature had not been explored together in depth, along the relevance to SMEs management.

Additionally, this work adds theoretical support and new guidelines for the Portuguese furniture sector, which has not yet had an extensive analysis along these lines, even though its activity has great repercussions in the forest and natural capital, being an additional source of information and a means of decision and support for the sector's managers and the other institutional bodies that represent it.

In practical terms, it allows decision-makers and institutional bodies to obtain an overview, albeit on a small sample scale, of the state of the sector in relation to the implementation of sustainability strategies and in relation to the entrepreneurial capacity of its managers, allowing variables such as motivations and barriers to the implementation of the EC to be used to change and define new policies or create support programs for the implementation of strategies in the sector.

Moreover, institutions and associations may find in this study a source of information and relevance on the attributes, strategies and state of implementation of sustainability strategies to help define and promote the internationalization of the sector, being able to highlight several characteristics and evidence listed throughout the work.

Research Limitations

A limitation of the study was the sample size. If it had been of a more adequate and expressive size it would have been possible to consolidate and deepen the construct validation and review the importance of the PROA2 variable, which presented a deviating behaviour compared to that described in the literature review by several authors. In addition, the exclusion of variable PROA3 is also a limitation of the study, given the competitive context of the Portuguese business world, not allowing inferences to be made on the state of the art on this subject and what would be the impact on the reliability of the construct if this variable were to be kept.

Regarding the exports, the relationship between the SDS and the promotion of exports was observed but it was not assessed whether the exported products - as diverse with chairs, office and home furniture - and whose growth was evidenced were innovative and environmentally conscious products or whether they were the products normally marketed by the company. Other limitations include the existence of scarce information regarding the internationalisation strategies of the Portuguese furniture sector and the state of implementation of SDS, for further analysis and comparison.

Future Lines of Research

Among the CE strategies described in the literature review, many are already starting to be implemented in the sector, such as the IKEA initiative, which has launched a second-hand furniture sales program that collects end-of-life furniture from consumers, as a way of approaching the RPO/PLE strategy (see Attachment I).

A future line of research would be to study the implementation of strategies in the Portuguese sector versus their international competitors. Additionally, it would be interesting to evaluate the consumer interest in purchasing articles resulting from these strategies and what adaptations the company would have to make in the production process, the supply and

logistics chains. An analysis of the adoption and monitoring of forestry standards such as FSC by SMEs in the sector would also be a relevant study for the area.

Moreover, this study opens the opportunity to extend this methodology to other important sectors for the Portuguese economy and with high environmental responsibility such as textiles and footwear, with a strong international presence, allowing to evaluate a cross-reference with an analysis of the companies' performance, namely in terms of growth in business volume, through new environmentally sustainable products, but also the levels of profitability and productivity achieved.

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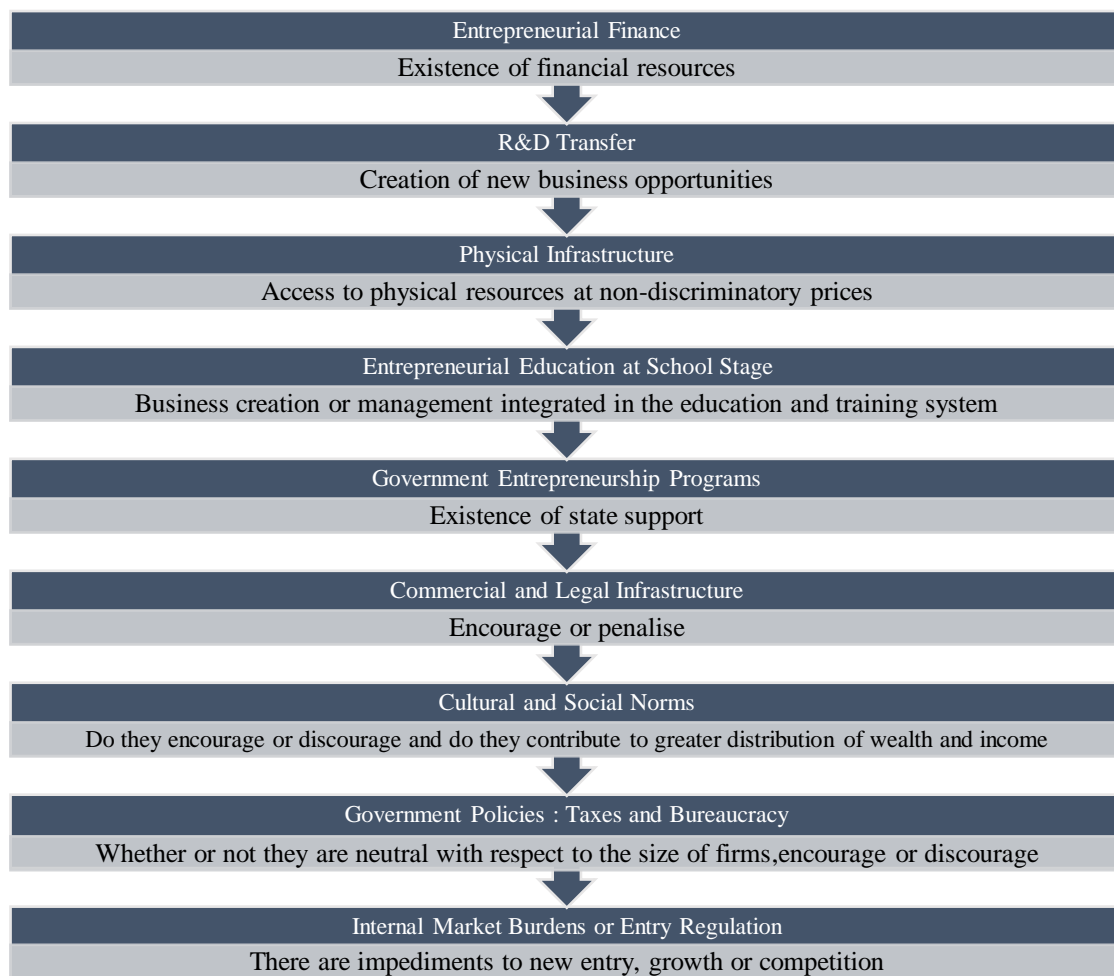
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Appendix I – Structural Conditions of Entrepreneurial Activity

For the establishment of the (GEM, 2019) the following Structural Conditions of Entrepreneurial Activity have been defined. In figure 13 it can be observed the SCEs and respective description of the condition.

