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1 - Organisational culture and the implication of values

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Resumo: Esta investigação tem como objetivos de estudo analisar as diversas abordagens de pesquisa da cultura organizacional. Para responder à questão de investigação e atingir os objetivos propostos, recorremos à elaboração de uma Revisão Sistemática da Literatura (RSL) que nos permite identificar distintas abordagens de Valores, Liderança, Inovação, Motivação e Confiança.
O nosso estudo reúne 16 artigos pesquisados no ISI - *Web of Knowledge Social Sciences Citation Index (SSCI)*, com datas de publicação entre 2006 e 2023. Esta literatura divide-se em três grandes áreas temáticas (Valores, Liderança e Inovação). Ao efetuar a análise aos dados obtidos decidimos agrupar os temas por categorias (*Clusters*), nomeadamente três clusters: Valores, Liderança e Inovação. É feita uma investigação descritiva sobre o tema com uma base metodológica qualitativa e quantitativa realizando uma análise e interpretação dos resultados para podermos concluir que a crescente importância da cultura organizacional nas organizações foi evidenciada, debatida e justificada num contexto de uma ampla integração com outras componentes importantes, centrada na ligação e implementação dos valores, liderança, motivação, confiança e inovação, sabendo que a cultura organizacional está continuamente em construção ao longo do tempo, crescendo e evoluindo para que as organizações possam ser analisadas, concebidas ou geradas corretamente, visando manter o equilíbrio nas organizações para que elas sobrevivam no futuro.

Palavras-chave: Cultura organizacional, Valores, Liderança, Inovação, Motivação, Confiança e Revisão Sistemática da Literatura

Abstract: This research aims to analyse the various approaches to researching organizational culture. To answer the research question and achieve the proposed objectives, we used a Systematic Literature Review (SLR) to identify different approaches to Values, Leadership, Innovation, Motivation and Trust.
Our study brings together 16 articles researched in the ISI - Web of Knowledge Social Sciences Citation Index (SSCI), with publication dates between 2006 and 2023. This literature is divided into three main thematic areas (Values, Leadership and Innovation). When analysing the data obtained, we decided to group the themes into categories (Clusters), namely three clusters: Values, Leadership and Innovation. We carried out a descriptive investigation into the subject with a qualitative and quantitative methodological basis, analysing and interpreting the results so that we could conclude that the growing importance of organisational culture in organisations was highlighted, debated and justified in a context of broad integration with other important components, focused on the connection and implementation of values, leadership, motivation, trust and innovation, knowing that organisational culture is continually under construction over time, growing and evolving so that organisations can be

analysed, designed or generated correctly, with the aim of maintaining balance in organisations so that they survive into the future.

Keywords: Organisational culture, Values, Leadership, Innovation, Motivation, Trust and Systematic Literature Review.

Introduction

Organisational culture consists of a series of activities carried out within a specific set of contexts, each of which influences how these activities are carried out. Organisations have been recognised as embodying culture since Japan emerged as an industrial powerhouse, with theorists and managers increasingly recognising the intricate relationship between culture and management (Kim & Park, 2020). According to the authors Mamatha and Geetanjali (2020), Harrison (1972) was one of the pioneers to create a model of organisational culture in which he defended the culture of achievement and the four dimensions of role, task, power and person. The role culture tends to follow rules and regulations; the task culture places importance on the skills needed to execute plans and projects; the power culture displays autocracy, and the personal culture displays its individual influence on the organisation. He also shows that family businesses are more power-orientated.

As it is a recent concept and still being developed, there are various approaches to studying and understanding organisational culture, as well as definitions of it. But according to the author Anning-Dorson, (2017) from an anthropological point of view, organisations have a culture that provides the capacity for external adaptation and internal integration for strategic success. As is the case in anthropology, most definitions of organisational culture focus on content (Schein, 1985; Martin, 1982), but are distinguished by the specificity of the "society" that studies the organisation and aims to explain the complexity inherent in organised action and its management.

The organisational culture model (Schein, 2004) discusses in detail the concept, formation and evolution of organisational culture. According to Bagraim (2001), organisational culture does not have a single accepted definition, which has led to many conceptual difficulties in the literature. Organisational cultures can be differentiated using numerous dimensions (Ahmad et al., 2017). There is plenty of empirical evidence to support the idea that leadership affects organisational climate and therefore culture. This connection can foster the necessary conditions and culture that lead to increased or decreased organisational performance. It is believed that leadership theory and the positive characteristics of leaders vary between cultures according to deep-rooted traditions and followers' expectations (Frantz & Jain, 2017). Today, some companies, such as Amazon, Alibaba and Netflix, are still led by their founders, while others are not, such as General Motors, Ford and Disney Corporation.

The founder's influence on the creation of organisational culture depends mostly on the founder's own cultural orientation, the environment in which he was brought up and his long-term vision for the company. Schein (1990) mentions that organisations are not built overnight, but through the capable leadership of the founder, who has the vision to create a brand in the business world (Mamatha & Geetanjali, 2020).

However, it is important to note that the values associated with an organisation's culture are not limited to those instilled by its founders. In addition to these, others have developed in response to changes in the organisation's environment. The leader's people-centred behaviour has been linked to other important organisational phenomena, such as knowledge creation, innovation and organisational performance (Frantz & Jain, 2017).

Marsick & Watkins (1990) state that organisational culture, in addition to stimulating the dissemination of knowledge (learning culture), can also improve organisational performance. With the dissemination of knowledge supported by organisational culture, organisational performance can be improved. This learning culture can be formed through the beliefs, values and behaviour of the members of the organisation, so that it becomes a personal learning that can benefit the members of the organisation and stimulate the emergence of innovation and lead to organisational performance (Fernandes, 2018).

According to the author Anning-Dorson, (2017), organisations with an innovative cultural orientation will cope well with the external effect when implementing their innovation strategy to improve performance. Organisational culture therefore creates the fundamental philosophy that determines the tolerance, development and implementation of innovation. Consequently, organisational culture will

be an important factor during the implementation of the innovation strategy and will shape the effect of environmental pressures on the implementation of the innovation strategy.

It has been argued that the fusion of knowledge from different sources could support the creation of disruptive technological outcomes, shifting from current cognitive models and producing technological innovations (Rosenkopf and Nerkar, 2001; Kaplan and Vakili, 2015). In addition, knowledge acquisition could introduce new technological pathways (Dosi, 1982) which, in turn, could support other organisations to avoid technological dependence (Kaplan and Vakili, 2015), encourage technological evolution and advancement (Ahuja and Lampert, 2001; Natalicchio et al., 2019) and avoid competence traps through trust in knowledge generated within the same traditions, procedures, norms and social principles Alassaf et al., (2020).

In general, various sources or origins can be identified that influence an organisation's culture, such as values, leadership, innovation, trust, motivation and technology. The impact of organisational culture on various aspects of organisational performance has been widely researched. Studies have shown that organisational culture plays a crucial role in increasing corporate entrepreneurship, leading to continuous growth and innovation within organisations (Fernandes, 2018). Furthermore, empirical evidence suggests that a strong organisational culture can significantly improve overall organisational performance (Alassaf et al., 2020).

Thus, the main theme of this research is the approach to organisational culture, which encompasses a whole range of issues, options, models and challenges. This objective is justified by the numerous definitions and constructs that involve organisational culture given its complexity in organisations, since culture is a fundamental aspect of any organisation, influencing its values, beliefs and behaviour. According to Nadine Lemaitre (1985), organisational culture can be defined as a system of values shared by all the members of a company (Anning-Dorson, 2017). This definition highlights the importance of a cohesive set of values that guide the actions and decisions of individuals within the organisation. Understanding and managing organisational culture is crucial for strategic management and overall performance (Anning-Dorson, 2017). Mamatha & Geetanjali's (2020) research analyses the impact of founding leaders on organisational culture, comparing the Indian and American contexts based on Schein's organisational culture model (Mamatha & Geetanjali, 2020). This study sheds light on how the cultural context of leaders influences the organisational culture they promote in their companies. It highlights the intentional adoption of specific cultural elements to shape the overall organisational culture (Mamatha & Geetanjali, 2020). Organisational culture is a multifaceted concept that encompasses both the tangible and intangible aspects of a company. The tangible elements of organisational culture include the physical environment of the workplace, such as the office layout and any visible displays that reflect the organisation's values (Mamatha & Geetanjali, 2020). On the other hand, the intangible aspects of organisational culture are more related to employee behaviours, decision-making processes, as well as the policies and procedures established in the company (Mamatha & Geetanjali, 2020). This duality of tangible and intangible components highlights the complexity of organisational culture and how it permeates various levels of an organisation.

The concept of a learning organisational culture has also gained prominence in recent research, highlighting the importance of continuous learning and adaptation in organisations. A learning organisational culture is considered conducive to continuous change and innovation, which makes it a suitable framework for organisations seeking to thrive in dynamic environments (Koo et al., 2022). According to Jajja et al. (2019), organisational culture is the set of shared values, beliefs and norms in an organisation that guide the understanding and organisational functioning of its members and are reflected in organisational practices and objectives. Although there are several models describing organisational culture, such as the Competing Values Model (CVM).

The culture of an organisation is a complex issue that comprises values and beliefs shared by the members of an organisation, their attitudes, behaviours, norms and behavioural assumptions (Ahmad et al., 2017). An organisation's culture is a unique set of characteristics that allows it to be distinguished from any other. It corresponds to the individual's personality and conveys the way people in an organisation behave, establishing a system of values that is expressed through myths, rituals, legends and actions. It represents the traditional and customary way of thinking and doing things, which are shared by all members of the organisation. In other words, organisational culture represents the informal and unwritten norms that guide the behaviour of the organisation's members on a day-to-day basis and that direct their actions towards achieving the organisational objectives.

But according to Mamatha & Geetanjali (2020), organisational culture is gradually created by founding leaders based on their values, assumptions and beliefs, which means that each organisation has its own comparative culture. Furthermore, the study by Alassaf et al. (2020) explores the impact of an open organisational culture on knowledge management and innovation practices within a company. The results suggest that organisations with a more open and inclusive culture are more likely to engage in open innovation activities, both internally and externally, leading to an increase in innovative outcomes (Alassaf et al., 2020). This highlights how organisational culture can drive innovation and knowledge sharing within a company.

Methodology

Systematic literature review

The origin of this study is the selection and analysis of studies published by the scientific community on organisational culture in a global way, which allows us to identify the different elements that lead to approaches in the definition of organisational culture, so, in general, we carried out a systematic literature review, which is a comprehensive, objective, systematic, transparent and replicable research, systematic, transparent and replicable, initiated by an explicit and clearly formulated question (Ravindran & Shankar, 2015) and can solve the problem of conflicting results by identifying, critically evaluating and integrating the most relevant results of all studies that answer the starting question and do so through good research work (Siddaway, 2014). When constructing a systematic literature review, authors become knowledgeable about the topic and, although it is time-consuming, they can develop a range of skills including literature searching and scientific writing.

Similar to the approach adopted to analyse and synthesise the results of the studies, we decided to group our sample of articles by standardised categories, i.e. clusters. Cluster analysis is a multivariate technique that aims to help one or multiple partitions of a data set, placing them in groups based on classification criteria so that there is homogeneity within the group and heterogeneity between groups (Sneath & Sokal, 1973).

Selection, evaluation and choice of articles

The search for articles was carried out on the ISI Web of Knowledge Social Sciences Citation Index (SSCI), which took place in June 2024, according to the procedure explained in figure 2, in which we limited the number of articles to those that include "Organisation culture and Value*" in the title, abstract or keywords, in which we initially registered 29 articles. We refined our search by collecting only those articles that fell within the "Management, Business, Applied Psychology, Business Finance, Economics, Education and Humanities Multidisciplinary" themes and obtained 22 articles. We refined our search based on document types, selecting the "article" option and registering 17 articles, then applied another filter based only on the "English" language and the results obtained were 16 articles.

The 29 articles initially identified were tested for their clarity, essence, transparency, explanation provided and heuristics, resulting in the final selection of 17 articles identified in Table 1, which is attached at the end of this document, organised by authors between 2006 and 2023, as we did not consider any conditions regarding the publication dates of this study, since it was the intention that the research should reflect as accurately as possible, the development of the study on the subject of organisational culture in its relationship with values.

Descriptive analysis (N=16)

In carrying out our empirical study, we found that the 16 articles we analysed were all published in different scientific journals, which are detailed in the Table 1.

Table 1 - Source of publication of articles.

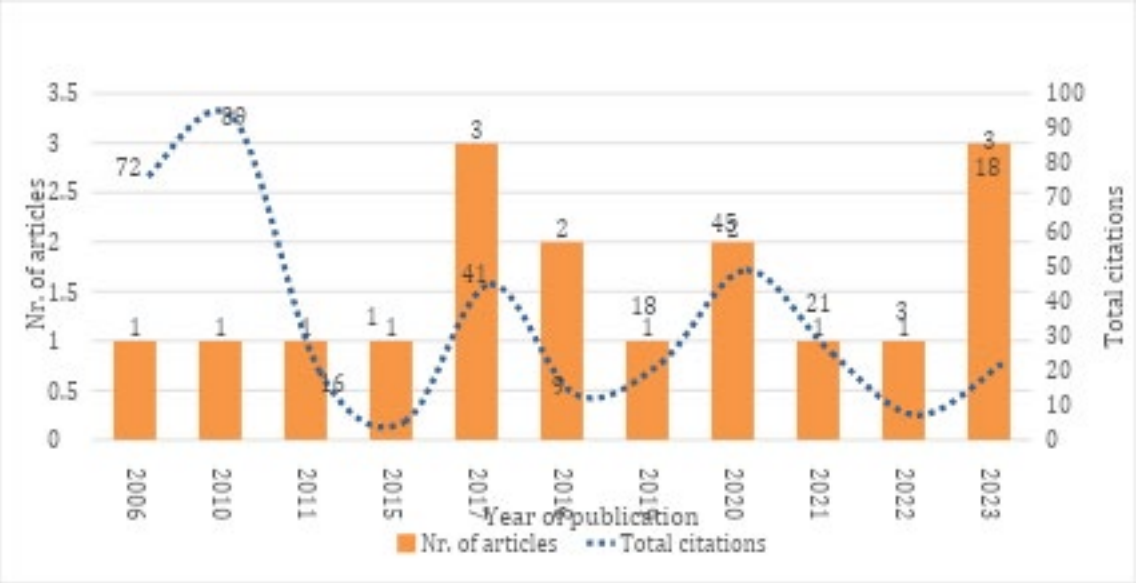
Employee relations	1	6,25%
International journal of manpower	1	6,25%
Management research review	1	6,25%
Learning organization	1	6,25%
Journal of entrepreneurship in emerging economies	1	6,25%
Journal of knowledge management	1	6,25%
Iim kozhikode society\& management review	1	6,25%

International journal of physical distribution & logistics management	1	6,25%
International journal of law and management	1	6,25%
Pacific accounting review	1	6,25%
Journal of organizational behavior research	1	6,25%
Leadership & organization development journal	1	6,25%
Marketing intelligence & planning	1	6,25%
Harvard business review	1	6,25%
Journal of vocational behavior	1	6,25%
Leadership quarterly	1	6,25%
Total	16	100%

Source: Own elaboration (2024), with data from the website: www.webofknowledge.com

Figure 1 summarises the number of articles and also identifies the total number of citations per year of publication. The years with the highest number of articles are 2017 and 2023, which reflect a slight increase in articles compared to previous periods, conveying a growing interest in recent years in topics related to organisational culture. With regard to the total number of citations, the years with the highest number are 2010, 2006 and 2020. The most cited article of all the periods analysed dates from 2010, with 89 citations, and addresses the topic of person-organisation fit (culture) and employee commitment under conditions of organisational change: A longitudinal study, according to Meyer et al. Other relevant studies are by Peterson & Castro, (2006) and Frantz & Jain, (2017), Measuring metrics at aggregate levels of analysis: Implications for organisational culture research and the GLOBE project, and Relating leadership behaviour and organisational culture in the context of India.

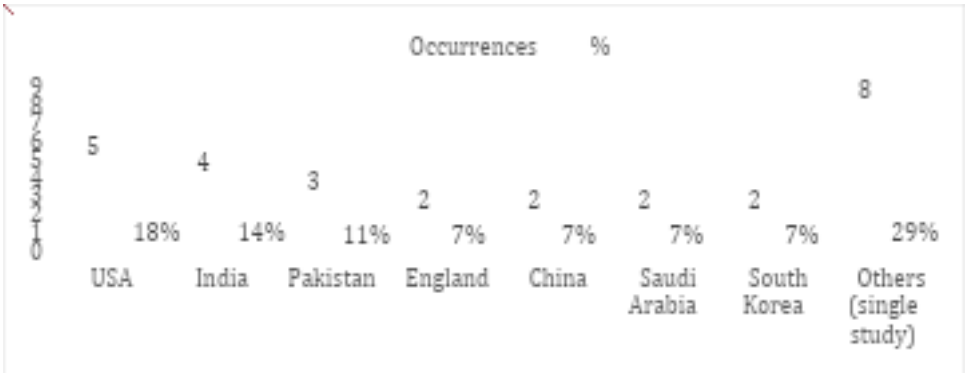
Figure 1 – Articles and citations by year of publication



Source: Own elaboration (2024), with data from the website: www.webofknowledge.com

Another relevant indicator resulting from this systematic review is related to the geographical distribution of the articles and based on our research 43 percent of the selected articles were published in 3 countries: USA, India and Pakistan, demonstrating the considerable importance attached to the subject of organisational culture in the countries listed above (Graph 1).

Graph 1 - *Distribution by country*



Source: Own elaboration (2024), with data from the website: www.webofknowledge.com

The empirical studies are mainly concentrated in the more developed countries, mainly the USA, followed by India, as these are where the most cited articles are included.

More significant insights for our study are related to the distribution of topics by research area and based on our research, 53% of the topics analysed correspond to the Management area, followed by the Business and Applied Psychology areas with 14% each, revealing the considerable importance of the topic of organisational culture (Table 2).

Table 2 - Distribution by research area

Research areas	Themes	%
Management	11	53%
Business	3	14%
Psychology Applied	3	14%
Others (Industrial Relations Labor, Finance,…)	4	19%
Total	21	100,00%

Source: Own elaboration (2024), with data from the website: www.webofknowledge.com

In the literature on organisational culture, quantitative empirical studies predominated and are identified in Table 4, as these methods have been the most explored on this topic. Our sample shows that 56% of the methods applied to include 9 quantitative empirical articles and 3 articles that apply quantitative and qualitative empirical methods simultaneously. It should also be noted that we only registered 1 qualitative empirical study, 1 case study, 1 theoretical conceptual article and 1 literature review article. We therefore clearly conclude that the topic in question has been explored in a generalised way.

Table 3 - Distribution by method

Type of Studies	Examples of authors	Occurrences	%
Empirical Quantitative	Meyer et al., (2010); Anning-Dorson, (2017); among others	9	56,25%
Mixed articles	Jajja et al., (2019); Fernandes, (2018) and Kumar et al., (2018)	3	18,75%
Empirical Qualitative	Oseghale et al. (2022)	1	6,25%
Case Studies	Mamatha & Geetanjali, (2020)	1	6,25%
Theoretical Conceptual Article	Frantz & Jain, (2017)	1	6,25%
Bibliographical review	Deshpande & Raina, (2011)	1	6,25%
Total		16	100,00%

Source: Own elaboration (2024), with data from the website: www.webofknowledge.com

Analysing and interpreting the results

The method of processing and analysing the results used for this type of research is directly related to the way in which the individual articles are broken down into consistent parts to the point where each part is related to the other, and thus the associations between the selected data can be assessed. The

analysis cannot fail to highlight the greater attention paid by authors to the subject, both in the number of articles published and in the evolution of citations (fig. 3). In order to assess the main contributions, the selected articles (n=16) were carefully analysed and during this procedure we identified three groups (clusters) of research topics: Values, Leadership and Innovation. This triangle of issues encompasses a whole set of challenges, questions, options, techniques and solutions. Table 5 shows the references inherent in each cluster obtained.

Table 4 - *Clusters*

Clusters	References
Values	*Oseghale et al., (2022)* *Yoon & Park, (2022)* *Mamatha & Geetanjali, (2020)*
	Jajja et al., (2019)
	Ahmad et al., (2017)
	Deshpande & Raina, (2011)
	Peterson & Castro, (2006)
Leadership	*Duan et al., (2022)* *Fernandes, (2018)*
	Frantz & Jain, (2017)
	Meyer et al., (2010)
Innovation	*Koo, et al., (2022)* *Alassaf et al., (2020)*
	Anning-Dorson, (2017)

Source: Own elaboration with data from the website: www.webofknowledge.com

Table 5 shows the conclusions of these articles, followed by their discussion.

Table 5 - Study on the approach of each article by cluster

Values			
Articles	Authors	Journals and Magazines	Approach
Organization culture types and the replication of transferred human resource management practices in multinational subsidiaries in Nigeria	*Oseghale et al. (2022)*	*Employee relations*	They discuss how formal mechanisms, such as company policies, structures, reward systems, performance appraisals, HR capabilities, global teams and training programmes, play a crucial role in overseeing the transfer and replication of practices in multinational subsidiaries. These formal mechanisms are essential for ensuring the

			successful implementation of HR practices in different cultural contexts. By taking advantage of these formal mechanisms, multinationals can increase the effectiveness of the transfer of HR practices to subsidiaries, ultimately contributing to the standardisation and alignment of HR processes within the organisation.
Employee's intention to share knowledge: the impacts of learning organization culture and learning goal orientation	*Yoon & Park (2022)*	*International journal of manpower*	The authors stressed the importance of organisational culture and learning goal orientation in shaping employees' willingness to share knowledge. Their research showed a positive correlation between organisational culture and employees' knowledge-sharing behaviour, subsequently having an impact on their job satisfaction.
Founder Leaders and Organization Culture: A Comparative Study on Indian and American Founder Leaders Based on Schein's Model of Organizational Culture	*Mamatha & Geetanjali, (2020)*	*Iim kozhikode society \& management review*	For these authors, the company's culture is assessed using Schein's Organisational Culture Model, while that of the founding leader is assessed using Hofstede's cultural dimensions model. A combination of standards and explanation-building methods are used to correlate the founder's cultural orientation with the culture of their organisations.
The influence of institutional pressures and organization culture on Supplier Social Compliance Management Systems	*Jajja et al., (2019)*	*International journal of physical distribution & logistics management*	The research presented in this article confirms that organisational culture is indeed a key determinant in shaping an organisational response to institutional pressures, i.e. it provides an overall frame of reference for making choices and responding to institutional pressures. The overall role of organisational culture is particularly interesting: among the four types of culture,

			market culture has the greatest influence in moderating the impact of institutional pressures, followed by adhocracy culture, hierarchy culture and clan culture.
Organization culture and its impact on performance: a comparative study of public and private sector universities	*Ahmad et al., (2017)*	*Journal of organizational behavior research*	The results of this research have shown that organisational culture positively affects organisational performance. Regarding the impact of organisational culture on organisational performance in Higher Education Institutes (HEIs), the three levels of cultural analysis described by Schein and the four perspectives of the Balanced Scorecard were used to examine the relationship between organisational performance (as a dependent variable) and organisational culture (as an independent variable). Higher education regulators should establish a system to assess the organisational culture of universities.
Organization & Culture The Ordinary Heroes of the Taj	*Deshpande & Raina, (2011)*	*Harvard business review*	The study identifies that the basis of the Taj Group's reward system is the notion that happy employees lead to happy customers, and one way of guaranteeing this result is to show that the efforts of the front-line employees and the heart of the house are valued, by thanking them personally. What's more, the moment of recognition is usually more important than the reward itself. The key ingredients of this Taj-style customer centricity that the authors explore include three elements that have important characteristics and nuances: a values-driven recruitment system that emphasises integrity and duty over talent and skills; training customer

			ambassadors who serve the guest first and the company second; and a recognition system - such as a reward system that values well-deserved applause - from customers, colleagues and immediate supervisors.
Measurement metrics at aggregate levels of analysis: Implications for organization culture research and the GLOBE project	*Peterson & Castro, (2006)*	*Leadership quarterly*	In the research presented in this article, the authors, in order to achieve the objectives and further clarify the level of analysis of the issues addressed in the organisational and cross-cultural literatures, specified three approaches to the construction of aggregate measures and concluded how it can be better integrated by applying these approaches to organisational and cross-cultural research and to the GLOBE project for the construction of aggregate measures.

Leadership			
Articles	Authors	Journals and Magazines	Approach
Emotional intelligence and high-performance leadership of women leaders: the mediating role of organization culture	Duan et al. (2022)	Management research review	They delve into the importance of emotional intelligence in the context of high-performance leadership in women leaders, highlighting the mediating role of organisational culture. The study underlines that organisational culture plays a key role in enabling women leaders to display effective leadership performance. This highlights the complex relationship between emotional intelligence, organisational culture and leadership effectiveness, especially in the context of women leaders.
The effect of organization culture and technology on	Fernandes, (2018)	International journal of law and management	The results of this research indicated that the implications of this study were to suggest

motivation, knowledge asset and knowledge management			to managers that they improve their organisational performance by implementing knowledge management, since organisational culture has a positive effect on motivation and knowledge assets and does not have a positive effect on knowledge management, in the same way that technology and motivation do not have a positive effect on knowledge management.
Relating CEO leadership behavior and organization culture in the Indian context	Frantz & Jain, (2017)	Leadership & organization development journal	These authors were able to confidently conclude that in Indian organisations, CEO behaviour is a strong predictor of their organisation's culture. And they are further synthesised into an understanding that, in the Indian context, CEOs' People-Centric behaviour is clearly indicative of the organisation's culture.
Person-organization (culture) fit and employee commitment under conditions of organizational change: A longitudinal study	Meyer et al., (2010)	Journal of vocational behavior	This study shows that from a practical management point of view, culture is important in the development of commitment and in deliberations about leaving an organisation. For some cultural characteristics, particularly those that are employee-centred (e.g. human relations culture), cultural strength itself may be more important. These authors' findings suggest that pre-change commitment and intention to stay can have positive implications for post-change commitment and intentions.
Innovation			
Articles	Authors	Journals and Magazines	Approach

The moderating effect of communication on congruence and incongruence of openness to change: is communication always beneficial for learning organization culture and knowledge sharing?	*Koo, et al., (2022)*	*Learning organization*	The study provides valuable information on the impact of communication on organisational culture, knowledge sharing and learning during periods of change. By recognising the interconnection between communication, openness to change and person-organisation fit, organisations can strengthen their ability to adapt, learn and thrive in dynamic environments.
The impact of open-border organization culture and employees' knowledge, attitudes, and rewards with regards to open innovation: an empirical study	*Alassaf et al., (2020)*	*Journal of knowledge management*	A positive impact of organisational characteristics on the adoption of Open Innovation (OI) is assumed in this empirical study, i.e. including the adoption of OI activities outside and inside and outside the participating organisations, showing that the openness of an organisation's culture increases its likelihood of adopting an OI paradigm. The results through a quantitative analysis using logistic regression models highlight the positive mediating effect of employee knowledge and rewards on this relationship.
Moderation-mediation effect of market demand and organization culture on innovation and performance relationship	*Anning-Dorson, (2017)*	*Marketing intelligence & planning*	Here it is concluded that although product innovation has a positive effect on company performance (both in terms of non-financial and financial performance), high market demand dampens and negates this effect. However, the study found that a service company's ability to build an innovative culture would alleviate this negative effect and restore the positive relationship between product innovation and company performance.

Cluster 1 - Values

Values are the convictions and moral principles that form the basis of an organisation's culture, which support its management style and its relationship with its employees and other stakeholders. They are basic convictions that are deeply rooted in people and guide their behaviour in the social environment. They allow individuals to define their line of conduct, as they give them a sense of what they understand by socially acceptable or socially rejected behaviour. The set of these convictions determines people's value system. According to Jajja et al., 2019 organisational culture is the set of shared values, beliefs and norms in an organisation that guide the organisational understanding and functioning of its members and are reflected in organisational practices and goals. According to Ahmad et al., 2017 culture is made up of community beliefs and values, attitudes, behavioural norms,

assumptions and artefacts (Hofstede, 1980). Organisational culture is gradually created by founding leaders based on their values, assumptions and beliefs. Schein (1995) proposed that the values held by the founders are transmitted through the organisation in terms of organisational structure, vision, mission, formal statements and other facts that are visible.

He also suggested a prototype for understanding organisational culture in which he says that the evolution of culture is a multi-stage process, in which the first stage is the dissemination of values and beliefs by the founder to the immediate group, which are later disseminated to the organisation. The final organisational culture reflects the interaction between assumptions and theories that the founder brings to the group/employees (Mamatha & Geetanjali, 2020). Schein (2004) has proposed various levels of culture, ranging from deeply embedded and unconscious assumptions to perceptible manifestations and displays that are visible and can be felt (Ahmad et al., 2017). According to the authors Mamatha & Geetanjali (2020), Schein provides a model for the incorporation and transmission of culture. The culture transmitted depends on incorporating assumptions and then reinforcing them with norms, values and observable and unobservable products. Shein's model (1995) uses 3 levels to discuss organisational culture: artefacts and creations, values and basic assumptions or presuppositions, ranging from full visibility to low visibility. The first level is the most visible (difficult to decipher).

It includes artistic productions, spoken and written language, the physical organisation of space and technology. The second level is the intermediate level. It lies between artefacts and assumptions. It completes the description of what needs to be done, said and thought. When a value is taken for granted, it obviously passes into convictions. The third level is that of convictions, hypotheses, assumptions, rules, basic orientations and beliefs. It is the cultural paradigm of an organisation. When the solution to a problem becomes the model and consequently determines the way in which facts are conceived, we move on to the third level: convictions. It is at this level that we find the frame of reference known as the cultural paradigm, which summarises the levels of organisational culture and serves to interweave perceptions, behaviours, actions, judgements and decisions. Schein's concepts of incorporating and transmitting assumptions through observable norms, values and culture actually create the driving organisational culture.

Cross-cultural scholars use many constructs derived from individual value items. The rationale for this use is that individual values are so strongly affected by the characteristics of society's institutions that it is useful to think of them as substitutes for institutional measures (Peterson & Castro, 2006). According to Hofstede's theory of the cultural dimension (2011), the deepest level of culture is a person's value system. He points out that culture differs from one nation to another and, within a nation, from one region to another and uses the "onion" diagram to show the manifestation of culture at different levels and concludes from his transnational research that organisational culture and national culture are different (Mamatha & Geetanjali, 2020). Deshpande & Raina, (2011) argue that other companies can emulate the key ingredients of Taj-style customer centricity, i.e. the manifestation of the Taj Group's deep-rooted culture, which include a values-driven recruitment system that emphasises integrity and duty over talent and skills, both in extreme circumstances and in periods of normality.

Personal, cultural and organisational values represent the special glue that binds organisations together internally. Shaping and driving each organisation's true mission is contributing to its success and longevity.

Cluster 2 - Leadership

Leadership is the process of social influence over a person or group, whereby the leader seeks to obtain the voluntary participation of the other members of the group in the common cause, i.e. the ability to influence a group towards the realisation of goals and also to influence others to get them to do what the leader wants them to do. It is the ability to influence a group to act in pursuit of the group's objectives. Many researchers have suggested that there is a continuous gap between leaders and the organisation's culture. Bass e Avolio (1993) argue that the leadership and culture of an organisation may be so closely linked that one may be able to sufficiently characterise the culture by directly describing the qualities of its leadership; it can be assumed that the culture of an organisation may be mostly driven by the values of the leaders (Frantz & Jain, 2017). Understanding how founding leaders shape organisational culture has also been a focus, with comparisons made between Indian and American leaders based on established cultural dimensions theories (Mamatha & Geetanjali, 2020).

According to Mayer et al. (2010), there are three crucial leadership characteristics that create trust: competence, benevolence and integrity. Competence would be related to the knowledge and experience of leading in the types of tasks to be carried out, benevolence would be the leader's belief that his followers would be in good faith and integrity would include the followers' perception associated with the fact that the leader honours what has been agreed. When followers believe in the leader's ability, integrity and benevolence, they become more confident and willing to take risks. It's called a propensity to trust.

Motivating members or their subordinates is a leader's responsibility. In addition, leaders must have useful ideas and thoughts for the organisation, but it is also necessary to create an atmosphere conducive to members sharing knowledge in organisations. The leader must also be able to create an active learning process in which all members can get involved and be willing to contribute their ideas and thoughts. High motivation is required to implement knowledge management, as knowledge management is the systematic, explicit, updating and application of knowledge to maximise an organisation's knowledge in order to improve its effectiveness, and the core of successful knowledge management is the dissemination of knowledge within an organisation. For an organisation, knowledge is only very useful if the knowledge can be applied in the implementation of the organisation's activities, as it is a challenge for an organisation to ensure that the knowledge can be received by the members of the organisation. Therefore, all members of the organisation without differentiation of rank must be concerned with the objectives of the organisation and make it their high motivation in carrying out or implementing knowledge management (Fernandes, 2018). Ogbonna e Harris (2000) presented evidence that the relationship between leadership style and organisational performance is mediated by the characteristics of culture.

Emotional intelligence and high-performance leadership have been associated with organisational culture, highlighting the mediating role that culture plays in shaping leadership effectiveness, particularly for women leaders (Duan et al., 2022). In addition, the correlation between the CEO's leadership behaviour and the characteristics of organisational culture has been explored, shedding light on how leadership styles influence and are influenced by the prevailing culture within an organisation (Frantz & Jain, 2017). Rodsutti e Swierczek (2002) point out that in order to be effective, leaders must change their nationalised leadership style when managing in a multicultural organisational environment (Frantz & Jain, 2017). This literature review confirms that there is a significant link between leadership and organisational culture, depending on the point of view of different authors.

Cluster 3 - Innovation

Innovation is what many organisations want, for the simple reason of the constant need to stand out in the market, mainly due to the similarity between competitors, where price is not the most relevant factor in choosing a good and/or service, causing an impact between organisations. Organisational culture explains the company's ability to create a constellation of events and steps between its functional areas to deal with environmental concerns in the implementation of strategy. Cakar e Erturk (2010) explain that organisational culture is the collective behaviour of the human beings who are part of an organisation, and this collective behaviour creates the meanings that people attribute to their actions. Organisational culture therefore creates the fundamental philosophy that determines the tolerance, development and implementation of innovation (Anning-Dorson, 2017). Tushman et al. (1997) rightly argue that organisational culture is at the heart of innovation development and therefore significantly influences innovation implementation. Specifically, an organisational culture that promotes employees' creative abilities, tolerates risks and supports the implementation of innovation is an important organisational factor that improves the company's knowledge base, achieving better results in product innovation (Anning-Dorson, 2017).

Segundo Ferraris et al. (2020), In an Open Innovation (OI) paradigm, it is essential to have an innovation-orientated culture, as well as examining different solutions for production processes in order to create value. Focusing on stability rather than creating change can obstruct innovation processes, especially as OI requires change as well as innovative mindsets, talents and knowledge. Thus, innovation-oriented cultures enable organisations to regularly create and commercialise new technologies. The author, with regard to employees' attitudes to internal knowledge, points out that

organisations face continual pressure from the conflict between their inclination to share knowledge with external parties and their tendency to protect their proprietary innovation or intellectual property rights. Employees often resist the transition to IO, perceiving it as a threat to their jobs and to traditional research and development (R&D) models of closed innovation (Alassaf et al., 2020). This highlights the need for organisations to cultivate a culture that promotes openness to experience and knowledge sharing in order to drive innovation. Furthermore, the replication of human resource (HR) management practices in multinational subsidiaries has been associated with types of organisational culture, highlighting the importance of aligning culture in different organisational units (Oseghale et al., 2022).

Gaynor (2002) explains that innovation doesn't require genius, but it does require a systemic dedication to looking for unique opportunities, and this systemic dedication is always inspired by the organisation's culture (Anning-Dorson, 2017). Organisational culture and employee characteristics complement each other. In fact, knowledgeable and talented employees are generally motivated by commitment, which serves as an important condition for an innovative culture in which they are recognised as intangible assets that the organisation uses to maintain its competitiveness (Alassaf et al., 2020).

An advantageous organisational culture enables an organisation to identify dynamically changing problems by adapting to the integration of external and internal organisational resources, employees and rules to support external adaptation (Alassaf et al., 2020). An innovative organisational culture will not only promote innovative activities but will also coordinate the entire innovation strategy management process to produce the desired effect (Anning-Dorson, 2017).

The moderating effect of communication on organisational change and the role of openness to change in learning organisation culture were examined, highlighting the need for effective communication strategies to facilitate successful organisational change initiatives (Koo et al., 2022). Employees' intention to share knowledge has been linked to the organisational learning culture and learning goal orientation, highlighting the importance of creating an enabling environment that promotes knowledge sharing and collaboration (Yoon & Park, 2022). Furthermore, it has been shown that the fit between individuals and organisational culture influences employee commitment, especially during periods of organisational change, underlining the role of culture in shaping employee attitudes and behaviour (Meyer et al., 2010).

For today's companies, innovation is a constant pursuit, since in order to keep up with their competitors, they need to be prepared and up to date with the latest developments in the market, satisfying their customers and/or improving their own processes.

Discussion

According to the opportunity, convenience and expressiveness of these contributions, together with the time criterion in line with the methodology adopted, were sufficient attributes for inclusion in the exchange of arguments, in the sense of adding own collaboration supported by two (2) studies which, although not referred to during the theoretical foundation, gained importance during the investigation.

These studies, which are not included, correspond to positions with which the authors identify in terms of organisational culture. As a first approach, it is worth highlighting the research carried out by Kumar et al., (2018) on how organisational culture can play a crucial role in shaping employees' attitudes towards fraud, which has already been identified in several previous studies. If, over time, an employer fails to remove the incentive and opportunity to commit fraud, some employees may take this as a sign of a "lax organisational culture" in relation to acts of occupational fraud and lead them to rationalise their actions by developing their belief that no one would care. The preliminary results of this research offered some indicative support for the BMB model (2013) by showing the perception of tolerance in the organisational culture towards fraud as a potentially important contributor to the rationalisation of an act of fraud. The study conducted by Kim & Park, (2021) served to inform the decision-making of many organisations about new business directions and success factors for gaining new growth opportunities with corporate entrepreneurship activities according to each of their own internal environment statuses, with the aim of investigating the critical factors necessary for an internal environment conducive to entrepreneurial activity, i.e. rethinking the organisation's culture. This discussion concludes by considering that organisational culture is a considerable differentiator in the fight against fraud in organisations.

However, it is necessary to pay attention to the consequences that critical factors, in an internal environment conducive to business activity, have on decision-making based on reflection of the organisation's culture.

Segundo Meyer et al., (2010) culture is a value-laden construct and, just as values fit, culture congruence falls under the rubric of necessary supplies. In other words, employees' needs are reflected in their preference for a particular culture, and congruence exists when the organisation provides conditions (i.e. through its policies and practices) that satisfy those needs. We also need leadership in our working relationships. Leadership that isn't felt is missing the heart. People want more than command and control, above all they want meaning, self-awareness, ethical and transparent relationships and a higher profile for their leaders. Leaders can get the best out of people to make their organisations healthier if they give greater importance to the balance between personal values and organisational values. Involving others and proclaiming values is the way forward. The founder's influence on the creation of organisational culture depends mostly on the founder's own cultural orientation, the environment in which he was brought up and his long-term vision for the company. Schein (1990) mentions that organisations are not built overnight, but through the capable leadership of the founder, who has the vision to create a brand in the business world. When a group of people start working for the company, the formation and dissemination of the culture begins subtly through the methods the group adapts to realise the founder's vision (Mamatha & Geetanjali, 2020).

It is reasonable to conclude that leadership is indeed closely linked to the formation and conservation of a culture (Frantz & Jain, 2017). Organisational culture influences the parameters of innovation, performance, job satisfaction, organisational commitment (Mamatha & Geetanjali, 2020).

It is concluded that organisational culture will be an important factor during the implementation of the innovation strategy and will shape the effect of environmental pressures on the implementation of the innovation strategy. Innovation helps companies create competitive advantages that eventually improve their performance (Anning-Dorson, 2017). It appears that the more an organisation's policies and practices reflect concern for employee morale and development (human relations) and encourage innovation and growth (open systems), the more employees want and intend to stay (Meyer et al., 2010). Organisational culture proved to be significantly influential on knowledge assets. Some of the previous research is identical to the results of this study, Kalay and Lynn (2015) and Laoufi et al. (2011) clearly describe that organisational culture is a very important factor in the knowledge management process (Fernandes, 2018). Finally, an organisation that has a mission and a certain vision needs to change its ways of learning best practices and continuously incorporate into the organisations culture, values, leadership and innovation, in other words, new insights into feeling part of the whole. The future will show that a good strategy will take values into account: the need for well-understood goals and taking organisational culture into account. In short, organisational culture plays a fundamental role in shaping the values, behaviour and performance of individuals within a company.

Understanding the dynamics of organisational culture, as defined by Lemaitre (1985) as a system of shared values, is essential for effective management and strategic decision-making in organisations (Anning-Dorson, 2017). Leaders, as highlighted in various studies, have a significant influence on shaping and reinforcing organisational culture, highlighting the importance of leadership behaviour in promoting a positive and cohesive culture (Mamatha & Geetanjali, 2020; Frantz & Jain, 2017). In addition, adjusting organisational culture with practices such as innovation, knowledge sharing and HR management is crucial to boosting organisational success and adapting to changing environments (Alassaf et al., 2020; Oseghale et al., 2022; Yoon & Park, 2022). By recognising the impact of organisational culture on various aspects of organisational functioning, companies can benefit from their culture as a strategic asset for sustainable growth and competitiveness.

Conclusion

Throughout this investigation, we've noticed how important it is to integrate organizational culture with values, leadership, and innovation. These elements work together and are crucial for the growth, development, and survival of organizations, especially as they become more diverse, open to innovation, self-regulating, and entrepreneurial. Reviewing the traditional literature on this topic can be challenging because organizational culture touches on so many key areas like values, leadership, innovation, motivation, and trust. There's not a lot of research that delves deeply into this particular combination of factors. In this study, we paid special attention to organizational culture for several reasons. The most important one is that you can't properly analyze or design an organization without

considering its culture. Many authors emphasize this point, showing that the intentions, values, and goals of an organization must be chosen with its culture in mind. Values play a fundamental role in motivation by giving meaning to cognitive and cultural needs, turning them into goals and intentions. From the examples we reviewed, it became clear that successful companies focus on a shared set of values among their members. They emphasized that organizational culture significantly impacts both the effectiveness of the organization and the satisfaction of the people who work there.

A literature review concerning organizational culture, values, leadership, and innovation, in our understanding, brought in insight into the concern of these factors regarding organizational effectiveness and depth and multiplicity of development. Organizational culture is, therefore, a core concept in which other dimensions intervene at any level of organization, from daily operation to long-term strategy. The review reveals that a well-defined organizational culture that integrates strong values with effective leadership and a supportive environment for innovation is the key to organizational success. Values, hence, are considered to be the backbone of organizational culture. It sets the boundaries of organizational members' behavior, laying out the norms within which they can work cohesively and operationally effectively. Leadership, on the other hand, is another aspect that shapes and sustains this culture. A competent, reliable, and visionary leader can play an effective role in representing organizational culture as one concerned with innovation, trust, and motivation.

Additionally, the study points out one more aspect: the dynamic and evolving capability of organizational culture to get adjusted by internal and external changes. This flexibility factor is quite important for discussing global changes, where companies need to meet the challenged requirements of competitiveness. Those organizations that better align their internal cultures with market demand and the expectations of all relevant stakeholders are likely to succeed in the long run, whereas the organizational culture can work against organizational success when not managed properly. Cultures that are non-innovative or hold onto past process and procedures put a cap on creativity and adaptability, resulting in the rut or even an organization's decline. It is, therefore, managing organizational culture that leadership should consider most vital, remain responsive to ever-changing needs, and align with new market realities.

This is relevant within any integrated view of the values, leadership, and innovation that leads to the development of organizational culture. With findings clustered around values, style of leadership, and innovation, the research creates a very understandable and tangible structure useful for scholars and managers as a guide to grasping and utilizing the concepts of organizational culture within other frameworks. This theoretically informed systematic review consolidates multiple organizational culture theoretical approaches, bringing them together on multiple dimensions. The study tends to strengthen the argument that organizational culture is a complex, dynamic system of values, norms, and practices over time. The practical implications of this research point toward providing lessons for the development and sustenance of such a culture for higher innovation and organizational performance to the practicing manager and organizational leader. Businesses can apply the leadership and management practices discussed in this study directly to their contexts for internal coherence and improved results. By grouping the findings into clusters like values, leadership, and innovation, the research offers a clear and practical framework that can be used by both academics and managers to understand and apply organizational culture concepts in different contexts. The systematic review has theoretically been able to bring together divergent approaches to organizational culture and develop a holistic view of its multiple dimensions.