Figure 13 - Structural Conditions of Entrepreneurial Activity



Source : Own Composition based on (Parreira & Proença, 2018)

Appendix II – Some Environmental Protection Legislation

Table 34 - Summary of some environmental protection legislation applied to the wood and furniture sector

Area	Scope	Legislation	Summary
Sectorial Regulation	EU/ National Law	Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010; Decree-Law No. 76/2013, of 5 June;	Obligations of operators who place timber and timber products on the market
Product Life Cycle	National Law	Resolution of the Council of Ministers no. 183/2021, of 28 December	Action Plan for the Sustainable Bioeconomy - Horizon 2025
	EU	Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012	Availability on the market and the use of biocidal products
	EU/ National	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006; Decree-Law No. 293/2009, of 13 October	Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency
Industrial and Environmental Licensing	National Law	Decree-Law No. 75/2015, of 11 May	Approves the Single Environmental Licensing Regime.
	National Law	Decree-Law 169/2012, of 1 August	Creation of the Responsible Industry System
	National Law	Decree-Law No. 102-D/2020, of 10 December	General waste management regime, the legal regime for landfilling waste
	National Law	Decree-Law No. 12/2020, of 6 April	Legal framework for greenhouse gas emission allowance trading.
	National Law	Decree-Law No. 145/2017, of 30 November	Ensures the implementation of Regulation (EU) No 517/2014 on fluorinated greenhouse gases
	National Law	Decree-Law No. 147/2008 of 29 July	Legal framework for liability for environmental damage
	National Law	Decree-Law No. 127/2008 of 21 July	Establishment of a European Pollutant Release and Transfer Register
	National Law	Decree-Law No 226-A/2007, of 31 May	Regime for the use of water resources
	Internati onal Law	ISO 14001	Definition of Environmental Management Systems
Forest Protection	National Law	Decree-Law No. 31/2020 of 30 June	Regime of the cutting manifest, extraordinary cutting, thinning or grubbing up of trees and traceability of woody material
	EU Legislati on	Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010	Obligations of operators who place timber and timber products on the market
	National Law	NP4406	Sustainable forest management systems
	National Law	Council of Ministers Resolution 6-B/2015, of 4 February	National Strategy for Forests

Source : Own composition based on (IAPMEI, 2022)

Appendix III – Factors Affecting the Implementation of CE

The implementation of a Circular Economy system in companies requires an investment of time, capital, R&D and significant changes in the production and processes, so there is some resistance to its adoption as it is not a simple and sometimes profitable process in the short term. The managers and leaders should pay attention to the implementation of the process and very well-defined planning, to avoid the incorrect application of new measures that may damage the financial health of the company and then not comply with the proposed designs in practice.

The first phase of implementation of the CE System, according to (Su, Heshmati, & Yong Geng, 2013) involves the implementation of a well-known system, the 3R's policy (*Reduce, Reuse, Recycle*) which should be much embedded and intrinsic in the companies' production process. *Reduce* aims at improving the efficiency of the production and consumption process by minimising raw materials, waste and errors in production and the energy used. This reduction will involve adopting new designs and processes that allow products to be compacted, thus avoiding the use of unnecessary resources when packaging or using excess components (Zhijun & Nailing, 2007) .

Companies oriented towards sustainable development see in this action a first and easier process of product innovation and adaptation, trying in various ways to reduce the number of resources used in the production of goods or simply opting for packaging conditions with fewer resources used, keeping the safety and integrity of the products. Several companies and proactive entrepreneurs have adopted waste or error reduction systems such as LEAN management, benefiting from the reduction of costs associated with defective products and reducing the waste of resources and pollution inherent to their manufacture.

Reuse promotes the use of products to their maximum level while maintaining their quality standards and state of conservation. Through this maximum use of resources, the financial outlay of having to buy new raw materials or products is avoided and the degree of pollution and waste in the company is reduced, promoting more sustainable production practices (Prendeville, Sanders, Sherry, & Costa, 2014).

The 3rd element is *Recycle*, which aims to give a new value and a new life to products that were at the end of the line or used, so that they are again integrated into production processes and assigned a new function or use, thus reducing waste and the environmental footprint of companies. This activity is not always possible, depending on the branch of activity of the company and the products it uses in its manufacturing process, since some materials such as certain plastics have metals and paints or acrylics in their composition that do not allow their recycling because it would be very expensive and would also have a negative burden in environmental terms (Graedel, et al., 2011).

Associated with this 3 R's policy, companies should reinforce the preference for renewable energies, thus allowing the reduction of energy use from polluting and greenhouse gas emitting sources, promoting better adaptability and conversion to a Circular Economy. Consumers play a fundamental role in the implementation of circular economy processes, since their level of awareness of environmental issues and sustainable consumption habits, through the choice of products, directly affect the adoption of these measures.

Currently, these are an ally in the promotion of sustainable development, being more and more environmentally aware, making more informed purchases of the products they consume and their manufacturing processes, so the adoption of sustainable strategies, such as the circular economy, mentioned throughout this chapter, will open new doors to internationalisation, being able to cover new and diversified markets and reaching market niches that previously would not be willing to know and buy the products for not being sustainable.

Appendix IV – Definition of SMEs

The integration in a single market, free of customs barriers between Member States (MS) and the guidance of common policies and rules to promote the economy of the MS led to the need to standardize the concepts and organization of the types of companies present in the system, to avoid a proliferation of inconsistent characterizations and definitions of Small and Medium Enterprises. To regulate and guide the system, the European Commission (EC) launched the Commission Recommendation of 6 May 2003 on the definition of micro, small and medium-sized enterprises, which was then transposed into national legislation through Decree-Law No. 372/2007 of 6 November. Article 2 of this Recommendation defines that *The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons and whose annual turnover does not exceed 50 million euros or whose annual balance sheet total does not exceed 43 million euros* (European Commission, 2003). Table 35 shows the characteristics of each type of company, according to the Recommendation established by the EC.

Table 35 – SMES classification

	Micro- Companies	Small- Enterprises	Medium Enterprises
No. of employees	< 10	≥ 10 e <50	≤ 50 e <250
Turnover	< 2 000 000 €	≤ 10 000 000 €	≤ 50 000 000 €
Balance Sheet Total	< 2 000 000 €	≤ 10 000 000 €	≤ 43 000 000 €

Source : Decree-Law 372/2007, of 6 November

Besides standing out from the remaining companies SMEs are distinguished from the remaining companies because they are, generally, more family-oriented companies in which the management is carried out by the owners, often without higher education, being companies with little hierarchical complexity, the little definition of positions and functions and a rather rudimentary organisational structure (Paulo, 2016). These companies are very aware of their internal business environment, presenting a close and trustful relationship with their clients and employees, as they are smaller in size, promoting bilateral communication between them. Additionally, they are willing to innovate and implement, albeit cautiously, new products, processes, or services in the market, to stand out from their competitors and grow in the market.