The research strengthens the view that organizational culture represents a complex system of values, norms, and practices that are Dynamic over time and in nature, shaped by leadership and external challenges. The study practically informs managers and organizational heads on how to build and sustain a culture that is innovative and supports organizational performance. The leadership and management practices discussed in this study can be directly related and applied in business contexts to strengthen their internal bonding and outcome. he studies also contributes methodologically by applying a systematic literature review that rigorously follows established steps to ensure objectivity and replicability of the results, offering a model for future research in organizational culture and beyond. Despite these significant contributions, there are some limitations to this study: 1) The review focused on articles available in specific databases, like ISI Web of Knowledge, which may have limited the scope of the included studies.

While this database is highly respected, excluding other sources may have overlooked relevant research, especially those published in different languages or regional contexts; 2) The review

concentrated on studies published between 2006 and June 2024, which is useful for capturing recent trends but may not reflect the historical roots or long-term evolution of organizational culture. Studies from before 2006 could offer a richer perspective on the formation and development of organizational culture concepts; 3) Most of the studies included in the review were conducted in developed countries like the United States, India, and Pakistan, which might limit the generalization of the findings to other cultural and economic contexts where the dynamics of organizational culture could be quite different; 4) While a systematic review is a robust approach, its rigorous nature might exclude exploratory or qualitative studies that offer rich insights but don't necessarily meet strict inclusion criteria. This could result in a somewhat limited view of the phenomenon under study.

Given that organizational culture is a vast field and that the factors involved are very complex, several promising directions for future research exist. For example, future studies may try to investigate how the values and beliefs of the founder continue to influence organizational culture with the growing and diversifying firm. This would help in explaining one of the fundamental questions pertaining to the construction and maintenance over time of robust, resilient cultures. Another area that requires further study is the relationship between organizational culture and occupational fraud prevention. Organizational culture tends to be seen as very positive, but it also has negative connotations, like implicit tolerance of bad practice. Research investigating how culture can be fashioned in a way to minimize these risks would be very applicable. Future studies could be directed toward organizational culture comparisons across different regions and sectors. In this respect, it would be more plausible to derive how these certain cultural, economic, and social contexts influence the formation and effectiveness of organizational culture.

With technological advancement, new tools and platforms are made available to measure and influence organizational culture. Specifically, one promising avenue of future research is in how such technologies can be harnessed in real-time to monitor and improve culture. Whereas a connection between organizational culture and innovation has clearly been established, additional research is needed to flesh out the details of how this relationship develops with respect to various forms of innovation—that is, disruptive versus incremental innovation—and how culture might be shifted to support various innovation strategies. The designs that would bring added value in the tracking for longitudinal studies of how organizational culture evolves over time—especially in times of major change, like during mergers, acquisitions, or an economic crisis—would be rich ground for understanding resilience and adaptability within organizational cultures.

References:

- Ahmad, A., Karim, N., & Jan, F. A. (2017). Organization culture and its impact on performance: a comparative study of public and private sector universities. JOURNAL OF ORGANIZATIONAL BEHAVIOR RESEARCH, 2(1), 1–15.
- Alassaf, D., Dabic, M., Shifrer, D., & Daim, T. (2020). The impact of open-border organization culture and employees' knowledge, attitudes, and rewards with regards to open innovation: an empirical study. JOURNAL OF KNOWLEDGE MANAGEMENT, 24(9), 2273–2297. https://doi.org/10.1108/JKM-02-2020-0122
- Anning-Dorson, T. (2017). Moderation-mediation effect of market demand and organization culture on innovation and performance relationship. MARKETING INTELLIGENCE \& PLANNING, 35(2), 222–242. https://doi.org/10.1108/MIP-04-2016-0066
- Briner, R.B., Denyer, D. (2012) Systematic Review and Evidence Synthesis as a Practice and Scholarship Tool. Handbook of Evidence-based Management: Companies, Classrooms and Research, pp. 112 e 129.
- Deshpandé, Raina. (2012). the ordinary heroes of the taj (how a deeply rooted customer-centric culture can motivate employees to place the well-being of their customers before their own). Human Resource Management International Digest, 20(4). https://doi.org/10.1108/hrmid.2012.04420daa.003
- Duan, W. H., Asif, M., Mahmood, N. H. N., & Zakaria, W. N. W. (2022). Emotional intelligence and high-performance leadership of women leaders: the mediating role of organization culture. Management Research Review, 46(1), 100-115. https://doi.org/10.1108/mrr-06-2021-0419
- Fernandes, A. A. R. (2018). The effect of organization culture and technology on motivation, knowledge asset and knowledge management. INTERNATIONAL JOURNAL OF LAW AND MANAGEMENT, 60(5), 1087–1096. https://doi.org/10.1108/IJLMA-05-2017-0105

- Frantz, T. L., & Jain, A. K. (2017). Relating CEO leadership behavior and organization culture in the Indian context. LEADERSHIP \& ORGANIZATION DEVELOPMENT JOURNAL, 38(6), 746–764. https://doi.org/10.1108/LODJ-12-2015-0287
- Jajja, M. S. S., Asif, M., Montabon, F. L., & Chatha, K. A. (2019). The influence of institutional pressures and organization culture on Supplier Social Compliance Management Systems. INTERNATIONAL JOURNAL OF PHYSICAL DISTRIBUTION \& LOGISTICS MANAGEMENT, 49(5, SI), 552–574. https://doi.org/10.1108/IJPDLM-11-2017-0359
- Kim, J. Y., & Park, M. J. (2021). Investigation of critical factors on corporate entrepreneurship Rethinking the organization culture. JOURNAL OF ENTREPRENEURSHIP IN EMERGING ECONOMIES, 13(1), 1–25. https://doi.org/10.1108/JEEE-11-2019-0175
- Kumar, K., Bhattacharya, S., & Hicks, R. (2018). Employee perceptions of organization culture with respect to fraud - where to look and what to look for. PACIFIC ACCOUNTING REVIEW, 30(2), 187–198. https://doi.org/10.1108/PAR-05-2017-0033
- Koo, Y., Kim, S. J., & Song, J. H. (2022). The moderating effect of communication on congruence and incongruence of openness to change: is communication always beneficial for learning organization culture and knowledge sharing?. The Learning Organization, 29(2), 172-190. https://doi.org/10.1108/tlo-02-2021-0025
- Mamatha, S. V, & Geetanjali, P. (2020). Founder Leaders and Organization Culture: A Comparative Study on Indian and American Founder Leaders Based on Schein's Model of Organizational Culture. IIM KOZHIKODE SOCIETY \& MANAGEMENT REVIEW, 9(1, SI), 23–33. https://doi.org/10.1177/2277975219890932
- Meyer, J. P., Hecht, T. D., Gill, H., & Toplonytsky, L. (2010). Person-organization (culture) fit and employee commitment under conditions of organizational change: A longitudinal study. JOURNAL OF VOCATIONAL BEHAVIOR, 76(3), 458–473. https://doi.org/10.1016/j.jvb.2010.01.001
- Oseghale, R., Pepple, D., Ifere, S. E., & Amaugo, A. (2022). Organization culture types and the replication of transferred human resource management practices in multinational subsidiaries in nigeria. Employee Relations: The International Journal, 45(3), 565-584. https://doi.org/10.1108/er-04-2021-0134
- Panchamia, J., & Petonjee, D. M. (2015). Study of Organization Culture in Power Sector Organizations. NMIMS MANAGEMENT REVIEW, 26, 13–26.
- Peterson, M. F., & Castro, S. L. (2006). Measurement metrics at aggregate levels of analysis: Implications for organization culture research and the GLOBE project. LEADERSHIP QUARTERLY, 17(5), 506–521. https://doi.org/10.1016/j.leaqua.2006.07.001
- Siddaway, A. (2014). What is a Systematic Literature Review and How do I do One?. 1-13.
- Yoon, S. W. and Park, J. G. (2022). Employee's intention to share knowledge: the impacts of learning organization culture and learning goal orientation. International Journal of Manpower, 44(2), 231-246. https://doi.org/10.1108/ijm-01-2021-0004

2 - A vida dos idosos institucionalizados: um estudo de caso sobre a adaptação de idosos no Lar Estrela Confiante, Estarreja, Portugal

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Resumo: À medida que a população envelhece, a procura por instituições para idosos aumenta exponencialmente. Por essa razão, o desenvolvimento e aprimoramento de serviços voltados aos cuidados geriátricos, instalações de vida assistida e outras formas de assistência são indispensáveis às demandas crescentes desse segmento demográfico. Diante do exposto, o objetivo geral deste artigo é avaliar como os utentes se adaptam à instituição privada Estrela Confiante, localizado em Estarreja, Portugal. Quanto aos objetivos específicos, propõe-se identificar as várias fases de adaptação de cada utente, descrever as estratégias utilizadas pela equipa técnica para a boa adaptação dos utentes e analisar a importância da rede familiar na adaptação do utente. Trata-se de um estudo misto, composto por um questionário de doze itens que se resumem em avaliar a integração e qualidade de vida dos idosos na Residencial Sénior Estrela Confiante, além de uma análise qualitativa acerca das questões que demandam essa apreciação. Para a adaptação ser positiva existem várias condicionantes, tais como uma boa integração com a equipa técnica, rede de suporte familiar e satisfação com as instalações da instituição. Os cuidados formais e a rede de relações interpessoais que o idoso mantém contribuem positivamente e interferem na sua qualidade de vida e na capacidade de adaptação a um novo meio.

Palavras-chave: Idosos Institucionalizados, Adaptação, Qualidade de Vida, Estrela Confiante de Estarreja.

Abstract: As the population ages, the demand for elderly care institutions increases exponentially. For this reason, the development and enhancement of services focused on geriatric care, assisted living facilities, and other forms of assistance are indispensable to meet the growing demands of this demographic segment. Considering the foregoing, the general objective of this article is to assess how residents adapt to the private institution “Estrela Confiante”, located in Estarreja, Portugal. Regarding specific objectives, it is proposed to identify the various phases of adaptation for each resident, describe the strategies employed by the technical team to facilitate residents' successful adaptation,

and analyze the importance of the family network in resident adaptation. This is a mixed-methods study, consisting of a twelve-item questionnaire designed to assess the integration and quality of life of the elderly at the Estrela Confiante Senior Residential Facility. Additionally, a qualitative analysis is conducted to address issues requiring a nuanced assessment. Several factors, such as positive integration with the technical team, a supportive family network, and satisfaction with the institution's facilities, contribute to a positive adaptation. Formal care and the network of interpersonal relationships maintained by the elderly have a positive impact on their quality of life and their ability to adapt to a new environment.

Keywords: Institutionalized Elderly, Adaptation, Quality of Life, Estrela Confiante de Estarreja.

Introdução

Ao longo dos anos, o índice de envelhecimento tem vindo a aumentar. Em Portugal, segundo dados do Instituto Nacional de Estatística (2023), é mantida a tendência de envelhecimento demográfico. O índice de envelhecimento, que avalia a proporção da população com 65 anos ou mais (considerada população sénior) em relação à população de 0 a 14 anos (população jovem), demonstrou um contínuo aumento. Em 2011, a relação era de 128,0 idosos para cada 100 jovens em Portugal, um número que cresceu para 181,3 em 2021 e 185,6 em 2022.

Por esse motivo, a cobertura de respostas para as pessoas idosas tem evoluído de forma positiva nos últimos dez anos, porém o aumento acelerado da população com 65 ou mais anos tem condicionado o crescimento da taxa de cobertura dessas respostas (República Portuguesa, 2017).

Considerando essa expressividade no aumento de pessoas idosas, em particular no caso de Portugal, este artigo tem como objetivo principal avaliar como os utentes se adaptam às instituições privadas de acolhimento, nomeadamente o Lar Estrela Confiante, localizado em Estarreja, Portugal. Em complemento, também são objetivos transversais a este artigo identificar as várias fases de adaptação de cada utente, descrever as estratégias utilizadas pela equipa técnica para a boa adaptação dos utentes e, por fim, analisar a importância da rede familiar na adaptação do utente.

Dentre os principais resultados, conclui-se que a apreciação dos idosos acerca da adaptação no lar em questão é positiva, mas essa é uma realidade pontual, já que muitos enfrentam desafios relacionados à acessibilidade financeira, limitações nas opções de escolha e, por vezes, questões emocionais ligadas à separação de seus lares e comunidades de longa data. Vale ainda ressaltar o risco superior de serem vítimas de maus-tratos, incluindo negligência, abusos físicos e emocionais, uma vez que se encontram em estado de maior dependência e debilidade física (Gonçalves, 2010).

A institucionalização da pessoa idosa e o processo de adaptação

Segundo Carvalho e Dias (2011), a institucionalização ocorre essencialmente quando o seio familiar não apresenta condições financeiras e nem psicológicas para cuidar do idoso. Um dos principais motivos que dá origem à procura dessa resposta social é o internamento. Simultaneamente a esse tipo de resposta, surgem sentimentos de culpa, abandono e isolamento por parte da família em relação à pessoa institucionalizada.

A qualidade de vida dos indivíduos institucionalizados varia muito, pois existem vários fatores que podem condicionar a essa situação, incluindo o convívio com as pessoas que lhe são próximas, tais como amigos e familiares (Carvalho & Dias, 2011).

Os idosos encontram-se bem-adaptados à instituição quando superam positivamente as suas dificuldades e conflitos. Quando sentem falta de apoio familiar, a possibilidade de se sentirem melhor adaptados é mais evidente. Por outro lado, a síndrome da não adaptação provoca consequências morfológicas, fisiológicas e comportamentais, ou seja, quanto mais tempo de institucionalização, maior o abatimento dos indivíduos, o que pode provocar solidão, levando muitas vezes à depressão (Carvalho & Dias, 2011).

Atualmente, as instituições são muito importantes para os idosos, pois são responsáveis pelos cuidados básicos na sua vida diária. Para que essa integração na instituição seja positiva, deve existir procedimentos de adaptação, além da aceitação por parte do idoso e da família (Freitas & Scheircher, 2020).

As instituições, de modo geral, são assistencialistas, focando-se essencialmente nos cuidados básicos de higiene e alimentação, descurando atividade física, saúde mental e relações sociais. Na maioria dessas instituições, não existem atividades suficientes para cativar o idoso, transformando os

seus em dias em dias monótonos ou rotineiros, por isso, muitos acabam por ficar à espera da sua morte (Freitas & Scheircher, 2020).

Na grande maioria, as instituições não oferecem alternativas de fisioterapia, diminuindo assim a qualidade de vida dos idosos, o que a médio prazo pode provocar dependência e incapacidades (Freitas & Scheircher,2020).

Segundo Oliveira e Gonçalves (2020) os estudos demonstram que os indivíduos que frequentam o centro de dia têm uma maior qualidade de vida quando comparados com os que estão institucionalizados. Isto acontece porque nos centros de dia existem diversas atividades para garantir que o idoso adquire maior capacidade de autonomia o que acaba por se revelar na sua autoestima e na sua saúde.

A verdade é que a qualidade de vida e o bem-estar do idoso que se encontra na instituição não depende apenas da mesma, mas também pode ter influência através dos familiares. Se o idoso não recebe visitas da família acaba por existir uma baixa da sua autoestima pela inexistência de afeto (Oliveira & Gonçalves 2020).

Existe uma grande distinção entre homens e mulheres quando chegam à terceira idade. As mulheres demonstram uma maior angústia ao contrário dos homens que melhoram a sua autoestima e aceitam como um processo normal (Oliveira & Gonçalves 2020). Do ponto de vista de Carvalho e Dias (2011), a adaptação é influenciada, também, pelo meio onde provém os indivíduos e a relação que apresentam com o sítio em que nasceram e viveram. A maioria dos idosos sente-se satisfeito com os cuidados que lhes são prestados nas instalações.

Procedimentos metodológicos

Em termos metodológicos, este estudo possui natureza mista, que engloba a associação entre procedimentos de coleta, análise e combinação de técnicas quantitativas e qualitativas (Creswell, 2010). Para tanto, é composto por um questionário estruturado, que consiste num instrumento de recolha de dados com um número limitado de perguntas, as quais são autopreenchidas pelos participantes, além de uma análise qualitativa acerca das questões que demandam essa apreciação.

O questionário aplicado nesta pesquisa está estruturado com doze questões, que se resumem em avaliar a integração e qualidade de vida dos idosos na Residencial Sénior Estrela Confiante, em Estarreja, Portugal.

A população selecionada para este estudo corresponde aos idosos que tiveram interesse e disposição para participarem da pesquisa e que residem na instituição Estrela Confiante. Na ocasião da pesquisa, esses indivíduos teriam de ter, no mínimo, 65 anos. Por outro lado, as pessoas idosas que participariam neste estudo não deveriam apresentar problemas neurológicos, pois isso poderia enviesar a interpretação dos resultados do questionário. Em todos os momentos foram ressaltadas a garantia do anonimato e a privacidade das informações.

Foram então inseridos no estudo 21 idosos institucionalizados no Residencial Sénior Estrela Confiante, localizada no município de Estarreja, Portugal. Portanto, ao retomar os critérios de inclusão deste estudo, destaca-se que os idosos participantes deveriam: ser institucionalizados nesta residência, ter no mínimo 65 anos e ter a capacidade cognitiva necessária para responder ao questionário sobre a sua adaptação à instituição.

Análise e discussão dos resultados

Dos 21 indivíduos que compunham a amostra deste estudo, três não puderam participar da pesquisa pelos seguintes motivos: um dos elementos recusou-se a participar e os outros dois não estavam aptos a responder o questionário. Portanto, 18 respostas foram consideradas válidas. O questionário foi aplicado a 12 pessoas do sexo feminino e 6 indivíduos do sexo masculino.

Para os indivíduos não alfabetizados, o questionário foi lido pelas investigadoras, sem interferência nas respostas e assinalando a resposta dada. Para os alfabetizados, o questionário foi apenas supervisionado pelas mesmas.

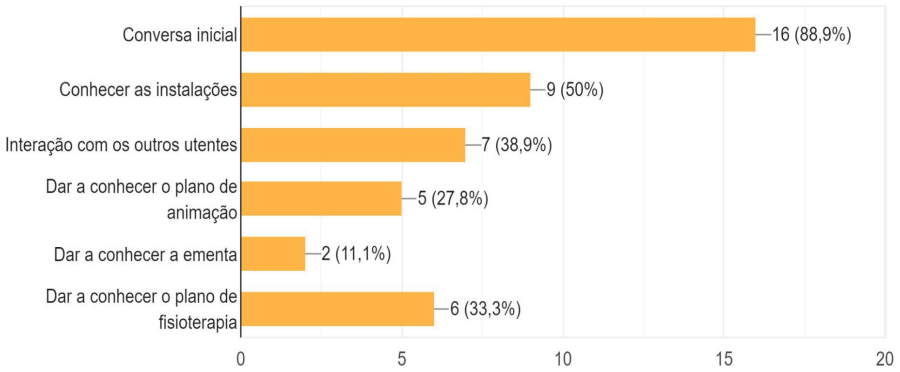
Considerando o conjunto dos idosos questionados, verificou-se que 11,1% têm entre 65 e 70 anos, seguido da maioria, com 61,1%, que está na faixa etária dos 71 e os 80 anos, além de 22,2% entre os 81 e os 90 anos. Em relação ao estado civil, 55,6% são viúvos e o número significativo de 33,3% de idosos casados.

Em relação ao tempo de institucionalização, 16,7% encontram-se há mais de 5 anos na instituição e 27,8% residem há menos de um ano.

Quanto à satisfação com o acolhimento, numa escala de 0 a 5, sendo 0 muito ruim, 1 ruim, 2 razoável, 3 bom, 4 muito bom e 5 excelente, 12 idosos avaliaram o acolhimento com nível 4, 5 com nível 5 e 1 com nível 3. Os resultados a nível da adaptação dos utentes foram muito heterogêneos, já que 22,2% encontram-se totalmente adaptados e 5,5% não se encontram nada adaptados.

Em termos de adaptação dos idosos à instituição, uma das estratégias mais utilizadas pelo Lar Estrela Confiante é a conversa inicial, que consiste em dar a conhecer as regras da instituição, os gostos e preferências dos idosos, assim como um historial das suas patologias.

Gráfico 1 - Estratégias utilizadas para a sua adaptação



Fonte: pesquisa de campo (2023).

Outras estratégias de adaptação, tal como apontado pelo gráfico, são conhecer as instalações, os restantes utentes e o funcionamento tanto das atividades de animação como de fisioterapia.

Para a adaptação ser positiva existem várias condicionantes, tais como uma boa integração com a equipa técnica, a rede de suporte familiar e a satisfação com as instalações da instituição. Os cuidados formais e a rede de relações interpessoais que o idoso mantém, contribuem positivamente e interferem na sua qualidade de vida e na capacidade de aceitação e adaptação a um novo meio.

Na instituição Estrela Confiante, 11 idosos recebem visitas regularmente, com predominância de visitas semanais (38.9%), seguidas de visitas anuais (33,3%). Essas visitas são maioritariamente feitas pelos filhos (66.7%), seguidas dos amigos (33.3%).

Sobre os fatores que determinam esse processo de institucionalização do idoso, aponta-se a falta de condições físicas, psíquicas e de estrutura habitacional por parte da rede familiar/amigos mais próximos do idoso. Nesse sentido, para o processo de institucionalização ser bem-sucedido é necessário que a aceitação por parte do idoso e da família seja positiva. Conforme o estudo, as estratégias utilizadas para a adaptação são as visitas frequentes e a boa socialização com a equipa técnica, que são fatores igualmente importantes.

No questionário realizado, analisou-se que os utentes que se encontram bem integrados na instituição são aqueles que têm visitas regulares e que têm noção que necessitam de ajuda de terceiros para atender às suas necessidades.

A falta das visitas por parte da família/amigos ocorre essencialmente devido a estes permanecerem no estrangeiro, não tendo tanta facilidade de se deslocarem até à instituição. No entanto, para combater a falta dessas visitas, são realizadas videochamadas para as pessoas que mais lhe são próximas. Esses momentos, tal como a animação, saídas ao exterior e a fisioterapia, melhoram a qualidade de vida dos utentes.

O plano anual de atividades da instituição Estrela Confiante tem como base o projeto de vida de cada idoso e a atenção à alteração do estado de saúde de cada um. É elaborado com base nas necessidades, expectativas e interesses dos utentes. Fazem parte deste plano um conjunto de atividades de caráter lúdico-recreativo, cultural, desportivo, intelectual/formativo e social, que inclui atividades como passeios e visitas culturais, cabeleireiro e estética, musicoterapia, artes manuais, atelier de culinária, estimulação cognitiva e psicomotora (Estrela Confiante, 2023).

Por fim, os principais objetivos da realização destas atividades são proporcionar ao idoso uma vida mais harmoniosa, atrativa e dinâmica, com a sua participação e envolvimento. Promover o desenvolvimento físico, psicológico, emocional, intelectual e social do idoso. Valorizar as capacidades, competências, saberes e cultura do idoso aumentando a sua autoestima e confiança e ao mesmo tempo oferecer momentos divertidos e de convívio.

Conclusão

Os resultados permitem concluir que a adaptação dos idosos institucionalizados na estrutura Residencial Sénior Estrela Confiante é positiva, ao contrário de dados de estudos que apontam um alto índice de abusos em instituições de acolhimento e cuidados séniores, o que dificulta o bem-estar e qualidade de vida dos idosos.

No geral, os idosos encontram-se bem-adaptados à instituição devido aos vários métodos utilizados tantos pela rede familiar quanto pela instituição. A equipa técnica utiliza os seguintes métodos em um contato preliminar: conversa inicial, dar a conhecer as instalações e os outros idosos institucionalizados, saídas regulares para a realização de atividades com outras instituições. Estes são fatores de integração que influenciam positivamente a adaptação dos idosos.

Por parte da família, as visitas regulares e a demonstração de afeto são fundamentais para que o idoso não se sinta abandonado e sozinho. Outro dos motivos que levam os idosos a diferenciar esta instituição das demais é o espaço exterior, que conta com uma piscina, uma pequena horta e alguns animais, tornando o ambiente acolhedor. Esse mesmo espaço é utilizado para caminhadas matinais. No verão, os idosos referiram que podem usufruir da piscina na parte exterior da instituição, quando usufruem de momentos de lazer com outros idosos.

Por fim, conclui-se que o que diferencia esta instituição das demais é a boa organização a nível da equipa multidisciplinar e os meios utilizados para a boa integração dos utentes.

Referências:

- Carvalho, M. & Dias, M. (2011). Adaptação dos Idosos Institucionalizados. *Millenium*, *1*(40), 161-184.
- Creswell, J. W. (2010). *Projeto de pesquisa: métodos qualitativo, quantitativo e misto* (3. ed.) Artmed.
- Estrela Confiante (2023). Quem somos. https://estrela-confiante.wixsite.com/estrelaconfiante/quemsomos
- Freitas, M. & Scheircher, M. (2010). Qualidade de vida de idosos institucionalizados. *Revista Brasil Geriátrica*, *3*(13), 395-401.
- Instituto Nacional de Estatística (2023). Estimativas de população residente em Portugal 2022. *Destaque*. https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaques&DESTAQUESdest_boui=594879758&DESTAQUESmodo=2
- República Portuguesa. Ministério do Trabalho, Solidariedade e Segurança Social (2017). *Carta Social - Rede de Serviços e equipamentos. Relatório 2017*. GEP/MTSS. https://www.cartasocial.pt/documents/10182/13834/csocial2017.pdf/ff4784d9-efe1-475a-b18f-be3fb170583e
- Oliveira, L. & Gonçalves, J. (2020). Depressão em idosos institucionalizados: uma revisão de literatura. *Revista JRG de Estudos acadêmicos*, *3*(6), 110-22.

3 - A Violência Baseada no Género na Perspetiva da Pedagogia Social: Uma Revisão Sistemática da Literatura

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Resumo: A violência baseada no género (VBG) é uma questão social amplamente difundida, fortemente enraizada em estruturas sociais desiguais e na normalização da violência. Este artigo apresenta uma revisão sistemática da literatura, com foco na VBG no contexto da Pedagogia Social. Utilizando metodologias de análise de desempenho científico e bibliometria, foram analisados 159 artigos científicos para identificar tendências, tópicos emergentes e redes de pesquisa. Os resultados mostram um aumento significativo de publicações a partir de 2016, com maior concentração em países como Austrália, Canadá e México. A análise destacou a pertinência de abordar a VBG através da Pedagogia Social, enfatizando a necessidade de intervenções socioeducativas que desafiem normas de género e promovam ambientes de aprendizagem inclusivos. Esta revisão contribui para o avanço do conhecimento sobre VBG, identificando lacunas na pesquisa e sugerindo direções para estudos futuros.

Palavras-chave: Violência Baseada no Género; Pedagogia Social; Revisão Sistemática; Bibliometria; Igualdade de Género.

Abstract: Gender-based violence (GBV) is a widespread social issue, strongly rooted in unequal social structures and the normalisation of violence. This article presents a systematic review of the literature, focusing on GBV in the context of Social Pedagogy. Using scientific performance analysis and bibliometrics methodologies, 159 scientific articles were analysed to identify trends, emerging topics and research networks. The

results show a significant increase in publications since 2016, with a greater concentration in countries such as Australia, Canada and Mexico. The analysis highlighted the pertinence of addressing GBV through Social Pedagogy, emphasising the need for socio-educational interventions that challenge gender norms and promote inclusive learning environments. This review contributes to the advancement of knowledge on GBV, identifying gaps in research and suggesting directions for future studies.

Keywords: Gender-Based Violence; Social Pedagogy; Systematic Review; Bibliometrics; Gender Equality.

Introdução

A violência baseada no género (VBG) é um problema social generalizado caracterizado pela violência que atinge indivíduos com base no seu género ou que afeta desproporcionalmente indivíduos de um género específico (Ortiz et al., 2022). Esta forma de violência está profundamente enraizada em estruturas sociais que mantêm relações de género desiguais, papéis de género rígidos e a normalização da violência (Amar & Laughon, 2020; Belmonte & Sacca, 2022). A normalização da VBG está frequentemente associada à perpetuação de representações sociais distorcidas que incentivam a aceitação e a continuação da violência, absolvendo os perpetradores da responsabilidade e reforçando os preconceitos sexistas contra as vítimas (Belmonte & Sacca, 2022). Além disso, a VBG não é apenas um subproduto do patriarcado, mas também pode ser vista como uma resposta aos desafios da integração da igualdade de género e da inversão das hierarquias de género (Hattery, 2022). Os esforços para combater a VBG exigem uma abordagem multifacetada que inclua a sensibilização, o desafio aos estereótipos e a promoção da mudança social. Iniciativas como programas de formação de espectadores e pedagogia sensível ao género têm-se mostrado promissoras na abordagem da VBG, capacitando os indivíduos para intervir, desafiando as normas tradicionais de género e criando ambientes de aprendizagem seguros que promovem a igualdade de género (Katz, 2018). Além disso, o papel dos movimentos sociais e das autoridades no reconhecimento da VBG como uma violação dos direitos humanos e na implementação de medidas preventivas é crucial para abordar as causas profundas da violência e promover a justiça (Calvo-García, 2016; Havronska et al., 2021).

Face a esta problemática, destacam-se alguns estudos sobre a VBD. Bady et al. (2020) conduziram uma revisão sistemática da literatura para examinar construções conceituais de género, sexualidade e corpo, enfatizando seu impacto na violência sexual contra mulheres; Rivera et al. (2021) desenvolveram um conjunto de intervenções

destinadas a proteger as crianças vítimas de violência sexual, o que foi avaliado por comitês de especialistas em diferentes áreas Além disso, Guarderas (2018) validaram o conteúdo de um instrumento de avaliação de assédio sexual através de consenso de especialistas em universidades equatorianas). Também Heslop et al. (2019), no Gana e em Moçambique, enfatizaram a importância de analisar discursos e práticas para compreender a violência baseada no género relacionada com a escola; Navarro Amador & Pastor Comín (2021) estudaram os preconceitos de género no consumo de música, destacando a presença de mensagens sexistas nas músicas consumidas por estudantes; já Callejón-Chinchilla & Gila-Ordóñez (2018) sugeriram trabalhar as relações saudáveis em situações socioeducativas através da arte e da criatividade e pelo processo de arteterapia. Por outro lado, Hawkins & Knox (2014) discutiram a violência e a discriminação de género na Rússia e enfatizaram a importância da parceria na resolução destes problemas. Um outro estudo (Alcázar-Campos, 2013) focou-se no trabalho social com mulheres vítimas de violência sexual, enfatizando a influência de perspetivas feministas baseadas em diferentes ideologias.

Percetivelmente, a literatura sobre a VBG abrange vários construtos. Porém é preciso compreender a sua complexidade no contexto da pedagogia social. Isto significa que abordar a VBG a partir da perspetiva da pedagogia social requer uma compreensão das complexas interações de fatores sociais, culturais e estruturais que influenciam a violência baseada no género. Ao promover a pedagogia crítica, apresentar papéis normativos de género e promover ambientes de aprendizagem inclusivos, a pedagogia social pode desempenhar um papel fundamental no combate à VBG e na promoção da igualdade de género. Todavia, a literatura existente está dispersa, pelo que o objetivo deste artigo é a elaboração de uma revisão sistemática da literatura com recurso à análise do desempenho científico e à bibliometria.

Seguidamente a esta Introdução, apresenta-se a metodologia de investigação, os resultados e as conclusões.

Métodos

Tendo como objetivo principal identificar tópicos recentes relacionados à violência de género na perspetiva da pedagogia social, recorreu-se à revisão sistemática da literatura para se proceder ao estado da arte, levando em consideração todos os procedimentos metodológicos necessários para dotar este estudo de fiabilidade e validade científica (Parahoo, 2014).

Estes critérios estão conforme os estabelecidos por Tranfield et al. (2003) que sustentaram que este tipo de revisão deve conter três etapas fundamentais:

planeamento/protocolo da revisão; seleção de documentos científicos e síntese dos dados (desenvolvimento da revisão); e divulgação resultados. Neste âmbito, a revisão sistemática aqui apresentada seguiu estes quesitos e usou a bibliometria para metodizar os resultados, tal como preconizado por pesquisas anteriores (Connor & Voos, 1981; Wasserman & Faust, 1994; Powell et al., 1996; White & McCain, 1998; Quinlan et al., 2008). A bibliometria patenteia uma avaliação quantitativa da produção científica na comunidade académica e tem sido comummente empregada (Callon et al., 1991; Coulter et al., 1998; Henderson et al., 2009; Ramos Rodríguez & Ruíz Navarro, 2004; Van Raan, 2005), dado que usa um conjunto de procedimentos para mensurar a informação contida na mesma (Henderson et al., 2009; Van Raan, 2005). Porém, a bibliometria abrange a análise de desempenho, que fornece análises de países, citações, número de publicações, revistas, por exemplo, com base em dados bibliográficos (Noyons et al., 1999; Van Raan, 2005; Waltman et al., 2010) e o mapeamento científico dessa produção que tem o objetivo implícito de mostrar os aspetos estruturais e dinâmicos da investigação científica (Börner et al., 2003; Boyack & Klavans, 2010; Noyons et al., 1999; Waltman et al., 2010), qual é operacionalizado através de um mapa científico que representa a estrutura cognitiva de uma investigação (Cobo et al., 2011).

Isto significa que se identificam, avaliam e analisam conteúdos em áreas específicas, de modo a categorizar conceitos, teorias e práticas (Rowley & Slack, 2004), o que vai muito além de um mero agrupamento de documentos científicos e dos seus contributos para a teoria e para a prática, pois retorna um valor agregado crítico ao sumariar a literatura sobre o tema em análise e ao proporcionar a identificação de lacunas emergentes para investigação futura, sendo o objetivo principal contribuir para o avanço do conhecimento científico sobre o tema (Mentzer & Kahn, 1995). Por conseguinte, esta análise de desempenho possibilita a determinação de padrões de subtópicos, autores, revistas científicas, citações, já o mapeamento científico identifica redes de co-citação e de palavras-chave, entre outros (Prasad & Tata, 2005; Treinta et al., 2014); conteúdos conceptuais (Seuring & Mu, 2008); e dimensões de análise (Pedro et al., 2018).

Neste contexto, serão aqui apresentados mapas científicos/redes de cocitações (Small, 1973) e co- palavras (Callon et al., 1983). As redes de cocitação mapeiam a estrutura de uma área de investigação através de pares de artigos científicos que são comumente citados em conjunto (Coulter et al., 1998; Gmür, 2003; Jeong et al., 2014), proporcionando a identificação de áreas de pesquisa (Small, 2006), a descoberta de grupos de conhecimento (Kandylas et al., 2010) e frentes de pesquisa emergentes (Upham & Small, 2010). O uso de redes de co-palavras, por outro lado, é uma análise eficaz para mapear a força das ligações entre dados textuais, uma vez que destaca a interação de palavras que são pertinentes na literatura em estudo (Callon et al., 1983).

Estas redes fornecem uma visão da estrutura científica e sobre a estrutura concetual do tópico em análise (Cobo et al., 2011).

A presente análise bibliométrica obedeceu a uma estratégia estruturada e metódica de seleção da base final de artigos científicos para sistematização da literatura, que incluiu a definição dos critérios de elegibilidade, das palavras-chave, do período temporal e das áreas científicas (Bandara et al., 2011; Tranfield et al., 2003). Também o uso do software VosViewer permitirá identificar as principais linhas de investigação (clusters) para a construção das redes bibliométricas (van Eck & Waltman, 2010), através abordagem de co-citação e co-palavra. Dito de outra forma, este software devolve uma visualização das correlações numa citação de um artigo científico (Shen & Wang, 2020) e com informação específica (Baier-Fuentes et al., 2019), para mensurar a investigação baseada em clusters sobre um determinado tópico (Triwahyuningtyas et al., 2021). Por outro lado, a densidade dos itens nos clusters depende da sua cor e da associação com outros itens (Al Husaeni & Nandiyanto, 2022).

Para garantir o rigor e a transparência desta revisão, apresenta-se na tabela 1 o protocolo de investigação delineado.

Tabela 1

Lista de itens e critérios de pesquisa

Itens	Critérios
Período	Sem filtro cronológico
Base de dados online	Web of Science (Wos)
Palavras-chave	"Gender violence" or "couple violence" and "social pedagogy perspective"
Área de pesquisa	Education Educational Research, Education Disciplines, Social Work
Tipo de documentos	Artigos e artigos de revisão
Software usado	Microsoft Excel and VosViewer
Total de documentos identificados	159

Estes critérios de elegibilidade retornaram 159 artigos com as seguintes características: 1) Somatório de citações - 1278) Média de Citações por Artigo - 8,04; 3) h-index -18. Por outro lado, a utilização apenas da Wos para a pesquisa justifica-se pelo seu reconhecimento internacional por pares (Harzing & Alakangas, 2016; Zhu & Liu,

2020), como relevante e pertinente devido à sua exigência de revisão por pares, além de disponibilizar todas as informações bibliográficas sobre autores, suas citações, revistas, países, áreas de pesquisa e ano de publicação. Adicionalmente, os critérios de elegibilidade aplicados seguiram o sugerido por Tranfield et al. (2003). Também o uso dos operadores booleanos "AND" e "OR" ampliou a abrangência dos resultados, como argumentaram Ely & Scott (2007), Kirby (2023) e Tsilika (2023).

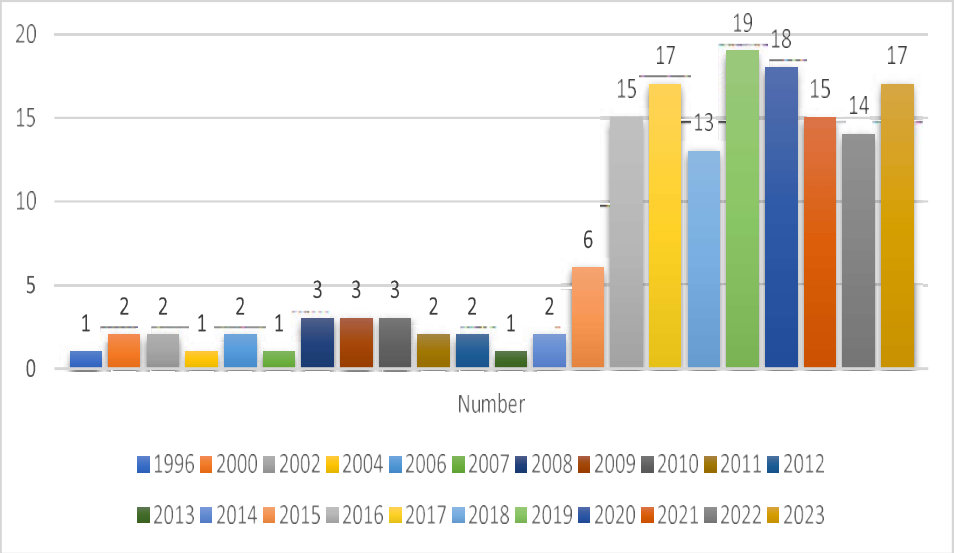
A próxima seção apresenta a análise de desempenho dos 159 artigos em análise, como sugerido por pesquisas anteriores (Noyons et al., 1999; Van Raan, 2005; Waltman et al., 2010).

Resultados

A figura 1 exibe a distribuição temporal dos 159 artigos selecionados.

Figura 1

Publicações por ano (Wos)



A figura 1 revela que só a partir 2016 o tópico em estudo despertou o interesse dos académicos, cuja produção científica nos anos seguintes oscilou entre as 19 e 13 publicações por ano, em que os anos com maior volume de publicações são 2019 (19) e 2020 (18). O aumento do interesse académico pela violência baseada no género (VBG) na perspetiva da pedagogia social, particularmente nos anos que se seguiram a 2016, pode ser atribuído a um reconhecimento crescente da importância de abordar esta questão social generalizada através de intervenções educativas e pedagógicas. Abordar a VBG na perspetiva da pedagogia social implica compreender a complexa interação de fatores sociais, culturais e estruturais que contribuem para esta. A pedagogia social pode combater a VBG e promover a igualdade de género ao desafiar os papéis normativos de género.

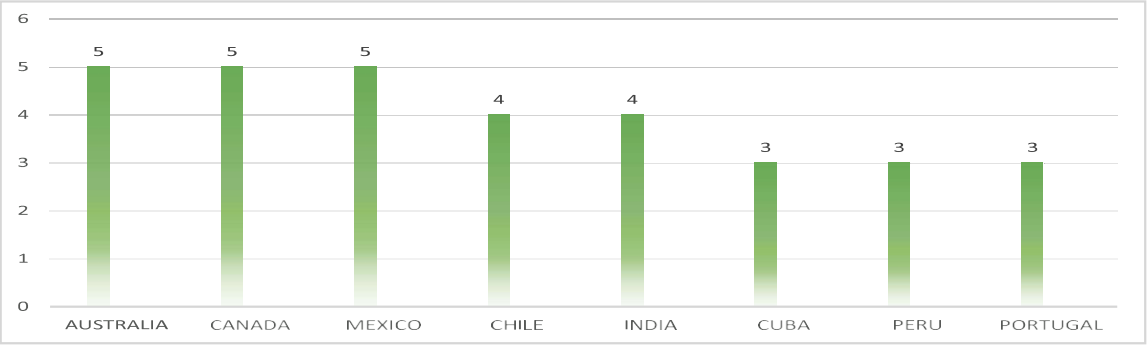
Por outro lado, os países com três ou mais publicações são mostrados na figura 2.

A figura 1 revela que só a partir 2016 o tópico em estudo despertou o interesse dos académicos, cuja produção científica nos anos seguintes oscilou entre as 19 e 13 publicações por ano, em que os anos com maior volume de publicações são 2019 (19) e 2020 (18). O aumento do interesse académico pela violência baseada no género (VBG) na perspetiva da pedagogia social, particularmente nos anos que se seguiram a 2016, pode ser atribuído a um reconhecimento crescente da importância de abordar esta questão social generalizada através de intervenções educativas e pedagógicas. Abordar a VBG na perspetiva da pedagogia social implica compreender a complexa interação de fatores sociais, culturais e estruturais que contribuem para esta. A pedagogia social pode combater a VBG e promover a igualdade de género ao desafiar os papéis normativos de género.

Por outro lado, os países com três ou mais publicações são mostrados na figura 2

Figura 2

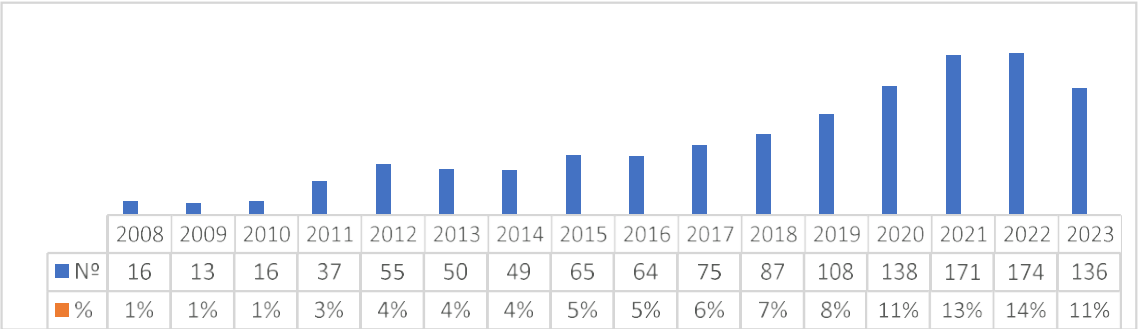
Países com maior número de publicações (WOS)



A Austrália, o Canadá e o México destacam-se na figura 2, pois estão comprometidos com o combate à discriminação e à violência baseada no género alicerçado na pedagogia social, a qual é vista como facilitadora no fomento da igualdade assente na edução e no empoderamento comunitário. Já nas áreas de pesquisa constatou-se que 122 artigos estão relacionados com Education Educational Research, o que representa cerca de 77% do total em análise, em conformidade com a Wos. Como mencionado anteriormente as 1278 citações dos 159 artigos apresentam uma distribuição heterogénea como se exibe na figura 3.

Figura 3

Citações anuais



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Nº	16	13	16	37	55	50	49	65	64	75	87	108	138	171	174	136
%	1%	1%	1%	3%	4%	4%	4%	5%	5%	6%	7%	8%	11%	13%	14%	11%

Quanto à indexação das revistas verifica-se que: 1) Emerging Sources Citation Index (ESCI) engloba 100 artigos publicados nestas revistas (64%); 2) 58 artigos incluídos nas revistas do Social Sciences Citation Index (SSCI), que representa 35,5%; 3) Science Citation Index Expanded (SCI- EXPANDED) somente com um artigo publicado (0,5%). Isto evidencia que este é um tópico emergente, o que por si só justifica a pertinência deste artigo, pois é essencial que estudos futuros sejam elaborados e publicados em revistas com fator de impacto ao nível de quartil Q1 e Q2.

A tabela 2 apresenta as revistas com maior nº de publicações com SJR atribuído com duas ou mais publicações. A título de exemplo, a Revista Conrado tem 6 publicações e a Dilemas Contemporaneos- Educacion Politica y Valores tem 5 publicações.

Tabela 2

Revista das publicações com SJR

Revista	Nº	SJR 2022	H-index	País de origem	Quartil
Gender and education	10	1,31	72	Reino Unido	Q1
Affilia-journal of women and social work	5	0,66	42	EUA	Q1
International journal of educational development	5	0,84	66	Reino Unido	Q1
International social work	4	0,71	49	Reino Unido	Q1
Child abuse & neglect	3	1,72	164	Reino Unido	Q1
Children and youth services review	3	0,97	107	Reino Unido	Q1
British educational research journal	2	0,9	98	Reino Unido	Q1
Child abuse review	2	0,45	48	Reino Unido	Q1
Educacion xx1	2	0,96	26	Spain	Q1
Educational review	2	1,1	56	Reino Unido	Q1
Indian journal of social work	2	0,1	9	India	Q4
Pedagogy culture and society	2	0,81	42	Reino Unido	Q1
Qualitative research in education	2	0,32	5	Spain	Q2
Remie-multidisciplinary journal ofeducational research	2	0,5	11	Spain	Q2
Revista electronica	2	0,5	11	Spain	Q2
South african journal of education	2	0,39	36	África do Sul	Q2

A tabela 3 mostra que as revistas com mais publicações com SJR são maioritariamente Q1, o que quer dizer que a violência de género na perspetiva da pedagogia social é cada vez mais um tema emergente para a sociedade. A título de exemplo, a revista Gender Education publicou artigos entre 2008 e 2023, especificamente

dos seguintes autores Jargalsaikhan et al. (2019), Flores et al. (2020) com 32 citações, Joelsson & Bruno (2022), Prioletta (2022), Malik (2022) que têm 34 citações, Crossouard et al. (2019), com 31 citações, Kenway & Fahey (2008) com 20 citações e McLean (2023) que já tem 35 citações.

Também se verifica que existem poucos autores com mais que um artigo publicado sobre o tópico em estudo, como se evidencia na tabela 3.

Tabela 3

Top 5 de autores

Autores	Nº de artigos
Bhana, Deevia	6
Donoso Vazquez, Trinidad	3
Dunne, M	3
Eliseo Valle Aparicio, J.	2
Mayeza, Emmanuel	2
Outros	143
Total	159

Estes autores abordam os seguintes construtos: 1) violência de género nas escolas (e.g., Bhana, Deevia; Dunne, M; Mayeza, Emmanuel); 2) violência de género em ambientes virtuais (e.g., Donoso Vazquez, Trinidad); 3) educação em igualdade do género (e.g., Eliseo Valle Aparicio, J.);

No tocante aos autores com mais citações apresenta-se a tabela 4 com o Top 20.

Tabela 4

Top 20 de citações por autor

Autores	Ano de publicação	Citações
Ringrose & Renold (2020)	2010	167
Kim (2018)	2018	105
Hanson et al. (2008)	2008	85
Dunne et al. (2006)	2006	85
Zeira et al. (2002)	2002	61
Richter & Dawes (2008)	2008	57
Dunne (2007)	2007	53

Morris (2009)	2009	50
Zeira et al. (2002)	2002	48
Bhana et al. (2009)	2009	45
Donoso Vazquez et al. (2018)	2018	30
Voisin et al. (2012)	2012	29
Oliver et al. (2009)	2009	28
Namy et al. (2017)	2017	27
Ramis & Krastina (2010)	2010	21
Rios-Gonzalez et al. (2019)	2019	18
Donoso-Vazquez et al. (2017)	2017	18
Jansen (2006)	2006	18
Rawlings (2019)	2019	17
Bhana et al. (2011)	2011	17

Do Top 20 das citações, Ringrose & Renold (2020) analisaram o discurso do "bullying" na comunidade educativa desde a década de 1990, destacando a sua simplificação das complexas relações de poder de género, classe, sexualização e racialização nas culturas escolares. Com base em entrevistas etnográficas e qualitativas aos estudantes do ensino básico e secundário, argumentaram que esse discurso individualiza essas relações, especialmente no que respeita à masculinidades e feminilidades heteronormativas. Os mesmos concluíram que os discursos sobre o bullying oferecem ínfimos recursos para lidar com a violência de género diária na escola, sendo urgente a realização de mais pesquisa futura. Já Kim (2018) exploraram a injustiça racial nas interseções da violência interpessoal e estatal, analisando as respostas tradicionais à violência doméstica e sexual, cujos resultados mostram que as intervenções focadas e em justiça restaurativa e transformativa aportam novas opções anti violência e renovam o papel do trabalho social em relação à justiça social e aos movimentos sociais. Hanson et al. (2008) examinaram as diferenças de género na exposição à violência, episódio depressivo major (MDE) e perturbação de stress pós-traumático (PTSD), para além das características dos incidentes de violência. Os resultados revelaram diferenças significativas entre os géneros nas taxas de exposição à violência, PTSD e MDE. O género também foi identificado como uma variável moderadora na relação entre agressão sexual e PTSD, mas não em outras relações entre exposição à violência e saúde mental, significando que as vias de desenvolvimento do PTSD podem variar entre homens e mulheres vítimas de abuso sexual.

Tabela 5

Objetivos do desenvolvimento sustentável (ODS) e o tópico em estudo

ODS	Nº
05 Igualdade de género	59
16 Paz e justiça e Instituições fortes	50
04 Educação de qualidade	28
03 Boa saúde e bem-estar	22
01 Ausência de pobreza	5
10 Redução da desigualdade	5
09 Inovação industrial e infra-estruturas	2

A tabela 5 acima mostra que ODS foram incluídos nestes artigos em estudo, em que se destaca: ODS 05 Igualdade de género; ODS 16 Paz e justiça e Instituições fortes; ODS 04 Educação de qualidade E ODS 03 Boa saúde e bem-estar. A relação entre os ODS e a questão da VBD evidencia a relevância de se abordar a desigualdade de género, promover a justiça, fortalecer as instituições, assegurar uma educação inclusiva e de qualidade, bem como proteger a saúde e o bem-estar de todos, como parte integrante dos esforços para alcançar um desenvolvimento sustentável e uma sociedade mais justa e pacífica.

Mapeamento científico

O mapeamento científico com recurso à bibliometria (rede de co-citações e acoplamento bibliográfico, rede de coocorrência de palavras) foi operacionalizado com recurso ao software VosViewer. Resultou em cinco clusters, cujas co-citações identificam as relações entre as publicações e geram pontos em comum entre as referências bibliográficas dos artigos citados (Hou, 2017), network view, circles represent nodes, and lines show the links amongst the nodes. The colors identify the clusters where the nodes are located. The size of the nodes indicates how frequently a specific (Arici et al., 2021, p.7).Neste contexto, a figura 4 exibe a rede de cocitações e a tabela 6 mostra a composição dos 2 clusters e as suas co-citações.

Figura 4

Rede de co-citações

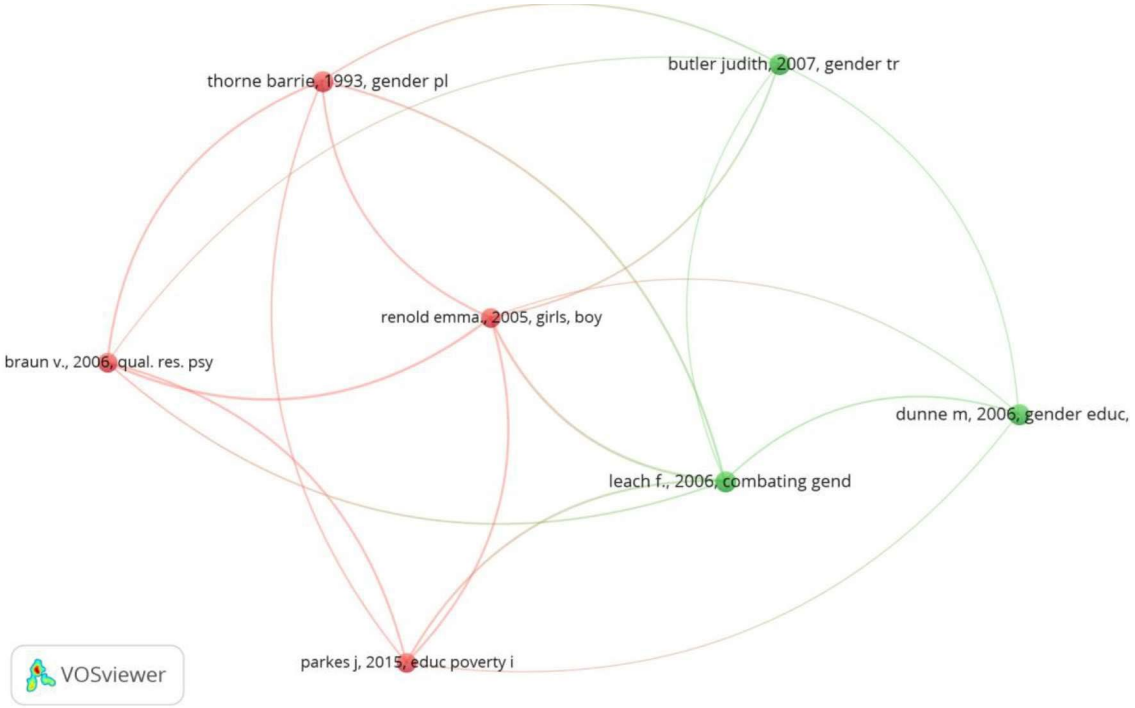


Tabela 6

Composição dos clusters

Autores	Clusters	Peso<forçatotal da ligação>	Co- citações
Braun & Clarke (2006)	1	13	6
Parkes (2015)	1	12	6
Renold (2005)	1	17	6
Thorne (1993)	1	13	7
Butler (2007)	2	7	7
Dunne et al. (2006)	2	5	7
Leach & Mitchell (2006)	2	15	7

Discussão de resultados

Cluster 1 “Dinâmicas de género nos ambientes educativos”

A violência de género nas escolas é uma questão premente que tem sido abordada através da adoção de diversas medidas em vários países. Nesse sentido, Parkes (2016) explorou a evolução da promulgação de medidas sobre a violência de género nas escolas,

focando especificamente a Libéria, a África do Sul e o Brasil. O estudo destaca progressos significativos no desenvolvimento de dessas medidas, na implementação de programas e de iniciativas de investigação nestes países, demonstrando um esforço concertado para combater a violência baseada no género nos contextos educativos. Além disso, Ringrose & Renold (2010) apresentaram uma crítica de género aos discursos sobre o bullying nas escolas, salientando a natureza performativa da violência normativa entre os rapazes e as raparigas. Ao examinar a forma como a masculinidade e a feminilidade se cruzam com os comportamentos normativos nos espaços escolares, a investigação lançou luz sobre as complexidades da abordagem da violência nas instituições educativas. A abordagem de análise temática metodológica, conforme descrita por Braun & Clarke (2006), é eficaz para a compreensão e avaliação de normas de saúde e segurança no ambiente de trabalho, podendo ser aplicada para examinar políticas e práticas relacionadas à violência de género nas escolas.

Finalmente, Thorne (1993) propõe uma visão relevante sobre a violência de género nas escolas, enfatizando a formação da identidade de género na infância e a compreensão da construção e manifestação dos papéis de género entre as crianças, a fim de abordar os problemas de violência, bullying e discriminação nas escolas. Este cluster debate a violência baseada no género, a adoção de políticas, os comportamentos normativos e a socialização do género nos ambientes escolares. Isto quer dizer que destaca as interações, os papéis e as estruturas de poder relacionadas com o género (Dinâmica de Género) e, ainda, enfatiza o contexto em que estas dinâmicas se desenvolvem, especificamente nas escolas (Ambientes Educativos).

Cluster 2 “A violência baseada no género em contextos educativos”

Butler (2007) analisa as complexidades da identidade de género e questiona as visões tradicionais sobre o assunto através da sua análise crítica das normas de género e da natureza performativa do género. No seu livro, ele investiga como o género é moldado por normas e práticas sociais, em vez de ser algo inerente ou imutável. Ao desafiar a conceção binária do género, Butler (2007) inicia uma discussão sobre a fluidez e diversidade das expressões de género, argumentando que o género não se limita apenas à biologia, mas é uma construção social continuamente reforçada por ações e comportamentos. Essa abordagem contesta a ideia de uma identidade de género fixa, destacando como os indivíduos têm um papel ativo na definição e expressão do seu próprio género. Além disso, esse estudo teve um impacto relevante na teoria feminista e "queer theory", gerando debates sobre as interseções entre género, sexualidade e identidade. Ao desconstruir conceitos tradicionais de género, Butler (2007) pavimentou o

caminho para uma compreensão mais inclusiva e sofisticada da diversidade de identidades de género. Em resumo, a sua obra seminal revolucionou as perspetivas sobre o tema ao questionar normas estabelecidas e ressaltar a natureza performativa do género, abrindo novas possibilidades para explorar as complexidades da expressão do próprio eu no âmbito social.

O estudo de Dunne et al. (2006) lança luz sobre a questão da violência de género nas escolas do mundo em desenvolvimento. Esta investigação, publicada na revista "Gender and Education", analisa a prevalência e o impacto da violência baseada no género em contextos educativos nos países em desenvolvimento. Os autores destacam as várias formas de violência sofridas pelos estudantes, concentrando-se particularmente na intersecção entre género e educação. No seu trabalho, estes autores salientam os efeitos prejudiciais da violência de género no bem-estar e no desempenho académico dos alunos; o estudo sublinha a importância de abordar a violência de género nas escolas como uma componente essencial da promoção de ambientes de aprendizagem seguros e inclusivos para todos os alunos. Com base nas ideias de Butler (2002) em "Gender Trouble" que desafia as visões tradicionais sobre o género e realça a natureza performativa do género, é possível analisar melhor a dinâmica da violência de género nas escolas.

O quadro de Butler (2007) encoraja uma análise crítica da forma como as normas sociais e as dinâmicas de poder contribuem para a perpetuação da violência baseada no género nas instituições educativas. Ao integrar as perspetivas de Dunne et al. (2006) com a concetualização de Butler (2007) do género como performativo, é possível desenvolver uma compreensão mais abrangente das complexidades que envolvem a violência de género nas escolas do mundo em desenvolvimento. Esta abordagem interdisciplinar permite uma análise matizada das causas profundas da violência de género e informa estratégias para criar ambientes educativos mais seguros e mais equitativos para todos os alunos.

De um modo geral, a combinação da investigação empírica de Dunne et al. (2006) com o quadro teórico de Butler (2007) fornece uma base sólida para abordar e combater a violência de género nas escolas, contribuindo, em última análise, para o avanço da igualdade de género e da justiça social nos sistemas educativos de todo o mundo.

A combinação das estratégias práticas de Leach & Mitchell (2006) para combater a violência de género nas escolas com os conhecimentos teóricos de Butler (2007) oferece uma abordagem multidisciplinar para lidar com este problema global. Ao combinar abordagens empíricas com perspetivas teóricas críticas, os educadores e os decisores políticos podem desenvolver intervenções mais eficientes para criar ambientes de

aprendizagem mais seguros e mais inclusivos para todos os alunos. Por fim, a colaboração entre Leach & Mitchell (2006) e Butler (2007) contribui para uma compreensão mais aprofundada da violência de género em ambientes educacionais e fornece um guia para a implementação de mudanças significativas. Ao combinar estratégias práticas com quadros teóricos críticos, essa abordagem interdisciplinar tem o potencial de acelerar o progresso no sentido de erradicar a violência baseada no género nas escolas.

Este cluster engloba uma série de artigos de investigação que se centram no combate à violência de género em ambiente escolar. As referências do cluster 2 examinam diversos aspetos da violência de género, incluindo a violência entre parceiros íntimos, o "bullying", a violência sexual e a violência nas escolas do mundo em desenvolvimento. O cluster destaca a importância de criar espaços educativos seguros e inclusivos, abordando as causas profundas da violência baseada no género e implementando intervenções eficazes.

Análise da co-concorrência de palavras

Ao analisar a presença de palavras-chave, os pesquisadores podem identificar temas comuns, relações e tendências num corpo de literatura (Ribeiro, 2017; Valencia, 2017). Essa análise permite a classificação de palavras em grupos, de acordo com suas associações, o que pode revelar padrões e conexões subjacentes (Valencia, 2017). A compreensão da coocorrência de palavras é crucial para mapear domínios de conhecimento, identificar conceitos-chave e explorar as relações semânticas entre termos (Ribeiro, 2017; Teixeira et al., 2022). Assim, apresenta-se a figura 5.

Figura 5

Rede de co-concorrência de palavras

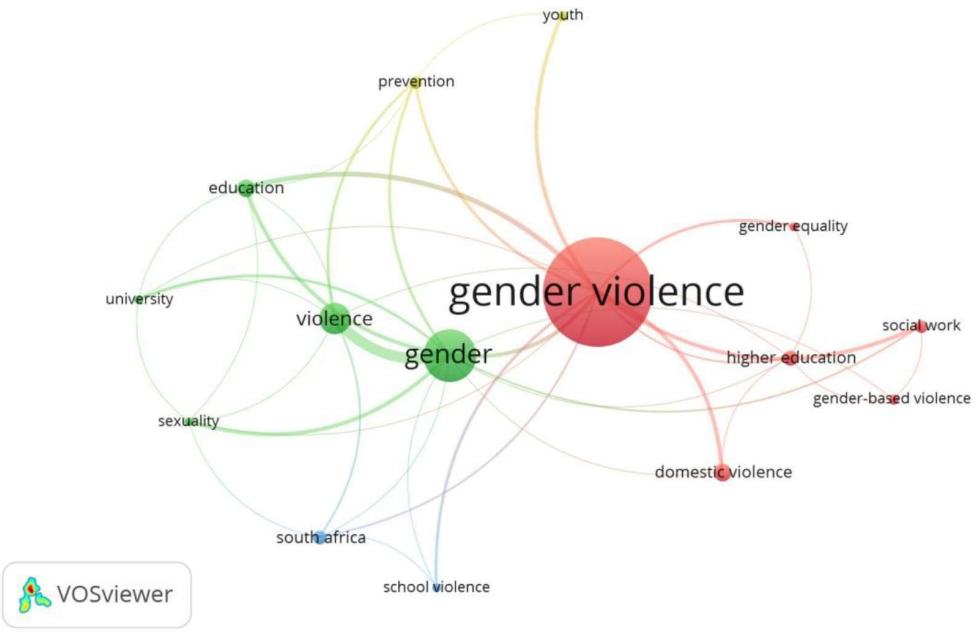


Tabela 7

Termos relacionados com a violência de género

Termos	Clusters	Co-ocorrência
Gender violence	1	61
Domestic violence	1	10
Higher education	1	9
Social work	1	7
Gender-based violence	1	6
Gender equality	1	5
Gender	2	30
Violence	2	18
Education	2	10
Sexuality	2	5
University	2	5
South africa	3	8
School violence	3	5
Prevention	4	7
Youth	4	6

A tabela 7 contém uma lista de termos relacionados com a violência de género, o ensino superior e outros tópicos relevantes, que constam da base de dados selecionada pela string exibida na tabela 1. Alguns dos termos mencionados incluem violência de género, violência doméstica, ensino superior, trabalho social, violência de género, igualdade de género, entre outros. Estas questões são importantes na sociedade atual e requerem atenção especial devido ao impacto na vida das pessoas. A discriminação de género é um problema global que afeta indivíduos de todas as faixas etárias e géneros. Por exemplo, para Rivera et al. (2021), a educação de género e a prevenção da violência são aspetos cruciais a serem abordados em ambientes educacionais (Miguel Guzman-Sanchez & Jimenez- Cortes, 2018; Pacheco-Salazar & López-Yáñez, 2019). A inclusão de conteúdos sobre violência de género nos currículos universitários é essencial para formar profissionais capacitados para intervir em casos de violência de género (Parra & Checa, 2021; Peña et al., 2015).

A compreensão da violência de género entre os jovens é crucial, uma vez que a normalização e a banalização desta violência dificultam a sua abordagem (Joelsson & Bruno, 2020). Além disso, a promoção da igualdade de género e da segurança nas escolas é crucial para prevenir a violência de género (Vanner, 2019). Da mesma forma, a participação das mulheres imigrantes e o atendimento às vítimas de violência de género são elementos fundamentais a serem considerados nas políticas e práticas sociais (Martinez-Roman et al., 2017). Em suma, a violência de género, a educação para a igualdade e a prevenção da violência são temas interligados que requerem uma atenção ampla em diversas áreas, desde a educação até a intervenção social e a elaboração de políticas públicas.

Conclusão

Este estudo apresenta uma compreensão aprofundada da violência baseada no género (VBG) através da perspetiva da Pedagogia Social, com importantes contributos teóricos e práticos, além de destacar limitações e sugerir direções para futuras investigações. No âmbito dos contributos teóricos, a pesquisa integra perspetivas da Pedagogia Social, estudos de género e direitos humanos, sublinhando a importância de uma abordagem holística para entender e combater a VBG.

Através de uma revisão sistematizada da literatura, oferece uma síntese abrangente que esclarece as tendências e lacunas na investigação sobre VBG no contexto educativo. A análise bibliométrica permitiu mapear o conhecimento, identificando clusters de pesquisa que destacam as áreas temáticas mais relevantes e emergentes, bem como a evolução das publicações ao longo do tempo.

Os resultados deste estudo são muito importantes para criar políticas e práticas educativas que ajudem a combater a violência baseada no género (VBG), promovendo a igualdade de género e garantindo ambientes de aprendizagem seguros. O estudo identifica estratégias eficazes, como programas de formação para os observadores e uma pedagogia que considera as questões de género, fornecendo orientações para desenvolver intervenções práticas nas escolas. Além disso, o estudo destaca a importância do empoderamento comunitário e da educação como ferramentas essenciais para desafiar as normas de género e reduzir a VBG.

Quanto às limitações, a análise foi limitada à base de dados WoS, o que pode ter excluído estudos relevantes publicados em outras bases de dados ou línguas. O foco em publicações a partir de 2016 pode não capturar a evolução completa da pesquisa sobre VBG em contextos educativos. A ênfase na bibliometria e análise quantitativa pode ter deixado de lado nuances qualitativas importantes presentes na literatura sobre VBG.

Para pistas futuras, futuras revisões poderiam incluir outras bases de dados e literatura cinzenta para uma visão mais abrangente. Pesquisas longitudinais que acompanhem a implementação e o impacto de intervenções educativas ao longo do tempo seriam valiosas para avaliar a eficácia dessas estratégias. Investigações qualitativas aprofundadas são necessárias para explorar experiências subjetivas de VBG e o impacto das intervenções em diferentes contextos culturais e educativos. Estudos futuros devem analisar a interseção do género com outras dimensões, como a raça, a classe social e a sexualidade, para uma compreensão mais aprofundada da violência baseada no género. Podemos assim concluir que este estudo contribui significativamente para o avanço do conhecimento sobre a VBG, proporcionando uma base sólida para futuras investigações e intervenções práticas que possam promover a igualdade de género e a segurança nos ambientes educativos.

Referências:

- Al Husaeni, D. F., & Nandiyanto, A. B. D. (2022). Bibliometric Using Vosviewer with Publish or Perish (using Google Scholar data): From Step-by-step Processing for Users to the Practical Examples in the Analysis of Digital Learning Articles in Pre and Post Covid-19 Pandemic. *ASEAN Journal of Science and Engineering*, *2*(1), 19 46.
- Alcázar-Campos, A. (2013). Social work with female victims of gender violence: Analysis of an experience in Southern Spain from a feminist perspective. *Affilia*, *28*(4), 366 378.

- Amar, A., & Laughon, K. (2020). Gender violence prevention in middle school male athletics programs. *JAMA Pediatrics*, *174*(3), 233 234.
- Bady, J. B., de Lima, A. do C. F., & da Silva, D. R. Q. (2020). As construções conceituais de gênero, sexualidade e corpo e seus impactos nas violências de gênero contra as mulheres. *Revista Educação e Linguagens*, *9*(17), 115 133.
- Baier-Fuentes, H., Merigó, J. M., Amorós, J. E., & Gaviria-Marín, M. (2019). International entrepreneurship: a bibliometric overview. *International Entrepreneurship and Management Journal*, *15*(2), 385 429. https://doi.org/10.1007/s11365-017-0487-y
- Bandara, W., Miskon, S., & Fielt, E. (2011). A Systematic, Tool-Supported Method for Conducting Literature Reviews in IS. *Information Systems Journal*, 1 14.
- Belmonte, R., & Sacca, F. (2022). *Women First-Person Narrative As A Tool For Deconstructing Stereotyped Representations Of Gender-Based Violence*.
- Bhana, D., Nzimakwe, T., & Nzimakwe, P. (2011). Gender in the early years: Boys and girls in an African working class primary school. *International Journal of Educational Development*, *31*(5), 443 448.
- Börner, K., Chen, C., & Boyack, K. W. (2003). Visualizing knowledge domains. *Annual Review of Information Science and Technology*, *37*(1), 179 255.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77 101.
- Butler, J. (2002). *Gender trouble*. routledge.
- Butler, J. (2007). *El género en disputa (Gender Trouble)*. Barcelona, Spain: Paidós.
- Callejón-Chinchilla, M. D., & Gila-Ordóñez, J. M. (2018). Precisa trabalhar relacionamentos de parceiros saudáveis a partir de contextos sócioeducacionais. *Sophia*, *14*(1), 31 38.
- Callon, M., Courtial, J.-P., Turner, W. A., & Bauin, S. (1983). From translations to problematic networks: An introduction to co-word analysis. *Social Science Information*, *22*(2), 191 235.
- Callon, M., Courtial, J. P., & Laville, F. (1991). Co-word analysis as a tool for describing the network of interactions between basic and technological research: The case of polymer chemsitry. *Scientometrics*, *22*, 155 205.
- Calvo-García, M. (2016). The role of social movements in the recognition of gender violence as a violation of human rights: from legal reform to the language of rights. *The Age of Human Rights Journal*, *6*, 60 82.
- Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2011). An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the Fuzzy Sets Theory field. *Journal of Informetrics*, *5*(1), 146 166. https://doi.org/10.1016/j.joi.2010.10.002

- Connor, D. O., & Voos, H. (1981). Empirical Laws , Theory Construction and Bibliometrics.
- *Library Trends*, *summer*, 9 20. https://doi.org/10.1080/19338244.2010.483622.
- Donoso-Vazquez, T., Rubio Hurtado, M. J., & Vila Banos, R. (2017). Cyberviolence & gender- related indicators. *Rie-Revista De Investigacion Educativa*, *35*(1), 197 214.
- Donoso Vazquez, T., Jose Rubio Hurtado, M., & Vila Banos, R. (2018). Adolescence and gender violence 2.0: Concepts, behavior and experiences. *EDUCACION XX1*, *21*(1), 109 134.
- Dunne, M. (2007). Gender, sexuality and schooling: Everyday life in junior secondary schools in Botswana and Ghana. *International Journal of Educational Development*, *27*(5), 499 511.
- Dunne, M., Humphreys, S., & Leach, F. (2006). Gender violence in schools in the developing world. *Gender and Education*, *18*(1), 75 98.
- Gmür, M. (2003). Co-citation analysis and the search for invisible colleges: A methodological evāluation. *Scientometrics*, *57*(1), 27 57. https://doi.org/10.1023/A:1023619503005
- Guarderas, P. (n.d.). *Acoso sexual en las universidades ecuatorianas: validez de contenido de un instrumento de medición. Alteridad [online]. 2018, vol. 13, n. 2*. ISSN.
- Amstadter, A. (2008). Relations among gender, violence exposure, and mental health: The national survey of adolescents. *American Journal of Orthopsychiatry*, *78*(3), 313 321.
- Harzing, A.-W., & Alakangas, S. (2016). Google Scholar, Scopus and the Web of Science: a longitudinal and cross-disciplinary comparison. *Scientometrics*, *106*(2), 787 804
- Hattery, A. J. (2022). Feminist lecture:(Re) Imagining gender-based violence as a strategy for enforcing institutional segregation and reproducing structural inequalities. *Gender & Society*, *36*(6), 789 812.
- Havronska, T., Krasnolobova, I., Bortniak, V., Bondar, D., & Boiko, A. (2021). The role of public authorities in combating gender-based violence. *Cuestiones Políticas*, *39*(71), 387 404.
- Hawkins, C. A., & Knox, K. S. (2014). Gender violence and discrimination in Russia: Learning from an American Russian partnership. *International Social Work*, *57*(5), 511 522.
- Henderson, M., Shurville, S., & Fernstrom, K. (2009). The quantitative crunch: The impact of bibliometric research quality assessment exercises on academic development at small conferences. *Campus-Wide Information Systems*, *26*(3), 149 167.

- Heslop, J., Parkes, J., Januario, F., & Sabaa, S. (2019). Making meaning from data on school related gender-based violence by examining discourse and practice: insights from a mixe methodology study in Ghana and Mozambique. *Compare: A Journal of Comparative and International Education*, *49*(1), 64 80.
- Hou, J. (2017). Exploration into the evolution and historical roots of citation analysis by referenced publication year spectroscopy. *Scientometrics*. *110*(3), 1437 1452. https://doi.org/10.1007/s11192-016-2206-9
- Jeong, Y. K., Song, M., & Ding, Y. (2014). Content-based author co-citation analysis. *Journal of Informetrics*, *8*(1), 197 211. https://doi.org/10.1016/j.joi.2013.12.001
- Kandylas, V., Upham, S. P., & Ungar, L. H. (2010). Analyzing knowledge communities using foreground and background clusters. *ACM Transactions on Knowledge Discovery from Data (TKDD)*, *4*(2), 1 35.
- Katz, J. (2018). Bystander training as leadership training: Notes on the origins, philosophy, and pedagogy of the mentors in violence prevention model. *Violence Against Women*, *24*(15), 1755 1776.
- Kim, M. E. (2018). From carceral feminism to transformative justice: Women-of-color feminism and alternatives to incarceration. *Journal of Ethnic & Cultural Diversity in Social Work*, *27*(3), 219 233.
- Kirby, A. (2023). Exploratory Bibliometrics: Using VOSviewer as a Preliminary Research Tool.
- *Publications*, *11*(1), 10.
- Leach, F. E., & Mitchell, C. (2006). *Combating gender violence in and around schools*. Trentham Books Limited.
- Martinez-Roman, M.-A., Vives-Cases, C., & Pérez-Belda, C. (2017). Immigrant women suffering from IPV in Spain: The perspectives of experienced social workers. *Affilia*, *32*(2), 202 216.
- Mentzer, J. T., & Kahn, K. B. (1995). *No Title*. *16*(1), 231 251.
- Morris, A. (2009). Gendered dynamics of abuse and violence in families: Considering the abusive household gender regime. *Child Abuse Review: Journal of the British Association for the Study and Prevention of Child Abuse and Neglect*, *18*(6), 414 427.
- Namy, S., Carlson, C., Pala, A. N., Faris, D., Knight, L., Allen, E., Devries, K., & Naker, D. (2017). Gender, violence and resilience among Ugandan adolescents. *Child Abuse & Neglect*, *70*, 303 314.
- Navarro Amador, M. T., & Pastor Comín, J. J. (2021). Sesgos de género en las músicas de consumo: percepción lectora y musical de mensajes sexistas en estudiantes de magisterio. *Revista Complutense de Educación*, *32*(1).
- Noyons, E., Moed, H., & Van Raan, A. (1999). Integrating research performance analysis and science mapping. *Scientometrics*, *46*(3), 591 604.

- Oliver, E., Soler, M., & Flecha, R. (2009). Opening schools to all (women): efforts to overcome gender violence in Spain. *British Journal of Sociology of Education*, *30*(2), 207 218.
- Ortiz, R. M., Freude, L., Calvet, C. C., Samaranch, E. A., Martí, J. B., Vivancos, C., & Beltrán, A.
- M. (2022). Raising awareness and combatting digital gender based v iolence through service-learning. *INTED2022 Proceedings*, 1008 1017.
- Parkes, J. (2016). The evolution of policy enactment on gender-based violence in schools.
- *Prospects*, *46*, 93 107.
- Parra, C. R., & Checa, M. M. (2021). Universitarias/os y recursos contra la violencia de género,¿ del aula a la intervención profesional? *Profesorado, Revista de Currículum y Formación Del Profesorado*, *25*(1), 67 86.
- Pedro, E., Leitão, J., & Alves, H. (2018). Intellectual capital and performance: Taxonomy of components and multi-dimensional analysis axes. *Journal of Intellectual Capital*, *19*(2), 407 452. https://doi.org/10.1108/JIC-11-2016-0118
- Peña, E. B., de Guzmán, V. P., & López, A. M. (2015). Formación en violencia de género en el Grado de Educación Social de las universidades españolas. *Bordón: Revista de Pedagogía*, *67*(3), 51 66.
- Powell, W. W., Koput, K. W., & Smith-Doerr, L. (1996). Interorganizational Collaboration and the Locus of Innovation: Networks of Learning in Biotechnology. *Administrative Science Quarterly*, *41*(1), 116. https://doi.org/10.2307/2393988
- Prasad, S., & Tata, J. (2005). Publication patterns concerning the role of teams/groups in the information systems literature from 1990 to 1999. *Information and Management*, *42*(8), 1137
- 1148. https://doi.org/10.1016/j.im.2005.01.003
- Quinlan, K. M., Kane, M., & Trochim, W. M. K. (2008). Evaluation of large research initiatives: Outcomes, challenges, and methodological considerations. *New Directions for Evaluation*, *2008*(118), 61 72. https://doi.org/10.1002/ev.261
- Ramis, M., & Krastina, L. (2010). Cultural intelligence in the school. *Revista de Psicodidáctica*, *15*(2), 239 252.
- Ribeiro, A. (2017). Práticas de política econômica: um teste das atas do Comitê de Política Monetária do Banco Central do Brasil (2003-2014). *Revista de Sociologia e Política*, *25*, 99 120.
- Richter, L. M., & Dawes, A. R. L. (2008). Child abuse in South Africa: rights and wrongs. *Child Abuse Review: Journal of the British Association for the Study and Prevention of Child Abuse and Neglect*, *17*(2), 79 93.

- Ringrose, J., & Renold, E. (2020). Normative cruelties and gender deviants: The performative effects of bully discourses for girls and boys in school. In *Judith Butler and Education* (pp.67 90). Routledge.
- Rios-Gonzalez, O., Puigvert Mallart, L., Sanvicén Torné, P., & Aubert Simón, A. (2019).
- Promoting zero violence from early childhood: a case study on the prevention of aggressive behavior in Cappont Nursery. *European Early Childhood Education Research Journal*, *27*(2), 157 169.
- Rivera, F. F., Martínez, M. D. S., Figueiredo, M. J. V., Pérez, M. N., & Fernández, R. A. (2021). Consenso de expertos sobre las medidas de protección a hijos e hijas víctimas de violencia de género. *Bordón: Revista de Pedagogía*, *73*(2), 63 78.
- Rowley, J., & Slack, F. (2004). Conducting a literature review. *Management Research News*, *27*(6), 31 39. https://doi.org/10.1108/01409170410784185
- Seuring, S., & Mu, M. (2008). *From a literature review to a conceptual framework for sustainable supply chain management*. *16*, 1699 1710. https://doi.org/10.1016/j.jclepro.2008.04.020
- Shen, X., & Wang, L. (2020). Topic evolution and emerging topic analysis based on open source software. *Journal of Data and Information Science*, *5*(4), 126 136.
- Teixeira, R., Campos, W. Y. Y. Z., de Souza, F. A. S., & Fuzyama, C. K. (2022). Gig Economy:
- estado da arte sob a ótica das relações de trabalho e uma chamada para pesquisas futuras.
- *Revista de Gestão e Secretariado*, *13*(4), 2243 2270.
- Thorne, B. (1993). *Gender play: Girls and boys in school*. Rutgers University Press.
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a Methodology for Developing Evidence- Informed Management Knowledge by Means of Systematic Review. *British Journal of Management*, *14*(3), 207 222. https://doi.org/10.1111/1467-8551.00375
- Tsilika, K. (2023). Exploring the Contributions to Mathematical Economics: A Bibliometric Analysis Using Bibliometrix and VOSviewer. *Mathematics*, *11*(22), 4703.
- Upham, S., & Small, H. (2010). Emerging research fronts in science and technology: patterns of new knowledge development. *Scientometrics*, *83*(1), 15 38.
- Valencia, C. A. (2017). *Propriedades de redes aplicadas à atribuição de autoria*. Universidade de São Paulo.
- Van Raan, A. F. J. (2005). For your citations only? Hot topics in bibliometric analysis. *Measurement: Interdisciplinary Research and Perspectives*, *3*(1), 50 62.
- Vanner, C. (2019). Examining gender safety in schools: teacher agency and resistance in two primary schools in Kirinyaga, Kenya. *Education Sciences*, *9*(1), 63.

- Voisin, D. R., Hong, J. S., & King, K. (2012). Ecological factors associated with sexual risk behaviors among detained adolescents: A systematic review. *Children and Youth Services Review*, *34*(10), 1983 1991.
- Waltman, L., van Eck, N. J., & Noyons, E. C. M. (2010). A unified approach to mapping and clustering of bibliometric networks. *Journal of Informetrics*, *4*(4), 629 635. https://doi.org/10.1016/j.joi.2010.07.002
- Wasserman, S., & Faust, K. (1994). Social network analysis: Methods and applications. *Cambridge University Press*, *1*, 116. https://doi.org/10.1525/ae.1997.24.1.219
- White, H. D., & McCain, K. W. (1998). Visualizing a discipline: An author co-citation analysis of information science, 1972 1995. *Journal of the American Society for Information Science*, *49*(4), 327 355. https://doi.org/10.1002/(SICI)1097-4571(19980401)49:4<327::AID- ASI4>3.0.CO;2-4
- Zeira, A., Astor, R. A., & Benbenishty, R. (2002). Sexual harassment in Jewish and Arab publicschools in Israel. *Child Abuse & Neglect*, *26*(2), 149 166.
- Zhu, J., & Liu, W. (2020). A tale of two databases: The use of Web of Science and Scopus inacademic papers. *Scientometrics*, *123*(1), 321 335.

4 - Strategic Technology Management: A Systematic Literature Review

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Resumo: Esta investigação tem como objetivos de estudo analisar as diversas abordagens de pesquisa de gestão estratégica de tecnologia. Para responder à questão de investigação e atingir os objetivos propostos, recorremos à elaboração de uma Revisão Sistemática da Literatura (RSL) que nos permite identificar distintas abordagens de tecnologia e gestão estratégica. O estudo reúne 42 artigos pesquisados no ISI - Web of Knowledge Social Sciences Citation Index (SSCI), com datas de publicação entre 1984 e 2024. Esta literatura divide-se em três grandes áreas temáticas (Estratégia, Tecnologia e Inovação). Ao efetuar a análise aos dados obtidos procedeu-se ao seu mapeamento científico, análise clusters e de conteúdo, nomeadamente de três clusters: Estratégia, Tecnologia e Inovação, agrupando os subtemas mais relevantes no interior de cada *Cluster*. Demonstrou-se a importância da necessidade de gerir a tecnologia estrategicamente num contexto de uma ampla integração de gestão de tecnologia com outras estratégias, planos, políticas, inovação e atividades das organizações. A gestão estratégica de tecnologia requer mudanças e escolhas para serem abraçadas e tomadas as decisões, sabendo que a tecnologia é um corpo de conhecimento que está continuamente mudando, crescendo e evoluindo. Por fim, foram tecidas as conclusões, implicações para a teoria e para a prática.

Palavras-chave: Gestão Estratégica, Gestão de tecnologia, Inovação e Revisão Sistemática da Literatura.

Abstract: This research aims to analyse the various research approaches to the strategic management of technology. To answer the research question and achieve the proposed objectives, we used a Systematic Literature Review (SLR) to identify different approaches to technology and strategic management. The study brings together 42 articles researched in the ISI - Web of Knowledge Social Sciences Citation Index (SSCI), with publication dates between 1984 and 2024. This literature is divided into three main thematic areas (Strategy, Technology and Innovation). The data obtained was analysed by scientific mapping, cluster analysis and content analysis, namely of three clusters: Strategy, Technology and Innovation, grouping the most relevant sub-themes within each Cluster.
The importance of the need to manage technology strategically in the context of a broad integration of technology management with other strategies, plans, policies, innovation and activities of organizations was demonstrated. Strategic technology management requires changes and choices to be embraced and decisions made, knowing that

technology is a body of knowledge that is continually changing, growing and evolving. Finally, conclusions and implications for theory and practice were drawn.

Keywords: Strategic Management, Technology Management, Innovation and Systematic Literature Review.

.1 - Introduction

Strategic technology management involves a series of activities that are conducted within specific internal and external contexts, and which influence how these activities are carried out. Internal contexts encompass factors within the organization such as its culture, people, and aspirations, while external contexts include the operating environment, stakeholder expectations, and industry quality standards (Velikorossov et al., 2019). The strategic management of technology is crucial for organizations to align their strategies with technological advancements and gain a competitive edge in the market (Ahmad, 2024). It involves integrating technology innovation with key strategic elements to drive organizational success (Lawlor & Kavanagh, 2009). Research has shown that strategic technology management is essential for enhancing corporate value and competitiveness in the digital economy (Wei & Yu, 2008). By aligning investments with strategic goals and fostering innovation, organizations can leverage technology to achieve their objectives effectively. Furthermore, the strategic management of technology should be considered a distinct functional domain that enhances the overall strategic orientation of enterprises (Sahlman & Haapasalo, 2009). Strategic technology management is not only about leveraging technology for competitive advantage but also about integrating it with other strategic activities within the organization (Lee et al., 1991).

This integration requires a comprehensive approach that considers the organization's resources, capabilities, and strategic goals. Strategic planning plays a vital role in technology management, ensuring that technological resources are utilized to gain a strategic edge in a competitive market (Kfir, 2000). In addition, strategic technology management has evolved in response to external factors such as the COVID-19 pandemic, leading organizations to adjust their technology-based strategies to maintain competitiveness and productivity (Liu & Yang, 2021). This adaptation involves a strategic management process that includes analysing the context, implementing the strategy and evaluating it to effectively deal with the challenges and opportunities arising from external disturbances, the same authors argue.

Strategic management in the realms of technology innovation, entrepreneurship, and overall organizational strategy is significantly influenced by the demand-side perspective. Understanding the demand-side approach allows organizations to tailor their strategies to meet market needs and trends, thereby enhancing their innovation processes and strategic management practices (Priem et al., 2012). This perspective emphasizes the importance of considering consumers' evaluation of products' functional performance and unmet needs in the innovation process (Zhao & Wang, 2018). The literature underscores that innovation is a coupling process between technical possibilities and market demands, with interactions and feedback loops between supply and demand forces (Walsh, 2002). While technology is a crucial supply-side force, stakeholders act as a demand-side force for innovation, highlighting the complexity surrounding innovation dynamics (Kauffman et al., 2015).

The demand-side view focuses on downstream aspects towards product markets and consumers, contrasting with upstream views that emphasize internal firm activities and capabilities as primary innovation drivers (Yusuf et al., 2016). Research has shown that demand has an incentive effect on technological innovation, with an increase in demand-side product prices contributing to higher expected profits from innovation (Chen & Chen, 2023). By shifting the focus towards the demand side, organizations can better anticipate market needs and align their innovation efforts accordingly, leading to improved innovation outcomes (Zhang et al., 2017). The evolution of markets into conditions of technology saturation further underscores the pivotal role of the demand side in technological innovation (Kim & Lee, 2009). The rapid advancement of technology in

today's world has become a defining characteristic, prompting companies to leverage these technological changes to gain a competitive edge in the market. In this context, strategic technology management plays a crucial role in integrating the technological variable into the strategic planning of organizations. By doing so, companies can differentiate themselves through innovative products and processes, ultimately securing competitive advantages necessary for their survival Bollinger & Smith (2001). The strategic management of technology is essential for organizations to adapt to technological advancements and align their strategies with market demands.

This alignment enables companies to capitalize on technological changes effectively, enhancing their innovation processes and overall strategic management practices (Sikander, 2018). By embracing strategic technology management, organizations can stay ahead of the curve and ensure that their technological initiatives are in sync with their strategic objectives, fostering a culture of innovation and competitiveness (Ferreira et al., 2018). Moreover, the strategic management of technology is closely linked to the development of competitive advantage. Companies that strategically manage their technological resources can create sustainable competitive advantages by aligning their technological capabilities with their strategic goals (Σακάς et al., 2014). This alignment allows organizations to respond to market changes and proactively shape market trends through innovative technological solutions (Mahdi & Nassar, 2021).

For the development and maintenance of an organization, it is essential that it use the most diverse methodologies to provide a service with greater added value, always maintaining the desired quality. In this context, reflecting its ability to react to changes in the market, harmonizing with the trends it presents, are investments in new technologies that result in process improvements (Pappas, 1984). Technological innovation is a term that applies to innovations in processes, products or services. Generally speaking, it is anything new implemented by the productive sector, through research and/or investment, which increases the efficiency of the production process. It also implies the creation of a new product or an improved version of a product (Dias et al., 2019).