Appendix V – Main Furniture importers and exporters worldwide

Figure 14 - Main furniture exporters worldwide

EXPORT			
		Value (\$)	%
World		307 242 554 577	
1 China	CHN	139 481 265 773	45,40
2 Germany	DEU	19 448 597 004	6,33
3 Poland	POL	17 641 655 627	5,74
4 Italy	ITA	15 772 923 629	5,13
5 Mexico	MEX	11 065 214 137	3,60
6 USA	USA	9 247 129 629	3,01
7 Netherlands	NLD	6 672 715 782	2,17
8 Czechia	CZE	5 812 151 185	1,89
9 Canada	CAN	5 605 966 645	1,82
10 Turkey	TUR	4 787 311 411	1,56
11 France	FRA	4 358 448 929	1,42
12 Spain	ESP	4 340 071 734	1,41
13 Denmark	DNK	3 912 827 655	1,27
14 Malaysia	MYS	3 466 560 513	1,13
15 United Kingdom	GBR	3 346 857 773	1,09
16 Lithuania	LTU	3 345 558 353	1,09
17 Sweden	SWE	3 097 179 706	1,01
18 Indonesia	IDN	3 018 162 295	0,98
19 Romania	ROU	2 932 229 078	0,95
20 Austria	AUT	2 847 050 763	0,93
21 India	IND	2 785 512 427	0,91
22 Other Asia nes	Asia	2 728 345 015	0,89
23 Portugal	PRT	2 274 815 705	0,74
24 Hungary	HUN	2 129 867 256	0,69
25 Belgium	BEL	1 881 482 994	0,61
26 Thailand	THA	1 826 902 045	0,59
27 Slovakia	SVK	1 692 457 764	0,55
28 Estonia	EST	1 466 407 840	0,48
29 Rep. Korea	KOR	1 425 022 050	0,46
30 United Arab Emirates	ARE	1 379 742 922	0,45
31 Brazil	BRA	1 088 578 914	0,35
32 Slovenia	SVN	1 062 414 503	0,35
33 Belarus	BLR	1 042 259 200	0,34
34 Bulgaria	BGR	1 037 596 514	0,34
35 Ukraine	UKR	1 029 120 959	0,33
36 Japan	JPN	992 938 175	0,32
37 Russian Federation	RUS	916 390 513	0,30
38 Serbia	SRB	812 503 770	0,26
39 Bosnia Herzegovina	BIH	754 793 072	0,25
40 Switzerland	CHE	727 726 499	0,24
41 China HK	HKG	700 743 472	0,23
42 Croatia	HRV	643 953 190	0,21
43 Finland	FIN	631 136 744	0,21
44 Norway	NOR	606 286 004	0,20
45 Philippines	PHL	578 046 096	0,19
46 Latvia	LVA	570 428 408	0,19
47 Israel	ISR	498 216 000	0,16
48 Lebanon	LBN	338 020 202	0,11
49 South Africa	ZAF	307 574 090	0,10
50 Morocco	MAR	305 527 367	0,10
sub-total 1-50		304 434 687 331	
	%T		99,1

Source: Own Composition based on (UN COMTRADE, 2022)

Figure 15 - Main furniture importers worldwide

IMPORT			
		Valor (US\$)	%
World		278 538 418 358	
1 USA	USA	81 386 654 542	29,22
2 Germany	DEU	25 607 497 686	9,19
3 France	FRA	14 742 431 371	5,29
4 United Kingdom	GBR	14 173 062 287	5,09
5 Netherlands	NLD	10 229 922 559	3,67
6 Canada	CAN	9 903 752 496	3,56
7 Japan	JPN	8 954 534 340	3,21
8 Australia	AUS	6 362 584 160	2,28
9 Poland	POL	5 707 858 357	2,05
10 Spain	ESP	5 551 098 032	1,99
11 Switzerland	CHE	5 325 920 481	1,91
12 Italy	ITA	4 713 326 307	1,69
13 Austria	AUT	4 581 370 919	1,64
14 Sweden	SWE	4 308 127 991	1,55
15 Rep. Korea	KOR	4 232 617 237	1,52
16 Czechia	CZE	4 057 954 489	1,46
17 Mexico	MEX	4 053 974 376	1,46
18 Russian Federation	RUS	3 886 075 178	1,40
19 Denmark	DNK	3 541 342 844	1,27
20 Norway	NOR	3 400 029 292	1,22
21 Belgium	BEL	3 223 668 482	1,16
22 China	CHN	3 201 163 599	1,15
23 United Arab Emirates	ARE	2 712 049 996	0,97
24 Saudi Arabia	SAU	2 651 057 673	0,95
25 Slovakia	SVK	2 175 063 071	0,78
26 Hungary	HUN	1 859 587 246	0,67
27 Romania	ROU	1 681 493 626	0,60
28 Israel	ISR	1 597 236 000	0,57
29 Portugal	PRT	1 551 051 527	0,56
30 China HK	HKG	1 524 986 625	0,55
31 Malaysia	MYS	1 511 635 133	0,54
32 Thailand	THA	1 485 444 045	0,53
33 Finland	FIN	1 482 111 080	0,53
34 Indonesia	IDN	1 351 659 655	0,49
35 India	IND	1 337 480 617	0,48
36 Brazil	BRA	1 331 280 436	0,48
37 Chile	CHL	1 310 858 207	0,47
38 Other Asia ne		1 277 105 394	0,46
39 Singapore	SGP	1 264 427 857	0,45
40 New Zealand	NZL	1 161 347 160	0,42
41 Qatar	QAT	845 322 817	0,30
42 Philippines	PHL	834 215 989	0,30
43 Turkey	TUR	796 878 789	0,29
44 Greece	GRC	790 900 847	0,28
45 Bulgaria	BGR	721 138 066	0,26
46 South Africa	ZAF	702 739 445	0,25
47 Lithuania	LTU	699 787 425	0,25
48 Croatia	HRV	670 382 261	0,24
49 Slovenia	SVN	650 527 762	0,23
50 Morocco	MAR	615 185 406	0,22
sub-total 1-50		267 737 921 180	
	%T		96,1

Source: Own Composition based on (UN COMTRADE, 2022)

Appendix VI – Structure of Questionnaire

Caro(a) participante,

Este estudo é desenvolvido no âmbito do Mestrado de Empreendedorismo e Internacionalização, do Instituto Superior de Contabilidade e Administração do Porto (ISCAP), sob orientação do Prof. Ricardo Silva, subordinado ao tema O papel da Orientação Empreendedora, Estratégia de Sustentabilidade Ambiental e Internacionalização das PME. Análise do setor mobiliário português.