The variables innovations and new technologies have been significantly considered as a reason for long-term economic growth, influencing the increase in GDP (Gross Domestic Product) in certain countries (Pappas, 1984). For this reason, it is not difficult to see that countries that have developed new processes or innovative products have had better competitive advantages in the market, as they have no direct competitors. New products almost always arouse the desire of consumers to obtain them and with this, organizations look for new technologies to ensure market leadership (Ivanova, et al., 2019). Studies by the Organization for Economic Co-operation and Development (OECD, 2005) have highlighted that countries that have developed new innovative processes or products have also achieved comparative advantages by not finding comparable competitors on the market.

The aim of this study is to analyze the various research approaches to strategic technology management through a Systematic Literature Review. This review aimed to provide a comprehensive understanding of best practices and approaches in the strategic management of technology by synthesizing existing literature and research findings. A bibliometric analysis covering three decades of research into technology analysis and strategic management sheds light on trends and advances in this field (Farrukh et al., 2020). To identify gaps in research on strategic technology management, a systematic literature review (SLR) is a valuable method. SLRs help in mapping existing research and pinpointing areas where further investigation is needed. Several studies have utilized SLRs to identify research gaps and propose future research directions in various domains (Agrawal et al., 2021; Ali & Phan, 2022; Arantes et al., 2019; Bastos et al., 2019; Bourdeau et al., 2019; Cerruti et al., 2019; Colberg, 2022; Cordova-Buiza et al., 2022; Eloranta & Turunen, 2015; Falkner & Hiebl, 2015; Florén et al., 2020; Gulaid, 2024; Hecker, 2020; Hesselbarth et al., 2023; Hezron, 2024; Huraizi & Marni, 2023; Keupp et al., 2011; Khizar et al., 2021; Kummer & Schmiedel, 2016; Lombardi et al., 2021; Minaya, 2024; Moya & Camacho, 2019; Nesara et al., 2020; Omar, 2023; Paiva & Rabechini, 2022; Pedrini &

Ferri, 2019; Pereira et al., 2023; Qazi et al., 2015; Rezvani, 2017; Richter, 2024; Sharma & Chillakuri, 2022; Sharan et al., 2023; Sieber et al., 2022; Suryono et al., 2020; Symeonidou & Bruneel, 2017; Tjønndal, 2016).

By conducting a systematic literature review on strategic technology management, researchers can gain insights into the current state of knowledge, identify areas that lack sufficient research attention, and propose avenues for future investigation. This method allows for a rigorous examination of existing literature, enabling scholars to fill gaps in understanding and contribute to the advancement of knowledge in the field of strategic technology management.

The work we present below has the following structure. Firstly, we present the methodology used. Secondly, we develop and analyze the different contributions to the study in question. Finally, we present a synopsis of the clusters and conclusions. We also point out some limitations and avenues for future work.

2 – Methodology

The origin of this study is the selection and analysis of studies published by the scientific community on the strategic management of technology in a global way, which allows us to identify the different elements that lead to approaches in the definition of the strategic management of technology, so, in general, we carried out a systematic review of the literature, which is a comprehensive, objective, systematic, transparent and replicable research, initiated by an explicit and clearly formulated question (Ravindran & Shankar, 2015) and can solve the problem of conflicting results by identifying, critically evaluating and integrating the most relevant results from all the studies that answer the starting question and that do so through good research work (Siddaway, et al., 2019).

As the aim of this research was to identify emerging topics related to the strategic management of technology, a systematic literature review was used to assess the state of the art, considering all the methodological procedures inherent to providing this study with reliability and scientific validity (Parahoo, 2014). These requirements are in line with those defined by Tranfield et al. (2003) who advocated that this type of review should include three fundamental stages: 1) planning/protocol of the review; 2) selection of scientific documents and synthesis of data (development of the review); 3) communication, dissemination and dissemination of the results. Briner and Denyer (2012) also defined 5 steps for this type of review.

The systematic literature review presented here includes the scientific mapping of the 42 articles and the traditional cluster analysis, without the use of software, followed a structured and methodical strategy for selecting the final base of scientific articles for systematizing the literature, which included defining the eligibility criteria, the keywords, the time period and the scientific areas (Bandara et al., 2011; Tranfield et al., 2003). Cluster Analysis is a multivariate technique that aims to help one or multiple partitions of a data set, placing them into groups based on classification criteria so that there is homogeneity within the group and heterogeneity between groups (Schlee et al., 1975). To guarantee the rigor and transparency of this review, the research protocol outlined is presented in Table 1.

Table 1 - List of items and search criteria

Items	Criteria
Period	No chronological filter
Online database	ISI *Web of Knowledge Social Sciences Citation Index* (SSCI)
Keywords	"*Strategic management and Technol**"

Research area	*Management, Business, and Economics*
Language	*English*
Type of documents	Articles and review articles
Software used	Microsoft Excel and VosViewer
Total documents identified	42

Source: Own elaboration

These eligibility criteria returned 42 articles with the following general characteristics: 1) Sum of citations - 1,350; 2) Average Citations per Article - 2.24; 3) On the other hand, the use of only Wos for the research is justified by its international recognition by peers (Harzing & Alakangas, 2016; Zhu & Liu, 2020), as relevant and pertinent due to its requirement for peer review, in addition to providing all bibliographic information on authors, their citations, journals, countries, research areas and year of publication.

3 - Scientific mapping

Table 2 details how Technology Analysis & Strategic Management is responsible for the publication of 8 articles, which represents a weight of 19% in relation to the total number of publications. Technovation published 4 articles, which accounted for 9% of the total number of articles published. The journals International Journal Of Technology Management and Research Technology Management account for 7% of publications, and R&D Management and Long Range Planning each published 2 articles, accounting for 5% of publications.

Table 2 - Source of publication of the articles

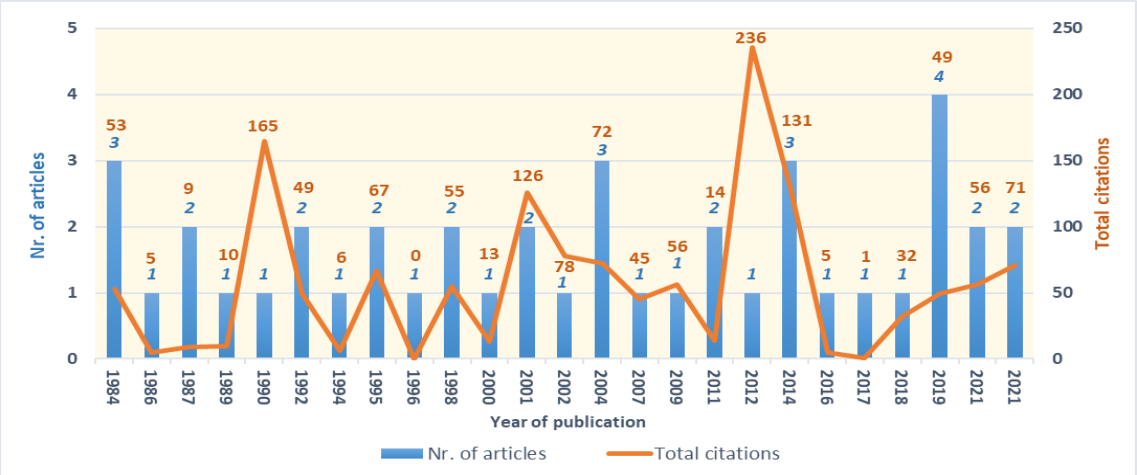
Journal	Nº of publications	%
Technology Analysis & Strategic Management	8	19
Technovation	4	9
International Journal Of Technology Management	3	7
Research Technology Management	3	7
R&D Management	2	5
Long Range Planning	2	5
Others Journals (só com uma publicação)	20	48
Total	42	100%

Source: Own elaboration

Figure 2 summarizes the number of articles and also identifies the total number of citations per year of publication. The year with the highest number of articles is 2019, which reflects a slight increase in articles compared to previous periods, which conveys the growing interest recently in topics related to strategic technology management.

In terms of total citations, the years with the highest number are 2012, 1990 and 2001. The most cited article of all the periods analyzed dates from 2012, with 236 citations, and addresses the topic of visions and new directions of demand-side approaches to technological innovation, entrepreneurship and strategic management research according to Priem, et al. (2012). Other relevant studies are by Pavitt (1990) and Robert (2001), highlighting the impact of technology on different economies and comparing technological developments between different world regions.

Figure 1 - Articles and citations by year of publication



Source: Own elaboration

Another relevant indicator resulting from this systematic review is related to the geographical distribution of the articles, in which 59% of the selected articles were published in 3 countries: USA, England and Italy, demonstrating the considerable recognized importance of the topic of strategic technology management in these countries (Table 3), in which the articles included in this percentage are the most cited, such as the study by Priem et al. (2012) and Pavitt (1990), with 236 and 165 citations respectively.

Table 3 - Distribution by country

Country	Occurrences	%
USA	16	38
England	5	12
Italy	4	9
China	3	7
Germany	2	5
Netherlands	2	5
Poland	2	5
Others (only 1 study)	8	19
Total	42	100,00%

Source: Own elaboration

Regarding the distribution of topics by research area, it was found that 52% of the topics analyzed corresponded to the area of Business Economics, followed by Engineering with 16%, revealing the considerable importance of the topic of strategic technology management (Table 4).

Table 4 - Distribution by research area

Research areas	Themes	%
Business economics	42	52
Engineering	13	16
Operations research management science	10	13
Science technology other topics	8	10
Development studies	2	3
Others (Public administration, Psychology,…)	5	6
Total	80	100,00

Source: Own elaboration

In the literature on strategic technology management, qualitative empirical studies and articles with mixed methodology predominated (Table 5), in which 66% of the methods applied to include 10 qualitative empirical articles, 9 articles that apply quantitative and qualitative empirical methods simultaneously and 9 quantitative empirical articles. It also includes 5 bibliographical review articles and 5 qualitative conceptual articles.

Table 5 - Distribution by method

Type of Studies	Occurrences	%
Empirical Qualitative	10	24
Mixed articles	9	21
Empirical Quantitative	9	21
Bibliographic review	5	12
Conceptual Qualitative	5	12
Case Study	2	5
Conceptual Theoretical Article	2	5
Total	42	100,00

Source: Own elaboration

Finally, table 6 shows the scientific performance of the journals, the total citations per article and their purpose.

Table 6 - Final selection of articles

Authors	Journals and magazines	h-index	Quartile	SJR 2023	Objective	Citations
Pappas, C (1984)	*Journal of product innovation management*	171	Q1	3,40	To show the relevance of technology as a fundamental resource.	27
Skinner, W (1984)	*Interfaces*	69	Q2	0,58	Innovation and technology as a competitive tool.	21
Birnbaum, Ph (1984)	*Ieee transactions on engineering management*	112	Q1	1,20	Focus on the relationship between the product life cycle and the appropriate use of technology.	5
Wilson, I (1986)	*Long range planning*	126	Q1	2,93	It investigates technology strategy based on three interrelated business areas.	5
Brownlie, Dt (1987)	*European journal of marketing*	154	Q1	1,27	It shows the link between technology, R&D and long-term business strategy for the industry.	5
Lauglaug, As (1987)	*Long range planning*	126	Q1	2,93	It describes the strategic technology management planning process using a matrix portfolio technique in companies in the tyre industry.	4
Mcgee, J; Thomas, H (1989)	*R & D management*	221	Q1	4,58	Focus on theory development and empirical analysis of the most common strategic determinations for managing technology.	10

Authors	Journals and magazines	h-index	Quartile	SJR 2023	Objective	Citations
Pavitt, K (1990)	*California management review*	155	Q1	3,33	The impact of technology on economies.	165
Tyran, Ck; Dennis, Ar; Vogel, Dr; Nunamaker, Jf (1992)	*Mis quarterly*	271	Q1	4,11	It investigates the application of electronic meeting systems technology to support management strategies.	41
Foxall, Gr; Fawn, Jr (1992)	*Technovation*	159	Q1	2,59	Technological innovation as an evolutionary process.	8
Lee, J; Bae, Zt; Lee, J (1994)	*Journal of engineering and technology management*	75	Q1	1,04	Analytical and systemic approach to the development of technology and strategic changes in the Korean telecommunications industry.	6
Roberts, Eb (1995)	*Research-technology management*	79	Q2	0,63	Benchmarking study on R&D spending, comparing technological evolution and its impact between the regions of Europe, Japan and the United States.	48
Roberts, Eb (1995)	*Research-technology management*	79	Q2	0,63	Compare technological developments and their impact between different world regions.	19
Wilson, G (1996)	*International journal of technology management*	66	Q2	0,36	It addresses the impact of environmental and internal interventions to optimise companies in their technology function management strategies.	0
Carayannis, Eg (1998)	*Technovation*	159	Q1	2,59	Conceptualises the strategic role of technological learning in projects.	49
Heidenberger, K; Roth, M (1998)	*International journal of technology management*	66	Q2	0,36	It deals with the agricultural sector and the adoption of technological innovations.	6
Zehner, Wb (2000)	*Technology analysis & strategic management*	84	Q2	0,80	It proposes analysing the new position of technology management as a competitive advantage.	13
Roberts, Eb (2001)	*Research-technology management*	79	Q2	0,63	It compares technological evolution and its impact between different world regions, reaffirming similar findings to the previous ones.	118

Authors	Journals and magazines	h-index	Quartile	SJR 2023	Objective	Citations
Van Wegberg, M; Van witteloostuijn, A (2001)	*Multiunit organization and multimarket strategy*	37	N/A	N/A	It deals with the spread of modern information technologies, known as the information revolution.	8
Edler, J; Meyer-Krahmer, F; Reger, G (2002)	*R & D management*	221	Q1	4,58	It analyses the main changes in the strategic management of technology in the most technological companies and their impact on different world regions.	78
Antoniou, Ph; Ansoff, Hi (2004)	*Technology analysis & strategic management*	84	Q2	0,80	It deals with technology and strategy design.	34
Coccia, M (2004)	*Technology analysis & strategic management*	84	Q2	0,80	Investigate the new behaviour of research laboratories.	30
Hemphill, Ta (2004)	*Technology analysis & strategic management*	84	Q2	0,80	The importance of trade secrets for strategic management in technology companies.	8
Chan, Tat; Nickerson, Jack a.; Owan, Hideo (2007)	*Management science*	290	Q1	5,44	It describes the limits of R&D selection and the use of technology markets to buy and sell projects.	45
Daghfous, Abdelkader; Barkhi, Reza (2009)	*Technovation*	159	Q1	2,59	IT applications in the hospitality industry.	56
kunz, veit dominik; warren, Lorraine (2011)	*technology analysis & strategic management*	84	Q2	0,80	Research and insert strategic actions to support successful management.	9
Kotnour, Tim; Bollo, Timothy R. (2011)	*International journal of technology management*	66	Q2	0,36	Analysis of strategic management tool structures, from the initial analysis to the business plan.	5
Priem, Richard l.; Li, sali; Carr, Jon c. (2012)	*Journal of management*	280	Q1	7,54	It describes the progress of three technological innovation management literatures.	236
Cavallo, eugenio; Ferrari, e.; Bollani, l.; Coccia, m. (2014)	*Technology analysis & strategic management*	84	Q2	0,80	Review of the evolution of technology in agriculture.	49
Coccia, Mario (2014)	*Technology analysis &*	84	Q2	0,80	He studies the convergence of genetics, genomics and	45

Authors	Journals and magazines	h-index	Quartile	SJR 2023	Objective	Citations
	strategic management				biochemistry in new technologies and paradigms in medicine.	
Cohen, boyd; Ernesto amoros, jose (2014)	*Technovation*	159	Q1	2,59	Development of a model for analysing the life cycle of public policy and technology in support of innovation.	37
Brovko, Petr Mikhailovich; Petruk, Galina Vladimirovna (2016)	*Economic and Social Changes-Facts Trends Forecast*	Emerging Sources Citation Index (ESCI)			It analyses the current state and strategic management of the development of enterprises within the military-industrial complex in the dynamic environment of the global market and determines the most effective ways of their development, for example in the Russian helicopter industry.	5
Baskarada, sasa; Hanlon, brian (2017)	*Journal of advances in management research*	33	Q2	0,67	Analysing strategic management practices and technology in the public sector.	1
De Moortel, kevin; Crispeels, Thomas (2018)	*Technological forecasting and social change*	179	Q1	3,12	Study that builds a strategic management framework for international technology transfer between universities.	33
Ivanova, alla s.; Holionko, nataliia g.; Tverdushka, tetiana b.; Olejarz, tadeusz; Yakymchuk, alina y. (2019)	*Journal of competitiveness*	37	Q1	0,93	Its aim is to investigate the new approaches and consequences in evaluating company development.	27
Parreiras, r. o.; Kokshenev, i.; Carvalho, m. o. m.; Willer, a. c. m.; Dellezzopolle, c. f., JR.; Nacif, d. b., JR.; Santana, j. a. (2019)	*European journal of operational research*	305	Q1	2,32	Analysing the strategic management of multi-business portfolios in the public sector.	13
Han, chen; Gao, shanxing (2019)	*Rbgn-revista brasileira de gestão de negócios*	20	Q3	0,28	This study integrates the influence of three types of innovation - strategic, managerial and technological - into the process of improving companies' competitiveness.	8

Authors	Journals and magazines	h-index	Quartile	SJR 2023	Objective	Citations
Dias, Cláudia S. L.; Ferreira, João j. (2019)	*Innovation-organization & management*	42	Q1	1,18	This study aims to analyse the different research approaches to the strategic management of technological innovation.	1
Farrukh, Muhammad; Shahzad, Imran Ahmed; Meng, Fanchen; Wu, Yihua; Raza, Ali (2021)	*Technology analysis & strategic management*	84	Q2	0,80	Understanding the development of technology analysis and strategic management research over time. The authors provide valuable information on the evolution of research in this field.	37
Liu, Chun; Yang, Jingjing (2021)	*International journal of contemporary hospitality management*	126	Q1	2,84	It explores how hotels develop their dynamic capabilities to adjust their technology-based strategy in order to improve performance and gain competitive productivity during the COVID-19 pandemic and in the aftermath.	21
Adamik, Anna (2023)	*European management studies*	Emerging Sources Citation Index (ESCI)			It comprehensively explores the significance and impact of integrating Technological Intelligence into the strategic management practices of organisations operating in the contemporary business landscape.	14
Belhadi, Amine; Kamble, Sachin; Benkhati, Imane; Gupta, Shivam; Mangla, Sachin Kumar (2023)	*Journal of business research*	265	Q1	3,13	Identify winning strategies for customer loyalty in the sharing economy.	0

Source: Own elaboration

4 – Analysing and interpreting the results

The method of processing and analyzing results in management and business research is essential for understanding the complex relationships between factors such as strategy, technology, and innovation. Breaking down articles into consistent parts and evaluating the connections between data can provide valuable insights into business management. To assess the main contributions, the articles included in Table 6 (42) were carefully analyzed, identifying three groups (clusters) of research topics: Strategy, Technology and Innovation. This thematic triangle encompasses a whole range of challenges, questions, options, techniques and solutions. Table 7 shows the references inherent in each cluster obtained.

Table 7 - Clusters

Clusters	References
1 - Strategy	Birnbaum, Ph (1984) Pappas, C (1984) Brownlie, Dt (1987) Lauglaug, As (1987) Kotnour, et al. (2011) kunz, et al. (2011) Brovko, et al. (2016) Baskarada, et al. (2017) De Moortel, et al. (2018) Ivanova, et al. (2019) Parreiras, et al. (2019) Liu, et al. (2021) Belhadi, et al. (2023)
2 - Technology	Wilson, I (1986) Lee, et al. (1994) Wilson, G (1996) Van Wegberg, et al. (2001) Edler, et al. (2002) Antoniou, Ph; Ansoff, Hi (2004) Chan, et al. (2007) Daghfous, et al. (2009) Cohen, et al. (2014) Farrukh, et al. (2020) Adamik, Anna (2023)
3 - Innovation	Skinner, W (1984) Mcgee, et al. (1989) Pavitt, K (1990) Tyran, et al. (1992) Foxall, et al. (1992) Roberts, Eb (1995) Roberts, Eb (1995) Carayannis, Eg (1998) Heidenberger, et al. (1998) Zehner, Wb (2000) Roberts, Eb (2001) Coccia, M (2004) Hemphill, Ta (2004) Priem, et al. (2012) Coccia, Mario (2014) Cavallo, et al. (2014) Han, et al. (2019) Dias, et al. (2019)

Source: Own elaboration

The following subsections show the content analysis of the clusters.

4.1 - Cluster 1 - Strategy

Strategy is defined as the result of some form of planning, it is an organized process for anticipating and acting on the future to fulfil the organization's mission. We apply strategy so that better decisions can be made, especially in the long term (Brownlie, 1987). Along with business strategy, technology strategy defines how resources can be used most effectively to achieve sustainable competitive advantage (Pappas, 1984). It's a complex process that can be planned, implemented and exploited (Pappas, 1984). Birnbaum (1984) and Lauglaug (1987) emphasize the interdependence between strategy and resource allocation, pointing out that a strategy without a budget is impractical. Financial resources are essential for the effective implementation of an organizational strategy. For development, any aspect of technology requires a significant investment of time, money and resources, necessitating a structured approach (Kunz, et al., 2011).

The international transfer of technology between universities boosts the economic development of regions and countries. The Western perspective highlights the formalization of collaborations, with more resources to facilitate management and collaborative learning. A strategic management framework can promote collaboration, commercialization and dissemination of research results (De Moortel, et al., 2018).

Birnbaum's work (1984) provides a solid basis for understanding the crucial role of strategic planning in defining organizational aims and objectives and determining how to achieve them, highlighting the importance of collaboration between the different levels of management to ensure the effectiveness of the process. Brownlie (1987) points out that implementing strategic planning at middle management and operational levels is fundamental to the effectiveness of tasks and the generation of tactical and operational plans, translating strategy into concrete actions throughout the organization.

The strategic management of resources by top managers, according to Birnbaum (1984), is crucial to the long-term success of the company, as it impacts all organizational activities, involving the prediction of the future and decisions that can significantly influence its trajectory. By recognizing the dynamic nature of strategic management, companies can increase their ability to respond effectively to challenges and opportunities, ensuring the relevance and success of their strategic initiatives (Liu et al., 2021). In this sense, Kunz et al. (2011) presented a new framework that generates a list of strategic actions to support the successful management of the innovation process as new technologies are brought to market and the intention was to link the notion of strategy with the future, providing an analysis approach that unites areas such as market and technology analysis, environmental factors, company factors, as well as benefits and risks.

An effective approach to implementing a strategy must consider both the benefits and disadvantages of implementation, along with the risks associated with not implementing it. Authors such as Kotnour et al. (2011) stress the importance of tools such as scenario planning and organizational maps in the strategic planning process. Pappas (1984) emphasizes the importance of an effective and efficient approach to managing technological projects, where failure is more common than success, and risk must be carefully managed to ensure the successful implementation of the strategy. According to Brownlie (1987) there is a broad view of the link between technology and business strategy in an attempt to identify its critical dimensions, establishing that an effective technology planning mechanism will provide and mean integrating technology in general, and R&D in particular, into long-term and strategic business planning.

Kotnour et al. (2011) emphasize that by planning, an institution develops a future vision and strategy to control it, allowing it to anticipate events and respond effectively to threats and opportunities. Strategic technology management is crucial for preparing employees to anticipate and act proactively, ensuring the organization's success in the face of future challenges. The formulation of strategic plans requires forecasts of technological development to anticipate advances that may affect the company's product or basic process technology and subsequently the technological dimensions of its competitiveness. Birnbaum (1984) addresses the importance of anticipating technological advances for competitiveness. In his work, he emphasizes the need to anticipate technological

developments to shape the company's strategy and guarantee its competitive position in the market. To anticipate possible bases of future competition, technology-based companies must also predict the relative technological positions of competitors, given their current position and expected technology strategy (Brownlie, 1987).

The strategic management of technology has become more of a tool than a dominant force in organizational development, as pointed out by Brownlie, (1987) who highlights the need for strategies to be adapted to the specific environment in which they are formulated, rejecting the notion of a generic model that can be universally applied to different sectors, countries or technologies.

According to Brownlie (1987) given the complexity of the link between business strategy and technology, it is believed that a substantial commitment is required to develop the basis for technology planning and operationalization. However, many of the factors that ultimately influence the design of a technology planning system are contextual in nature, so that different systems will evolve for each individual company. Technology is seen as a means of achieving sustainable competitive advantage (Brownlie, 1987).

Benchmarking is recognized as a valuable tool for assessing and improving strategic technology management in organizations (Roberts, 2001). By comparing performance metrics and practices with industry standards and competitors, companies can identify areas for improvement and innovation in their technology management strategies. Only by integrating technology and business issues into strategy development and sharing responsibility for implementation will companies be able to succeed in globally competitive markets (Lauglaug, 1987).

4.2 – Cluster 2 – Technology

According to Wilson (1986) a technology strategy, like any other functional strategy, must always be conceived and implemented within the overall context of strategic business management. It is crucial for an organization to ensure the successful implementation of its strategy once it has been designed and agreed. Technological intelligence plays a crucial role in this process, accelerating and improving the quality of organizational processes, including efficient strategic management (Adamik, 2023).

The gap between conception and reality can lead to the failure of many strategies, as organizations often lack the resources and skills needed to apply ideas in practice, revealing deficiencies in relation to the other pillars of the smart world (Adamik, 2023). This disconnect highlights the importance of effective strategic management that incorporates not only the design but also the practical implementation of organizational strategies (Edler et al., 2002).

Constantly evolving technological knowledge is a valuable asset and can be the difference between organizational success and failure, highlighting the importance of intangible assets (Adamik, 2023). Furthermore, technology is a method focussed on understanding, developing, implementing and using systems to solve problems, with the fundamental aim of utility (Edler et al., 2002). The interaction between people and systems, along with the dynamics of system behavior and the transformation process, are crucial aspects in the technological method, involving analysis and design to improve existing systems or develop new ones (Antoniou et al., 2004).

According to Antoniou et al., 2004, the different visions of reality between the organization's general and technical managers regarding technology are addressed when it comes to strategy design. In this sense, it is essential for organizations to recognize that R&D and technology play key roles in defining corporate and business strategies (Edler et al., 2002).

The study by Lee et al. (1994) analyses a high-tech innovation project in Korea, highlighting changes in technological strategy and the accumulation of capabilities over the course of the industry's development. It is emphasized that developing countries face challenges in global competition due to limited resources and poor infrastructure, requiring specific strategic approaches to select industries and technologies to gain national competitive advantage. To compete effectively, these countries need distinct strategies

from advanced countries when promoting large-scale projects as part of their development strategy (Lee, et al., 1994).

Edler et al. (2002) also studied the main changes in the strategic management of technology in the most technology-intensive companies in Western Europe, North America and Japan over time, developing the main changes in R&D generations in management and technology. The same authors explain how to "formulate technology strategies and link them to corporate and business strategies", and in this line of reasoning the authors defend the need to understand the nature of technology, as well as the demand that society imposes. In short, the ultimate success of the technology is the success of the business: in other words, it must combine techniques, economies and commercial success (Wilson, 1986).

From another perspective, the political factors and their regulation for technology to be successful will vary from sector to sector, from industry to industry and from country to country. This intervention can be related to various factors such as market stimulation or reduction, legislative changes related to employment, environmental changes, among others. According to the Lee, et al. (1994) model, government technology policy and socio-cultural characteristics are also considered in three stages of development of technology, showing distinctly different behaviors and patterns that have been highly influenced by government policies. Branscomb (1992) highlights the importance of identifying effective policies and programs in today's competitive landscape. Comparative case studies between countries, industries and technologies, together with additional theoretical frameworks, are essential for understanding and guiding process technology development in developing countries, as well as formulating appropriate technological strategies. For example, Wilson (1996) found that government policies in Zimbabwe affect macroeconomic environments. It is reported that, on balance, the short-term impacts of the structural adjustment program on small businesses in their technological functions, the country's development is likely to be negative, the same author argued. But according to Cohen, et al. (2014),

innovation policy is no longer the exclusive domain of national governments, leading to a reconsideration of the role of public policies in supporting the sustainability of capable innovation. The size of an organization can, in fact, increase its susceptibility to being influenced by policies and regulations, as larger entities often have a more complex operational structure that interacts with various stakeholders and environments (Adamik, 2023). This complexity can lead to a greater impact from external factors such as government policies and industry regulation, which may require a more sophisticated approach to strategic management to ensure compliance and adaptability (Edler et al., 2002). Multinational companies such as Apple and Microsoft can, in fact, exert a significant influence that makes them less susceptible to the policies and regulations of a single country, due to their global presence and ability to shape the regulatory environment in which they operate (Edler et al., 2002). These organizations often have the flexibility and resources to adapt and actively influence policies in different jurisdictions.

Technology life cycles refer to the progression of technology generations in the context of the economy and society in general, rather than focusing on the life cycle of a specific product (Cohen & Amorós, 2014). As proposed by Chan et al., 2007, after extensive R&D work, it is necessary to invent a new technology to drive innovation and progress. This involves the strategic management of R&D pipelines, progressing through phases such as research, development and commercialization.

Cohen (2014) proposes a model of demand-side policy instruments for different stages of the technology S-curve to accelerate the adoption of sustainable technologies. Using S-curves allows organizations to predict when to substitute technologies, varying according to the sector and situation. This model promotes innovation and strategic adaptation in policy and technology. It sheds light on the potential for demand side tools to stimulate local sustainable innovation, based on the stages of the technology life cycle (Rogers, 1962), contributing to the extension of the theory, as well as providing potential guidance for local policymakers and practitioners on a more effective innovation policy that not only

stimulates the development of sustainable technology, but also has the potential to influence local sustainable development.

According to Lee et al. (1994) there have been a number of studies on the technology or industry development process and life cycles. Among them, Lee et al. (1988) describes the dynamic patterns of technology development in developing countries from a global perspective, along three stages of development, such as initiation, internalization and generation. Although the hypothetical model of Lee at al. (1994) explains how and why developing countries develop their technologies through links with developed countries, the modes and contents of technology acquisition change depending on the stages of technology development. Government technology policy and socio-cultural characteristics are also considered in this model. Although various stage models imply that there are different strategic requirements for success at different stages of industry life cycles, most of them fail to fully explain what underlies the principles of technology development in developing countries. The rapid pace of technological advances and the increasing rate of innovation have, in fact, led to a reduction in product life cycles. Adamik, (2023) emphasizes the impact of these factors on the acceleration of product life cycles. In addition, Edler et al. (2002) emphasize the importance of R&D in defining business strategies, further contributing to this phenomenon (Edler et al., 2002).

Strategic technology management is crucial to drive hardware, software and other technological components to develop innovative products (Antoniou et al., 2004). Wilson (1986) defines technology broadly as know-how about the transformation of materials, energy and information, so in this case, a technology strategy should cover at least three interrelated business areas: (1) Product development - the attractive side of technology, where most attention is devoted; (2) Process development - the dark side of technology, often neglected or given short shrift, and including manufacturing technology, materials handling, packaging, stock and control. Process technology is more concerned with transformation than output. It is a management between borrowing and ordering documents; and (3) Information systems and automation.

Control technology is intrinsically linked to automation and information communication and plays a key role in strategic technology management (Chan et al., 2007). Innovation policy aims to promote the development and diffusion of new products and services (Cohen & Amorós, 2014). In addition, there is a growing importance and expansion of technology-related networks with partners from industry or the public research system (Edler et al., 2002).

Finally, there are various ways of acquiring technology, the most likely being through a direct purchase from a third party, i.e. based on a relationship external to the organization, and according to Edler, et al, (2002) there is a growing tendency to acquire technology from external sources across the sample. The desire to collaborate with a foreign partner is dictated by the need to acquire technical or market knowledge that is not equally available on the domestic market. For Lee et al. (1994) although the model studied is hypothetical, it explains how and why developing countries develop their technologies through links with developed countries, changing the modes and content of technology acquisition depending on the stages of technology development.

4.3 – Cluster 3 – Innovation

The strategic management of technology is fundamental to competitive success, as technology has the power to alter industry and market conditions and is an important component of corporate strategy (Pappas, 1984; McGee & Thomas, 1989). In this context, technological innovation can be a powerful competitive weapon when applied strategically (Skinner, 1984). Furthermore, effective strategic technology management involves technological learning, knowledge generation and information dissemination to drive innovation (Carayannis, 1998).

According to Pavitt (1990), although the importance of technological change was recognised by previous authors, it was Schumpeter who highlighted the central importance

of innovation in competition between companies, in the evolution of industrial structures, and in the processes of economic development.

Innovation is a constant demand for today's companies, as it is essential for maintaining competitiveness with their competitors. Strategic technology management plays a key role in this process, enabling organizations to develop capabilities to meet emerging market needs, capture market share and establish barriers to imitation by competitors (Han et al., 2019). From this perspective, according to Dias et al. (2019), innovation and invention have different meanings: innovation is the driving force behind economic progress and the agents of innovation are workers, while invention is a new idea that has the potential to be commercialized. Therefore, innovation involves the successful exploitation of new ideas, while invention is the creation of new ideas or technologies (Skinner, 1984). When approaching innovation, it is noted that it increases competitive advantage for organizations by introducing new technologies that promote their growth. This sentiment fits in with the idea that strategic innovation can strengthen a company's competitiveness through various routes (Han & Gao, 2019). Specifically, the strategic utilization of technology can serve as a powerful competitive tool (Skinner, 1984).

The research carried out by Priem et al. (2012) reveals that the innovation process, a challenging component of management, requires a strategic approach to its implementation, where there are numerous establishments that are already consolidated, as well as new companies that support the implementation of the idea and a strengthening of the organization. In line with this argument, Pavitt (1990) lists some characteristics of technological innovation, such as the fact that it initially involves intensive collaboration and interaction between specialized groups in research and development, marketing, financial organization and strategic decisions.

Looking for a better definition of the concept of innovation, to introduce the concept and contextualize the current discussions on the subject, it is essential to introduce it through the clarifications of Pavitt (1990), who characterizes it as an activity of profound uncertainty, as the author elucidates that only 1 (one) in every 10 (ten) R&D projects are finished and ready to be commercialized. For Pavitt (1990), innovation is the implementation of a new or significantly improved product (good or service) or process, a new market method (marketing) or a new organizational method in the company's business practices, workplace organization or external relations.

Innovation in operating equipment and process technology can be used strategically as a powerful competitive weapon and can bring many other strategic factors in addition to achieving low costs - superior quality, shorter delivery cycles, lower stocks, lower investment in equipment, shorter new product development cycles and new production economics (Skinner, 1984). The development of new products and technologies requires high organizational performance to manage significant changes. Competitive success, productivity and profitability are increasingly linked to technological evolution, highlighting the need to prioritize technology in strategic business processes (Pappas, 1984).

Organizations need to learn to adapt and solve problems quickly, like the car industry, which now has to launch new models in two or three years instead of six or seven (Skinner, 1984). In addition, it needs to replace the massive and inflexible capital equipment that it has kept in its product strategy trapped in operations technology (Skinner, 1984). For Mcgee et al. (1989) the acquisition of highly differentiated intangible assets from company to company represents the basis from which product-market selection takes place for product development.

Based on the above, according to Coccia (2014) and Dias et al., (2019), the strategic management of technological innovation plays a crucial role in guiding organizations on how to effectively categorize and address the different types and levels of innovation in their operations. However, according to Coccia (2014) and Foxall & Fawn (1992), it is crucial in the strategic management of technology and innovation to realize that profound changes take time, as this requires a systematic and evolutionary approach to effectively manage innovation processes.

For Foxall & Fawn (1992), Han et al., 2019 and Priem et al. (2011) understanding the levels of innovation, such as radical and incremental innovation, is essential in strategic

management to effectively categorize and approach innovations based on their nature and impact.

Radical innovation occurs when a product or process presents drastic changes in performance or cost characteristics in relation to something that already existed, creates new markets or even transforms them; radical innovation is linked to the R&D process of organizations, which gives rise to certain uncertainties for its occurrence (Skinner, 1984). According to Skinner (1984), radical innovation is basically defined by the uncertainties that the product or process may incur, the main ones being: the uncertainties in relation to the techniques employed; the uncertainties arising from the market itself in which this product or service will be inserted; organizational uncertainties also play a major role, since the implementation of innovation depends on the needs and support of the business.

Incremental innovation involves improving existing products or product lines. It encompasses various strategic factors, such as improving quality, reducing delivery cycles, minimizing stocks, reducing investments in equipment, accelerating the development of new products and optimizing production economics (Skinner, 1984). It usually represents advances for the consumer market, and unlike radical innovation, it doesn't modify or create new markets for the product or service, but it does have a measurable impact on business (Mcgee et al., 1989). This is the type of innovation most commonly found in organizations, as it doesn't necessarily create something new, but rather improves on what already exists, but promotes beneficial characteristics for the service or product, as well as economic development (Mcgee et al., 1989). Table 8 shows the comparison between the two types of innovation.

Table 8: Comparison: incremental vs radical innovation

Characteristics	Incremental Innovation	Radical Innovation
Project time	Short periods.	Long periods.
Trajectory	A linear and continuous path from concept to commercialisation.	The path is marked by discontinuities that must be integrated by the end of the project.
Creating ideas and recognising opportunities	They occur on the front line and in critical circumstances can be anticipated.	They occur sporadically throughout the project and can be a response to discontinuities.
Processes	Approved formal process, from idea generation through to development and commercialisation.	There is a formal process for obtaining and managing resources, but not everyone treats it as such until a certain point in the project. There are too many uncertainties to make the process relevant.
Participants	Assigned to a group from different areas, each member has defined responsibility within their area of expertise.	Participants come and go throughout the initial stages of the project. The main participants tend to be individuals of various competences.
Structures Organisational	Typically a group of different areas working within a business unit.	The project often starts in the innovation area, migrates to an incubation process in the organisation and moves on to become the company's central project or objective.

Source: Own elaboration (adapted from Koberg et al., 2003 e Moore, 2002)

In this vein, Zehner (2000) states that 95 percent of scientists and engineers today are working to discover new techniques and products, and as a result, products/services that used to take years to reach the market now arrive in a few months. Coccia (2004) discusses the need for integration between private institutions and those with an interest in scientific development. In this case, this partnership would be between companies and universities, and their integration through a communication channel has economic and social consequences (Coccia, 2004). The aforementioned author reflects on and criticizes the need for this integration, where society would be built on educational attributes. From the perspective of technological development and considering the link between private and public institutions, it is natural to have concerns about the security of trade secrets, since in collaborative contexts' information can be vulnerable, which leads to the need for solid

studies and methodologies, such as secret audits and physical access control, to identify and protect vulnerable components (Hemphill, 2004).

Strategic innovation has been identified as a driver of business competitiveness, with strategic, managerial and technological innovations working together to improve organizational performance (Han & Gao, 2019). To understand the applicability and dynamics of innovation, it is crucial to consider demand-side approaches that focus on value creation within a value system, examining product markets and consumer decisions (Priem et al., 2011).

Along these lines, Tyran et al. (1992) defined that the strategy should be filled out by a pattern, or, plan that has objectives, policies and a well-organized sequence, in any case, a set of cohesive elements that bring security to the development process, and consequently application. In this way, it is not difficult to bring in the explanations of Foxall and Fawn (1992) who outline some qualities of innovation, reconciling the knowledge between strategic management in technology and the need and innovative attributes. According to the authors, innovation has an important economic role, and it is common for it to be portrayed as a source of abrupt and radical change. However, this evolution must be generated from a sequential development, unfolding over a period of time, thus having continuity within a context. In addition, Priem et al. (2012) argue that it needs to be aligned with the company's competitive strategy and geared towards the market and the customer. It should also be noted that the strategic management of technology develops in an environment linked to time, space and culture, as both the use and development of technology can vary significantly between companies or regions (Roberts, 1995). The research carried out by Roberts (1995) indicates that companies that are strong in their technological development strategies are also strong companies in their business development strategy, i.e. it is not difficult to ascertain how dynamic institutions should be, varying according to the needs that arise in their research and development (Roberts, 1995). In addition, the same author clarifies that when making comparisons of strategic technology management, it is crucial to analyze the effective use of resources, efficiency, the timeline in moving products to market; the percentage of new product/service purchases; cost reduction (Roberts, 1995).

However, it is still easy to understand what Carayannis (1998) described about technological learning. This learning comes with the quality of facilitating knowledge management, offering greater diffusion of innovative attributes, as well as directing organizations towards creating, renewing and updating their latent capacities - be they stock, structural, capital, intellectual or human capital.

5 - Cluster overview

As a first approach, it is worth highlighting the research carried out by Chan et al. (2007) under the title Strategic Management of R&D Pipelines with Cospecialised Investments and Technology Markets, which provides an in-depth basis for reviewing the literature on R&D pipeline management with co-specialised investments and technology markets, which is based on decision-making theories, which in turn are used to decide whether to undertake, continue or close a given project. In the first phase, knowledge about the pipeline originates, which basically consists of analyzing a certain demand that may or may not become a project. This step is extremely important because it sets a methodological course for the attributes and other potential that an idea possesses. In this vein, the aforementioned authors analyze the issue of research and development management in choosing the limits of the potentials selected.

In line with the above discussion, the study by Daghfous et al. (2009) explores the quality of the applicability of technology in innovation in the hotel sector. In this respect, the hotel industry in the United Arab Emirates efficiently applies the attributes of technology to the routines and other operational problems of the enterprise. The study reveals that with the application of technological procedures in 4 (four) and 5 (five) star hotels, the resorts have shown high profits, since with the optimization of the process, service times, as well as reservations and certain needs, have been carried out more efficiently.

This case study is interesting because, for researchers, there may not be a clear relationship between the hotel sector and technology. However, by combining directly human issues (in terms of the human relationship in the enterprise) with the efficiency brought about by the implementation of information processing technologies, the hotel industry has brought customers closer and more satisfied, enhancing the competitive attributes of the enterprises and forcing others to keep up with this progress. In this sense, we analyzed a case of technological application in routines that can largely be said to be a human function. It is not our intention to say that it is assertive to remove human quality, but rather to reaffirm that there is a process of optimization when a connection is established between technological application and human skills.

Looking again at technological applicability, the study conducted by Cavallo, et al., (2014) reveals how the evolution of technology applied to agricultural tractors has had a significant impact on agricultural production. This evolution has led to an increase in labor, productivity, a reduction in employee risks, an improvement in general working conditions, innovation project budgets and the financing of agricultural subsidies, and even greater protection for the environment. The impact that the application of technologies has on the market is huge. There is a long and often arduous road to acceptance, research, development and availability of the product/service on the market. However, in line with the latest discussions, it is necessary to bear in mind the consequences that technological innovation brings to society, whether it will bring development to enterprises, as well as other elements such as efficiency, utilization, and comparison with what is available (Ivanova et al., 2019).

This discussion concludes by considering that decision-making processes are continually evolving, and the technological factor is a considerable competitive differentiator in organizations. However, it is necessary to pay attention to the consequences of these developments in today's totally globalized world, as they fully favor the entry of concepts and trends from other markets.

6 – Conclusion

In line with the discussion and other reflections made throughout this research, it was possible to verify the need to integrate the quality of technological innovation together with strategic management, since these aspects support each other in a way that effectively contributes to the growth and survival of organizations. We also sought to highlight the importance of strategic planning, considering it to be a useful tool for managing organizations. In this way, strategic planning should be seen as a dynamic management tool that contains important decisions about the course of action to be followed by the organization in meeting its objectives. It is important to emphasize that the implementation of a strategy must be supported by resources. These can be financial, but they can also include time and commitment, especially from the senior team that is responsible for developing and implementing the strategy. The adequacy of the level of resources to be made available will be a particular problem in large innovation projects, due to the research and development that may require particularly intense and extensive investment. Organizations that learn from their mistakes are much more likely to succeed in developing and implementing strategy than those that don't. Organizations need to determine their strategic capabilities and know how realistic a strategy is.

Technology provisions were discussed, and the effect of political and regulatory factors reflected. The life of technology is an important consideration in strategic technology management. Technology replacements as a means of extending life cycles were debated. Descriptions of the different types of technology, with special reference to strategy and stimulation technologies, were included, as well as, according to our study, technology is increasingly acquired from third parties, i.e. through external sources, which points to a growth in the acquisition of technology in other markets. The need to strategically manage technology was highlighted and justified. Increasingly, the emphasis is on developing the term know-how that will transcend individual technologies in the context of a broad integration of technology management with other strategies, plans,

policies and activities of the organization. It is important to note that organizations' management processes will increasingly face a large body of information and corporate trends, but we must always analyze and improve the practice of technological integration. In this context, technological innovation has certainly come to be seen as a business opportunity, transforming it into a valuable strategic resource that must therefore be managed appropriately, always working with the company's objectives.

Strategic technology management means making decisions and changes, and one of the most difficult strategic decisions to make relates to the choice of technology. The end product of strategic technology management should be the identification, acceptance and maintenance of a position in relation to technology invention, innovation and improvement. The position that each organization takes can vary depending on the technology, the environment or the specific overall objective. Strategic technology management requires changes and choices to be embraced and decisions made accordingly. The emphasis will probably be on differentiation - of product, service or markets. The increasing development of information technologies and the importance of the people who master them are leading to new forms of organization. Due to the major and increasingly rapid changes in the surrounding environment, the era in which we live has sometimes been referred to as the beginning of the "age of uncertainty".

Considering the above, today's organizations are tending to become increasingly diversified, more open to innovation, more self-controlled and more entrepreneurial. Strategic technology management encompasses a diverse range of approaches, tools and methodologies aimed at improving the competitiveness, innovation and performance of organizations in a rapidly evolving technological landscape. By drawing on knowledge gained from systematic literature reviews, demand-side perspectives, benchmarking studies and strategic analysis frameworks, organizations can develop robust technology management strategies that drive sustainable growth and success in the digital age.

As with any research, this one is not without its limitations. The first concerns not using bibliometric analysis software to identify co-citation networks, for example. The second concerns the research string, as many others could be used.

Regarding the triangle of themes investigated in this work: strategy, technology and innovation, it is worth pointing out that further research is needed into the limitations that research can bring to technological evolution, since to meet these needs, organizations direct resources towards research and product development. Therefore, the question remains as to the impact that this quality has on the emergence of new knowledge that would not necessarily have immediate application. The innovation investigated here does not consider the development of elements that are not necessary, in other words, research that would apparently have no obvious market application. However, it's not difficult to understand that a considerable part of today's technological developments are the result of discoveries that have no immediate application - for example, the discovery of cathode rays, which were later transformed into the construction of the first televisions. Still looking closely at innovation, it was possible to see that it is always aligned with market demands, seeking to "innovate" on all possible fronts, whether in the construction of services and products, or in production costs and service optimization. In future research, it would be useful to see if this focus on demand limits true innovation.

There are also a few issues that have not been addressed in our work. For example, math and physics, which have no obvious application; the lack of resources in these areas can have an impact that we don't even know about. Perhaps we could be much more evolved, but this evolution could have been slowed down by looking at the needs. Although it is difficult to say which other areas of knowledge will be relevant in the future, the researchers believe that physics "will play a role in linking different areas of research, strategy, technology and innovation, since it is a "scientific area from the ground up, capable of disseminating and giving results in many others".

References:

- Adamik, A. (2023). Technology Intelligence as a One of the Key Factors for Successful Strategic Management in the Smart World. *European Management Studies*, *2023*(3), 71–101. https://doi.org/10.7172/2956-7602.101.4
- Agrawal, R., Agrawal, R., Wankhede, V. A., Wankhede, V. A., Kumar, A., Kumar, A., Kumar, A., Kumar, A., Kumar, A., Kumar, A., Luthra, S., Luthra, S., & Kataria, K. K. (2021). A systematic and network-based analysis of data-driven quality management in supply chains and proposed future research directions. *The TQM Journal*. https://doi.org/10.1108/tqm-12-2020-0285
- Ahmad, I. (2024). The Role of Strategic Financial Management in Enhancing Corporate Value and Competitiveness in the Digital Economy. *Economia Chilena*. https://doi.org/10.36923/economa.v27i1.116
- Ali, I., Ali, I., Phan, H. M., & Phan, H. M. (2022). Industry 4.0 technologies and sustainable warehousing: a systematic literature review and future research agenda. *The International Journal of Logistics Management*. https://doi.org/10.1108/ijlm-05-2021-0277
- Antoniou, P. H., Antoniou, P. H., Ansoff, H. I., Ansoff, H. I., & Ansoff, H. I. (2004). Strategic Management of Technology. *Technology Analysis & Strategic Management*. https://doi.org/10.1080/09537320410001682928
- Arantes, F. P., Arantes, F. P., Caetano, M., Caetano, M., de Paula, V. A. F., Paula, V. A. F. De, Freitag, M. S. B., & Freitag, M. S. B. (n.d.). New independent technology-based firms: differences from other NTBFs and future research agenda for technology innovation management. *International Journal of Entrepreneurship and Innovation Management*. https://doi.org/10.1504/ijeim.2019.096501
- Bandara, W., Miskon, S., & Fielt, E. (2011). A systematic, tool-supported method for conducting literature reviews in information systems. In M. Rossi & J. Nandhakumar (Eds.), *ECIS 2011 Proceedings [19th European Conference on Information Systems]* (pp. 1–13). AIS Electronic Library (AISeL) / Association for Information Systems. https://eprints.qut.edu.au/42184/
- Baškarada, S., Baškarada, S., Baskarada, S., Baškarada, S., Hanlon, B., & Hanlon, B. (2017). Strategic management of multi-business portfolios in the public sector: A case study in defence science and technology. *Journal of Advances in Management Research*. https://doi.org/10.1108/jamr-03-2017-0032
- Bastos, F. D., de Assis Bastos, F. A. D., de Mello Cordeiro, J. V. B., de Mello Cordeiro, J. V. B., Drohomeretski, E., Drohomeretski, E., & Drohomeretski, E. (2019). Human values, teamwork design and knowledge management on the shop floor: a systematic literature review. *Independent Journal of Management & Production*. https://doi.org/10.14807/ijmp.v10i1.795
- Belhadi, A., Kamble, S. S., Benkhati, I., Gupta, S., & Mangla, S. K. (2023). Does strategic management of digital technologies influence electronic word-of-mouth (ewom) and customer loyalty? empirical insights from b2b platform economy. Journal of Business Research, 156, 113548. https://doi.org/10.1016/j.jbusres.2022.113548
- Birnbaum, P. H., & Birnbaum, P. H. (1984). Strategic management of industrial technology: A review of the issues. *IEEE Transactions on Engineering Management*. https://doi.org/10.1109/tem.1984.6447536
- Bollinger, A. S., Bollinger, A. S., Smith, R. D., Smith, R. D., Smith, R. D., & Smith, R. D. (2001). Managing organizational knowledge as a strategic asset. *Journal of Knowledge Management*. https://doi.org/10.1108/13673270110384365
- Bourdeau, S., Bourdeau, S., Coulon, T., Coulon, T., Vieru, D., Vieru, D., Boissières, É., & Boissieres, E. (2019). IT Infrastructures Maintenance and Evolution in Public Sector Organizations: Main Challenges. *Hawaii International Conference on System Sciences*. https://doi.org/10.24251/hicss.2019.783
- Briner, R. B., Briner, R. B., Denyer, D., & Denyer, D. (2012). Systematic Review and Evidence Synthesis as a Practice and Scholarship Tool. *Null*. https://doi.org/10.1093/oxfordhb/9780199763986.013.0007
- Brovko, P., Brovko, P., Petruk, G. V, & Petruk, G. (2016). Strategic Management of Development of the Military-Industrial Complex Enterprises with the Use of Dual Technologies

under the Resource-Based Approach. *Economic and Social Changes: Facts, Trends, Forecast*. https://doi.org/10.15838/esc.2016.3.45.4

- Brownlie, D., & Brownlie, D. (1987). The Strategic Management of Technology: a New Wave of Market-led Pragmatism or a Return to Product Orientation? *European Journal of Marketing*. https://doi.org/10.1108/eum0000000004716
- Carayannis, E. G., & Carayannis, E. G. (1998). The strategic management of technological learning in project/program management: the role of extranets, intranets and intelligent agents in knowledge generation, diffusion, and leveraging. *Technovation*. https://doi.org/10.1016/s0166-4972(98)00065-0
- Cavallo, E., Cavallo, E., Ferrari, E., Ferrari, E., Bollani, L., Bollani, L., Coccia, M., & Coccia, M. (2014). Strategic management implications for the adoption of technological innovations in agricultural tractor: the role of scale factors and environmental attitude. *Technology Analysis & Strategic Management*. https://doi.org/10.1080/09537325.2014.890706
- Cerruti, C., Cerruti, C., Tavoletti, E., Tavoletti, E., Grieco, C., Grieco, C., & Grieco, C. (2019). Management consulting: a review of fifty years of scholarly research. *Management Research Review*. https://doi.org/10.1108/mrr-03-2018-0100
- Chan, T. Y., Chan, T. Y., Nickerson, J. A., Nickerson, J. A., Owan, H., & Owan, H. (2007). Strategic Management of R&D Pipelines with Cospecialized Investments and Technology Markets. *Management Science*. https://doi.org/10.1287/mnsc.1060.0676
- Chen, H., Han, C., Gao, S., & Gao, S. (2019). A Chain Multiple Mediation Model Linking Strategic, Management, and Technological Innovations to Firm Competitiveness. *Review of Business Management*. https://doi.org/10.7819/rbgn.v21i5.4030
- Chen, T., & Chen, X. (2023). The Role of Digital Transformation in the Relationship between Industrial Policies and Technological Innovation Performance: Evidence from the Listed Wind Power Enterprises in China. *Sustainability*. https://doi.org/10.3390/su15075785
- Coccia, M., & Coccia, M. (2004). Spatial Metrics of the Technological Transfer: Analysis and Strategic Management. *Technology Analysis & Strategic Management*. https://doi.org/10.1080/0953732032000175490
- Coccia, M., & Coccia, M. (2014). Converging scientific fields and new technological paradigms as main drivers of the division of scientific labour in drug discovery process: the effects on strategic management of the R&D corporate change. *Technology Analysis & Strategic Management*. https://doi.org/10.1080/09537325.2014.882501
- Cohen, B., Cohen, B., Amorós, J. E., & Amorós, J. E. (2014). Municipal demand-side policy tools and the strategic management of technology life cycles. *Technovation*. https://doi.org/10.1016/j.technovation.2014.07.001
- Colberg, T. (2022). STRATEGIC RESILIENCE: A SYSTEMATIC REVIEW OF LEADING LITERATURE. *Journal of Business Management*. https://doi.org/10.32025/jbm22004
- Cordova-Buiza, F., Cordova-Buiza, F., Hernandez-Zuniga, K., Hernandez-Zuniga, K., Julca-Carrasco, K., Julca-Carrasco, K., Huerta-Tantalean, L. N., & Huerta-Tantalean, L. N. (2022). Strategic Management of E-Commerce in Commercial Companies: A Systematic Review (2016 -2020). *European Conference on Innovation and Entrepreneurship*. https://doi.org/10.34190/ecie.17.1.344
- Daghfous, A., Daghfous, A., Barkhi, R., & Barkhi, R. (2009). The strategic management of information technology in UAE hotels: An exploratory study of TQM, SCM, and CRM implementations. *Technovation*. https://doi.org/10.1016/j.technovation.2009.05.007
- Dias, C., Dias, C. S. L., Ferreira, J. J., & Ferreira, J. J. (2019). What we (do not) know about research in the strategic management of technological innovation. *Innovation-the European Journal of Social Science Research*. https://doi.org/10.1080/14479338.2019.1569464
- Edler, J., Edler, J., Meyer-Krahmer, F., Meyer-Krahmer, F., Reger, G., Reger, G., & Reger, G. (2002). Changes in the Strategic Management of Technology: Results of a Global Benchmarking Study. *R & D Management*. https://doi.org/10.1111/1467-9310.00247
- Eloranta, V., Eloranta, V., Turunen, T., & Turunen, T. (2015). Seeking competitive advantage with service infusion: a systematic literature review. *Journal of Service Management*. https://doi.org/10.1108/josm-12-2013-0359

- Falkner, E. M., Falkner, E. M., Hiebl, M. R. W., & Hiebl, M. R. W. (2015). Risk management in SMEs: a systematic review of available evidence. *The Journal of Risk Finance*. https://doi.org/10.1108/jrf-06-2014-0079
- Farrukh, M., Shahzad, I. A., Meng, F., Wu, Y., & Raza, A. (2020). Three decades of research in the technology analysis & strategic management: a bibliometrics analysis. Technology Analysis &Amp; Strategic Management, 33(9), 989-1005. https://doi.org/10.1080/09537325.2020.1862413
- Ferreira, J. J., Ferreira, J. J., Mueller, J., Mueller, J., Mueller, J., Papa, A., & Papa, A. (2018). Strategic knowledge management: theory, practice and future challenges. *Journal of Knowledge Management*. https://doi.org/10.1108/jkm-07-2018-0461
- Florén, H., Florén, H., Barth, H., Barth, H., Gullbrand, J., Gullbrand, J., Holmén, M., Holmén, M., & Holmén, M. (2020). Additive manufacturing technologies and business models – a systematic literature review. *Journal of Manufacturing Technology Management*. https://doi.org/10.1108/jmtm-01-2020-0009
- Foxall, G. R., Foxall, G. R., Fawn, J. R., & Fawn, J. R. (1992). An evolutionary model of technological innovation as a strategic management process. *Technovation*. https://doi.org/10.1016/0166-4972(92)90035-g
- Gulaid, A. H. A. (2024). STRATEGIC MANAGEMENT PRACTICES AND ORGANIZATION PERFORMANCE IN KENYA: A SYSTEMATIC LITERATURE REVIEW. *Strategic Journal of Business & Change Management*. https://doi.org/10.61426/sjbcm.v11i2.2871
- Harzing, A.-W., & Alakangas, S. (2016). Google Scholar, Scopus and the Web of Science: a longitudinal and cross-disciplinary comparison. *Scientometrics*, *106*(2), 787–804. https://doi.org/10.1007/s11192-015-1798-9
- Hecker, S., & Hecker, S. (2020). Implementation of 3D printing and the effect on decision making in logistics management. *The International Journal of Logistics Management*. https://doi.org/10.1108/ijlm-01-2020-0049
- Heidenberger, K., Heidenberger, K., Roth, M., & Roth, M. (1998). Taxonomies in the strategic management of health technology: the case of multiperiod compartmental HIV/AIDS policy models. *International Journal of Technology Management*. https://doi.org/10.1504/ijtm.1998.002613
- Hemphill, T. A., & Hemphill, T. A. (2004). The Strategic Management of Trade Secrets in Technology-based Firms. *Technology Analysis & Strategic Management*. https://doi.org/10.1080/0953732042000295793
- Hesselbarth, I., Alnoor, A., & Tiberius, V. (2023). Behavioral strategy: A systematic literature review and research framework. *Management Decision*. https://doi.org/10.1108/md-09-2021-1274
- Hezron, J. L., & Justice MUTUA, P. (2024). STRATEGIC ALLIANCE AND TECHNOLOGY TRANSFER AMONG COMMERCIAL BANKS IN KENYA. *Strategic Journal of Business & Change Management*. https://doi.org/10.61426/sjbcm.v11i2.2918
- Huraizi, S. A. N. A. S., & Marni, N. (2023). Strategic Leadership Practices and Their Role in Achieving Competitive Advantage in Schools, Future Agendas, Research Gaps, and the Research Needs: Systematic Literature Review. *International Journal of Academic Research in Business and Social Sciences*. https://doi.org/10.6007/ijarbss/v13-i2/16424
- Kauffman, R. J., Kauffman, R. J., Li, J., Liu, J., Liu, J., Liu, J., Ma, D., & Ma, D. (2015). Innovations in Financial IS and Technology Ecosystems: High-Frequency Trading in the Equity Market. *Technological Forecasting and Social Change*. https://doi.org/10.1016/j.techfore.2014.12.001
- Keupp, M. M., Keupp, M. M., Palmié, M., Palmié, M., Gassmann, O., & Gassmann, O. (2012). The Strategic Management of Innovation: A Systematic Review and Paths for Future Research. *International Journal of Management Reviews*. https://doi.org/10.1111/j.1468-2370.2011.00321.x
- Kfir, R., & Kfir, R. (2000). A framework, process and tool for managing technology-based assets. *R & D Management*. https://doi.org/10.1111/1467-9310.00183
- Khizar, H. M. U., Khizar, H. M. U., Iqbal, M. J., Iqbal, M., Rasheed, M. I., & Rasheed, M. I. (2021). Business orientation and sustainable development: A systematic review of

sustainability orientation literature and future research avenues. *Sustainable Development*. https://doi.org/10.1002/sd.2190

- Kim, W., Kim, W., Lee, J., & Lee, J.-D. (2009). Measuring the Role of Technology-Push and Demand-Pull in the Dynamic Development of Semiconductor Industry: The Case of the Global DRAM Market. *Journal of Applied Economics*. https://doi.org/10.1016/s1514-0326(09)60007-6
- Koberg, C. S., Detienne, D. R., & Heppard, K. A. (2003). An empirical test of environmental, organizational, and process factors affecting incremental and radical innovation. *The Journal of High Technology Management Research*, *14*(1), 21–45. https://doi.org/https://doi.org/10.1016/S1047-8310(03)00003-8
- Kotnour, T., Kotnour, T., Bollo, T. R., & Bollo, T. R. (2011). Strategic management of a transformation in a multi-program technology program involving convergence and divergence of programs: observations from NASA. *International Journal of Technology Management*. https://doi.org/10.1504/ijtm.2011.038593
- Kummer, T.-F., Kummer, T.-F., Schmiedel, T., & Schmiedel, T. (2016). Reviewing the Role of Culture in Strategic Information Systems Research: A Call for Prescriptive Theorizing on Culture Management. *Communications of The Ais*. https://doi.org/10.17705/1cais.03805
- Kunz, V. D., Kunz, V. D., Warren, L. M., & Warren, L. (2011). From innovation to market entry: a strategic management model for new technologies. *Technology Analysis & Strategic Management*. https://doi.org/10.1080/09537325.2011.558388
- Lauglaug, A. S., & Lauglaug, A. S. (1987). A framework for the strategic management of future tyre technology. *Long Range Planning*. https://doi.org/10.1016/0024-6301(87)90089-6
- Lawlor, J., Lawlor, J., Kavanagh, D., & Kavanagh, D. (2009). The relationship between new technologies and strategic activities. *Technology Analysis & Strategic Management*. https://doi.org/10.1080/09537320902969117
- Lee, J., Lee, J., Bae, Z., Bae, Z.-T., Lee, J., & Lee, J. (1994). Strategic management of a large-scale technology development: The case of the Korean telecommunications industry. *Journal of Engineering and Technology Management*. https://doi.org/10.1016/0923-4748(94)90003-5
- Lee, J., & Lee, J. W. (1991). Managing technological change through strategic planning. *Technology Management*. https://doi.org/10.1109/picmet.1991.183789
- Lombardi, R., Lombardi, R., Trequattrini, R., Trequattrini, R., Schimperna, F., Schimperna, F., Cano-Rubio, M., & Cano-Rubio, M. (2021). The Impact of Smart Technologies on theManagement and Strategic Control: A Structured Literature Review. *Management Control*. https://doi.org/10.3280/maco2021-001-s1002
- Mahdi, O. R., Mahdi Omar Rabeea, N. I. A., Mahdi, O. R., Nassar, I. A., & Nassar, I. A. (2021). The Business Model of Sustainable Competitive Advantage through Strategic Leadership Capabilities and Knowledge Management Processes to Overcome COVID-19 Pandemic. *Sustainability*. https://doi.org/10.3390/su13179891
- McGee, J., McGee, J., McGee, J., Thomas, H., & Thomas, H. (1989). Technology and strategic management progress and future directions. *R & D Management*. https://doi.org/10.1111/j.1467-9310.1989.tb00642.x
- Minaya, P. E., Avella, L., & Trespalacios, J. A. (2024). Synthesizing three decades of digital servitization: a systematic literature review and conceptual framework proposal. *Service Business: An International Journal*. https://doi.org/10.1007/s11628-024-00559-x
- Moore, R., & Moore, R. S. (2002). Radical Innovation: How Mature Companies Can Outsmart Upstarts. *Journal of Business Research*. https://doi.org/10.1016/s0148-2963(01)00266-1
- Moortel, K. De, Moortel, K. De, Crispeels, T., & Crispeels, T. (2018). International university-university technology transfer: Strategic management framework. *Technological Forecasting and Social Change*. https://doi.org/10.1016/j.techfore.2018.05.002
- Moya, S., Moya, S., Camacho, M., Camacho, M., & Camacho, M. (2019). What Factors Matter Most for Mobile Learning Adoption. *Proceedings of the 15th International Conference on Mobile Learning 2019*. https://doi.org/10.33965/ml2019_201903l004
- OECD. (2005). *The measurement of scientific and technological activities. Oslo Manual. Guidelines for collecting and interpreting innovation data (3rd ed.). Paris: Author.*

- Omar, S. S., Aris, N. F. M., Alias, S., Mu'min, R., & Arokiasamy, L. (2023). Assessing the Disparities Between Strategic Human Resource Management and Conventional Human Resource Management: A Theory-Based Review. *KnE Social Sciences*. https://doi.org/10.18502/kss.v8i20.14627
- Paiva, D. C., & Rabechini, R. (2022). Project capabilities in industry 4.0: future research opportunities in project management. *Future Studies Research Journal: Trends and Strategies*. https://doi.org/10.24023/futurejournal/2175-5825/2022.v14i1.581
- Pappas, C., & Pappas, C. (1984). Strategic management of technology. *Journal of Product Innovation Management*. https://doi.org/10.1016/s0737-6782(84)80040-5
- Parahoo, K. (2014). Nursing research: principles, process and issues. Bloomsbury Publishing.
- Parreiras, R., Parreiras, R., Kokshenev, I., Kokshenev, I., de Carvalho, M. A. M., Carvalho, M. O. M., Willer, A. C. M., Willer, A. C. M., Dellezzopolles, C. F., Dellezzopolles, C. F., Nacif, D. B., Nacif, D. B., Santana, J. A., & Santana, J. A. (2019). A flexible multicriteria decision-making methodology to support the strategic management of Science, Technology and Innovation research funding programs. *European Journal of Operational Research*. https://doi.org/10.1016/j.ejor.2018.06.050
- Pavitt, K., & Pavitt, K. (1990). What We Know about the Strategic Management of Technology. *California Management Review*. https://doi.org/10.2307/41166614
- Pedrini, M., Pedrini, M., Ferri, L. M., & Ferri, L. M. (2019). Stakeholder management: a systematic literature review. *Corporate Governance*. https://doi.org/10.1108/cg-08-2017-0172
- Pereira, S. A. F., Ferreira, J. J., Rammal, H. G., & Peris-Ortiz, M. (2023). Strategic change in the health sector: a literature review and future challenges. *Journal of Organizational Change Management*. https://doi.org/10.1108/jocm-05-2022-0144
- Priem, R. L., Priem, R. L., Li, S., Li, S., Carr, J. C., & Carr, J. C. (2012). Insights and New Directions from Demand-Side Approaches to Technology Innovation, Entrepreneurship, and Strategic Management Research. *Journal of Management*. https://doi.org/10.1177/0149206311429614
- Qazi, A., Qazi, A., Quigley, J. M., Quigley, J., Dickson, A., & Dickson, A. (2015). Supply Chain Risk Management: Systematic literature review and a conceptual framework for capturing interdependencies between risks. *International Conference on Industrial Engineering and Operations Management*. https://doi.org/10.1109/ieom.2015.7093701
- Ravindran, V., & Shankar, S. (2015). Systematic reviews and meta-analysis demystified. *Indian Journal of Rheumatology*, *10*(2), 89–94. https://doi.org/https://doi.org/10.1016/j.injr.2015.04.003
- Rezvani, Z., & Rezvani, Z. (2017). Who is a Middle Manager: A literature Review. *Null*. https://doi.org/10.15226/2577-7815/1/2/00104
- Richter, B., & Hanf, J. (2024). Competitive parity in chain management – factors that influence the long-term compliance with product and quality criteria along the chain. *International Food and Agribusiness Management Review*. https://doi.org/10.22434/ifamr2023.0089
- Roberts, E. B. (2001). Benchmarking Global Strategic Management of Technology. *Research-Technology Management*, *44*(2), 25–36. https://doi.org/10.1080/08956308.2001.11671416
- Roberts, E. B. (1995). Benchmarking the Strategic Management of Technology—I. *Research-Technology Management*, *38*(1), 44–56. https://doi.org/10.1080/08956308.1995.11671024
- Roberts, E. B. (1995). Benchmarking the Strategic Management of Technology—II. *Research-Technology Management*, *38*(2), 18–26. https://doi.org/10.1080/08956308.1995.11671679
- Sahlman, K., Sahlman, K., Haapasalo, H., & Haapasalo, H. (2009). Perceptions of strategic management of technology in small high-tech enterprises. *Portland International Conference on Management of Engineering and Technology*. https://doi.org/10.1109/picmet.2009.5262249
- Schlee, D., Schlee, D., Sneath, P. H. A., Sneath, P. H. A., Sneath, P. H. A., Sokal, R. R., Sokal, R. R., Sokal, R. R., Freeman, W., Freeman, W. H., & Freeman, W. H. (1975). Numerical Taxonomy. The Principles and Practice of Numerical Classification. *Systematic Biology*. https://doi.org/10.2307/2412767

- Sharan, K., Dhayanithy, D., & Sethi, D. (2023). Interrelationship between strategic factors, technology and organizational learning: a systematic literature review. *Journal of Knowledge Management*. https://doi.org/10.1108/jkm-09-2022-0706
- Sharma, N., Sharma, N., Chillakuri, B., & Chillakuri, B. (2022). Positive deviance at work: a systematic review and directions for future research. *Personnel Review*. https://doi.org/10.1108/pr-05-2020-0360
- Siddaway, A. P., Siddaway, A. P., Wood, A. M., Wood, A. M., Hedges, L. V, & Hedges, L. V. (2019). How to Do a Systematic Review: A Best Practice Guide for Conducting and Reporting Narrative Reviews, Meta-Analyses, and Meta-Syntheses. *Annual Review of Psychology*. https://doi.org/10.1146/annurev-psych-010418-102803
- Sieber, M. R., Sieber, M., Malý, M., Malý, M., Liska, R., & Liška, R. (2022). Conceptualizing organizational culture and business-IT alignment: a systematic literature review. *SN Business & Economics*. https://doi.org/10.1007/s43546-022-00282-7
- Sikander, A., & Sikander, A. (2018). Influence of Strategic Technology Management on Smart Manufacturing: The Concept of 'Smart Manufacturing Management.' *Null*. https://doi.org/10.5772/intechopen.72184
- Skinner, W., & Skinner, W. (1984). Operations Technology: Blind Spot in Strategic Management. *Interfaces*. https://doi.org/10.1287/inte.14.1.116
- Suryono, R. R., Suryono, R. R., Budi, I., Budi, I., Purwandari, B., & Purwandari, B. (2020). Challenges and trends of financial technology (Fintech): A systematic literature review. *Information-an International Interdisciplinary Journal*. https://doi.org/10.3390/info11120590
- Symeonidou, N., Symeonidou, N. E., Bruneel, J., & Bruneel, J. (2017). Determinants, causal connections and outcomes of corporate technology licensing: a systematic review and research agenda. *R & D Management*. https://doi.org/10.1111/radm.12278
- Tjønndal, A., & Tjønndal, A. (2016). Sport, Innovation and Strategic Management: A Systematic Literature Review. *Brazilian Business Review*. https://doi.org/10.15728/edicaoesp.2016.3
- Tranfield, D., Tranfield, D., Denyer, D., Denyer, D., Smart, P., Smart, P., Smart, P., & Smart, P. A. (2003). Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review. *British Journal of Management*. https://doi.org/10.1111/1467-8551.00375
- Tyran, C. K., Tyran, C. K., Dennis, A. R., Dennis, A. R., Vogel, D. R., Vogel, D. R., Nunamaker, J. F., & Nunamaker, J. F. (1992). The application of electronic meeting technology to support strategic management. *Management Information Systems Quarterly*. https://doi.org/10.2307/249531
- van Wegberg, M., van Wegberg, M., van Witteloostuijn, A., & van Witteloostuijn, A. (2001). Strategic management in the new economy: Modern information technologies and multichannel contact strategies. *Null*. https://doi.org/10.1016/s0742-3322(01)18010-1
- Velikorossov, V., Bryukhanov, Y. M., Maksimov, M., Filin, S., Kozlov, V. A., & Khudaibergenov, A. K. (n.d.). Conceptual Model of Strategic Management of the Value of Technological Cluster. *2019 2nd International Conference on Contemporary Education and Economic Development (CEED 2019)*. https://doi.org/10.23977/ceed.2019.021
- Walsh, V., & Walsh, V. (2002). Biotechnology and the UK 2000-2005: Globalisation and Innovation. *New Genetics and Society*. https://doi.org/10.1080/1463677022000006998
- Wei, W., Wu, W., Yu, B., & Yu, B. (2008). Strategic planning for management of technology of China's high-tech enterprises. *Portland International Conference on Management of Engineering and Technology*. https://doi.org/10.1109/picmet.2008.4599613
- Wilson, G., & Wilson, G. (2014). From day–to–day coping to strategic management: developing technological capability among small–scale enterprises in Zimbabwe. *International Journal of Technology Management*. https://doi.org/10.1504/ijtm.1996.025530
- Wilson, I., & Wilson, I. (1986). The strategic management of technology: Corporate fad or strategic necessity? *Long Range Planning*. https://doi.org/10.1016/0024-6301(86)90216-5
- Yusuf, M. F., Yusuf, M. F., Hasbullah, A., Ashari, H., Ashari, H., Ashari, H., Razalli, M. R., Razalli, M. R., Ramle, R., & Ramle, R. (2016). Environmental technological innovation and

market demand: is market orientation a missing link? *Null*. https://doi.org/10.15224/978-1-63248-089-7-31

- Zehner, W. B., & Zehner, W. B. (2000). The Management of Technology (MOT) Degree: A Bridge Between Technology and Strategic Management. *Technology Analysis & Strategic Management*. https://doi.org/10.1080/713698470
- Zhang, W., Zhang, W., Zhao, Y., Zhao, Y., Zhao, Y., Tian, L., Tian, L., Tian, L., Dong, L., & Liu, D. (2017). Boundary-spanning demand-side search and radical technological innovations in China: The moderation of innovation appropriability. *Management Decision*. https://doi.org/10.1108/md-04-2016-0236
- Zhao, Z., Zhao, Z., Wang, D., & Wang, D. (2018). Demand- vs. Supply-Driven Innovation: A Case Study of Alipay Credit Renting Platform. *Chinese Business Review*. https://doi.org/10.17265/1537-1506/2018.08.002
- Zhu, J., Zhu, J., Liu, W., & Liu, W. (2020). A tale of two databases: the use of Web of Science and Scopus in academic papers. *Scientometrics*. https://doi.org/10.1007/s11192-020-03387-8
- Σακάς, Δ. Π., Sakas, D. P., Vlachos, D. S., Vlachos, D., Nasiopoulos, D., & Nasiopoulos, D. (2014). Modelling strategic management for the development of competitive advantage, based on technology. *Journal of Systems and Information Technology*. https://doi.org/10.1108/jsit-01-2014-0005
- Іванова, А. С., Ivanova, A. S., Holionko, N. G., Твердушка, Т. Б., Holionko, N. G., Olejarz, T., Tverdushka, T. B., Yakymchuk, A., Olejarz, T., Olejarz, T., Yakymchuk, A., Yakymchuk, A. Y., & Yakymchuk, A. Y. (2019). The Strategic Management in Terms of an Enterprise's Technological Development. *Journal of Cryptology*. https://doi.org/10.7441/joc.2019.04.03

5 - Implementing Lean management tools for process improvement - a case study in the manufacturing industry

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Resumo: Tendo em conta o papel fundamental da melhoria contínua no contexto organizacional, é necessária uma grande atenção por parte dos gestores para que as medidas de melhoria implementadas estejam de acordo com as expectativas do mercado. Ao longo das últimas décadas, a gestão Lean tem demonstrado a sua capacidade de identificar, melhorar e reduzir atividades sem valor acrescentado, com base em ferramentas de gestão Lean, como o mapeamento do fluxo de valor, o fluxo de uma peça, o 5-S e várias outras ferramentas. Considerando a constatação de que as organizações que implementaram as ferramentas Lean têm vindo a afirmar-se, em diversas áreas de atividade, esta investigação pretende confirmar as melhorias baseadas nas ferramentas Lean numa organização transformadora portuguesa. Objetivos: Caracterizar o percurso efetuado pelos gestores para identificar as ferramentas lean a implementar, de modo a descrever o processo de implementação. Para além disso, as poupanças obtidas com as implementações podem ser um ponto de referência para outras organizações implementarem ferramentas de gestão lean. Metodologia: Para aprofundar o conhecimento foi selecionado um estudo qualitativo, nomeadamente um Estudo de Caso realizado na organização transformadora portuguesa. Resultados: Com as ferramentas de gestão lean implementadas, foram conseguidas várias melhorias no chão de fábrica, relacionadas com um layout mais eficiente, redução de etapas de manuseamento, bem como ajustes e reduções de inventário. Conclusão: Esta investigação confirma que as ferramentas de gestão lean são replicáveis em indústrias de transformação, independentemente da sua atividade. A principal preocupação está relacionada com a identificação dos processos, movimentos de materiais e etapas de manuseamento que

não criam valor. Após a identificação destas atividades de valor acrescentado, o processo de implementação deve ser orientado e monitorizado. As ferramentas de gestão Leam são competentes para criar valor independentemente do sector de atividade.

Palavras-chave: ferramentas Lean management; 5-S; atividades de valor acrescentado; redução de desperdícios; melhoria contínua.

Abstract: Bearing in mind the key role of continuous improvement in organisational context, a very tight focus beside managers is afforded to enable the implemented improvement steps in accordance to market's expectations. Lean management has, along the last decades proven its ability to identify, improve and reduce non-value-added activities, based on lean management tools, like value stream mapping, one piece flow, 5-S and several other tools. Considering the insight that organisations which implemented lean tools have stated, in several activity areas, this research aims to confirm the improvements based on lean tools in a Portuguese transformation organisation. Objectives: Characterize the performed path by managers to identify the lean tools to implement, so as, to describe the process of implementation. Furthermore, the savings based on the implementations might be a highlight for other organisations to implement lean management tools. Methodology: In order to provide deeper knowledge a qualitative study was selected, namely a Case Study performed in the Portuguese transformation organisation. Results: On hand of the implemented lean management tools several improvement have been accomplished in the shop floor, related to a more proficient layout, reduction of handling steps, so as inventory adjustments and reductions. **Conclusion:** This research confirms that lean management tools are replicable on transformation industries, independently of its activity. The mayor concern is related to identify the processes, material movements and handling steps that do not create value. Subsequently to having identified these on value added activities, the implementation process needs to be guided and monitored. Leam management tools are proficient to create value independently of the activity sector.

Keywords: Lean mangement tools; 5-S; value-added activities; waste reduction; continuous improvement.

1. Introduction

The transformation reached a high point at the beginning of the 20th century with the creation of Henry Ford's automobile factory, which spearheaded the large-scale production movement. The paradigm shift brought about by this industrial change allowed Ford to overcome numerous challenges, reducing manufacturing costs while increasing product quality. The shift from the traditional mass method to the "Lean" approach was largely motivated by the exorbitant expense and limited adaptability of industrial machinery (Womack, Jones & Roos, 1990). On the other hand, Taiichi Ohno did not adapt to the mass production system (realizing that it did not correspond to the Japanese reality) and conceived the model recognized at the time as the Toyota Production System (TPS) (Ohno, 2019). The aim of the method was to maximize productivity and eliminate wasteful practices, a determining and driving factor at the time. By identifying and resolving inefficiencies in the work routine, improving the quality of the end product and training employees, the methodology gained widespread acceptance in various industries (Liker, 2004). This research focused on the Lean methodology, specifically the Lean Manufacturing philosophy, with the aim of reducing waste and improving operations and workstations. In detail, the 5S tool was worked on and applied, highlighting the objectives of improving the organizational environment and employee culture, while increasing the company's productivity.

With the increasingly competitive environment in organizations, it becomes more and more imperative to achieve excellence not only in results, but particularly in processes, and this is the discipline that needs to be optimized through a series of sustainable resources that allow the company to reduce costs, increase productivity and improve customer service.

What's more, after initial contact with the company, the tool in question proved to be a good fit, since the findings at the time of the visit focused essentially on "organization", "cleanliness" and "self-discipline", some of the ideals of the 5S philosophy.

Using the Lean methodology, specifically the 5S tool, all the relevant criteria relating to general warehouse logistics and specifically to the organization's production process will be observed so that they are duly recorded, evaluated and identified as useful or indispensable to the normal and healthy running of the company.

Given the problems described, the following research question was considered:

How can the 5S tools add value to the organization's performance?

To this end, the following research objectives were considered:

- Thorough knowledge of the entire process inherent in the production line in order to identify possible problems (particular interest in the handling of white paraffin);
- Creating proposals for improvement and documentary support for the work routine, using the Lean philosophy, particularly the 5S tool;
- Understand the importance of implementing improvement activities through the management tool.

2. Lean Thinking and Lean Manufacturing

Cusumano and Nobeoka (1992) highlight the ability to minimize costs, shorten production cycles and optimize customer satisfaction has resulted in companies all over the world adopting the concept in order to remain competitive in the business environment.

Intrinsically linked to Lean Thinking, the name Lean Manufacturing, according to Womack et al. (1990), arose from Toyota Production System (TPS) and was also labeled in this way due to the smaller number of elements incorporated, compared to mass production. At the same time, it is less physically demanding for the employee and requires less space, time and investment. The Lean Manufacturing concept focuses on rationalizing production standards and maximizing efficiency by minimizing waste (Womack et al., 1990). According to Liker (2004) the approach emphasizes the need for continuous analysis and refinement of processes in order to eliminate waste and improve effectiveness. The same author also argues that one of the most significant benefits of Lean Manufacturing is the focus on employee training. By involving the team, as well as gaining knowledge, the company creates a culture of learning and continuous improvement, with a positive impact on employee engagement. In the same vein, De Vin et al. (2017) consider that in order to succeed in implementing Lean Manufacturing, the organization must commit to constant training and mutual support, providing resources for this purpose, as well as promoting a culture of collaboration and open communication.

Lean thinking is not about imitating Toyota's manufacturing processes, but rather about including the principles in the company's culture so that they are developed and practiced with the customer in mind, adding value to the final product/service. Womack et al. (1990) states that Lean principles can be applied to the whole industry (Liker, 2004).

As explained by Womack and Jones (1996) the Lean Manufacturing philosophy encompasses five guiding principles (Table 1), which begin by clarifying that: 1) unequivocally determine the value of each item produced, 2) map out the full range of

activities that bring each product to fruition, 3) instill a continuous flow of operations, 4) produce only what is necessary and 5) relentlessly pursue eminence.

Table 1
Lean Manufacturing Principles

Principle	Description
Value	Recognizing that value is not determined by the company but by the end customer is extremely important. It's about what the customer is willing to pay, and inherent waste must be reduced or eliminated.
Value stream	The value chain includes a series of actions necessary to take a product or service from the conceptualization phase to launch, and also includes customer satisfaction. It is essential to understand which stages do and do not add value to the product/service and to discard the unnecessary ones.
Flow	Optimizing processes such as product design, order processing and storage time, as well as enabling the production flow to be continuous, helps to eliminate waste.
Pull system	The aim is to produce only what is necessary (*Just-In-Time* concept), according to the orders received, thus once again avoiding waste.
Perfection	The final value of the product/service is formed with a total absence of waste, which is why only operations that increase legitimacy should be present. Perfection is sought, linked to continuous improvement and the elimination of waste from the previous principles.

Source: Adapted from Womack and Jones (1996).

While the first principle is more customer-oriented, the next four refer to the production and delivery of the product to the customer, always with a view to eliminating waste (Cunningham & Jones, 2007).

the application of the above principles concerns the manufacture of products, however, it also extends to the development of services (Andrés-López, González-Requena & Sanz-Lobera, 2015). Lean tools essentially focus on identifying and eradicating the seven wastes, since these do not add any value to the organization or customer (Tyagi et al., 2011).

Singh and Kumar (2020) consider that despite the particular impact and applicability of the different Lean tools, there is a commonality in the production of certain effects, among them:

- System optimization through collaboration and learning;
- Continuous change and the search for perfection;
- Transmission of esteem by the client;
- Encouraging continuous flow, eliminating aspects that don't add value;
- Introduction of the pull concept, i.e. starting to produce only what is actually ordered.

Therefore, the advantages of Lean tools pointed out by Gupta and Jain (2013) refer to the following points:

- Improved quality and safety: the tools used improve the quality of production and increase safety in the workplace. The possibility of small errors is eliminated;
- Reducing time when searching: using certain tools (e.g. 5S), the organization of materials and raw materials is clearly visible, making it easier to visually check items;
- Change in organizational culture: communication with employees increases, as does their involvement and responsibility in the company;
- Reduction in fatigue: once work movements have been reconsidered and adapted, the reduction in employee fatigue becomes obvious.

Machado and Leitner (2010) mention that the implementation of the Lean philosophy in the quality management of companies requires the adoption of a series of practices and tools known as Lean tools. From this point of view, Toyota developed a method that preserves a clean, organized and efficient working environment, the 5S (John et al., 2008). As one of the most notable philosophies, the 5S, which focuses on visual issues and the organization of spaces, contains five stages, namely use, organization, cleanliness, standardization and self-discipline (Machado & Leitner, 2010). The description of each stage (Table 2) is associated with the senses, as explained by the authors Hirano (1995), quoted by Liker (2004) e Buesa (2009).

According to Liker (2004) senses contribute to the elimination of errors, defects and work accidents.

Table 2
Senses of the 5S Tool

Sense	Description
Seiri (sense of use)	• Separation of necessary and unnecessary items in the work process and in the organization. By removing any dispensable elements, the work environment can be simplified and the organization can operate more efficiently (Hirano, 1995, cited by Liker, 2004). • Separating what is not needed for the work area and disposing of it. (Buesa, 2009).
Seiton (sense of organization)	• Everything deemed necessary must be organized in such a way as to allow easy access. This means assigning a specific place to each item, so that anyone working in the company can quickly find what they need (Hirano, 1995, cited by Liker, 2004). • Arrange the necessary elements of the process in an accessible and arranged manner (Buesa, 2009).
Seiso (sense of cleanliness)	• Regular cleaning of the work area. This creates an environment conducive to efficiency and productivity (Hirano, 1995, cited by Liker, 2004). • The aim is to keep the working environment clean, excluding dirt and increasing staff motivation (Buesa, 2009).

Sense	Description
Seiketsu (sense of normalization)	• To maintain usefulness, organization and cleanliness, the company must develop effective practices and documents that can be easily monitored. This involves standardizing processes to ensure consistent operations (Hirano, 1995, cited by Liker, 2004). • Create *standard* routines that support and enable the three initial senses to be put into practice (Buesa, 2009).
Shitsuke (sense of self-discipline)	• The progress achieved through 5S is instilled through discipline in the workforce. It is crucial that procedures are maintained and that the effort is repeated daily (Hirano, 1995, cited by Liker, 2004). • Discipline that helps control *standard* practices (Buesa, 2009).

Source: Adapted from Hirano (1995), quoted by Liker (2004), e Buesa (2009).

The 5S methodology has been widely adopted in various industries as a way of improving operational efficiency. By complying with the five senses, companies are able to create an organized, clean and profitable work routine, which also leads to greater employee satisfaction and a consequent increase in profitability (Sobek & Smalley, 2008). Al Aomar (2011) explains that 5S is an easy tool to implement and in many cases provides a starting point for companies to integrate other Lean methods into the organizational culture. This philosophy maintains transparency, providing an efficient flow of activities.

2.1 Waste Reduction

Lean Thinking is based on reducing waste (called Mudas by the Japanese) and activities that absorb resources and time and do not add any value to the production process (Womack & Jones, 1996). Williams and Duray (2013, p. 59) in turn, highlight the idea that Lean Thinking is characterized as a commitment to "improving value, optimizing flow and eliminating waste". Examples of two important waste reduction and continuous improvement tools highlighted by Toyota are Just-in-Time and Jidoka. While the first pillar produces goods in the quantity required and according to customer orders, the second automates the production flow so that it is interrupted if quality problems are detected (Mazzocato et al., 2010).

In the work carried out by Ohno (1988) identified seven wastes associated with the work environment and how these can be effectively eliminated, thereby achieving significant improvements in efficiency and productivity. The seven wastes identified by the research include overproduction, waiting times, transportation, inadequate processes, unnecessary movements, stock and defects (Table 3).

Table 3
Seven Lean Thinking Wastes

Waste	Description
Overproduction	Production exceeds demand, generating unnecessary *stocks.* Use of resources without financial return.

Waste	Description
Waiting times	Delays in carrying out activities in the production process. These include periods of employee or machine inactivity.
Transportation	Transportation of raw materials or end products that are not needed in the production process.
Inadequate processes	Deficiencies in the workflow that occur incorrectly and therefore need to be repeated. Irregularities caused by incorrect use of equipment or tools.
Unnecessary movements	Unnecessary movement of people or equipment, for example due to poor workplace organization. Meyers and Stewart (2002) add poor ergonomic conditions and aspects such as the location and position of tools/materials.
Stock	Non-processing of raw materials, products in manufacture and/or end products compared to the quantity disposed of.
Defects	Non-conforming products. They carry with them implications such as repairs, inspections, increased production quantities, among others.

Source: Adapted from Ohno (1988).

Just like Ohno (1988), Brunt and Butterworth (1998) point out that the overuse of employee potential can form the eighth waste. This, according to Ohno (1988), underuses the team's mental, creative and physical skills, due to causes such as inefficient workflow, organizational culture, unsuitable practices and training, and high employee turnover.