Esta investigação tem como principal objetivo efetuar uma análise do setor do mobiliário - industrial e comercial - em termos de atuação e adoção de estratégias de desenvolvimento sustentável, como fator de promoção e internacionalização das PME que nele se inserem.

O questionário é composto por questões de resposta fechada e aberta, estando dividido em 4 temas designadamente " Caracterização da Empresa, Estratégia de Sustentabilidade, Orientação Empreendedora, Estratégia de Internacionalização" e tendo uma duração média de 15 minutos.

O autor garante a total confidencialidade e anonimato sobre a sua participação e respetivas respostas. Os dados obtidos serão utilizados para uma análise estatística da parte metodológica da dissertação.

Agradeço, antecipadamente, o tempo dispensado e disponibilidade para participar neste estudo que pretende ser mais uma ferramenta de base à inovação e diferenciação do setor.

Luís Leça

Part 1 - Company's characterization

1.1 Em que região do país se encontra sediada a empresa? *

Mark only one oval.

- Norte de Portugal
- Centro de Portugal
- Lisboa e Vale do Tejo
- Alentejo
- Algarve
- Reg.Autónoma da Madeira
- Reg.Autónoma dos Açores

1.2 Qual o código postal da sede da empresa? *

1.3 Qual a forma jurídica da empresa? *

Mark only one oval.

- Empresa em nome individual
- Sociedade Comercial (Limitada, Unipessoal, Anónima)
- Cooperativa
- Other: _____

1.4 Qual o seu Código de Atividade Económica (CAE Rev3) ? *

Exemplo: 31 - Fabrico de Mobiliário e de Colchões

Tick all that apply.

- 3101 - Fabricação de mobiliário para escritório e comércio
- 3102 - Fabricação de mobiliário de cozinha
- 3103- Fabricação de colchoaria
- 31091 - Fabricação de mobiliário de madeira para outros fins
- 31092 - Fabricação de mobiliário metálico para outros fins
- 31093 - Fabricação de mobiliário de outros materiais para outros fins
- 31094 - Atividades de acabamento de mobiliário
- 47591 - Comércio a retalho de mobiliário e artigos de iluminação, em estabelecimentos especializados
- 47781 - Comércio a retalho de máquinas e de outro material de escritório, em estabelecimentos especializados.
- Nenhum dos anteriores

Se à pergunta 1.4 respondeu " Nenhum dos anteriores" , por favor indique o CAE da sua empresa segundo a (CAE Rev.3)

Exemplo: (32502) - Fabricação de material ortopédico e próteses e de instrumentos médico-cirúrgicos.

1.5 Qual a dimensão da empresa? (Nº de efetivos, atualmente) *

Mark only one oval.

- Micro empresa (N° Efetivos < 10)
- Pequena (10 ≤ N° Efetivos < 50)
- Média (50 ≤ N° Efetivos < 250)
- Grande (N° Efetivos ≥ 250)

1.6 Indique o ano de fundação da empresa? *

1.7 A empresa desenvolve um planeamento estratégico formal a médio/ longo prazo? *

Mark only one oval.

- Sim
- Não

1.8 A empresa tem um plano de adaptação à economia circular/ estratégia de desenvolvimento sustentável? *

Mark only one oval.

- Sim
- Não

Part 2 - Entrepreneurial Orientation

A. Em geral, a gestão de topo valoriza e investe em I&D, liderança tecnológica e inovação sustentável? *

Mark only one oval per row.

	1. Discordo Totalmente	2. Discordo	3. Nem concordo nem discordo	4. Concordo	5. Concordo Totalmente
Resposta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

B. Nos últimos 5 anos, a empresa lançou novos produtos baseados no modelo circular? *

Mark only one oval per row.

	1. Discordo Totalmente	2. Discordo	3. Nem concordo nem discordo	4. Concordo	5. Concordo Totalmente
Resposta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

C. Nos últimos 5 anos, foram aplicadas mudanças drásticas, relacionadas com o desenvolvimento sustentável, nas linhas de produção? *

Mark only one oval per row.

	1. Discordo Totalmente	2. Discordo	3. Nem concordo nem discordo	4. Concordo	5. Concordo Totalmente
Resposta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

D. A empresa desenvolve ações na sua indústria, às quais as empresas concorrentes reagem? *

Mark only one oval per row.

	1. Discordo Totalmente	2. Discordo	3. Nem concordo nem discordo	4. Concordo	5. Concordo Totalmente
Resposta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

E. Em relação aos concorrentes, a empresa costuma ser a primeira a lançar novos produtos e inovações. *

Mark only one oval per row.

	1. Discordo Totalmente	2. Discordo	3. Nem concordo nem discordo	4. Concordo	5. Concordo Totalmente
Resposta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

F. Em geral, os gestores da empresa, acreditam que dada a natureza do mercado onde se encontram, são necessárias ações arrojadas e de grande impacto para alcançar os objetivos. *

Mark only one oval per row.

	1. Discordo Totalmente	2. Discordo	3. Nem concordo nem discordo	4. Concordo	5. Concordo Totalmente
Resposta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

G. De forma geral, a gestão de topo, têm preferência por projetos de risco que possam trazer futuramente proveitos para a empresa. *

Mark only one oval per row.

	1. Discordo Totalmente	2. Discordo	3. Nem concordo nem discordo	4. Concordo	5. Concordo Totalmente
Resposta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

H. A gestão de topo da empresa, quando confrontada com a tomada de decisões que envolvam incerteza, adotam uma postura agressiva e arrojada, de modo a aproveitar as potenciais oportunidades. *

Mark only one oval per row.

	1. Discordo Totalmente	2. Discordo	3. Nem concordo nem discordo	4. Concordo	5. Concordo Totalmente
Resposta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 3 - Sustainable Development Strategy

3.1 A empresa já iniciou ou está em vias de iniciar o processo de adaptação a uma economia circular ou estratégia de desenvolvimento sustentável? *

Mark only one oval.

- Sim
 Não

3.2 Quais os objectivos da empresa em relação ao plano de adaptação à economia circular / desenvolvimento sustentável? *

Mark only one oval.

- Reduzir a pegada de carbono do produto
 Reduzir os resíduos operacionais
 Utilização mais eficiente dos resíduos

3.3 Quais as estratégias mais plausíveis para o sector do mobiliário na adaptação à economia circular / desenvolvimento sustentável? *

• RPO - o produtor aluga ou arrenda o seu produto ao cliente, em vez de o vender. Assim, o produtor é responsável pelos produtos quando os consumidores já não necessitam dos mesmos.
• PLE - As empresas concentram-se na concepção de produtos para durar mais tempo, o que pode abrir possibilidades de mercados de venda de produtos usados.
• DFR - As empresas redesenham os seus produtos e processos de fabrico para maximizar a recuperabilidade dos materiais envolvidos para utilização em novos produtos.

Mark only one oval.

- Retenção da propriedade do produto (RPO)
 Extensão da vida útil do produto (PLE)
 Design para a reciclagem (DFR)

3.4 Quais os principais agentes que sensibilizam a empresa à adaptação a uma economia circular ou estratégia de desenvolvimento sustentável? *

Tick all that apply.

- Orientação da Gestão de Topo
 Pressão dos Clientes
 Propostas dos Fornecedores em relação às matérias-primas e componentes
 Design e processo de Inovação
 Custos associados ao processo de Recolha e Seleção de Resíduos
 Nenhuma das anteriores
 Other: _____

3.5 Na situação atual em relação à economia circular e estratégia de desenvolvimento sustentável, em que nível considera que a sua empresa se enquadra? *

Mark only one oval.

- Nível 1 - A empresa cumpre com as normas e regulamentos ambientais impostos, utilizando-as como uma oportunidade para inovação.
 Nível 2 - A empresa procura aumentar a eficiência através de alterações na cadeia de valor.
 Nível 3 - A empresa procura tornar-se amiga do ambiente e como tal redefine os designs e composição dos seus produtos para se tornarem mais sustentáveis.
 Nível 4 - A empresa desenvolve novos modelos de negócio a partir da economia circular, de forma a entregar valor e diferenciar-se dos seus concorrentes.
 Nível 5 - A empresa cria novas plataformas relacionadas com a sustentabilidade que visam a criação de produtos sustentáveis, desenvolvimento de novas tecnologias mais eficientes e de relações com clientes e fornecedores baseadas na gestão eficiente dos recursos.

3.6 Dos seguintes fatores, indique quais os que impedem a adaptação a uma economia circular ou estratégia de desenvolvimento sustentável na sua empresa? *

Tick all that apply.

- Dificuldades associadas aos materiais e componentes utilizados no processo produtivo
- Dificuldades associadas à produção e comercialização do produto final
- Sistemas de recolha e tratamento de resíduos deficientes
- Falta de recursos financeiros e tecnológicos
- Complexidade dos processos
- Incerteza quanto aos resultados

3.7 Quais as principais motivações para a adaptação a uma economia circular ou estratégia de desenvolvimento sustentável na sua empresa? *

Tick all that apply.

- Redução do impacto ambiental associado ao processo produtivo
- Redução do risco associado à utilização e compra das matérias-primas
- Adquirir vantagem competitiva face aos concorrentes
- Maior a probabilidade de acesso a fundos públicos e europeus
- Redução de custos operacionais, através da melhor eficiência dos processos
- Melhoria das condições de trabalho e de saúde dos funcionários
- Aumento das vendas, especialmente junto dos nichos de mercado compostos por clientes preocupados com a sustentabilidade e a matéria ambiental.

3.8 Quais os principais fatores que levariam a sua empresa a investir mais em produtos e processos de desenvolvimento sustentável? *

Tick all that apply.

- Incentivos fiscais e económicos para investimentos em I&D
- Possível utilização de sistemas de Inteligência Artificial no processo de produção e distribuição dos produtos
- Aumento do conhecimento e consciência dos consumidores para as questões ambientais

3.9 Qual o principal destino dos resíduos decorrentes do processo produtivo da empresa? *

Tick all that apply.

- Aterro Sanitário
- Recolha por terceiros com valor Comercial
- Recolha por terceiros sem valor Comercial
- Recolha pelo fornecedor com valor Comercial
- Recolha pelo fornecedor sem valor Comercial
- Utilização em novos produtos
- Materiais utilizados no sistema de aquecimento
- Other: _____

3.10 Das seguintes alterações ao processo produtivo, quais já foram implementadas na empresa? *

Tick all that apply.

- Substituição de matérias-primas e materiais auxiliares por outros ambientalmente mais adequados;
- Adoção de energias alternativas renováveis.
- Redesign dos produtos
- Eficiência na utilização dos recursos na fabricação dos produtos e nos processos
- Substituição de equipamentos obsoletos e com elevado gasto energético
- Separação de Fluxos de Resíduos
- Prolongamento do ciclo de vida do produto
- Other: _____

Part 4 - Internationalization Strategy

4.1 Importa matérias-primas ou componentes do exterior (Aprovisionamento) ? *

Mark only one oval.

- Sim
 Não

Se respondeu Sim à questão 4.1. Há quantos anos iniciou importação de matérias-primas e/ou componentes?

Se respondeu Sim à questão 4.1 Indique os 3 principais mercados de importação da empresa.

Exemplo: 1.Espanha / 2.França / 3. Alemanha

4.2 Exporta produtos ou componentes para o exterior (Vendas) ? *

Mark only one oval.

- Sim
 Não

Se respondeu Sim à questão 4.2. Há quantos anos iniciou a exportação de produtos ou componentes ?

Se respondeu Sim à questão 4.2 Indique os 3 principais mercados de exportação da empresa.

Exemplo: 1.Espanha / 2.França / 3. Alemanha

De que forma a sua empresa exporta? (modelo de internacionalização)

Tick all that apply.

- Exportação direta na moeda do comprador
 Exportação direta na moeda do vendedor
 Exportação indireta (através de agente, broker , ou empresa de " trading" , entre outras...)
 Other: _____

4.3 No total da faturação da sua empresa, qual a % relativa à atividade internacional no ano de 2021?

Mark only one oval per row.

	Aprovisionamento (Importação)	Vendas (Exportação)
Menos de 5 %	<input type="radio"/>	<input type="radio"/>
Entre 5 e 25 %	<input type="radio"/>	<input type="radio"/>
Entre 26 e 50 %	<input type="radio"/>	<input type="radio"/>
Entre 51 e 75 %	<input type="radio"/>	<input type="radio"/>
Mais de 75%	<input type="radio"/>	<input type="radio"/>

4.4 De que forma a internacionalização influenciou a adaptação a uma economia circular ou estratégia de desenvolvimento sustentável na sua empresa? *

Tick all that apply.

- Mudança na conceção / design do produto
- Utilização de novos materiais e componentes
- Mudança no processo produtivo (maior eficiência energética , utilização de água, entre outros...)
- Mudança no embalamento dos produtos
- Desenvolvimento de novos produtos
- Desenvolvimento de novos modelos de negócio ligados ao desenvolvimento sustentável

4.5 A empresa já sentiu (por pressão dos mercados e dos seus consumidores) a necessidade de alterar os seus produtos por alternativas mais sustentáveis? *

Mark only one oval.