2.2 Barriers to Lean Manufacturing implementation

Considering the observations of Kilpatrick (2003) successful implementations in companies can, in many cases, be difficult and/or inaccessible to the expected benefits. To this detriment, the author highlights a few points:

- The improvement indicators are not associated with the financial statements; in other words, the company reports the percentage of improvement, but does not convert it into monetary terms. This communication is necessary for Lean implementation to continue to be supported;
- The sequence of measures applied is not correct. Improvements must be implemented logically and sequentially, so that the workflow is optimized from the first moment to the last step;
- The first contact with the Lean methodology must be successful or generate sufficient return, so that support for the measures remains in the future;
- Certain areas, such as administrative areas, are not targeted for implementation because they have little impact there;

- Too much time is spent on training and less on introducing the concepts, or on the other hand, starting at the wrong stage;
- Suppliers must be involved in improvement efforts, but failure is common when it comes to expanding them. The need for Just-in-Time delivery and stock minimization requires the commitment of suppliers, and if it is not possible to deliver on time and in precise quantities, the benefits of Lean will be diminished;
- The Lean methodology affects each employee individually and notoriously the organizational culture. The magnitude of these changes can cause discomfort and companies don't always have the capacity to deal with it;
- Understanding and implementing the Lean concept throughout a large company can be a lengthy process, more so than the occasional cycle of management turnover;
- The traditional view and the Lean view approach certain definitions differently (Table 4).

Table 4
Definitions according to traditional and Lean organizations

Concept	Traditional organization	*Lean* Organization
Inventory	An asset, as defined by accounting.	A waste. It ties up capital and increases processing time.
Quantity and lot size	Handling large batch sizes to compensate for process downtime.	A continuous effort is made to reduce downtime to zero.
Use of employees	Everyone must be busy all the time.	Since the work is done on the basis of customer demand, employees may not be busy.
Using processes	Processes are carried out quickly and at all times.	Processes just need to be designed to keep up with demand.
Work planning	Creation of products according to the forecast.	Creating products according to demand.
Labor costs	Variables.	Fixed.
Working groups	Traditional departments.	Multifunctional teams.
Quality	Inspection of the work at the end of the process to check for errors.	Processes and products are designed to eliminate errors.

Source: Adapted from Kilpatrick (2003).

To be added, Achanga et al. (2006) indicate that the lack of financial resources in small industries and inadequate top management are obstacles to implementing the methodology. For their part, Abdul-Nour, Lambert and Drolet (1998) identify the lack of qualified personnel as an impediment to the application of Lean practices and Chong (2007) states that the time factor is also a barrier to the process.

3. Methodology

This research was carried out using qualitative research and action research methodology. The qualitative approach is, according to Padgett (2008) e Watkins (2012) is preponderant in applied research, as it provides in-depth information on human experience. For Strauss and Corbin (1990) a research model in which the results cannot be obtained through statistical methods or other quantification tools. Instead, the results are derived from the data collected with the aid of interpretative processes involving non-mathematical analysis. In turn, Yin (2003) e Bonoma (1985) argue that qualitative research presents an intimate version, allowing the researcher to cooperate with the organization's stakeholders, collecting data and personal experiences.

As far as it is concerned, action research methodology works in defense of plans whose objectives are to simultaneously create new knowledge and improve practice. The same research can continually increase the professional's ability to solve problems encountered in the field (Vallenga et al., 2009). For Checkland and Holwell (2003) the researcher is involved in a real situation and aspires to improve it while acquiring knowledge. Assuming three aspects of action research, accepted by Grundy and Kemmis (1982) it is assumed that it is the object of a social practice subject to improvement actions, that it comprises the sequence of planning, acting, observing and reflecting, and that, finally, all stages of the activity include those responsible for the practice. Advantageous for creating change and new knowledge (Waterman et al., 2001).

A qualitative research approach was used in this investigation, where the starting point comes from familiarizing ourselves with the situation or event, as well as describing and analyzing it. Through the tools used to collect data, namely observation and conversation (Latorre, 2003), photographs and field notes (descriptive and reflective) (Coutinho, 2023) the requirement to use "words" and their consequent contrast, comparison and analysis can be seen.

The action-research methodology was therefore applied, since (Elliot, 1993) the aim is to improve the quality of an action within a given situation. In the same vein, Lomax (1990) defines the concept as an intervention aimed at improving professional practice. In addition, Dick (1999) points out that action research can include change and understanding, in other words, action and research respectively. According to Simões (1990, p. 43) for this methodological perspective "(...) the result of research will always have a triple objective: to produce knowledge, to modify reality and to transform the actors".

The fieldwork carried out in the organization took shape through the use of tools based on observation, conversation (Latorre, 2003), photography and field notes, the latter descriptive and reflective (Coutinho, 2023).

Coutinho (2023) defines the data collection tool as being direct and face-to-face (observation), and as an interaction in a dialog environment (conversation).

4. Implementation of 5S improvements

According to Arabzad and Shirouyehzad (2012) SWOT analysis is a strategic planning model that encompasses the organization's internal and external environment, in which it is stated whether a certain goal is achievable and what requirements are necessary to achieve that goal. According to Porter (1991) there is a desired alignment of organizational variables, in which listing positive and negative internal and external issues makes it possible to understand how new opportunities can arise from strengths, and how organizational setbacks and increased threats can be associated with weaknesses.

Table 5
SWOT Analysis Organization

	Strengths	Weakness

Internal factors	1. Strategic location; 2. Manufacturing mostly with the aid of equipment; 3. Competitive price and easy to negotiate; 4. Product innovation, despite the restricted theme; 5. Solid and growing client portfolio; 6. No competition in the region.	1. Unsustainable raw materials; 2. Dissemination is practically non-existent outside the religious sector; 3. Low investment in *marketing*; 4. Unattractive *web* page presentation; 5. *Website with* no purchase option.
	Opportunities	Threats
External factors	1. Growth of e-commerce; 2. An increasingly high-quality, differentiated offer that needs to be adapted; 3. Manufacture of other products related to the religious environment (*e.g.* flower brightener); 4. Rural areas, where the "word gets around" has considerable power; 5. Partnerships with companies linked to religious culture (*e.g.* florists and funeral directors); 6. Partnership with religious institutions; 7. Participation in trade fairs.	1. Environmental factors; 2. Shortage of inputs for making products (including yellow paraffin); 3. Catholic population (practicing) decreasing; 4. Changing consumer buying habits and "Do Yourself" behavior; 5. Decrease in the purchasing power of consumer.

Source: Own elaboration.

Table 5, the SWOT analysis of the company under study, shows that the number of strengths and opportunities exceeds the number of weaknesses and threats. This scenario could show that the organization is optimistic and expanding.

In short, the organization is generally more likely to prosper, if it chooses to exalt the quadrants on the left, than to regress in the market in which it operates.

4.1 Production System Proposals for Improvement

As an introductory note, it should be noted that there is no order management software, and that contact with management is made by telephone, email or WhatsApp. It should also be noted that the description and analysis of the production process in question refers only to white models, and that the company works with the Just-in-Time system. The infographic of the associated circuit takes into account the following phases:

- Stage 1 - grinding the paraffin;
- Stage 2 - grinding and transportation of the wax;
- Stage 3 - molding the wax into the selected shape;
- Stage 4 - wick distribution;
- Stage 5 - packaging the order.

In order to put into practice the concepts covered in the literature review, recommendations were formalized in this report with the intention of applying the 5S tool (the then Seiri, Seiton, Seiso, Seiketsu and Shitsuke senses). In order to apply the Seiri sense - the sense of use - the content present within the company was collected and subsequently classified and grouped according to its relevance to the performance of duties. In line with the literature review, the necessary is distinguished from the unnecessary and only the tools, parts and precise instructions are kept on site. Table 6 considers these elements and shows how they are grouped according to need and use in relation to the work area. Hirano (1995), quoted by Liker (2004) classifies items as necessary or unnecessary.

Table 6
Classification of Items According to Need and Use

Classification of items				
Needed			Unnecessary	
Constant use	Occasional use	Rarely used	Potentially useful	No potential for use
1. DDS A machine; 2. DDS B machine; 3. DDS C machine; 4. Forklift; 5. Pallet trucks; 6. Forklift charger; 7. Support bench (Phase 5); 8. Support table for main equipment; 9. Pallets; 10. *Stock* (cardboard boxes, paraffin, plastic cups, wicks and caps); 11. Raw materials in use and others (paraffin, plastic cups, wicks, lids and cardboard boxes); 12. Sharp object (phase 1); 13. Transparent tape; 14. Brush; 15. Cleaning material (brooms and dustpans).	1. DDS D machine; 2. DDS E machine; 3. DDS F machine; 4. Parts removed from machines (screws and guards); 5. Boxes with wax removed due to faulty machine action; 6. Scissors.	1. Brown tape; 2. Lubricant spray.	1. Compressor; 2. Various tools; 3. Non-compliant product (candles); 4. Electrical extensions.	1. Label machine; 2. Defective raw materials (plastic cups, lids and wicks); 3. Raw materials used in the second warehouse; 4. Recyclable material (food packaging, small containers, soft drink and cooking oil bottles, cardboard boxes, tubes and other plastic).

Source: Own elaboration.

Once the unneeded items have been disposed of, in this case those listed in the "no potential for use" column, it is essential to put the useful ones away and clean up the work environment. The "potentially useful" items may remain on the company's premises, but separated in a specific location. The analysis and interpretation of Table 6 will lead to the next stage, which aims to organize and maintain the items described there.

As introduced, the sense of organization - Seiton - stresses what needs to be kept in the work environment, depending on its use, ordering and identifying what is previously

stipulated as necessary. For its part, the Seiso sense - sense of cleanliness - defines the need to keep the workspace as clean as possible.

Taking into account the field notes and tools based on observation and conversation, while considering the items in the previous sense, a table was created with 20 processes recognized as being subject to improvement. This revealed common errors in all phases of the production process and standards intrinsic to the organization, predominantly linked to the stock of raw materials and associated waste. The organization also saw clear signs of a lack of cleanliness in the machines, both those that are used daily and those that are used occasionally. Likewise, a number of packages were found in the production area that were inconsistent with the location. The company's greatest difficulty was in reorganizing and taking care of the space and the consequent reuse of the areas, resulting in the (essentially) poor organization of the production line. Table 7, in the light of the procedures identified as being developable, presents proposals for solving the main error mentioned above, and in this respect, the suggested interventions of maintenance and cleaning of equipment, intersect with the acquisition of suitable bins for miscellaneous waste. Improvements will also be presented here with ergonomics and general employee well-being in mind.

Table 7
Improvements Presented to Company Management

Phase	Description	Suggested intervention
1	1. Raw material far from DDS A machine; insufficient circulation space.	Acquisition of a lift table, fixed at an optimum distance from the DDS A machine or determination of an area close to it for unloading raw materials; delimitation of passageways.
1	2. Manual system for placing paraffin blocks in the DDS A machine inappropriate and impractical for the employee; excessive weight and continued poor posture.	Purchase of a lifting table, enabling the pallet to be adjusted according to the employee's preference/height; purchase of an ergonomic belt.
1	3. Empty cardboard boxes with no convenient place to dump them; left for several days, obstructing the employees' passage area.	Acquisition of a container for this purpose, located, if possible, outside the pavilion; agreement with a cardboard collection company (considering the location of the warehouse, Resinorte operates in the perimeter).
4	4. Reduced work tray, with the need to pause the DDS A machine due to the concentration of production.	Purchase of a support bench to free up space on the production tray.
4	5. Lack of auxiliary material with the intention of avoiding daily discomfort for employees, such as back and foot pain.	Purchase of anti-fatigue mats.

Phase	Description	Suggested intervention
5	6. Raw materials of the same category, arranged in different places in the warehouse (*e.g.* cup lids are not all in the same area).	Reorganization of space, delimitation of areas and distribution of raw materials as close as possible to the corresponding phase.
5	7. Support bench shared with the previous phase, making it impossible to arrange storage boxes on the table in question: as a consequence, the periphery was occupied, making it difficult for employees to pass.	Acquisition of an individual workbench. The solution is to clear the way and make it easier to handle materials.
5	8. Once the pallet is complete and packed, there is no identified shipping area; the completed orders are distributed among the empty spaces, mixed in with the *stock of* raw materials or unnecessary material.	Delimiting areas and identifying them. Adopting floor markings (for the activity under study, one of the options will be epoxy paint) throughout the warehouse and placing labels/signs.
General	9. Improperly located factory floor, with a lack of floor markings and identification of sections (*e.g.* "raw material reception", "production", "maintenance" and "dispatch").	Transfer of the production line to near the exit; ground markings using epoxy paint.
General	10. Circulation compromised specifically in the production area corridor, due to insufficient distance between equipment; circulation compromised in general terms.	Reorganization of the shop floor, together with floor markings.
General	11. Non-conforming raw materials permanently in the same space as the production area; no reservoir for storing defective parts.	Identifying a suitable area to place the defective raw material, for later forwarding.
General	12. Forklift and pallet truck without a suitable place to stand.	Reorganization of the space, delimitation of areas with proper identification.
General	13. Wax removed by faulty machinery stored in cardboard boxes.	Since it is possible to put the wax back into the DDS B machine in order to create empty areas and reuse raw materials (and the costs involved), this should be done immediately or by the end of working hours.
General	14. Accumulated wax, the result of cleaning the floor, deposited in cardboard boxes, with no proper place to stay (it remained there for several weeks).	The wax in question is reused in the production of another candle model, in the owners' second factory, so it should be removed and transported frequently, avoiding accumulation and taking up space. Depending on the regularity, a medium-sized storage container could be chosen and, if possible, installed outside the warehouse.

Phase	Description	Suggested intervention
General	15. Various maintenance/safety/cleaning materials randomly distributed not only in the warehouse but also in the production area: machine screws and guards, electrical extensions, various tools, brooms and picks.	Acquisition of a cupboard to store maintenance equipment and tools; individual identification of each item.
General	16. Compressor and label machine unusable, taking up space in the production area.	Verification of the compressor's usefulness for later forwarding; removal of the label machine (as it has no usefulness).
General	17. Disorganized and poorly positioned *stock*, difficult to access.	Reorganization of the warehouse, delimitation of areas through floor markings and establishment of the maximum safety limit for overlapping pallets.
General	18. Miscellaneous waste (soft drink, water and cooking oil bottles, packaging for consumed products, empty containers, tubes, cardboard boxes and plastics) kept mainly in the production area.	Purchase of an ecopoint for inside the warehouse.
General	19. Machines with obvious signs of lack of cleanliness; breakdowns to the detriment of.	Cleaning and maintenance of equipment and work areas. Creating a cleaning plan with the periodicity that best suits (through observation and feedback from employees, the suggestion for rigorous cleaning of each machine is once a week).
General	20. Employees do not have personal protective equipment (PPE).	Purchase of PPE, namely hearing and ergonomic protection and safety footwear.

Source: Own elaboration.

The organization's management was asked to change the current shop floor, since the environment in which the employees work every day is closed, with natural light and insufficient distance between equipment, and the raw materials are arranged at an unfeasible distance. All the equipment was kept, with the sole aim of re-establishing the different zones, with the exception of the recyclable material deposit, which, as we have seen, was proposed to be removed.

Following the alterations, the production line under study and the machines for occasional use were placed close to the exit and with an upper corridor between them - for greater ventilation, passage between machines, natural light and proximity to the outside in case of emergency - creating an upper opening for the organization of raw materials and finished production. This arrangement also favors circulation in the exit area. The area identified as a storage area was eliminated, with the aim of creating a space for this purpose outside the building, thus unobstructing the passage and maneuvering of work, while facilitating the collection of recyclable material. In comparison, from the first to the second layout, the aim was also to manage the existing storage spaces and create more visually attractive places (e.g. placing decorative elements, such as plants in the bathroom). All the aspects described were designed to directly address situations 1, 3, 6, 8, 9, 10, 11, 12, 14, 16 and 17 in Table 7, naturally associated with changes in individual behavior and as a work team.

According to the literature review carried out, the Seiketsu sense - the sense of standardization - involves creating a system for maintaining and monitoring processes, referring to the three previous senses. The aim is to ensure that the workstation functions properly with the help of certain documents, such as procedures and work instructions, technical sheets and maintenance and cleaning plans. Consequently, and due to the lack of the aforementioned documentation, it was drawn up for the interventions checked:

- A Work Instruction (WI) on the production flow of white-tongued tapers;
- An IT for receiving material, specifically cardboard boxes and cups;
- An IT for the treatment of defective raw materials;
- An IT for the treatment of non-conforming products.

In addition, although it is not listed as an object of improvement, as these practices were already maintained before the proposals, it will be added:

- An IT for cleaning the DDS C machine;
- An IT for cleaning the DDS E machine;
- General daily cleaning checklist.

At the same time, signage/awareness-raising boards could be placed around the marked areas. At this stage, it is also suggested that each machine be identified, so that the documents are better understood.

The sense of self-discipline - the Shitsuke sense - makes the whole package of measures developed and applied beforehand sustainable, committing to creating a disciplined culture in which everyone involved takes responsibility for maintaining organizational and cleaning practices and instructions as standard. For this reason, in order for the 5S tool to remain active, evaluation checklists are needed to act as auditors and indicate the real state of implementation. To this end, a document was put in place to check the criteria stipulated in each of the senses. A scale of zero to four was assigned in order to identify nil, bad, fair, good and optimal implementations.

5. Results and Discussion

Through the information observed and duly recorded, it was possible to understand that the team's awareness, including that of the management, has been changing and the great advantage of this is reflected in the work routine. There has been greater interaction between hierarchies, a key point if suggestions are to flow easily and adjustments are to be made jointly. Although a little short of what is needed, in practice there was greater use of the shop floor through reorganization (eliminating items and improving the layout of some stock), an increase in the usefulness attributed to materials, since the hypothesis was raised of creating a second production line using equipment classified as occasional, and a reduction in time spent transporting raw materials in phase 1, as a result of reducing the pallet-machine distance. Considering the wastes pointed out by Ohno (1988) the decrease in unnecessary movement waste was evident, since the poor location and positioning of materials – (Meyers and Stewart, 2002) - was improved, and stock wasted, as the non-processing of raw materials began.

For each step that follows, the implementations applied have been detailed and the next changes scheduled.

Of the items classified in Table 8 as unnecessary, the non-conforming products, auxiliary material, defective raw materials and some of the recyclable waste were removed from the work environment. The remaining items, i.e. unusable machines, miscellaneous

tools, the raw material used in the second warehouse and all the recyclable material, have been kept until now, and according to the organization's management, are expected to be evaluated in August, when the company closes for vacations.

Table 8
Unnecessary items in the work routine

Classification of items	
Unnecessary	
Potentially useful	No potential for use
1. Compressor; 2. Various tools; 3. Non-compliant product (candles); 4. Electrical extensions.	1. Label machine; 2. Defective raw materials (plastic cups, lids and wicks); 3. Raw materials used in the second warehouse; 4. Recyclable material (food packaging, small containers, soft drink, water and cooking oil bottles, cardboard boxes, tubes and other plastic).

Source: Own elaboration.

The removal of non-conforming products, defective raw materials and recyclable material from the work area has, in a way, encouraged (certain changes in behavior have stimulated future changes, hence the concern to continue applying suggestions for improvement when closing for the vacation period) the possibility of creating a second production line, only used for the yellow wax models. As a result, production would be carried out in two independent sequences, one for white candles and the other for yellow candles, and there would be no need to maintain the current system of changing equipment with each order (at the moment, orders that include white paraffin are paused to make way for those that include yellow, as the DDS C machine is used in both processes). Thus, the white wax models would be guaranteed by machines DDS A, DDS B and DDS C, while the yellow wax models, which could form the second line, would be handled by DDS D, DDS E and DDS F, so there would be no need to move equipment, pause production or face maintenance problems.

Following on from this, the apparently unnoticeable elimination of auxiliary material, as indicated in the first paragraph, showed awareness and some interest in what should and shouldn't remain in the work environment, thus creating added value for the company and consequent productivity.

- Description no. 1: the situation listed first refers to the distance from the raw material in use and the fact that the route is partially obstructed. As this is a repeated scenario, it was recommended that ergonomic PPE be purchased or, alternatively, a lifting table be placed in a predefined area (with the added bonus that this would make it possible to lift the pallet, facilitating the employee's process). A suggestion was also made to identify

an area close to the DDS A machine, without any extra equipment, solely for boxes of paraffin, in order to reduce the employee's movement.

The problem was detected and the decision was made to keep the raw material as close as possible to the first stage of the production process, reducing the distance from 5.1 to 1.2 meters. The surrounding environment was organized so as not to interfere with the employee's movement. In this way, as well as requiring less time to transport, the weight of the paraffin blocks became more bearable, resulting in an increase in the speed of action.

• Description no. 3: The storage area for the empty paraffin boxes was just a few centimeters from the DDS A machine, obstructing the passage of employees, who repeatedly delayed production in order to clear the area. It was recommended that a container be purchased (due to the considerable quantity of boxes), preferably to be placed outside the premises, and that contact be made with at least one company that collects recyclable material.

The solution that worked best was for employees to place the bins outside the warehouse at the end of the morning and at the end of working hours (no container was purchased for this purpose), thus organizing the internal space and facilitating collection. In the meantime, an external company has agreed to collect the recyclable material on a weekly basis. With this change, employees freed up space, increasing the circulation corridor by around 1.35 meters. The continued elimination of unneeded items will become a favorable and usual practice as the planned layout begins to make sense.

Table 9
Improvements to be implemented

Phase	Description	Suggested intervention	Scheduling
1	2. Manual system for placing paraffin blocks in the DDS A machine inappropriate and impractical for the employee; excessive weight and continued poor posture.	Acquisition of a lifting table, making it possible to adjust the pallet according to the employee's preference/height.	August 2023
4	4. Reduced work tray, with the need to pause the DDS A machine due to the concentration of production.	Purchase of a support bench to free up space on the production tray.	August 2023
4	5. Lack of auxiliary material with the intention of avoiding daily discomfort for employees, such as back and foot pain.	Purchase of anti-fatigue mats.	August 2023
4	6. Raw materials of the same category, arranged in different places in the warehouse (*e.g.* cup lids are not all in the same area).	Reorganization of space, delimitation of areas and distribution of raw materials as close as possible to the corresponding phase.	August 2023

Phase	Description	Suggested intervention	Scheduling
5	7. Support bench shared with the previous phase, making it impossible to arrange storage boxes on the table in question: as a consequence, the periphery was occupied, making it difficult for employees to pass.	Acquisition of an individual workbench. The solution is to clear the way and make it easier to handle materials.	August 2023
5	8. Once the pallet is complete and packed, there is no identified shipping area; the completed orders are distributed among the empty spaces, mixed in with the *stock of* raw materials or unnecessary material.	Delimiting areas and identifying them. Adopting floor markings (for the activity under study, one of the options will be epoxy paint) throughout the warehouse and placing labels/signs.	August 2023
General	9. Improperly located factory floor, with a lack of floor markings and identification of sections (*e.g.* "raw material reception", "production", "maintenance" and "dispatch").	Transfer of the production line to near the exit; ground markings using epoxy paint.	August 2023
General	10. Circulation compromised specifically in the production area corridor, due to insufficient distance between equipment; circulation compromised in general terms.	Reorganization of the shop floor, together with floor markings.	August 2023
General	12. Forklift and pallet truck without a suitable place to stand.	Reorganization of the space, delimitation of areas with proper identification.	August 2023
General	13. Wax removed by faulty machinery stored in cardboard boxes.	Since it is possible to put the wax back into the DDS B machine in order to create empty areas and reuse raw materials (and the costs involved), this should be done immediately or by the end of working hours.	August 2023
General	14. Accumulated wax, the result of cleaning the floor, deposited in cardboard boxes, with no proper place to stay (it remained there for several weeks).	The wax in question is reused in the production of another candle model, in the owners' second factory, so it should be removed and transported frequently, avoiding accumulation and taking up space. Depending on the regularity, you could opt for a medium-sized storage container and, if possible, install it outside the warehouse.	August 2023

Phase	Description	Suggested intervention	Scheduling
General	15. Various maintenance/safety/cleaning materials randomly distributed not only in the warehouse but also in the production area: machine screws and guards, various tools, brooms and dustpans.	Acquisition of a cupboard to store maintenance equipment and tools; individual identification of each item.	August 2023
General	16. Compressor and label machine unusable, taking up space in the production area.	Verification of the compressor's usefulness for later forwarding; removal of the label machine (as it has no usefulness).	August 2023
General	18. Miscellaneous waste (cooking oil bottles, packaging from consumed products, empty containers, tubes, cardboard boxes and plastics) kept mainly in the production area.	Purchase of an ecopoint for inside the warehouse.	August 2023
General	19. Machines with obvious signs of lack of cleanliness; breakdowns to the detriment of.	Cleaning and maintenance of equipment and work areas. Creating a cleaning plan with the periodicity that best suits (through observation and feedback from employees, the suggestion for rigorous cleaning of each machine is once a week).	August 2023
General	20. Employees do not have personal protective equipment (PPE).	Purchase of PPE, namely hearing and ergonomic protection and safety footwear.	June 2023

Source: Own elaboration.

In order to set the procedures and make them practically in the team, the improvements implemented were formalized (Table 9). At the end of April, the ITs and cleaning checklist became available, subject to the approval of the company manager. In this way, the activities are carried out in the same way, regardless of the employee carrying them out. The documents were both placed in an appropriate place and recognized as useful, and now, at the end of working hours, the checklist is checked step-by-step by the entire team, including the recently hired employee. No signage/awareness-raising signs have been put up, as this action will be accompanied by the rest of the suggestions to be made during the employees' vacation break.

It is extremely important that procedures are maintained and that the effort is repeated daily (Hirano, 1995, cited by Liker, 2004). Continuous evaluation is therefore essential in ensuring commitment and discipline to the 5S philosophy, helping to sustain the results achieved. The 5S implementation checklist showed that the most frequently awarded score was "fair", followed by "excellent". The analysis reflected the employees' commitment to the new concepts and willingness to maintain them and continue with the previous processes (points marked as strong). The absence of a "nil" score indicated that the 5S dynamic is well accepted by the company, even though there are still many aspects

that need to be optimized, much of which is focused on organization and not so much on use. Improvements should be made to the arrangement of items, so that the work routine becomes more fluid and less exhausting. In discussion with the head of the organization, it was agreed that audits should be scheduled regularly, monthly if possible.

6. Conclusion

In increasingly non-predictable times, it turns even more relevant to establish internal processes to exceed market's expectations.

Bearing this demanding environment, lean management based on its tools is capable to identify waste, non-value-added activities, unnecessary material movements, so as to reduce inventory levels.

Further to the shop floor re-organization, to have a continuous flow of materials and steps, also the packaging concept has been improved. With regard to the improvements considered the packaging methodology was reviewed, the minimum order quantities, so as, the inventory levels were leveled. To standardize these improvement practices, support documents such as work instructions and cleaning plans were formalized, which proved useful as the team recently increased.

Based on the improvements several reductions have been registered, such as the time related to deliver the raw materials to the production flow, which in itself makes the collaborator more productive. The elimination of waiting time in circulation areas, since the passage in many cases hindered the transportation of materials. This rearrangement enabled a more organized, unloading area, so as stock management in the warehouse. At the end, the organization was able to double the production line, based on the savings reached on hand of the lean implementation.

The path to reach these lean management objectives rely on knowing the entire process related to the shop floor and its production line, to be able to identify waste. Furthermore, to provide clear insights, written procedures and work instructions should guide collaborators along their tasks to assure the standardization of the process. The contributions of this research are twofold. The first is that it provides guidance for the researcher, particularly in academic circles, in order to guide the use of the methodology applied in a similar practical situation; the second is that it represents a structured way of applying Lean thinking for senior managers, helping them to find and mitigate the challenges associated with the working environment of any manufacturing company. In the same vein, the study in question could be especially useful for organizations that are in the process of implementing the Lean philosophy, given that a theoretical approach has been carried out with standardized improvements, which could be introduced into other production flows.

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References:

- Abdul-Nour, G., Lambert, S., & Drolet, J. (1998). Adaptation of jit phylosophy and kanban technique to a small-sized manufacturing firm; a project management approach. Computers & Industrial Engineering, 35(3-4), 419-422.
- Achanga, P., Shehab, E., Roy, R., & Nelder, G. (2006). Critical success factors for lean implementation within SMEs. Journal of Manufacturing Technology Management, 17(4), 460-471. https://doi.org/10.1108/17410380610662889

- Al Aomar, R. A. (2011). Applying 5S LEAN Technology: An infrastructure for continuous process improvement.
- Andrés-López, E., González-Requena, I., & Sanz-Lobera, A. (2015). Lean Service: Reassessment of Lean Manufacturing for Service Activities. Procedia Engineering, 132, 23-30. https://doi.org/10.1016/j.proeng.2015.12.463
- Arabzad, S. M., & Shirouyehzad, H. (2012). Improving project management process in municipality based on SWOT analysis. IACSIT International Journal of Engineering and Technology, 4(5), 607-612.
- Bonoma, T. V. (1985). Case research in marketing: opportunities, problems, and a process. Journal of Marketing Research, 22(2), 199-208.
- Brunt, D., & Butterworth, C. (1998). Waste elimination in lean production-a supply chain perspective. Proceedings of the ISATA Conference, 275-282.
- Buesa, R. J. (2009). Adapting lean to histology laboratories. Annals of Diagnostic Pathology, 13(5), 322-333.
- Checkland, P., & Holwell, S. (2003). Chapter 1 ACTION RESEARCH : System Practice and Action Research, 9-21.
- Chong, S. (2007). Business process management for SMEs: an exploratory study of implementation factors for the Australian wine industry. Journal of Information Systems and Small Business, 1(1-2), 41-58.
- Coutinho, C. P. (2023). Metodologia de Investigação em Ciências Sociais e Humanas (2.a ed.). Coimbra: Edições Almedina.
- Cunningham, J., & Jones, D. (2007). Easier, simpler, faster: Systems strategy for lean IT. Productivity Press.
- Cusumano, M. A., & Nobeoka, K. (1992). Strategy, structure and performance in product development: Observations from the auto industry. Research Policy, 21(3), 265-293. https://doi.org/10.1016/0048-7333(92)90020-5
- De Vin, L. J., Jacobsson, L., Odhe, J. E., & Wickberg, A. (2017). Lean Production Training for the Manufacturing Industry: Experiences from Karlstad Lean Factory. Procedia Manufacturing, 11, 1019-1026. https://doi.org/10.1016/j.promfg.2017.07.208
- Grundy, S., & Kemmis, S. (1982). Educational action research in Australia: The state of the art (an overview). The Action Research Reader, 3, 321-335.
- Gupta, S., & Jain, S. K. (2013). A literature review of lean manufacturing. International Journal of Management Science and Engineering Management, 8(4), 241-249. https://doi.org/10.1080/17509653.2013.825074
- John, A., Meran, R., Roenpage, O., & Staudter, C. (2008). Six Sigma+ Lean Toolset: Executing Improvement Projects Successfully. Springer Science & Business Media.
- Kilpatrick, J. (2003). Lean Principles Explained. 1-5.
- Liker, J. K. (2004). The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer McGraw-Hill Education. 121.
- Machado, V. C., & Leitner, U. (2010). Lean tools and lean transformation process in health care. International Journal of Management Science and Engineering Management, 5(5), 383-392. https://doi.org/10.1080/17509653.2010.10671129
- Mazzocato, P., Savage, C., Brommels, M., Aronsson, H., & Thor, J. (2010). Lean thinking in healthcare: a realist review of the literature. BMJ Quality & Safety, 19(5), 376-382. https://doi.org/http://dx.doi.org/10.1136/qshc.2009.037986
- Meyers, F. E., & Stewart, J. R. (2002). Motion and time study for lean manufacturing. Pearson College Division.
- Ohno, T. (2019). Toyota production system: beyond large-scale production. Productivity press.
- Padgett, D. K. (2008). Qualitative Methods in Social Work Research (2nd Editio.). Los Angeles.
- Porter, M. (1991). Towards a dynamic theory of strategy. Strategic Management Journal, 12(S2), 95-117. https://doi.org/10.1002/smj.4250121008

- Simões, A. (1990). Action research: nature and validity. Revista Portuguesa de Pedagogia, 24(3), 39-51.
- Singh, S., & Kumar, K. (2020). Review of literature of lean construction and lean tools using systematic literature review technique (2008-2018). Ain Shams Engineering Journal, 11(2), 465-471. https://doi.org/10.1016/j.asej.2019.08.012
- Sobek, D. K., & Smalley, A. (2008). Understanding A3 thinking: a critical component of Toyota's PDCA management system. Productivity Press.
- Strauss, A., & Corbin, J. (1990). Basics of qualitative research. Sage publications.
- Tyagi, S. K., Yang, K., Tyagi, A., & Dwivedi, S. N. (2011). Development of a fuzzy goal programming model for optimization of lead time and cost in an overlapped product development project using a Gaussian Adaptive Particle Swarm Optimization-based approach. Engineering Applications of Artificial Intelligence, 24(5), 866-879.
- Vallenga, D., Grypdonck, M. H. F., Hoogwerf, L. J. R., & Tan, F. I. Y. (2009). Action research: What, why and how? Acta Neurologica Belgica, 109(2), 81-90.
- Waterman, H., Tillen, D., Dickson, R., & De Koning, K. (2001). Action research: a systematic review and guidance for assessment. Health Technology Assessment, 5(23), 1-166.
- Watkins, D. C. (2012). Qualitative research: The importance of conducting research that doesn't "count." Health Promotion Practice, 13(2), 153-158.
- Williams, H., & Duray, R. (2013). Making IT Lean: Applying Lean practices to the work of IT. Productivity Press.
- Womack, J P, & Jones, D. T. (1996). Lean Thinking-Banish Waste and Create Wealth in your Corporation. Journal of the Operational Research Society, 48(11), 1148-1148. https://doi.org/10.1038/sj.jors.2600967
- Womack, James P., Jones, D. T., & Roos, D. (1990). The Machine That Changed the World Rawson Associates, New York, NY. 352.
- Yin, R. K. (2003). Case study research design and methods third edition. Applied Social Research Methods Series, 5.

Referências

- Bruno, I. (2006). *Avaliação das aprendizagens: o processo de regulação através do feedback* [Dissertação de Mestrado, Universidade de Lisboa]. Repositório da Universidade de Lisboa. https://repositorio.ul.pt/jspui/handle/10451/43571
- Cobb, P. (1999). Individual and collective mathematical learning: The case of statistical data analysis. *Mathematical Thinking and Learning, 1*, 5-44. https://doi.org/10.1207/s15327833mtl0101_1
- English, L. D., & Halford, G. S. (1995). *Mathematics education: Models and processes*. Lawrence Erlbaum.
- Ponte, J. P., & Matos, J. F. (1992). Cognitive processes and social interaction in mathematical investigations. In J. P. Ponte, J. F. Matos, J. M. Matos, & D. Fernandes (Eds.), *Mathematical problem solving and new information technologies: Research in contexts of practice* (pp. 239-254). Springer.
- Sandoval, W. A. (2004). Developing learning theory by refining conjectures embodied in educational designs. *Educational Psychologist*, *39*(4), 213-223. https://doi.org/10.1207/s15326985ep3904_3
- Santos, R. (2011). *Future elementary and kindergarten teachers' knowledge of statistics and of its didactics*. [Apresentação de póster]. Seven Congress of the European Society for Research in Mathematics Education. Rzeszów, Polónia. Repositório Científico do Instituto Politécnico de Santarém. http://hdl.handle.net/10400.15/810

- Wittmann, E. C. (1998). Mathematics Education as a ‘Design Science’. In A. Sierpinska, & J. Kilpatrick (Eds.), *Mathematics education as a research domain: A search for identity* (pp. 87-103). Kluwer.

6 - Implementing the Lean Philosophy in the Manufacturing Industry: Challenges, Benefits and Success Factors

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Resumo: A filosofia Lean é amplamente reconhecida por otimizar os resultados da produção e a eficiência da empresa através da eliminação de desperdícios e da melhoria dos processos. Este estudo tem como objetivo avaliar a implementação das ferramentas Lean na indústria transformadora da região da Beira Interior, Portugal, destacando os principais obstáculos e desafios que as empresas locais enfrentam. Através de um questionário detalhado enviado a 687 empresas da região, foram analisadas as razões para a adoção do Lean, as dificuldades encontradas durante a implementação, os benefícios alcançados e os factores críticos de sucesso. A análise dos dados revelou que 91,30% das empresas que responderam implementaram ferramentas Lean nas suas operações, destacando a redução de desperdícios, a melhoria da qualidade dos produtos e a redução dos custos operacionais como os principais benefícios. No entanto, a resistência à mudança e a falta de formação adequada foram desafios significativos. Os resultados indicam que o empenho da gestão de topo, a formação contínua dos

colaboradores e uma comunicação eficaz são factores críticos para uma implementação Lean bem sucedida. Comparações com estudos nacionais e internacionais mostraram que as empresas da Beira Interior enfrentam desafios semelhantes aos de outras regiões, mas obtêm benefícios comparáveis. Este estudo contribui para a literatura sobre a implementação do Lean em contextos regionais específicos, oferecendo perspectivas práticas para as empresas que pretendem adotar ou melhorar as suas práticas Lean.

Palavras-chave: Filosofia Lean, Portugal, Indústria Transformadora, Questionário, Ferramentas Lean

Abstract: The Lean philosophy is widely recognized for optimizing production results and company efficiency by eliminating waste and improving processes. This study aims to evaluate the implementation of Lean tools in the manufacturing industry of the Beira Interior region, Portugal, highlighting the main obstacles and challenges that local companies face. Using a detailed questionnaire sent to 687 companies in the area, the reasons for adopting Lean, the difficulties encountered during implementation, the benefits achieved and the critical factors for success were analyzed. Analysis of the data revealed that 91.30% of the companies that responded implemented Lean tools in their operations, highlighting waste reduction, improved product quality and reduced operating costs as the main benefits. However, resistance to change and lack of adequate training were significant challenges. The results indicate that top management commitment, ongoing employee training and effective communication are critical factors for successful Lean implementation. Comparisons with national and international studies showed that companies in Beira Interior face challenges similar to those in other regions but obtain comparable benefits. This study contributes to the literature on Lean implementation in specific regional contexts, offering practical insights for companies looking to adopt or improve their Lean practices. As implicações práticas sugerem que um forte empenhamento da gestão de topo e investimentos em formação e comunicação são essenciais para sustentar os benefícios do Lean a longo prazo.

Keywords: Lean Philosophy, Portugal, Manufacturing Industry, Questionnaire, Lean Tools

Introduction

Implementing innovative management practices is fundamental for the sustainability and competitiveness of companies in the contemporary context. The global economic landscape, characterized by rapid technological evolution and increasing pressure for efficiency, demands that organizations reassess their production processes and adopt methods that favor waste elimination and value maximization. The Lean philosophy, which originated in the Toyota Production System, stands out as a strategic approach to transforming company operations, focusing on simpler and more efficient procedures (Moshood, 2024). The implementation of Lean extends beyond manufacturing, reaching sectors such as services, healthcare, and government (Maware & Parsley, 2022). The essence of Lean is to provide exactly what the customer needs at the right time, in the right quantity, using the minimum necessary resources (Qureshi, Mewada, Alghamdi, Almakayeel, Qureshi, et al., 2022). However, successful Lean implementation faces several challenges, such as employee resistance to change and the need for strong commitment from top management (Sandagomika, 2021).Previous studies demonstrate that while many companies have adopted Lean practices, they still encounter significant difficulties sustaining long-term improvements (Abolhassani et al., 2016).

Adopting the Lean philosophy in Portugal's Beira Interior region is all the more relevant given the local economic challenges. By adopting this approach, the area can increase its competitiveness and promote sustainable development. Beira Interior, which

includes the sub-regions of Beira Baixa and Beiras e Serra da Estrela, has seen significant economic growth recently, making it a promising setting for studying the implementation of Lean practices. With a diversity of manufacturing industries, the region has great potential to benefit from these practices. However, studies still need to explore how these practices are implemented in the Portuguese industrial context (Martins et al., 2021; C. M. A. Pinto et al., 2022; Valente et al., 2020). Specifically, no study was found that analyzes the application of the Lean philosophy in Beira Interior companies, highlighting the need for more research in this area.

Therefore, understanding how regional companies address these challenges and benefit from adopting Lean practices becomes a priority for operational improvement and strengthening regional competitiveness. This work aims to systematically address the challenges, benefits, and critical factors associated with implementing Lean tools in companies in Beira Interior. Through a thorough analysis of existing practices and the results achieved, it seeks to contribute to the literature on Lean Manufacturing, highlighting the particularity of the regional context.

This study aims to fill the gap in the literature regarding Lean implementation in Beira Interior by providing a detailed analysis of current practices and identifying the main challenges and benefits. According to data from the National Institute of Statistics, between 2018 and 2021, the region recorded a growth of 1.74% in the number of companies and a 12.29% increase in business volume (INE, 2023), reinforcing the relevance of studying this geographical area and the need to develop this research in this context.

This study aims to understand how companies in Beira Interior are implementing Lean tools, the challenges they face, the benefits they obtain, and the critical factors for the success of this implementation. Additionally, the study seeks to compare these results with other studies conducted in Portugal and other international contexts, providing a broad view of the state of Lean implementation in the region. Specifically, this study intends to (1) Identify the reasons for implementing Lean tools in companies in the region;

(2) Analyze the main difficulties faced by companies during the implementation process; (3) Evaluate the benefits achieved with the adoption of Lean practices and (4) Identify the key factors for success in Lean implementation.

The article is structured to present the literature review, which addresses the evolution of Lean Philosophy, the reasons for its implementation, the main difficulties faced, the benefits achieved, the critical success factors, previous studies on Lean implementation in Portugal, and international studies on Lean implementation. Next, the Methodology describes the research design, data collection instruments (questionnaire), data collection procedures, and data analysis. The Results and Discussion section presents the Lean tools used, the benefits of Lean implementation, the challenges faced, the critical success factors, and a comparison with other studies. Finally, the Conclusion summarizes the main findings related to the study's objectives, discusses the importance of the results for the Beira Interior region, and offers recommendations for future implementations and studies

Literature Review

Overview of Lean Tools and Their Relevance for Companies

The Lean philosophy, also known as Lean Production, was popularized by Womack, Jones, and Roos in their book "The Machine That Changed the World" (1990), where they detailed how Toyota managed to surpass the American automotive industry in terms of efficiency and quality (Wolf, 1991). The foundation of Lean is the elimination of waste (muda, mura, and muri), which is defined by Ohno (1988) as activities that do not add value to the customer. The fundamental principles of Lean include specifying value from the customer's perspective, identifying the value stream, creating continuous flow, establishing a pull system, and striving for perfection (Stone, 2012)

Various tools have been developed to support these principles, such as 5S, Kanban, Jidoka, Poka-Yoke, Kaizen, SMED, VSM, Heijunka, Andon, and Just-in-Time (JIT)(Ahrabi & Darestani, 2024; Utami et al., 2023)These tools aim to improve operational efficiency and product quality by reducing waste and optimizing production processes. The 5S tool, for example, organizes the workplace, while Kanban controls production flow and minimizes inventory (Ahmad et al., 2016; Gazules, 2023).

The increasing competitiveness in the global market demands that organizations adopt innovative approaches to optimize their production processes. Adopting Lean practices has become important for operational efficiency and competitiveness in the rapidly changing industrial landscape. However, transitioning to an effective Lean model faces obstacles, especially in small and medium-sized enterprises (SMEs), which often lack sufficient financial resources and technical knowledge to facilitate this change (Sinkamba et al., 2023). In this context, challenges such as cultural resistance and financial limitations continue to create barriers that must be overcome (Bashar et al., 2021). For Lean Management to become an effective strategy, organizations must improve employee training and promote a change in mentality that values efficiency and innovation in the workplace (Solaimani et al., 2019)

Implementation of Lean

Implementing Lean practices is motivated by various factors, including increasing efficiency, improving product quality, reducing costs, and enhancing customer satisfaction (Womack & Jones, 1997). Studies show that companies adopt Lean to remain competitive in an increasingly demanding global market (Danese et al., 2012; Sharma et al., 2015).Companies that adopt Lean often report significant improvements in operational efficiency and product quality(Bellisario & Pavlov, 2018). The literature suggests that one of the main reasons for adopting Lean is competitive pressure, especially in markets where efficiency and quality are critical success factors (Udokporo et al., 2020). Additionally, Lean's ability to reduce cycle times and inventory is an important motivator, allowing companies to improve their responsiveness and reduce operational costs (Hofer et al., 2012)

Furthermore, implementing Lean can be driven by the need to comply with international standards of quality and efficiency (Karthi et al., 2014). In sectors such as, adopting Lean practices is often necessary to meet customer requirements and maintain global competitiveness (Aripin, 2024; Sahoo, 2020). The literature shows that adopting Lean can significantly improve customer satisfaction and financial performance, highlighting the strategic importance of this methodology (Hofer et al., 2012).