- Sim
- Não

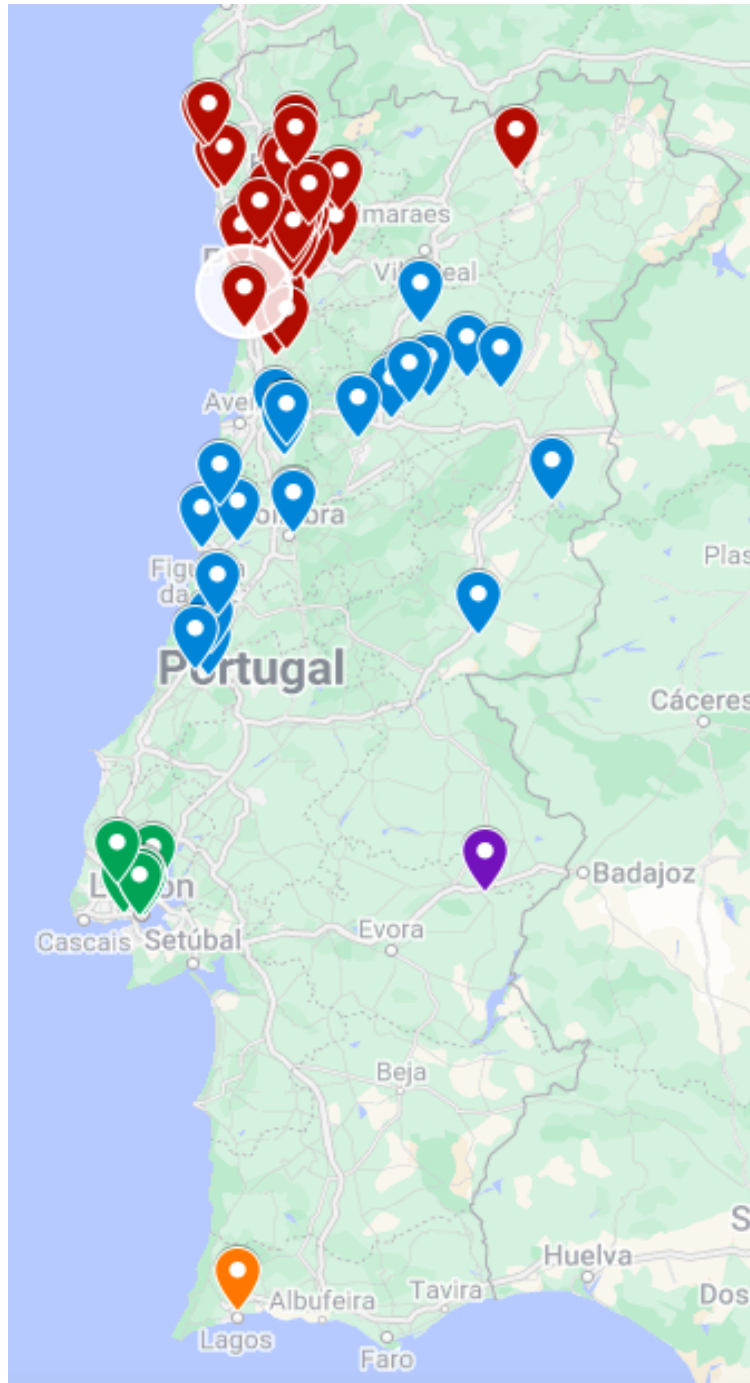
4.8 Os consumidores internacionais cada vez mais procuram produtos amigos do ambiente e são mais seletivos na escolha dos produtores e da sua pegada ecológica. *
Em relação à sua empresa, avalie a seguinte afirmação, numa escala de 1 a 5, em que 1 significa " Discordo Totalmente" e 5 " Concordo Totalmente"

Mark only one oval per row.

	1. Discordo Totalmente	2. Discordo	3. Nem discordo nem concordo	4. Concordo	5. Concordo Totalmente
Avaliação	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

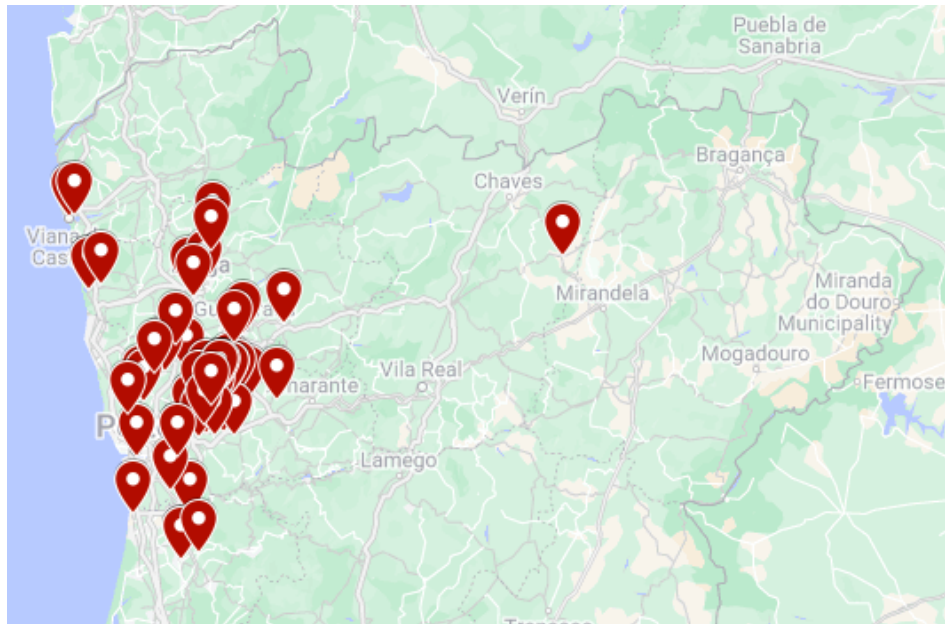
Appendix VII – Regional Distribution of the Sample

Figure 16 – General Distribution of the Sample companies



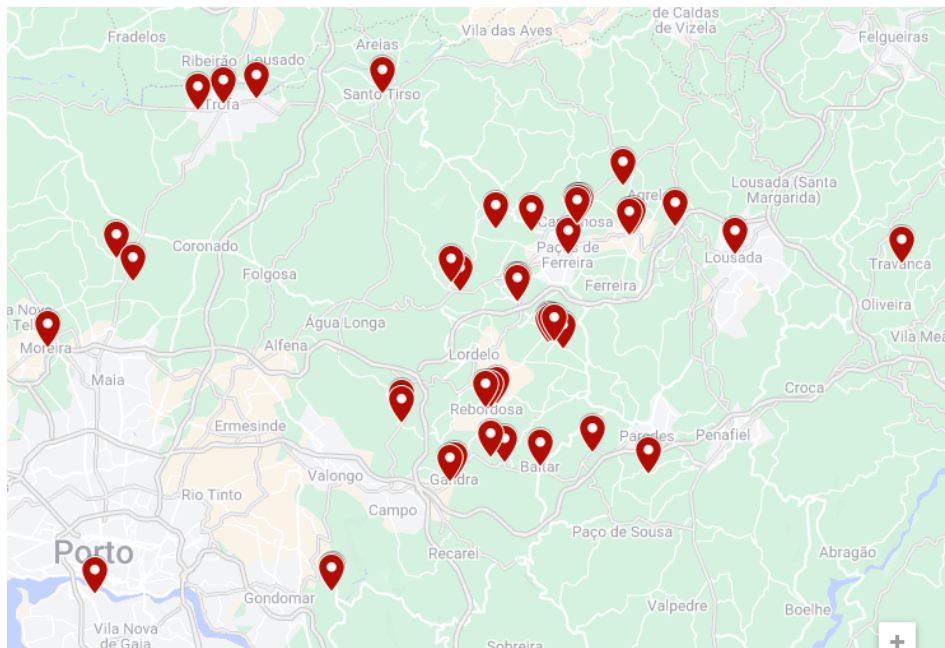
Source : Own composition, Google Maps

Figure 17 - Distribution of companies in the North of Portugal



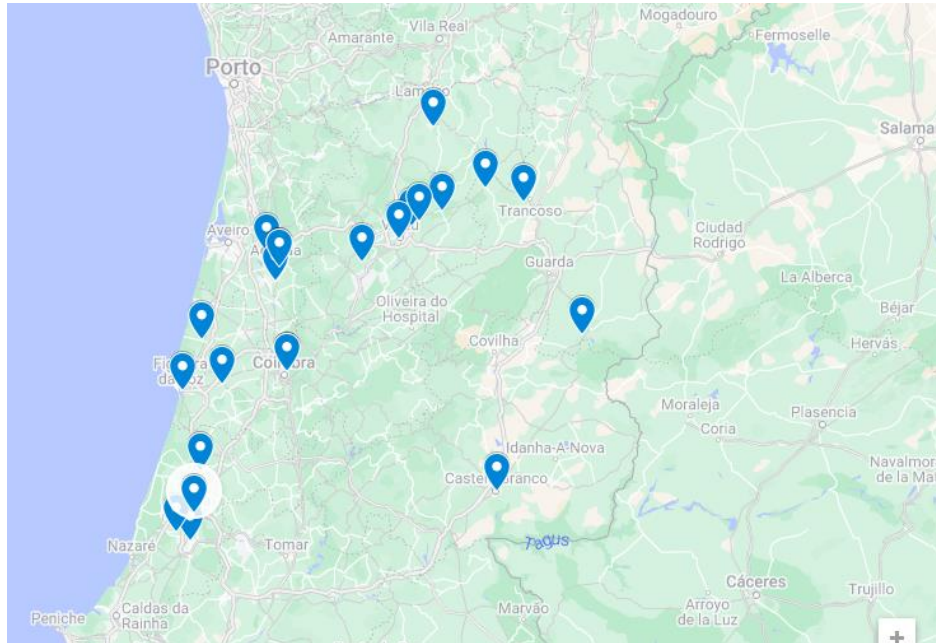
Source : Own composition, Google Maps

Figure 18 - Business clusters in the North of Portugal



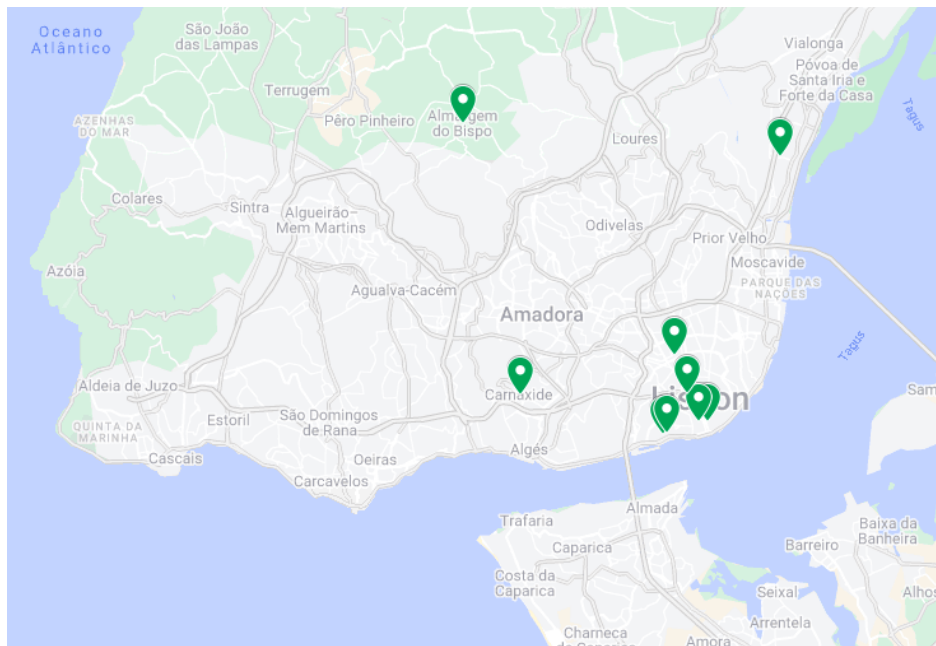
Source : Own composition, Google Maps

Figure 19 - Distribution of companies in the Centre of Portugal



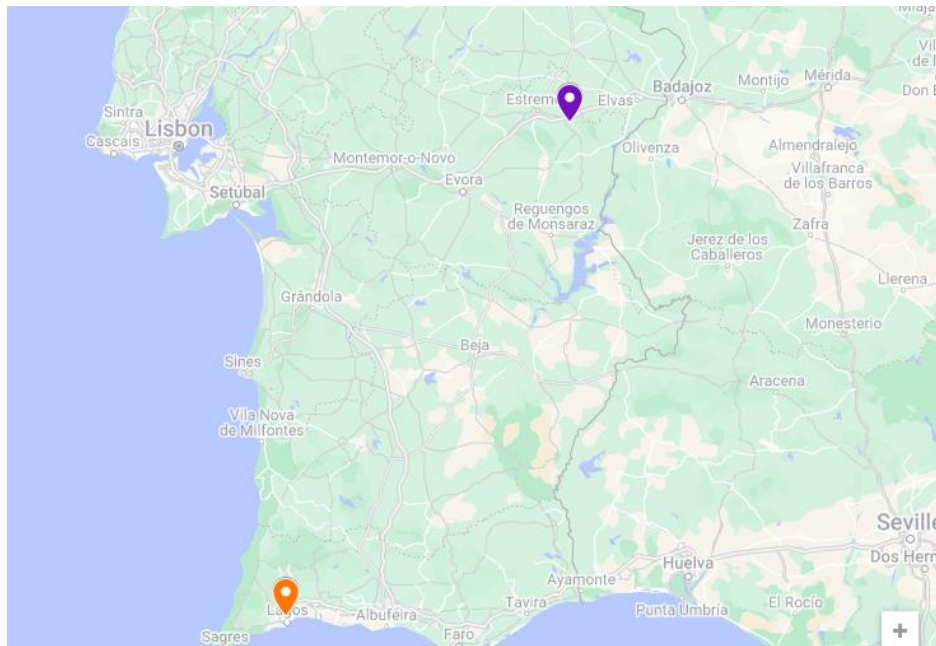
Source : Own composition, Google Maps

Figure 20 - Distribution of companies in Lisboa e Vale do Tejo



Source : Own composition, Google Maps

Figure 21 - Distribution of companies in Alentejo and Algarve



Source : Own composition, Google Maps

A more detailed analysis of the map can be made through the website - [Regional Distribution of the Sample](#) - where you can consult the companies by geographical location on the map, indicating its postcode and region. In order to facilitate the reading and the study of the map layers were made with the name of the region of the country, where selecting the desired ones you can observe the companies based in that demographic region. This allows geographical comparisons to be made and the existence of business clusters in certain districts or regions to be denoted.

Appendix VIII – Tables of Results

I. Distribution of the agents promoting the CE plan in order of priority

Table 36 - Distribution of the agents promoting the CE plan, in order of priority

1 st Option	2 nd Option	3 rd Option	4 th Option	N	ECINIC	% ECINIC
GEST	0	0	0	9	5	0,6
GEST	DESI	0	0	5	4	0,8
GEST	DESI	PRSR	0	9	9	1,0
GEST	FORN	0	0	3	3	1,0
GEST	FORN	DESI	0	10	9	0,9
GEST	FORN	PRSR	0	3	2	0,7
GEST	CLIEN	0	0	1	1	1,0
GEST	CLIEN	DESI	0	6	5	0,8
GEST	CLIEN	DESI	PRSR	2	2	1,0
GEST	CLIEN	PRSR	0	3	3	1,0
GEST	CLIEN	FORN	0	2	1	0,5
GEST	CLIEN	FORN	DESI	1	0	0,0
GEST	CLIEN	FORN	PRSR	2	2	1,0
GEST	PRSR	0	0	1	1	1,0
GEST	CLIEN	PRSR	0	1	1	1,0
CLIEN	0	0	0	5	2	0,4
CLIEN	DESI	0	0	1	0	0,0
CLIEN	DESI	PRSR	0	4	4	1,0
CLIEN	FORN	DESI	0	1	0	0,0
CLIEN	FORN	PRSR	0	2	1	0,5
PRSR	0	0	0	6	5	0,8
PRSR	DESI	CLIEN	GEST	1	1	1,0
DESI	0	0	0	11	9	0,8
DESI	PRSR	0	0	2	1	0,5