The Main Difficulties in Implementing Lean

Lean tool implementation in companies faces several challenges that can compromise the process's success. One of the primary obstacles is the cultural resistance of employees, who often hesitate to adopt new practices and methods(Trentin & Tontini, 2022) Emphasizes that barriers to Lean application are frequently generated by the employees themselves, reflecting a fear of the changes that new methodologies bring (Hasle, 2012). Furthermore, a lack of specific knowledge about Lean tools can limit the effectiveness of their application, as inadequately trained professionals may not be able to identify and eliminate waste effectively (Torres et al., 2021). The literature identifies various challenges in Lean implementation, including employee resistance to change and inadequate training. Many individuals are reluctant to change because it may jeopardize their organizational status (Elenin, 2023). Additionally, a lack of understanding of Lean principles and insufficient instruction can hinder the effective implementation of these practices.

Another critical challenge is the need for ongoing commitment from top management (Goodridge et al., 2015). With the support and leadership of managers, Lean initiatives can maintain momentum and succeed. Studies indicate that Lean implementation requires changes in operational processes and organizational cultural transformation. This cultural

transformation can be difficult, especially in companies with deeply rooted hierarchies and established practices (Trentin & Tontini, 2022)

Moreover, integrating Lean practices with existing management and production systems is crucial (Florescu & Barabas, 2022). A lack of alignment between new practices and existing systems can lead to conflicts and inefficiencies. Implementing Lean also requires a significant investment of time and resources, which can be a barrier for many companies (Huang et al., 2022; Qureshi, Mewada, Alghamdi, Almakayeel, Mansour, et al., 2022; Schwarz et al., 2011). The literature frequently cites the lack of adequate financial and human resources to support the transition to Lean as a common obstacle.

Therefore, companies must overcome these challenges to reap the benefits of the Lean philosophy. Addressing cultural resistance, providing adequate employee training, ensuring ongoing commitment from top management, and effectively integrating Lean practices with existing systems are critical for successful implementation.

Benefits Achieved with the Adoption of Lean

Adopting Lean tools in companies represents an effective strategy for optimizing processes and reducing waste, promoting a culture of continuous improvement (Bo et al., 2020). Among the most perceived benefits is increased operational efficiency, which reduces costs and enhances product and service quality (Pawlik et al., 2021; Sahoo, 2020). The integration of Lean practices is linked to technological progress and the development of human capital, essential elements for the sustainability of economic growth (Gazules, 2023b). Furthermore, implementing these tools can stimulate team collaboration, creating an environment conducive to innovation and adaptability, which are critical factors in a competitive market (Elenin, 2023; Solaimani et al., 2019). By allowing companies to adjust to market demands quickly, Lean practices increase productivity and provide a clear strategic advantage, fostering a virtuous cycle of competitiveness and success.

The literature documents the benefits of adopting Lean practices. Key advantages include waste reduction, improved product quality, decreased operational costs, and increased customer satisfaction (Sahoo & Yadav, 2018). The Lean philosophy can also significantly improve operational efficiency and responsiveness to market demands (Shamah, 2013). Additionally, studies show that Lean implementation can create a safer and more organized work environment, contributing to employee motivation and engagement (Yang et al., 2011).

Lean implementation has demonstrated positive results across various sectors. For instance, companies that adopted Lean practices in the automotive industry reported significant reductions in production cycle times and inventory levels (G. Pinto et al., 2019; Sahoo, 2020; Singh & Modgil, 2020). In the healthcare sector, Lean has been utilized to improve the efficiency of hospital processes and reduce patient wait times (Burgess & Radnor, 2013; Régis et al., 2018). These examples illustrate the versatility and effectiveness of Lean methodology in different contexts.

Beyond operational and quality benefits, adopting Lean can lead to significant competitive advantages. Companies that effectively implement Lean can continuously improve their operations, enabling them to respond swiftly to market changes and innovate consistently. Maintaining a sustainable competitive advantage is one of the main attractions of Lean philosophy, highlighting its strategic importance for companies across various sectors.

Critical Success Factors for Lean Implementation

For Lean implementation to be successful, several critical factors must be considered. The commitment of top management is essential, as it provides the necessary resources and support for implementation (Latif & Vang, 2021). Effective communication and involvement from all levels of the organization are also fundamental to aligning all team members around Lean objectives (Worley & Doolen, 2006) Studies indicate that

leadership is one of the most critical factors for success in Lean implementation (Aij & Teunissen, 2017). Effective leaders support Lean initiatives and inspire and motivate employees to adopt new practices.

Continuous training and education of employees are equally important to ensure that everyone understands Lean principles and knows how to apply them in their daily activities (Hackler et al., 2019) . Furthermore, implementing a culture of continuous improvement, where all employees are involved in identifying and solving problems, is essential for sustaining the benefits of Lean in the long term (Alpar, 2023). Moreover, integrating Lean practices with change management strategies is crucial to overcoming resistance and ensuring successful adoption.

Utilizing change management techniques, such as clear communication, stakeholder engagement, and constant progress monitoring, can mitigate issues associated with Lean implementation. The literature emphasizes the importance of a holistic approach considering the technical and human aspects of Lean implementation (Bellisario & Pavlov, 2018; Narayanamurthy & Gurumurthy, 2016; Stone, 2012; Tortorella et al., 2019).

Methodology

Research Design

The research followed a quantitative approach to evaluate the implementation of Lean tools in the Manufacturing Industry of the Beira Interior region, Portugal. This approach enabled an understanding of internal processes and organizational dynamics. Based on Lean principles, such as waste elimination and continuous improvement, structured questionnaires were incorporated to allow rigorous data collection (Pinto et al., 2022).

The appropriate selection of data collection instruments is a crucial step in research, as it can directly influence the validity and reliability of the results (Marôco, 2011). In this study, structured questionnaires were used as primary data collection methods, as they allow quantitative perceptions to be obtained. The questionnaire was designed to capture managers' perceptions of implementing Lean practices, including questions about barriers and benefits, providing a clear view of local companies' experiences.

Applying ethical principles ensures that participants, such as SME' employees, are informed about the study's objectives and implications, thus respecting their autonomy. Protecting personal information confidentiality and ensuring data usage transparency are essential. Challenges such as low company participation in the research can be mitigated by robust ethical practices, reflecting the researchers' commitment to scientific integrity and respect for research subjects.

Questionnaire

The Pinto et al. (2022) questionnaire was adapted to the study's needs and sent via email to the companies in the sample using Google Forms. The questions were formulated using a multiplechoice format and a Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), to measure the respondents' degree of agreement with the various statements. This format allows for effective quantitative analysis and comparison of responses between different companies.

The questionnaire is structured in 3 parts: (1) Socio-demographic data: Information on the company's size, the sector in which it operates, and the length of time it has been

in operation. This information is crucial for contextualizing the results and understanding the characteristics of the respondent companies. (2) Lean Implementation: Questions about the Lean tools used, the degree of implementation, and the reasons for adopting Lean. This section sought to identify the most common tools and why companies implement Lean practices. (3) Challenges and Obstacles: Questions about the main difficulties faced during implementation. This part of the questionnaire aims to map the most common obstacles that prevent the effective adoption of Lean. (4) Perceived Benefits: Evaluation of the benefits of implementing Lean practices. Through this section, it is possible to measure the positive results perceived by the companies. (4) Success Factors: Identification of the critical factors for the successful implementation of Lean. Here, companies indicate which aspects are essential for a successful implementation.

Sample

The Amadeus database was used to define the final sample. To obtain a sample made up of companies relevant to the study, three filtering criteria were established in the Amadeus database: (1) Companies based in the Beira Interior region; (2) Companies in the Manufacturing Industry (CAE between 10 and 33) and (3) Companies currently in business.

Considering these criteria, it was possible to obtain a database of 966 companies with information on sales volume, Tax Identification Number (TIN), CAE, number of employees, size, address, telephone contacts and e-mails. Of the 966 companies, only 630 had their e-mail address, but it was possible to increase this figure to 692 e-mails manually and using the companies' websites. This figure was later reduced to just 687 companies because there were duplicate emails in some cases (this was because some companies in the database, despite having different names, belong to the same business group and, therefore, have the same contacts). Table 1 summarizes these figures.

The questionnaire developed was then sent to various industry professionals in Beira Interior, namely the companies shown in Table 1, and was available to be answered from August 11 to September 18, 2023. The universe under study included 1,795 industrial companies based in the Beira Interior region, and it was only possible to contact 687 of these companies via e-mail. Of this number of companies, it should also be noted that 26 of the e-mail contacts made were unsuccessful due to possibly outdated or deactivated emails. Thus, over this period, 661 companies were contacted via e-mail. However, this method proved unsuccessful, with only a few responses being received at the first stage.

Therefore, in the second phase of collecting responses, it was decided to directly approach employees of some of the companies in the sample, thereby increasing the number of responses obtained. Therefore, in this second phase of collecting responses, direct contact with company employees was made via LinkedIn and e-mail, the same method adopted by other authors, namely Pinto et al. (2022). The criteria for choosing the employees to contact was the employee's position and length of service in the company, as it was intended that they had been with the company for at least 9 months and that their duties were related to production, maintenance or quality.

Table 1

Sample

Description	Nº Companies in the Amadeus Database	Nº Filtered Companies

Criterion 1: Companies in NUTS Beira Baixa and Beiras e Serra da Estrela	10.643	10.643
Criterion 2: CAE between 10 and 33	161.7947	1004
Criterion 3: Active Companies	223.01863	966
Subtotal 1 (Filtering of Criteria 1, 2, and 3)	-	966
E-mails Available in the Amadeus Database	-	630
E-mails Added Manually	-	62
Subtotal 2 (Total Nº of e-mails)	-	692
Duplicated e-mails	-	5
Subtotal 3 (Total Nº of e-mails Sent)	-	687
Bounced E-mails	-	26
Subtotal 4 (Total Nº of Companies Successfully Contacted)	-	661
Total Nº of Responses Obtained	-	23

Therefore, 23 valid responses were obtained during this period, 14 in the first phase of response collection and 9 in the second. This represents a response rate of 3.48%, which, although lower, is close to that of other studies already carried out (see references in Table 1).

Data was collected over three months. During this period, periodic reminders were sent to encourage participation and increase the response rate. Responses were guaranteed confidentiality to promote voluntary participation by companies and ensure that the data collected was honest and accurate.

Data Analysis and Interpretation

The quantitative data collected through the questionnaire was analyzed using descriptive statistics (Martins et al., 2021; Pinto et al., 2022) The statistical analysis identified important trends and patterns in the companies' responses to implementing Lean, offering valuable insights into the factors influencing the adoption of these practices and the associated benefits (Marôco, 2011). The results were presented as tables and graphs to facilitate interpretation and communication of the main findings.

Descriptive statistical analysis was used to summarize the sample's basic characteristics and the questionnaire's answers. Measures of central tendency (mean, median) and dispersion (standard deviation) were calculated to provide an overview of the responses. This helps to understand the distribution of the data and identify general patterns. In addition, frequency analysis was carried out to assess the distribution of responses and identify common patterns. Absolute and relative frequencies were used to describe different reactions in the variables analyzed.

This analysis is crucial for determining which Lean tools are most used and which challenges are most common. The low engagement rate of the participating companies impacted the sample, resulting in insufficient data for more robust statistical analysis.

The companies were divided into four classes based on the size of their human resources. Figure 1 shows that 13% of the companies in the study have between 1 and 9 employees, 39.1% have between 10 and 49 employees, 30.4% have between 50 and 249 employees, and only 17.4% have more than 250 employees in terms of turnover in 2022. The percentage of companies with a turnover of less than 2 million euros (M€), between 2 and 10 million euros (M€) and between 10 and 50 million euros (M€) was 30.4% in all three cases. It should also be noted that only 8.7% of the companies had a turnover of more than 50 million euros (M€).

Figure 1

number of Employees per Company

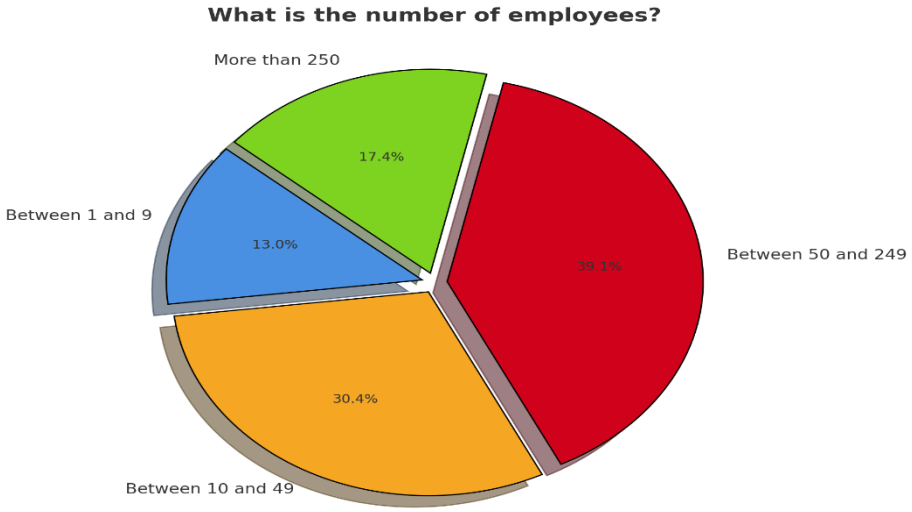
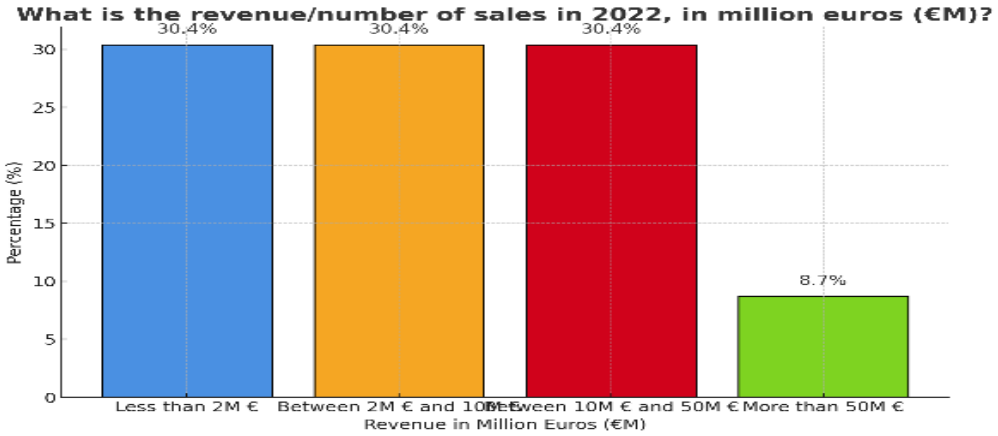


Figure 2

Company Sales Volume in 2022



Regarding the type of markets in which the companies operate, it can be concluded that the group of Beira Interior companies in this study are more committed to internationalization (60.87%) than the companies in the study by Pinto et al. (2022) (43%). However, regarding certifications, only around half (47.83%) of the companies in Beira Interior have some certification, while the national figure 4 is higher (86%) (Pinto et al., 2022).

Figure 3

Market

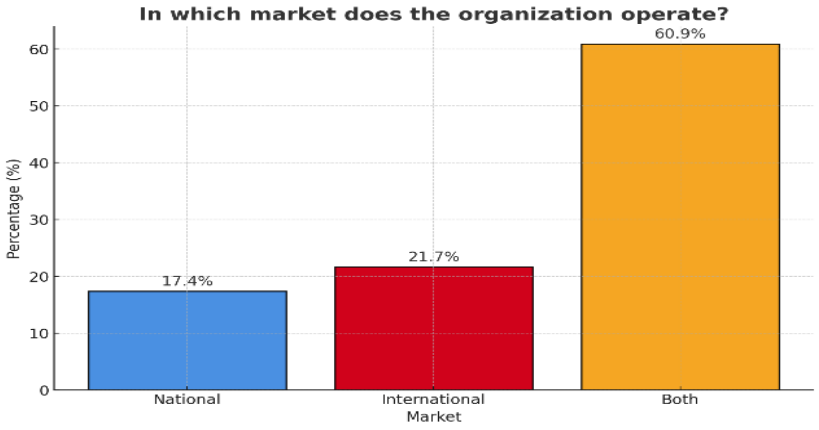
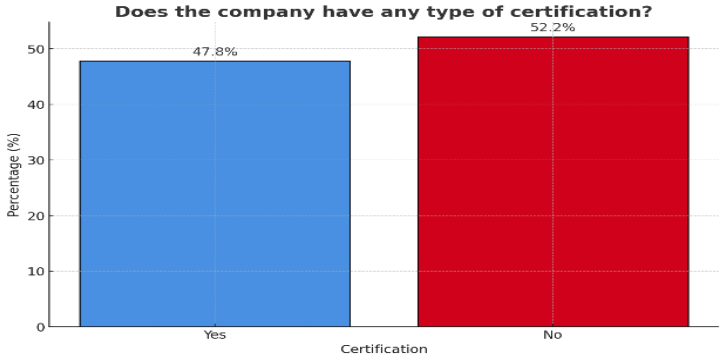


Figure 4

Certification



About the analysis of the respondents, it can also be seen in Figures 4 to 8 that in this study carried out in Beira Interior, the respondents are part of the Production Department of their companies (30.43%), and most of them have higher education degrees (78.26%). In the study carried out by Pinto et al. (2022), the respondents were characterized by holding engineering positions (51.02%) and being part of the Production (22.45%) and Quality (18.37%) Departments. Regarding the respondents' experience and knowledge of Lean tools, the study in Beira Interior found that 39.13% had been with the company for more than 5 years, and 87% said they knew Lean tools. These figures are close to those achieved by Pinto et al. (2022), who found that 39.80% of the respondents had also been with the company for more than 5 years, and 71% said they knew Lean.

Figure 5

Department of Respondents

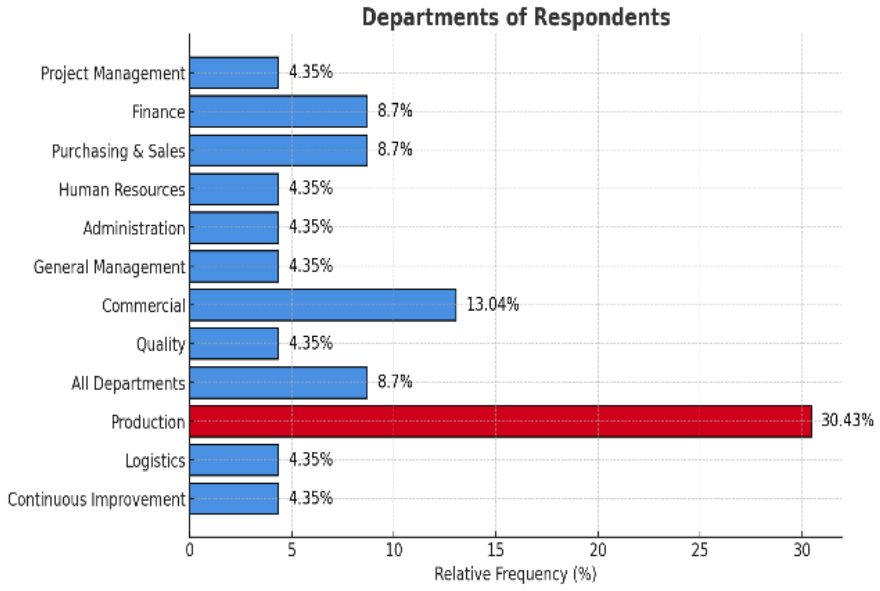


Figure 6

Education of Respondents

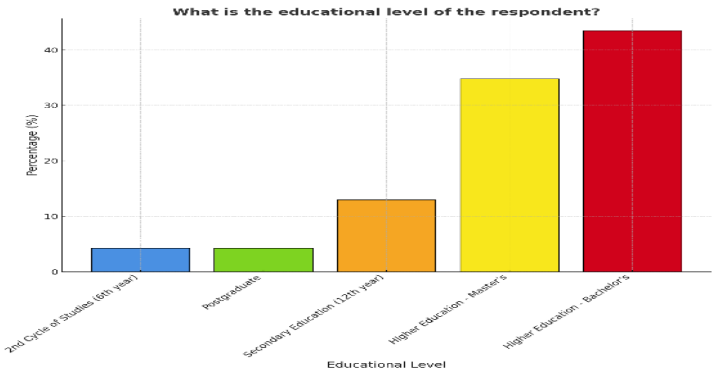


Figure 7

Lean Tools

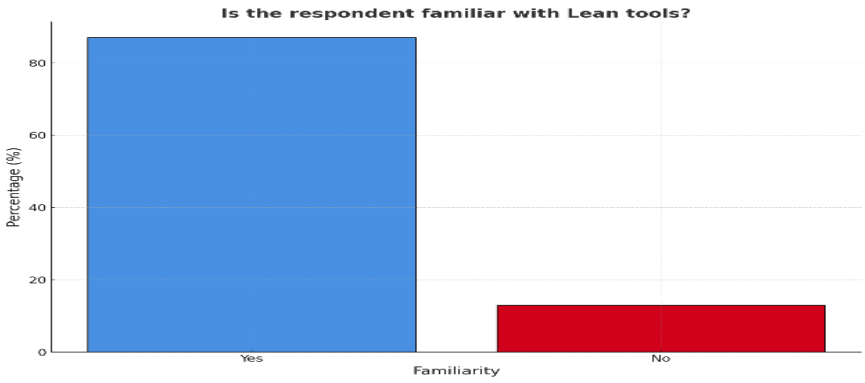
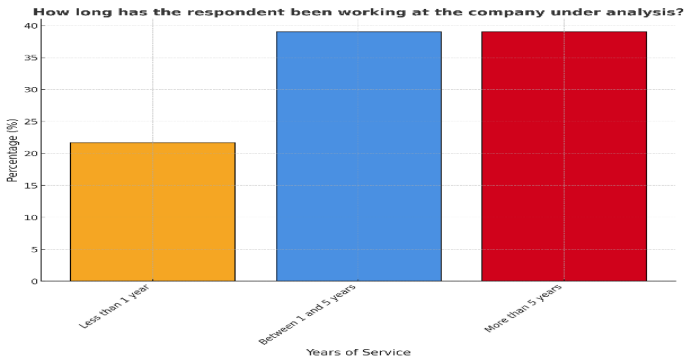


Figure 8

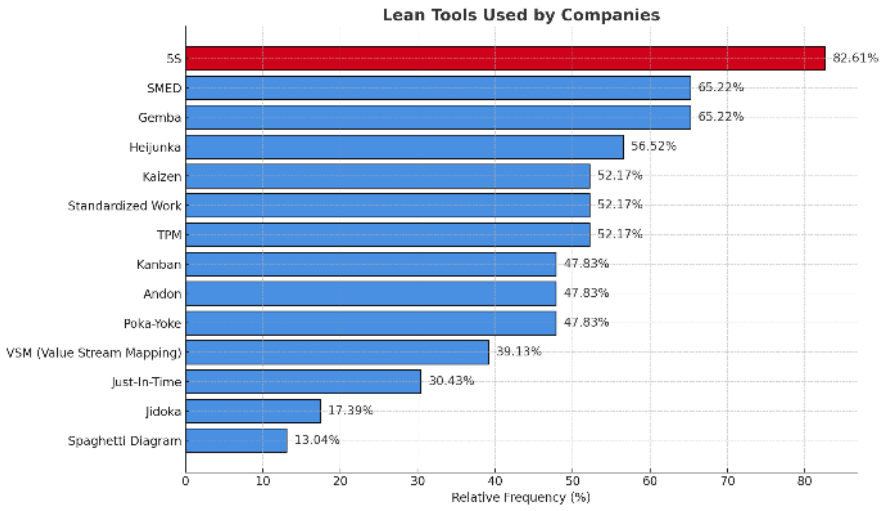
Respondent Been Working at the Company



Questions about the Lean tools used, the degree of implementation and the reasons for adopting Lean. This section sought to identify the most common tools and why companies implement Lean practices. Figure 9 shows that the most used tools by companies are 5S (82.61%), SMED (65.22%), Gemba (65.22%), Heijunka (56.52%) and Kaizen (52.17%). These figures contrast slightly with those obtained at the national level by Pinto et al. (2022), where 5S (87%), Kaizen (77%), Kanban (64%) and Gemba (56%) were the most used tools by companies.

Figure 9

Lean Tools

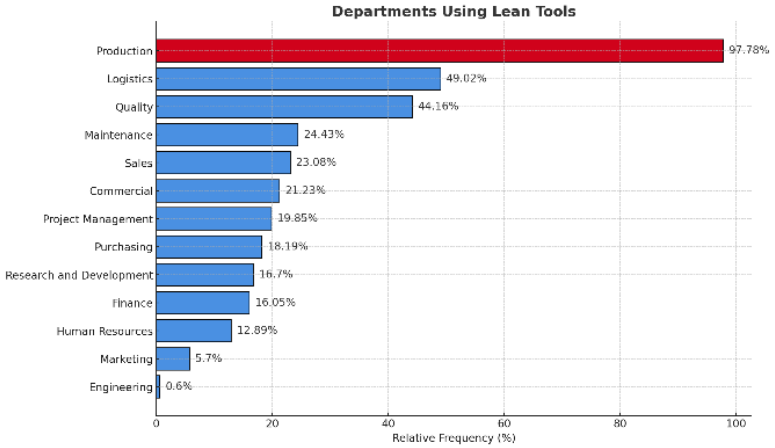


In short, the Lean tools most used by companies in Beira Interior include 5S. The 5S tool, which focuses on the organization and cleanliness of the workplace, is widely adopted due to its simplicity and immediate impact on operational efficiency. Implementing these Lean tools aligns with reducing waste and optimizing production. Tools such as 5S and Kanban help better organize resources and manage workflow, while Jidoka and Kaizen promote quality and a culture of continuous improvement. These practices are adopted to increase efficiency, ensure flexible production, and respond quickly to changing market demands.

As for the departments where they are used, Figure 10 shows that there is a significant presence of Lean tools in the Production (97.78%), Logistics (49.02%) and Quality (44.16%) departments of the companies. The national study by Pinto et al. (2022) also obtained similar results, with Quality (63%), Logistics (47%) and Production (32%) standing out from the rest.

Figure 10

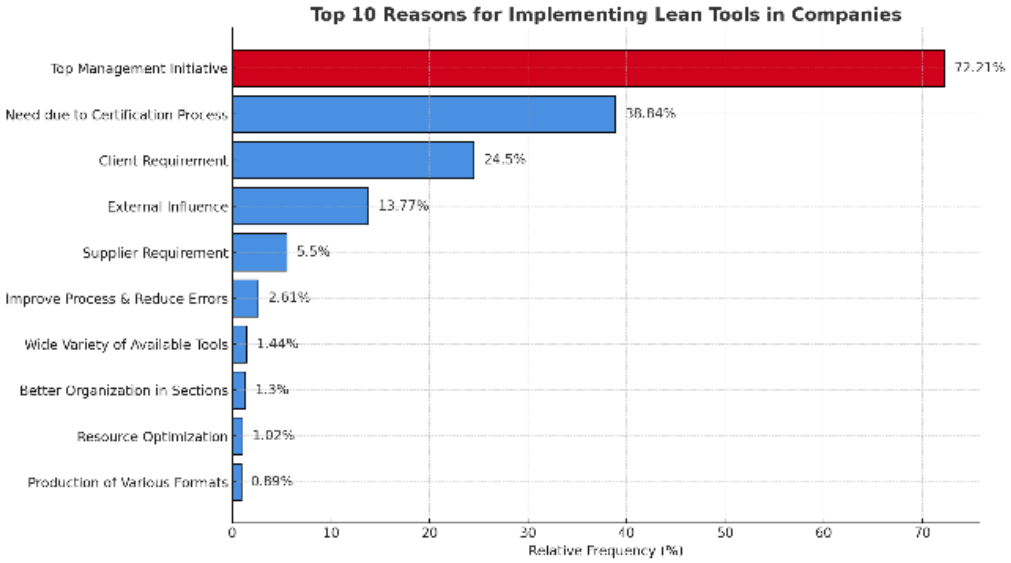
Departaments Lean Tools



However, it is also important to understand why companies invest in this type of implementation. Figure 11 shows that, in 72.21% of cases, the initiative of top management was the starting point for introducing Lean tools in companies. Other reasons for implementation include the companies' compliance with certification processes (38.84%) and customer obligations (24.50%). In the national context, Pinto et al. (2022) concluded that 61.2% of implementations originated from the top management of companies.

Figure 11

Reasons for Implementing Lean Tools



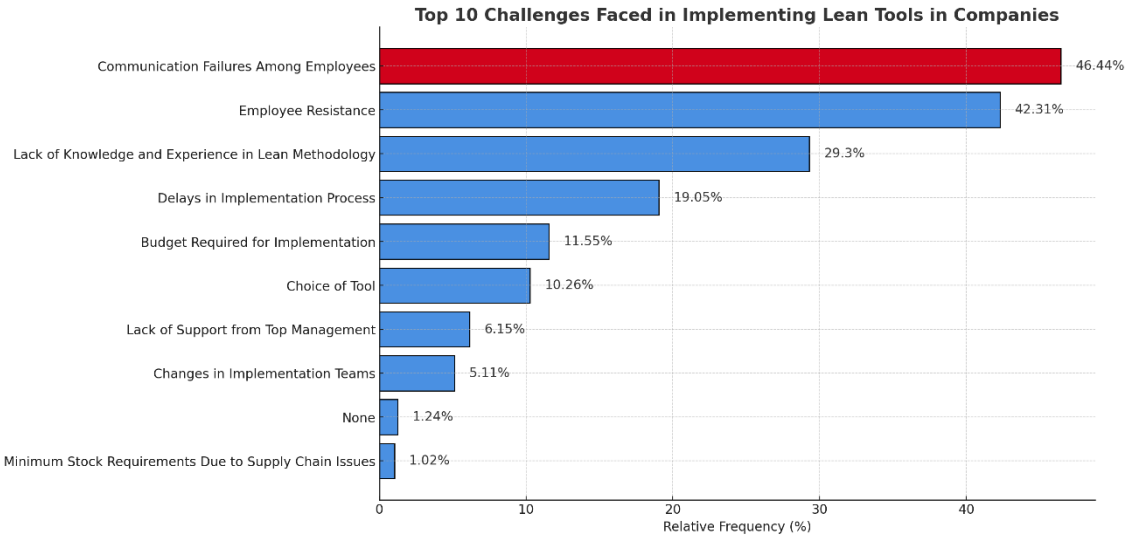
Despite the benefits, companies also need help with implementing Lean. Resistance to change is one of the biggest obstacles, especially among employees who are used to traditional working methods (Trentin & Tontini, 2022). Switching to Lean practices requires a significant change in organizational culture, which can be uncomfortable for many employees. Lack of adequate training is another significant challenge, as successful implementation of Lean requires a thorough understanding of Lean tools and principles (Miles et al., 2017; Torres et al., 2021).

In addition, some companies face difficulties sustaining Lean improvements over the long term due to a lack of ongoing commitment and support from management (Hassan & Pasha, 2023). Without constant support from leadership, Lean initiatives can lose momentum and fail to generate the expected benefits. Companies must ensure that all levels of management are committed to the Lean philosophy and that there is clear and constant communication about the objectives and progress of Lean initiatives (Berlec et al., 2017).

Another common challenge is integrating Lean practices with existing systems and processes (Saabye et al., 2023). Companies must often adjust or replace their management and production systems to accommodate the new practices. This can be costly and timeconsuming, requiring significant training and capacity-building investments. In addition, a lack of financial and human resources can limit companies' ability to implement Lean practices fully (Qureshi et al., 2023).

Figure 12

Challenges Faced in Implementing Lean Tools



However, the companies were asked to identify the main difficulties. Figure 12 shows that communication failures (46.44%), employee resistance (42.31%) and lack of knowledge and experience of Lean (29.30%) were the main difficulties encountered by the companies in the study. These results are also in line with the national panorama of the study by Pinto et al. (2022), where employee resistance (71.11%), communication failures with and between workers (66%) and delays in implementation processes (65.77%) emerged as the main problems encountered by companies when implementing Lean tools.

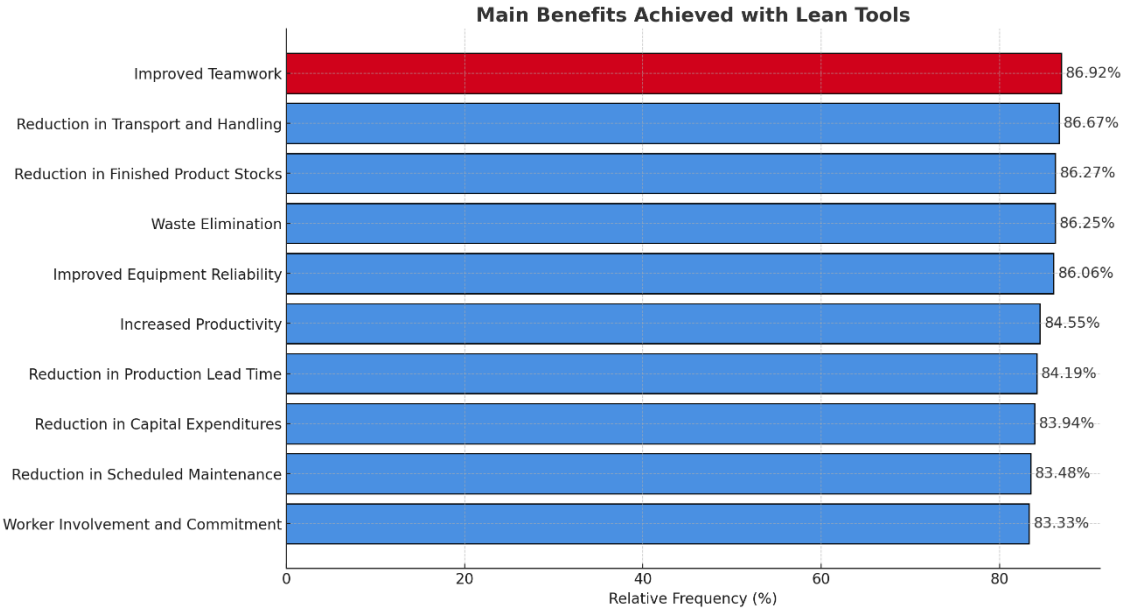
Companies implementing Lean have reported several benefits, including reducing waste, improving product quality, reducing operating costs and increasing customer satisfaction (Goshime et al., 2019). Reducing waste is one of the most mentioned benefits since the Lean philosophy focuses on eliminating activities that do not add value to the customer. In addition, operating costs are reduced through greater efficiency and less resource waste (Ahmad et al., 2020). The Lean philosophy allows companies to identify and eliminate unnecessary processes, optimizing the use of materials and labor.

This increase in efficiency reduces costs and improves companies' competitiveness in the global market (Goshime et al., 2019). Finally, customer satisfaction increases as companies can deliver high-quality products more efficiently (Mohamed et al., 2023). These benefits are particularly important in challenging economic contexts, where operational efficiency can mean the difference between success and failure. Companies that adopt Lean practices often report improved quality and efficiency and a more motivating and collaborative working environment (Karthi et al., 2014). Therefore, gains in efficiency and quality directly and positively impact both financial results and employee morale.

As for the benefits achieved by the companies, they are quite heterogeneous due to the wide range and type of Lean tools available. However, according to Figure 13, it is possible to conclude that, in general, improving teamwork (86.92%), reducing transport (86.67%), reducing stocks of finished products (86.27%) and eliminating waste (86.25%) are the main benefits obtained by companies by implementing Lean in their processes. In the study carried out by Pinto et al. (2022), the main benefits were an increase in process quality (82%), productivity (81.58%) and process flexibility (75.56%).

Figure 13

Benefits Achieved with Lean Tools



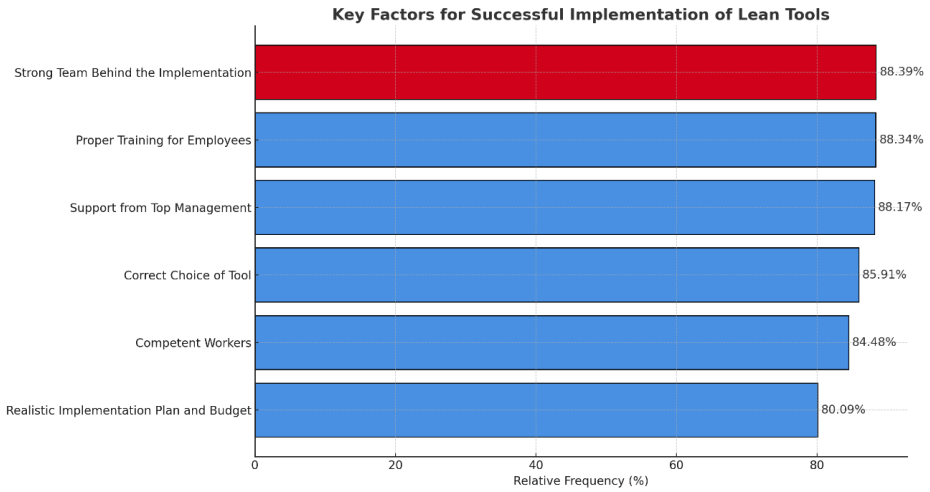
The critical factors for successful Lean implementation include the commitment of top management, adequate employee training, effective communication and the involvement of all levels of the organization. Top management commitment is essential, as it provides the resources and support needed for implementation (Latif & Vang, 2021). Without clear and visible support from leadership, Lean initiatives are unlikely to achieve the necessary employee engagement (Aij & Teunissen, 2017; Tortorella et al., 2019).

Adequate training ensures employees understand and can effectively apply Lean tools (Elenin, 2023). This training should be continuous, ensuring that all team members are up to date with best practices and able to contribute to the continuous improvement of processes. Effective communication helps align all organization members around Lean objectives, ensuring that everyone understands the importance of the initiatives and how they can contribute to their success(Worley & Doolen, 2006).

The involvement of all levels of the organization is crucial to sustaining long-term improvements. When all employees, from the front line to senior management, are involved and committed to the Lean philosophy, the organization can create a culture of continuous improvement (Hackler et al., 2019; Hassan & Pasha, 2023; Trentin & Tontini, 2022). This culture sustains initial improvements and promotes innovation and continuous adaptation to market changes.

Figure 14

Factors for Successful Implementation of Lean Tools



However, it is also important to analyze the factors that, according to the companies, are essential for the success of this type of implementation in their processes, as well as the main difficulties experienced during the implementation of Lean tools. Figure 14 shows the key factors that companies indicate are necessary for the success of a lean implementation. It can thus be seen that, as in the study by Pinto et al. (2022), the presence of a good team behind the implementation (88.39%), adequate training for employees (88.34%) and support from top management (88.17%) are essential for the success of this type of implementation.

Discussion of the results

The data collected during the survey illustrates the complex and multifaceted reality of the implementation of Lean practices in Beira Interior companies. The analysis revealed that, although 60.9% of the participating organizations have used at least one Lean tool, large companies have a significantly more advanced adoption maturity level than SMEs, corroborating the thesis that barriers such as financial limitations and lack of knowledge are preponderant in the latter case. In addition, the interdependence between the involvement of senior management and partnerships between industry and academia is crucial for disseminating Lean techniques, especially among companies with little previous exposure to these practices. The removal of waste, in turn, is highlighted as a determining factor for the competitiveness of organizations, indicating that maximizing efficiency and continuous improvement are desirable and necessary for sustainability in today's market.

The results of this study are consistent with those of other studies carried out in Portugal and international contexts. For example, Pinto et al. (2022) found that Portuguese companies implementing Lean often report quality and cost reduction improvements, like the benefits observed in Beira Interior. Furthermore, the challenges faced, such as resistance to change and the need for training, are common in different geographical contexts (Martins et al., 2021; Sahoo, 2020).

This consistency in the results reinforces the validity of this study's findings and suggests that Lean practices, when implemented properly, can significantly improve efficiency, quality and competitiveness. Therefore, companies in Beira Interior can benefit from lessons learned and best practices developed in other contexts, adapting them to their specific needs and conditions.

Conclusion

The main objective of this study was to evaluate the implementation of Lean tools in the Manufacturing Industry in the Beira Interior region, Portugal. It identified the main obstacles and challenges local companies face, the benefits achieved, and the critical factors for success. Based on the results obtained, several important conclusions can be drawn that relate directly to the research established.

The results showed that the main reasons for companies in Beira Interior to adopt lean tools include increasing operational efficiency, improving product quality, and reducing costs. The most common tools adopted, such as 5S, Kanban, Jidoka and Kaizen, reflect these objectives, indicating that companies are looking to optimize their production processes and increase their competitiveness in the market. This motivation is consistent with previous studies, such as Karthi et al. (2014), which highlights the search for efficiency and quality as the main drivers for adopting Lean.

Implementing Lean tools in Beira Interior companies presents challenges and significant benefits, as highlighted in this study. The conclusion points out that although companies face initial difficulties due to resistance to change and entrenched organizational culture, the long-term results, such as waste reduction and increased efficiency, outweigh these obstacles. As Sánchez & González (2022) mention integrating Lean principles into project management practices strengthens efficiency and enhances project success, which is crucial in a competitive business context. Furthermore, the interactions between Lean practices and the adoption of Industry 4.0 technologies are highlighted in (Florescu & Barabas, 2022; Qureshi et al., 2023). Reinforce the need for a multidimensional approach to implementing lean operations and promoting innovation. The strategic adoption of these tools can position companies in the region competitively in the global market.

Companies face several significant challenges when implementing Lean, with resistance to change and inadequate training being the most common obstacles. Resistance to change, especially among employees accustomed to traditional methods, and a lack of ongoing management commitment are critical barriers that prevent the full adoption of Lean practices. Trentin and Tontini (2022) corroborate these challenges, identifying cultural resistance and training as significant barriers.

The benefits of implementing Lean in Beira Interior companies are clear and significant. The companies reported substantial waste reductions, product quality improvements, reduced operating costs and increased customer satisfaction. These benefits prove that adopting Lean practices can result in considerable gains in efficiency and competitiveness, confirming the validity and effectiveness of these practices in different business contexts.

The critical factors for success identified include the commitment of top management, adequate employee training, effective communication and the involvement of all levels of the organization. These elements are necessary for Lean implementation to avoid serious difficulties in sustainability and effectiveness. Structured and continuous support is essential to ensure that initial improvements are maintained and that a culture of continuous improvement is established. This finding aligns with the studies by Aij & Teunissen (2017), who emphasize the importance of leadership support and effective communication.

The incorporation of Lean tools by companies in the Beira Interior region is important for professionals to understand the connection between the implementation of Lean practices and operational efficiency, given that eradicating waste leads not only to a reduction in costs but also to an increase in the quality of the products and services provided. Furthermore, the research shows that resistance to transformation, which is often observed in small and medium-sized enterprises (SMEs), can be mitigated through training programs that raise awareness of the advantages of Lean. In this way, managers should establish strong backing from senior management to support these initiatives. Ultimately, the assimilation of Lean practices into operational routines can foster an

environment geared towards continuous improvement and innovation, essential aspects for competitiveness in today's industrial context.

For a more in-depth understanding of the incorporation of Lean tools in organizations located in Beira Interior, future research must be dedicated to examining the intersection between the implementation of these practices and indicators such as the size of the organization and the stage of Lean maturity. Existing literature highlights the diversity of barriers faced by small and medium-sized enterprises (SMEs), which often lack the resources and training to promote structural transformations in their production flows. Furthermore, it is suggested that longitudinal research be carried out to measure the effects of Lean approaches over time, enabling a more solid appreciation of operational efficiency and productivity (Majava & Ojanperä, 2017; Rymaszewska, 2014; Sahoo, 2020). The active participation of stakeholders, including top management and academic institutions, can help design training programs tailored to the specific demands of local companies, creating a favorable scenario for innovation and competitiveness.

There were some limitations to this study. Firstly, the small sample of organizations that took part in the research compromises the possibility of generalizing the results obtained, restricting the analysis to descriptive data and making it difficult to recognize more substantial correlations between the assimilation of Lean practices and variables such as the size of the companies or their level of maturity in Lean. In addition, cultural resistance and a lack of awareness of the benefits of Lean, found among many small and mediumsized enterprises (SMEs), may have impacted participants' willingness to provide essential information, reflecting a possible bias in obtaining the data. Finally, the geographical limit of Beira Interior may not cover the variety of experiences of implementing Lean in different industrial contexts, which could be addressed in future research that analyzes the subject in various regions and with varying profiles of business.

The main findings of this study highlight the effectiveness of implementing Lean tools in companies in the Beira Interior region, highlighting their benefits in terms of increasing operational efficiency and reducing waste. In addition, it was observed that resistance to change and a lack of employee training are significant barriers to fully adopting these practices. The qualitative analysis of the data collected through interviews and questionnaires reveals that organizations that invest in employee training and engagement can overcome these challenges more effectively. Future research must explore the intersection between organizational culture and Lean implementation and investigate the impact of different sectors on the effectiveness of Lean tools. Thus, continuing this field of study could provide valuable insights for improving the competitiveness of companies in the region.