FORN	0	0	0	11	3	0,3
FORN	DESI	0	0	1	0	0,0
FORN	FORN	0	0	1	0	0,0
FORN	PRSR	0	0	1	1	1,0
NENH	0	0	0	2	0	0,0
All Groups				107	75	0,7

Source : Own composition

II. Distribution of Companies by the start of import activity

Table 37 - Distribution of Companies by the start of import activity

Nº of years of Importation	Frequency	Relative %
2	1	1%
4	1	1%
5	2	2%
6	2	2%
8	4	4%
9	1	1%
10	2	2%
12	5	5%
14	1	1%
15	1	1%
16	2	2%
18	4	4%
20	5	5%
21	1	1%
24	1	1%
25	4	4%
28	2	2%
29	2	2%
30	8	7%
32	2	2%
35	1	1%
38	1	1%
45	1	1%
55	1	1%
56	1	1%

Source : Own Composition

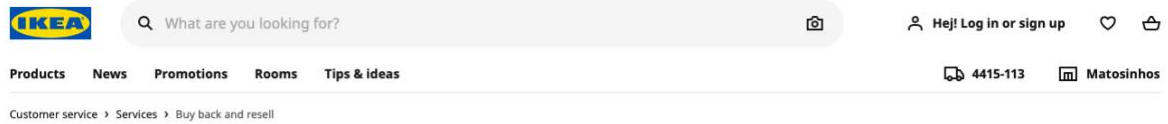
III. Distribution of Companies by the beginning of export activity

Table 38 - Distribution of Companies by year of beginning of export activity

Nº of Years of Exports	N	Relative %
0	23	21%
1	3	3%
2	2	2%
3	1	1%
4	2	2%
5	4	4%
7	5	5%
8	5	5%
9	3	3%
10	9	8%
11	1	1%
12	4	4%
13	1	1%
14	3	3%
15	6	6%
17	1	1%
18	3	3%
20	12	11%
21	1	1%
23	3	3%
24	1	1%
25	3	3%
27	2	2%
28	1	1%
30	2	2%
32	1	1%
35	1	1%
38	1	1%
40	1	1%
48	1	1%
50	1	1%

Source : Own Composition

Attachment I – IKEA Strategy – Buy back & Resell



Buy back and resell

With buyback and resell, you sell us used IKEA furniture you don't need in a safe, streamlined way year-round. You'll get IKEA credit. Someone else buys your old stuff second hand from us and gives it a new home. Everyone wins, especially the planet.



[How it works](#) | [Eligible products](#) | [FAQ](#)

How it works

- The [buy-back tool](#) gives you a preliminary evaluation for your furniture. This offer is valid for 30 days, unless stated differently in the preliminary valuation;
- You bring your assembled IKEA furniture and the offer to your nearest IKEA store;
- An IKEA co-worker assesses your product to confirm the offer. [Find your local store](#);
- You get a refund card for the agreed amount to spend in the store. This card is valid for one year;
- The furniture goes on sale in the Circular Area, for the same price as you received;
- The IKEA store will recycle or dispose of unsold products in a responsible way.

[Get an estimate](#)

Source: <https://www.ikea.com/pt/en/customer-service/services/buy-back-resell/> on 30th October 2022