However, despite the significant challenges, implementing Lean tools in the Beira interior manufacturing industry results in substantial benefits. This study contributes to a better understanding of the application of the Lean philosophy in specific regional contexts, offering valuable insights for companies wishing to adopt or improve their Lean practices. Practical implications include the need for strong senior management commitment, ongoing investment in training and effective communication, and the promotion of a culture of continuous improvement to ensure long-term success.

References

- Abolhassani, A., Layfield, K. A., & Gopalakrishnan, B. (2016). Lean and US Manufacturing Industry: Popularity of Practices and Implementation Barriers. International Journal of Productivity and Performance Management, 65(7), 875–897. https://doi.org/10.1108/ijppm-10-2014-0157
- Ahmad, M. O., Lwakatare, L. E., Kuvaja, P., Oivo, M., & Markkula, J. (2016). An Empirical Study of Portfolio Management and Kanban in Agile and Lean Software

Companies. Journal of Software Evolution and Process, 29(6). https://doi.org/10.1002/smr.1834

- Ahmad, N. A., Ahmad, F., Hamid, N. A., Ngadiman, Y., Pakir, M. I., Nawanir, G., Bakri, A., & Rahim, M. A. (2020). Green Lean Practices Towards Increasing Operation Value of Manufacturing Company. In International Journal of Integrated Engineering. https://doi.org/10.30880/ijie.2020.12.07.015
- Ahrabi, S. Z., & Darestani, S. A. (2024). A Roadmap for Lean Production Tools Implementation. In International Journal of Business Excellence. https://doi.org/10.1504/ijbex.2024.137573
- Aij, K. H., & Teunissen, M. (2017). Lean Leadership Attributes: A Systematic Review of the Literature.In Journal of Health Organization and Management. https://doi.org/10.1108/jhom-12-2016-0245
- Alpar, Ş. E. (2023). Do Lean Practices Increase Nurses' Organizational Commitment and Job Satisfaction in Turkey? – A Private Hospital Model. Journal of Human Sciences, 20(2), 129–142. https://doi.org/10.14687/jhs.v20i2.6293
- Aripin, N. M. (2024). Sustenance Strategies for Lean Manufacturing Implementation in Malaysian Manufacturing Industries. International Journal of Automotive and Mechanical Engineering, 21(1), 11018–11035. https://doi.org/10.15282/ijame.21.1.2024.06.0852
- Bashar, A., Hasin, A. A., & Adnan, Z. H. (2021). Impact of Lean Manufacturing: Evidence From Apparel Industry in Bangladesh. International Journal of Lean Six Sigma, 12(5), 923–943. https://doi.org/10.1108/ijlss-01-2020-0005
- Bellisario, A., & Pavlov, A. (2018). Performance Management Practices in Lean Manufacturing Organizations: A Systematic Review of Research Evidence. In Production Planning & Control. https://doi.org/10.1080/09537287.2018.1432909
- Berlec, T., Kleindienst, M., Rabitsch, C., & Ramsauer, C. (2017). Methodology to Facilitate Successful Lean Implementation. In Strojniški Vestnik – Journal of Mechanical Engineering. https://doi.org/10.5545/sv-jme.2017.4302
- Bo, Z., Niu, Z., & Liu, C. (2020). Lean Tools, Knowledge Management, and Lean Sustainability: The Moderating Effects of Study Conventions. In Sustainability. https://doi.org/10.3390/su12030956 Burgess, N., & Radnor, Z. (2013). Evaluating Lean in Healthcare. International Journal of Health Care Quality Assurance, 26(3), 220–235. https://doi.org/10.1108/09526861311311418
- Danese, P., Romano, P., & Bortolotti, T. (2012). JIT Production, JIT Supply and Performance: Investigating the Moderating Effects. In Industrial Management & Data Systems. https://doi.org/10.1108/02635571211210068
- Elenin, K. M. A. (2023). Effect of Lean Management Training Program on Nurse Managers' Innovation and Crisis Management. Port Said Scientific Journal of Nursing, 10(3), 31–64. https://doi.org/10.21608/pssjn.2023.218392.1272
- Florescu, A., & Barabas, S. (2022). Development Trends of Production Systems Through the Integration of Lean Management and Industry 4.0. In Applied Sciences. https://doi.org/10.3390/app12104885
- Gazules, S. P. (2023a). Longitudinal Study of Lean Tools In Spanish Manufacturing Firms.
- Journal of Manufacturing Technology Management, 34(9), 64–83. https://doi.org/10.1108/jmtm-11-2022-0406
- Gazules, S. P. (2023b). Longitudinal Study of Lean Tools In Spanish Manufacturing Firms. Journal of Manufacturing Technology Management, 34(9), 64–83. https://doi.org/10.1108/jmtm-11-2022-0406
- Goodridge, D., Westhorp, G., Rotter, T., Dobson, R., & Bath, B. (2015). Lean and Leadership Practices: Development of an Initial Realist Program Theory. In BMC Health Services Research. https://doi.org/10.1186/s12913-015-1030-x

- Goshime, Y., Kitaw, D., & Jilcha, K. (2019). Lean Manufacturing as a Vehicle for Improving Productivity and Customer Satisfaction. In International Journal of Lean Six Sigma.
- https://doi.org/10.1108/ijlss-06-2017-0063
- Hackler, C., Byse, E., Alves, T. da C. L., & Reed, D. (2019). Building a Lean Culture: Engaging the Value Stream. https://doi.org/10.24928/2019/0169
- Hasle, P. (2012). Lean Production—An Evaluation of the Possibilities for an Employee Supportive Lean Practice. In Human Factors and Ergonomics in Manufacturing & Service Industries. https://doi.org/10.1002/hfm.20350
- Hassan, B., & Pasha, U. (2023). Impact of Lean Manufacturing Practices on Sustainable Firm Performance: An Empirical Study Moderated by Lean Culture. In International Journal of Business and Economic Affairs. https://doi.org/10.24088/ijbea-2023-83002
- Hofer, C., Eroglu, C., & Hofer, A. R. (2012). The Effect of Lean Production on Financial Performance: The Mediating Role of Inventory Leanness. In International Journal of Production Economics. https://doi.org/10.1016/j.ijpe.2012.03.025
- Huang, C., Lee, D., Chen, S., & Tang, W. (2022). A Lean Manufacturing Progress Model and Implementation for SMEs in the Metal Products Industry. Processes, 10(5), 835. https://doi.org/10.3390/pr10050835
- INE (2023) National Statistics Institute - Databases: Companies by Geographic Location and Turnover. [Online] Disponível em: https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_indicadores&indOcorrCod=0008272&contexto=bd&selTab=tab2 [Acedido em 6 junho 2023]
- Karthi, S., Devadasan, S. R., Selvaraju, K., Sreenivasa, C. G., & Sivaram, N. M. (2014).
- Transforming Into a Lean Six Sigma Enterprise Through ISO 9001 Standard-Based Quality Management System. In Journal of Enterprise Transformation. https://doi.org/10.1080/19488289.2014.890981
- Latif, M. A., & Vang, J. (2021). Top Management Commitment and Lean Team Members' Prosocial Voice Behaviour. In International Journal of Lean Six Sigma. https://doi.org/10.1108/ijlss-01-2020-0002
- Majava, J., & Ojanperä, T. (2017). Lean Production Development in SMEs: A Case Study.
- Management and Production Engineering Review, 8(2), 41–48. https://doi.org/10.1515/mper-2017-0016
- Marôco, J. (2011). Análise estatística com o SPSS Statistics (ReportNumber, Ed.; 5a).
- Martins, D., Fonseca, L., Ávila, P., & Bastos, J. (2021). Lean practices adoption in the Portuguese industry. Journal of Industrial Engineering and Management, 14(2), 345. https://doi.org/10.3926/jiem.3291
- Maware, C., & Parsley, D. M. (2022). The Challenges of Lean Transformation and Implementation in the Manufacturing Sector. Sustainability, 14(10), 6287. https://doi.org/10.3390/su14106287
- Miles, M. P., de Vries, H., Harrison, G., Bliemel, M., de Klerk, S., & Kasouf, C. J. (2017). Accelerators as authentic training experiences for nascent entrepreneurs. Education and Training, 59(7–8), 811–824. https://doi.org/10.1108/ET-01-2017-0007
- Mohamed, M., Rady, A., & Fawy, W. (2023). The Impact of Floating Hotels' Green Practices on Customers' Satisfaction and Retention. In International Journal of Tourism and Hospitality Management. https://doi.org/10.21608/ijthm.2023.300886
- Moshood, T. D. (2024). Enhancing Infrastructure Project Delivery Through Lean Construction: Opportunities, Challenges And implementation Strategies.

Technological Sustainability, 3(3), 237–261. https://doi.org/10.1108/techs-11-20230041

- Narayanamurthy, G., & Gurumurthy, A. (2016). Leanness Assessment: A Literature Review. International Journal of Operations & Production Management, 36(10), 1115–1160. https://doi.org/10.1108/ijopm-01-2015-0003
- Ohno, T. (2019). Toyota production system: beyond large-scale production. Productivity press.
- Pawlik, E., Ijomah, W., Corney, J., & Powell, D. (2021). Exploring the Application of Lean Best Practices in Remanufacturing: Empirical Insights Into the Benefits and Barriers. Sustainability, 14(1), 149. https://doi.org/10.3390/su14010149
- Pinto, C. M. A., Mendonça, J., Babo, L., Silva, F. J. G., & Fernandes, J. L. R. (2022). Analyzing the Implementation of Lean Methodologies and Practices in the Portuguese Industry: A Survey. Sustainability (Switzerland), 14(3). https://doi.org/10.3390/su14031929
- Pinto, G., Silva, F., Campilho, R. D. S. G., Casais, R. B., Fernandes, A., & Baptista, A. (2019). Continuous Improvement in Maintenance: A Case Study in the Automotive Industry Involving Lean Tools. Procedia Manufacturing, 38, 1582–1591. https://doi.org/10.1016/j.promfg.2020.01.127
- Qureshi, K. M., Mewada, B. G., Alghamdi, S., Almakayeel, N., Mansour, M., & Qureshi, M. N. (2022). Exploring the Lean Implementation Barriers in Small and MediumSized Enterprises Using Interpretive Structure Modeling and Interpretive Ranking Process. Applied System Innovation, 5(4), 84. https://doi.org/10.3390/asi5040084
- Qureshi, K. M., Mewada, B. G., Alghamdi, S., Almakayeel, N., Qureshi, M. N., & Mansour, M. (2022). Accomplishing Sustainability in Manufacturing System for Small and
- Medium-Sized Enterprises (SMEs) Through Lean Implementation. Sustainability, 14(15), 9732. https://doi.org/10.3390/su14159732
- Qureshi, K. M., Mewada, B. G., Buniya, M. K., & Qureshi, M. N. (2023). Analyzing Critical Success Factors of Lean 4.0 Implementation in Small and Medium Enterprises for
- Sustainable Manufacturing Supply Chain for Industry 4.0 Using PLS-SEM. Sustainability, 15(6), 5528. https://doi.org/10.3390/su15065528
- Régis, T. K. O., Gohr, C. F., & Santos, L. C. (2018). Implementação Do Lean Healthcare: Experiências E Lições Aprendidas Em Hospitais Brasileiros. Revista De Administração De Empresas, 58(1), 30–43. https://doi.org/10.1590/s0034759020180104
- Rymaszewska, A. (2014). The Challenges of Lean Manufacturing Implementation in SMEs. Benchmarking an International Journal, 21(6), 987–1002. https://doi.org/10.1108/bij10-2012-0065
- Saabye, H., Powell, D., & Coughlan, P. (2023). Lean and Action Learning: Towards an Integrated Theory? In International Journal of Operations & Production Management. https://doi.org/10.1108/ijopm-06-2022-0371
- Sahoo, S. (2020). Assessing Lean Implementation and Benefits Within Indian Automotive Component Manufacturing SMEs. Benchmarking an International Journal, 27(3), 1042–1084. https://doi.org/10.1108/bij-07-2019-0299
- Sahoo, S., & Yadav, S. (2018). Lean Implementation in Small- And Medium-Sized Enterprises. Benchmarking an International Journal, 25(4), 1121–1147. https://doi.org/10.1108/bij-02-2017-0033
- Sánchez, M. A. R., & González, J. C. H. (2022). A Systematic Literature Review About the Influence of Good Project Management Practices Applying to Lean Manufacturing. https://doi.org/10.46254/in02.20220612

- Sandagomika, N. M. G. H. (2021). Human Related Challenges in Lean Implementation: A Case of Sri Lankan Large Scale Contractors. https://doi.org/10.46254/eu04.20210464
- Schwarz, P., Pannes, K. D., Nathan, M., Reimer, H. J., Kleespies, A., Kuhn, N., Rupp, A., & Zügel, N. P. (2011). Lean processes for optimizing or capacity utilization: Prospective analysis before and after implementation of value stream mapping (VSM). 396(7), 1047–1053. https://doi.org/10.1007/s00423-011-0833-4
- Shamah, R. A. M. (2013). Measuring and Building Lean Thinking for Value Creation in Supply Chains. In International Journal of Lean Six Sigma. https://doi.org/10.1108/20401461311310490
- Sharma, V., Dixit, A. R., & Qadri, M. A. (2015). Impact of Lean Practices on Performance Measures in Context to Indian Machine Tool Industry. In Journal of Manufacturing Technology Management. https://doi.org/10.1108/jmtm-11-2014-0118
- Singh, R., & Modgil, S. (2020). Assessment of Lean Supply Chain Practices in Indian Automotive Industry. Global Business Review, 24(1), 68–105. https://doi.org/10.1177/0972150919890234
- Sinkamba, F., Matindana, J., & Mgwatu, M. I. (2023). Towards Lean Manufacturing in Developing Countries: Research Gaps and Directions in Tanzania. Tanzania Journal of Engineering and Technology, 42(1), 26–45. https://doi.org/10.52339/tjet.v42i1.886
- Solaimani, S., Veen, J. v. d., Sobek, D. K., Gülyaz, E., & Venugopal, V. (2019). On the Application of Lean Principles and Practices to Innovation Management. The TQM Journal, 31(6), 1064–1092. https://doi.org/10.1108/tqm-12-2018-0208
- Stone, K. B. (2012). Four Decades of Lean: A Systematic Literature Review. In International Journal of Lean Six Sigma. https://doi.org/10.1108/20401461211243702
- Torres, L. F., Rampasso, I. S., Quelhas, O. L. G., Filho, W. L., Martins, V. W. B., & Anholon, R. (2021). Difficulties Observed During Lean Tools Training: Insights for Leaders. In Revista De Administração Da Ufsm. https://doi.org/10.5902/1983465963914
- Tortorella, G. L., Dun, D. H. v., & Almeida, A. G. d. (2019). Leadership Behaviors During Lean Healthcare Implementation: A Review and Longitudinal Study. Journal of
- Manufacturing Technology Management, 31(1), 193–215. https://doi.org/10.1108/jmtm-02-2019-0070
- Trentin, L., & Tontini, G. (2022). The Influence of People Management Practices on a Culture of Lean Manufacturing. Revista De Administração Da Ufsm, 15(3), 512–540. https://doi.org/10.5902/1983465965469
- Udokporo, C. K., Anosike, A., Lim, M. K., Nadeem, S. P., Garza-Reyes, J. A., & Ogbuka, C. P. (2020). Impact of Lean, Agile and Green (LAG) on Business Competitiveness: An Empirical Study of Fast Moving Consumer Goods Businesses. Resources Conservation and Recycling, 156, 104714. https://doi.org/10.1016/j.resconrec.2020.104714
- Utami, E. Y., Rijal, S., & Iwang, B. (2023). Application of Lean Manufacturing Principles in Increasing Factory Productivity. In West Science Journal Economic and Entrepreneurship. https://doi.org/10.58812/wsjee.v1i10.290
- Valente, C. M., Sousa, P. S. A., & Moreira, M. R. A. (2020). Assessment of the Lean effect on business performance: the case of manufacturing SMEs. Journal of Manufacturing Technology Management, 31(3), 501–523. https://doi.org/10.1108/JMTM-04-20190137
- Wolf, B. M. (1991). The Machine That Changed the World. Journal of International Business Studies, 22(3), 533–538. https://doi.org/10.1057/jibs.1991.40

- Womack, J. P., & Jones, D. T. (1997). Lean Thinking—Banish Waste and Create Wealth in Your Corporation. Journal of the Operational Research Society, 48(11), 1148–1148. https://doi.org/10.1057/palgrave.jors.2600967
- Worley, J. M., & Doolen, T. (2006). The Role of Communication and Management Support in a Lean Manufacturing Implementation. In Management Decision. https://doi.org/10.1108/00251740610650210
- Yang, C., Yeh, T., & Yang, K. (2011). The Implementation of Technical Practices and Human Factors of the Toyota Production System in Different Industries. Human Factors and Ergonomics in Manufacturing & Service Industries, 22(6), 541–555. https://doi.org/10.1002/hfm.20I. (2006). *Avaliação das aprendizagens: o processo de regulação através do feedback* [Dissertação de Mestrado, Universidade de Lisboa]. Repositório da Universidade de Lisboa. https://repositorio.ul.pt/jspui/handle/10451/43571
- Cobb, P. (1999). Individual and collective mathematical learning: The case of statistical data analysis. *Mathematical Thinking and Learning, 1*, 5-44. https://doi.org/10.1207/s15327833mtl0101_1
- English, L. D., & Halford, G. S. (1995). *Mathematics education: Models and processes*. Lawrence Erlbaum.
- Ponte, J. P., & Matos, J. F. (1992). Cognitive processes and social interaction in mathematical investigations. In J. P. Ponte, J. F. Matos, J. M. Matos, & D. Fernandes (Eds.), *Mathematical problem solving and new information technologies: Research in contexts of practice* (pp. 239-254). Springer.
- Sandoval, W. A. (2004). Developing learning theory by refining conjectures embodied in educational designs. *Educational Psychologist*, *39*(4), 213-223. https://doi.org/10.1207/s15326985ep3904_3
- Santos, R. (2011). *Future elementary and kindergarten teachers' knowledge of statistics and of its didactics*. [Apresentação de póster]. Seven Congress of the European Society for Research in Mathematics Education. Rzeszów, Polónia. Repositório Científico do Instituto Politécnico de Santarém. http://hdl.handle.net/10400.15/810
- Wittmann, E. C. (1998). Mathematics Education as a 'Design Science'. In A. Sierpinska, & J. Kilpatrick (Eds.), *Mathematics education as a research domain: A search for identity* (pp. 87-103). Kluwer.

7 - Work-Life Balance in Health Professionals in Portugal

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Abstract: In today's society full of responsibilities and commitments, seeking a balanced life is becoming increasingly important. In this sense, the concept of Work-Life Balance (WLB), which means the balance between personal and professional life, has been considered a predominant issue both in the workplace and at home, and it is extremely important to understand which factors can influence this balance. This project aims to understand which and how these factors influence the WLB of health professionals. Health professionals were chosen for the study since these professionals, due to the nature of the work, are more affected by this imbalance. To this end, a qualitative study was carried out based on ten interviews conducted with health professionals working in health institutions in Portugal. The results obtained were in line with what was identified in the literature review, namely that health professionals have greater difficulty maintaining the WLB. The fact that they have schedules that force them to work on festive days and shift work, as well as the fact that they often must change personal plans to the detriment of work, are the main factors that harm the WLB of these professionals. Also, the fact that they deal with the health status of their patients, many of them in precarious health conditions, affects these professionals psychologically, which enhances the emergence of individual problems that can even drive problems at the family and social levels.

Keywords: Work-Life Balance (WLB), Healthcare Professionals, Psychological Well-Being, Workload, Time Management, Occupational Health

Resumo: Na sociedade atual, repleta de responsabilidades e compromissos, a procura de uma vida equilibrada é cada vez mais importante. Neste sentido, o conceito de Work-Life Balance (WLB), que significa o equilíbrio entre a vida pessoal e profissional, tem sido considerado uma questão preponderante tanto no local de trabalho como em casa, sendo de extrema importância perceber quais os factores que podem influenciar este equilíbrio. Este projeto visa compreender quais e como estes factores influenciam o WLB dos profissionais de saúde. Os profissionais de saúde foram escolhidos para o estudo uma vez que estes profissionais, devido à natureza do trabalho, são mais afectados por este desequilíbrio. Para o efeito, foi realizado um estudo qualitativo com base em dez entrevistas realizadas a profissionais de saúde que trabalham em instituições de saúde

em Portugal. Os resultados obtidos vão ao encontro do que foi identificado na revisão da literatura, ou seja, que os profissionais de saúde têm maior dificuldade em manter o WLB. O facto de terem horários que os obrigam a trabalhar em dias festivos e por turnos, bem como o facto de muitas vezes terem de alterar os seus planos pessoais em detrimento do trabalho, são os principais factores que prejudicam o WLB destes profissionais. Também o facto de lidarem com o estado de saúde dos seus utentes, muitos deles em condições de saúde precárias, afecta psicologicamente estes profissionais, o que potencia o aparecimento de problemas individuais que podem, inclusivamente, conduzir a problemas a nível familiar e social.

Keywords: Equilíbrio Trabalho Vida (WLB), Profissionais de Saúde, Bem-estar Psicológico, Carga de Trabalho, Gestão do Tempo, Saúde Ocupacional

Introduction

In the contemporary work environment, the significance of Work-Life Balance (WLB) has become increasingly apparent, influencing employee well-being, productivity, and job satisfaction. WLB is the equilibrium between professional responsibilities and personal life, enabling individuals to fulfill their work roles while maintaining a satisfactory quality of life outside the workplace. For instance, studies have shown that healthcare professionals, including doctors and nurses, often experience significant stress due to demanding work schedules and insufficient support, which can exacerbate issues related to burnout and job dissatisfaction (Egreja & Melo, 2023c; Hussenoeder, Bodendieck, Jung, Conrad, & Riedel-Heller, 2021; Rodrigues Filho & Junges, 2018). The phenomenon of burnout, characterized by emotional exhaustion and depersonalization, is particularly prevalent among medical professionals, highlighting the urgent need for effective WLB strategies to mitigate these effects (Thimmapuram et al., 2019)

Moreover, recognizing WLB as a vital component of organizational health has led to various policies to improve employee satisfaction and performance. Organizations implementing WLB initiatives, such as flexible working hours and supportive management practices, tend to see enhanced employee engagement and reduced turnover rates (O. Igbinomwanhia et al., 2012). in this way, integrating flexible work arrangements can protect against these adverse outcomes, allowing individuals to manage their personal and professional responsibilities better (Thimmapuram et al., 2019; Witzig & Smith, 2019).

Digital technologies have further complicated the traditional boundaries between work and personal life, enabling constant connectivity that blurs the lines defining work hours. While these technologies can enhance flexibility, they also introduce challenges such as increased intrusions into personal time (Wang et al., 2022). Research indicates that using information and communication technologies outside of regular working hours can lead to work-family conflict, exacerbating employees' feelings of overload and stress (Wang et al., 2022). This is particularly pertinent in the healthcare sector, where job demands often spill over into personal life, leading to a cycle of stress and burnout (Chen et al., 2018).

In recent years, the healthcare sector in Portugal has encountered escalating pressures, primarily due to resource limitations, understaffing, and the additional strain imposed by the COVID-19 pandemic. These challenges have intensified the already strenuous conditions under which healthcare professionals operate, making the study of work-life balance (WLB) within this group both timely and critical.

The COVID-19 pandemic has significantly impacted healthcare professionals' mental health, leading to increased levels of burnout and stress. Research indicates that healthcare workers have faced unexpected traumatic experiences during the pandemic (Braquehais et al., 2020). The psychological toll of these experiences has been profound, with many healthcare professionals reporting exhaustion and decreased professional

efficacy (Hussenoeder et al., 2021). This context highlights the urgent need to explore WLB as healthcare professionals strive to maintain their well-being.

Research into work-life balance (WLB) among healthcare professionals in Portugal is a topic of growing importance, especially considering the direct impact that their well-being has on patient outcomes. Existing literature points to several factors influencing healthcare professionals' ability to balance their work and personal responsibilities, highlighting the need for targeted interventions to improve this situation.

One of the main factors identified is the relationship between precarious working conditions and the quality of life of health professionals. Sánchez et al. (2018), discuss how strenuous working hours and the multiplicity of activities contribute to professional burnout and Burnout Syndrome, which negatively affects quality of life. In addition, the research by (Egreja & Melo, 2023a) provides a sociological perspective on how work characteristics, such as working hours and rhythms, impact time management and work-life balance. This study is particularly relevant to the Portuguese context, as it reveals how the pressure to perform in highly demanding professions, such as nursing, can exacerbate conflicts between work and personal life.

The analysis by Bäck-Wiklund et al. (2017a) on quality of life in healthcare organizations in Europe, including Portugal, reinforces the idea that a healthy working environment is fundamental to the well-being of healthcare professionals. Another important aspect to consider is the use of communication and information technologies at work, which can affect WLB. Hai-xia et al. (2022), explore how communication technologies outside working hours can increase work-family conflict, suggesting that properly managing these technologies is crucial to improving work-life balance. In addition, research by Chen et al. (2018b), highlights the importance of a work environment that offers emotional and material support for doctors to mitigate burnout and improve WLB.

Implementing organizational policies that promote work-life balance (WLB) is therefore essential. The literature suggests a more holistic and integrated approach to WLB, which considers the demands of work and professionals' personal and family needs. This study on WLB among healthcare professionals in Portugal seeks to identify and address the working conditions that influence WLB and explore the impact of communication technologies on creating organizational policies that promote a healthy working environment. This will not only benefit healthcare professionals but will also positively impact the quality of patient care.

This qualitative study in the northern region of Portugal, aims to explore healthcare professionals' perceptions and experiences of work-life balance (WLB). Specifically, the study aims to identify the main factors influencing work-life balance, analyzing internal and external factors. In addition, it seeks to understand the challenges faced by these professionals, including those related to working hours, work demands and emotional stressors, and to assess how work-life balance, or the lack of it, impacts professional performance, job satisfaction, mental health and personal life of healthcare professionals.

Literature Review

Background Theories - Work-Life Balance

The difficulty of balancing work and personal life (WLB) is a topic that has gained prominence in recent decades, especially in the context of the social and economic changes after the Second World War. WLB emerged as a response to conflicts between work and family, particularly as women entered the labor market in masse. In patriarchal societies, gender inequality results in a greater burden of responsibilities for women, making it difficult for them to maintain a professional career and affecting their well-being (Canabarro & Salvagni, 2015; Hussenoeder, Bodendieck, Jung, Conrad, & Riedel-Heller, 2021), discuss how women continue to take on most of the family responsibilities, which

creates instability in their personal and professional lives. Although multiple roles can bring satisfaction, they often cause stress and conflict (Schwartz et al., 2018).

With the growing presence of women in the labor market, policies have emerged to improve WLB and promote workers' well-being (Schwartz et al., 2018) WLB is seen as an organizational effort to reduce stress and improve work-life harmony, and it is crucial for well-being and productivity. Igbinomwanhia et al. (2012), emphasize the importance of balancing professional and personal demands to improve employee satisfaction and motivation. Kelliher et al. (2018), also suggest that adequate WLB can increase productivity and job satisfaction.

The advance of communication technologies has brought new challenges for the WLB, blurring the boundaries between work and personal life. Digitalization and the home office increase flexibility but also extend working hours and make it harder to separate personal and professional life (Hai-xia et al., 2022; Metselaar et al., 2022). The European Commission has emphasized the importance of improving the structural conditions that affect WLB in countries (Egreja & Melo, 2023). Constant connectivity results in challenges such as ‘technostress’ and ‘Digital Life Balance’ which affect individual well-being and reinforce the need to balance the use of technology (Braquehais et al., 2020).

In Portugal, the negative impact of work on family life is evident, especially in high-risk professions such as healthcare, where burnout and work intensity jeopardize WLB and patient care (Bäck-Wiklund et al., 2017; Chen et al., 2018) .The imbalance between professional and personal life affects health, generating stress, fatigue and exhaustion. This jeopardizes productivity and increases absenteeism and employee turnover. Investing in policies that promote WLB is essential for creating healthier and more efficient work environments, addressing both the internal challenges faced by employees and the external challenges imposed by work dynamics (Santos et al., 2011).

Work-Life Balance Influencing Factors

Internal Factors

The internal factors that influence work-life balance (WLB) are key to understanding how healthcare professionals can manage their responsibilities. These factors include personal values, attitudes, time management skills, and energy levels, crucial in achieving and maintaining a healthy balance between professional responsibilities and personal needs.

Work Experience

In the health field, the demands inherent to work, such as irregular shifts and overtime, significantly impact professionals' physical and mental health. According to (Sánchez et al., 2018), these working conditions not only deteriorate physical health but also affect mental health, leading to increased stress and dissatisfaction. The research by Hussenoeder, Bodendieck, Jung, Conrad, & Riedel-Heller (2021), confirms that working conditions directly impact physicians' quality of life, job satisfaction, and workload, resulting in a stress cycle that compromises WLB.

Healthcare workers often face a high risk of burnout, with high levels of burnout and a susceptibility to depressive symptoms. Chen et al. (2018) highlights that intense workload and scheduling issues make it difficult to meet patients' needs, compromising work-life balance. J. Thimmapuram et al. (2019)Also note that burnout and2019)

Alsofaction with WLB among physicians in the United States has increased over the years, reflecting a worrying trend that may extend to other contexts, such as Portuguese.

Furthermore, research by Schwartz et al. (2018) suggests that time demands and inadequate support systems can lead to detrimental consequences such as immune system dysfunction and decreased life expectancy. The combination of occupational stress and the pressure to meet patients' needs can result in a vicious cycle that affects professionals and the quality of medical care.

Therefore, internal factors such as work experience and working conditions are crucial in healthcare professionals' ability to maintain a healthy WLB. Implementing policies that address these issues is essential to improving the well-being of workers and, consequently, the quality of patient care.

Time Management

Time management is crucial for healthcare professionals, directly influencing work-life balance (WLB). Effectively managing time can be the difference between a sustainable career and burnout. Professionals with insufficient time management skills often face long working days and difficulty disconnecting from work responsibilities, negatively affecting their personal lives and well-being (Filho & Junges, 2018)

Efficient time management involves planning the activities to be carried out, defining how and when they will be executed, and establishing priorities to achieve the defined goals (Roberts, 2007). These conflicts reflect how the demands of each role and individual characteristics can increase the conflict between the various facets of a professional's life (Bäck-Wiklund et al., 2017).

Thus, understanding and effectively applying time management not only facilitates the fulfillment of professional tasks but also helps maintain a healthy balance between personal and professional responsibilities, which is essential for the well-being of health professionals (Kelliher et al., 2018; McCarthy et al., 2010). In addition, the research of O. R. Igbinomwanhia et al. (2012), indicates that work-family conflict is correlated with burnout and that coping styles can mediate this relationship. Therefore, time management is a practical skill influencing healthcare professionals' mental health and job satisfaction.

Physical and Mental Health

The physical and mental health of healthcare professionals is a decisive internal factor in the work-life balance (Silva & Gomes, 2009). Health problems, whether physical or psychological, can exacerbate the work-life imbalance, as they directly influence the amount of energy available for work and activities outside the work environment. In addition, poor health can reduce work effectiveness, increase the number of sick days, and negatively affect the professional's quality of life (Sánchez et al., 2018).

The literature suggests that health professionals often face working conditions that can lead to burnout, characterized by emotional exhaustion, depersonalization, and a reduced sense of personal fulfillment (Shaikh & Dange, 2017). This burnout not only harms mental health but can also have physical implications. Additionally, constant interaction with patients and pressure to maintain high standards of care can result in chronic stress, which in turn can trigger or aggravate conditions such as depression and anxiety. Health professionals must have access to resources that promote mental and physical well-being,

including psychological support programs, opportunities for regular physical activity, and effective strategies for stress management (Roberts et al., 2014).

Studies indicate that the lack of organizational support and the emotional demands of the job can intensify the risk of burnout among physicians and nurses, leading to a decrease in the quality of patient care (Bäck-Wiklund et al., 2017). Therefore, the promotion of a healthy work environment and the implementation of policies that favor mental health are essential to ensure that health professionals can perform their duties effectively and balance (Igbinomwanhia et al., 2012).

Motivations and Personal Values

Personal motivations and values are internal factors that are crucial in how healthcare professionals manage work-life balance (WLB). These factors, which include career aspirations, commitment to one's profession, and the pursuit of personal fulfillment, can determine the amount of energy and time an individual is willing to devote to work at the expense of personal activities (Silva & Gomes, 2009)

For example, professionals with a strong dedication to their careers may prioritize professional advancement and excellence at work, often at the expense of personal time and leisure. This commitment can lead to increased working hours and a greater propensity for burnout, as discussed in the literature (Chen et al., 2018). On the other hand, professionals who value a healthy work-life balance can set stricter limits on working hours, which can help maintain better mental and physical health (McCarthy et al., 2010). Several factors are essential to the motivation and satisfaction of professionals. Among them are position in the category, length of service, financial compensation, opportunities for advancement, adequate working conditions, social context, shortage of professionals and high turnover, personal fulfillment, intra-team interactions, possibilities for professional progression, autonomy at work, conflicts between personal and professional values, and recognition by managers (Roberts et al., 2014).

Investing in hygiene, safety, and adequate equipment can prevent dissatisfaction. In settings such as emergency hospitals, where professionals deal with extreme pressures and even aggression by patients and companions in the face of structural and organizational difficulties, adequate physical conditions are crucial to maintaining the motivation and well-being of professionals (Shaikh & Dange, 2017). The literature also suggests that the lack of organizational support and the emotional demands of the job can intensify the risk of burnout among physicians and nurses, leading to a decrease in the quality of patient care. Therefore, promoting a healthy work environment and implementing policies that favor mental health is essential to ensure that health professionals can perform their duties effectively and sustainably (Schwartz et al., 2018)

Emotional Intelligence

Emotional intelligence is crucial for healthcare professionals, affecting job performance, personal well-being, and family relationships. This skill, which encompasses the ability to understand and manage one's emotions and those of others, is fundamental to dealing with the pressures and challenges of the healthcare environment, which often bring stress and require emotional resilience (Gomes & Maranhão, 2020).

Emotional lucidity is closely linked to a greater degree of personal fulfillment regarding health. Emotionally lucid health professionals recognize whether their emotional state is positive or negative and have a deeper understanding of the emotions they experience, including how those emotions manifest their origins and their consequences.

Therefore, it is crucial to emphasize emotional education to mitigate the possible deterioration of doctor-patient relationships. Doctors need to be able to identify patients' emotions and feelings and control them appropriately. If they achieve this, they can guide patients' emotions and, more importantly, help them deal with them constructively rather than avoiding them (Gomes & Maranhão, 2020).

In the relationship between doctor and patient, although the roles of each are distinct and defined, emotions always constitute a significant part of this interaction. The doctor's emotions impact both the patient and the care provided to him. Similarly, the patient's emotions can affect the healthcare professional involved (Silva & Gomes, 2009). Professionals with high emotional intelligence tend to have better communication and empathy skills, facilitating more effective and compassionate interactions with patients and colleagues. In addition, these emotional skills allow professionals to maintain emotional control in high-tension situations, preventing professional burnout and promoting mental health (Witzig & Smith, 2019).

The literature also suggests that the lack of organizational support and the emotional demands of the job may intensify the risk of burnout among physicians and nurses, leading to a decrease in the quality of patient care (Greenhaus et al., 2003) Therefore, the promotion of a healthy work environment and the implementation of policies that favor mental health are essential to ensure that health professionals can perform their duties in an effective and balanced manner (Egreja & Melo, 2023).

External Factors

A complex interplay of external factors profoundly influences the WLB of healthcare professionals. Family, friends, and education shape these professionals' priorities and emotional support. At the same time, the work environment, including relationships with colleagues and management, directly impacts stress and job satisfaction. In addition, technological advances such as teleconsultations have transformed the work dynamics of doctors, provided flexibility and introduced challenges related to time management and patient interaction. Understanding these influences is crucial to promoting a healthy work-life balance in this demanding profession.

Interpersonal Relationships

Interpersonal relationships play a crucial role in work-life balance (WLB). Work intensity and increased working hours are directly related to isolation from family and leisure activities, which can significantly impact the quality of personal relationships Gragnano et al. (2020)Health professionals often consider work a top priority, which can lead to distancing from spouses and partners and decreasing time dedicated to family (SA et al., 2023). This intense commitment to work challenges maintaining a healthy balance between professional and personal needs.

Parenting introduces an additional layer of complexity into this balance. Being a parent is a transformative experience that requires continuous adjustments in work-life balance for both genders. The equitable involvement of both parents is critical not only for the child's healthy development but also for the personal and professional satisfaction of the parents. As children grow older, parenting responsibilities evolve, and collaboration between parents becomes essential to maintain an effective balance between family and work commitments. Careful management of these dynamics is necessary to promote a satisfactory WLB, allowing health professionals to maintain both career fulfillment and family harmony (SA et al., 2023).

The quality of the interpersonal relationships of health professionals influences the balance between personal and professional life. The ability to effectively manage work responsibilities and individual and family needs is crucial to avoiding isolation and promoting a healthy family environment (Shikhare et al., 2022). In addition, the active and equitable involvement of parents in the growth and development of their children is vital to sustain this balance. Thus, healthcare organizations should consider policies and practices that support professionals in managing their workloads without compromising their responsibilities and family well-being. Taking a more holistic and integrated approach to WLB can lead to more effective job performance and greater personal satisfaction, enhancing the overall well-being of healthcare professionals and their families.

Relations with Work Colleagues

Interpersonal relationships in the workplace, especially between colleagues and managers, play a crucial role in work-life balance (WLB). Work intensity and increased working hours are directly related to isolation from family and leisure activities, which can significantly impact the quality of personal relationships (Steele, 2019) Healthcare providers, in particular, often consider work a top priority, which can lead to distancing from spouses and partners and decreased time spent on family (Steele, 2019). This intense commitment to work challenges maintaining a healthy balance between professional and personal needs.

In addition, factors such as poor communication between team members, difficulty in changing shifts, and high staff turnover can complicate maintaining stable relationships and understanding patients' needs, leading to stressful situations and confrontations in the workplace, which exacerbate the work-life balance (Smith et al., 2013). In this context, it is imperative that health organizations, both public and private, implement measures that promote the proper functioning of their professionals and the maintenance of healthy relationships, both internally and with the head. Strategies that align with World Health Organization standards, government requirements, and patient needs are essential to sustaining WLB and ensuring the effectiveness of health services.

Thus, it is understandable that health professionals tend to demonstrate a greater commitment to WLB when it is culturally valued within the organization and actively supported by management and co-workers (Shiiya, 2018). Thus, promoting a work environment where WLB is a priority can result in significant improvements for both professionals and the quality of care provided.

Digital Technologies

It is essential to consider the impact of technological advancement on medicine and its influence on work-life balance (WLB). The growing involvement of technologies in this field has significantly transformed the dynamics and demands of medical work. Several studies indicate that technologies such as Electronic Health Records and computerized systems for entering medical requests have contributed to factors associated with physician burnout. These technologies can increase administrative burden, create inefficiencies, reduce productivity, and compromise the doctor-patient relationship, all of which negatively influence WLB (Witzig & Smith, 2019).

On the other hand, flexible working hours and location play a crucial role in the work-life balance of healthcare providers, directly impacting their well-being. Considering the significant impact of these new technologies on health professionals' routines, it is pertinent to address the concept of telemedicine. In the context of technological changes in healthcare, telemedicine is defined as a system of care delivery that uses

telecommunications and computer technologies to replace, in different combinations, face-to-face interactions between patients, doctors, and other health professionals (Ferreira, 2018).

Despite the ease it offers in communication between patients and health institutions/health professionals, these technologies can hurt the lives of health professionals since they feel that these technologies destroy the barriers between work and personal life, often taking work into their personal lives. For example, the ease of reading work emails from anywhere, as well as always being aware of the patient's status or even knowing that there is a problem with the workplace, hinders the ability of health professionals to relax and thus maintain a good WLB (Witzig & Smith, 2019).

Teleconsultation impacts the management that health professionals make of their work. The main beneficiaries of teleconsultations are patients, as people living in remote regions have difficulties in accessing healthcare or transporting to hospitals and health centres, thus facilitating access to these services (Ferreira, 2018). On the other hand, health professionals sometimes find it difficult to be absent from their workplaces for face-to-face consultations. Teleconsultations thus offer the advantage of avoiding travel and time wasted in transport and waiting rooms, hence reducing associated costs for both parties, such as travel expenses and wage losses (Ferreira, 2018).

In this way, it is crucial to recognize and evaluate the external factors that influence the work-life balance of healthcare professionals. By understanding and analyzing these factors, we can implement effective strategies to promote a healthy and sustainable work environment for healthcare providers.

Effets

After identifying the factors that influence work-life balance (WLB) and how each of these factors affects personal well-being, the consequences of work-life imbalance will also be examined, emphasizing impacts such as stress and burnout and on the health and well-being of health professionals. These challenges represent a growing concern due to their potential impact on the quality of life of individuals and the effectiveness of the services provided. Contemporary strategies to address these adverse effects will be discussed to promote a healthy work-life balance for healthcare professionals.

The literature indicates that burnout among physicians, especially those working in high-pressure environments, is a growing concern. This reflects the need for interventions that address both the individual and organizational factors that contribute to this condition (Egreja & Melo, 2023b). Additionally, poor communication and lack of organizational support are often cited as factors that exacerbate stress and burnout, negatively impacting WLB (Braquehais et al., 2020).

Contemporary strategies to mitigate these effects include implementing flexible work policies, wellness programs, and psychological support and promoting an organizational culture that values work-life balance (Chen et al., 2018b). Telemedicine, for example, has been a useful tool for improving access to healthcare, but it also presents challenges that can affect practitioners' WLB (Schwartz et al., 2018). Therefore, healthcare organizations must adopt integrated approaches to support their professionals in managing stress and promoting a healthy work environment.

Work-life imbalance has a significant impact on well-being. The main factor noticed by health professionals is burnout, which has physical and psychological consequences.

Burnout is understood by. Roberts et al. (2014) as a work-related condition characterized by emotional exhaustion, depersonalization, and lack of personal fulfillment. To complement, Schwartz et al. (2018) Burnout describes burnout as a state of physical, emotional, and mental exhaustion that is often caused by long periods of chronic stress, usually related to the work environment, which can even cause heart problems, as well as depression, anxiety disorders, and sleep disorders. The impact caused by burnout is notorious, especially in health professionals, who, due to the nature of the work, are more likely to suffer from depression and anxiety disorders. A higher risk of suicide is also more often associated with health professionals, leading them to have behaviors that are harmful to the person themselves, such as skipping meals, changing personal plans due to work or even the abuse of toxic substances, which negatively impacts emotional well-being (Schwartz et al., 2018).

This prolonged exposure to stress is thus the main cause of emotional exhaustion and, eventually, burnout, manifesting through the loss of enthusiasm for work and even a sense of defeatism. Emotional exhaustion, depersonalization (negative attitudes towards patients) and professional dissatisfaction are also specific symptoms caused by the emotional and physical discomfort felt by health professionals resulting from poor management of personal and professional life (Filho & Junges, 2018).

Contemporary strategies to address these adverse effects include implementing flexible work policies, wellness programs, and psychological support, as well as fostering an organizational culture that values work-life balance (Igbinomwanhia et al., 2012). Telemedicine, for example, has been a useful tool for improving access to healthcare, but it also presents challenges that can affect professionals' work-life balance (Ferreira, 2018). Therefore, healthcare organizations must adopt integrated approaches to support their professionals in managing stress and promoting a healthy work environment.

Personal malaise caused by conflicts between professional and personal life has consequences in both. From a professional point of view, medical burnout is directly associated with a reduction in professional effort. Santos et al. (2011) state that, due to poor management of work-life balance (WLB) and related stress, health professionals have decreased their production capacity, increasing absenteeism, becoming ill more frequently and, in general, being more tired at work. This lack of dedication to work leads to an increased risk of patient safety incidents, lower quality of patient care and reduced overall patient satisfaction. In general, all these constraints lead health professionals to change not only in behavior, as mentioned, but also in personal well-being.

These professionals are more anxious and depressed, with less attention, unmotivated, and with low personal fulfillment due to the high stress of their professional activities (Souza et al., 2019). That said, we can also consider that the discontent of society in general with doctors and health services is also a consequence of the low quality of care provided to users of these same health services (Borges et al., 2023). From a personal point of view, this impact can be felt in terms of family relationships and self-being.

At the family level, the degree of conflict depends on several factors, such as the number of children, the age of the youngest child, the nature of the family system, the career gap of the spouse, the support of the spouse and the sharing of responsibilities. When poorly managed, all these factors contribute to increased health problems and even decreased work performance (Bäck-Wiklund et al., 2017). On a personal level, the adverse impact of family issues on work and personal life can be devastating. Usually, the influence of personal life is stronger in the conflict between professional and personal life. However, involvement at work also increases individual satisfaction, leading to increased productivity, which can be detrimental to WLB. Poor management of these aspects of life

causes symptoms such as exhaustion, fatigue, headaches, gastrointestinal disorders, insomnia, irritability, anxiety, rigidity and disinterest, showing the result of this poor management of WLB (Kelliher et al., 2018).

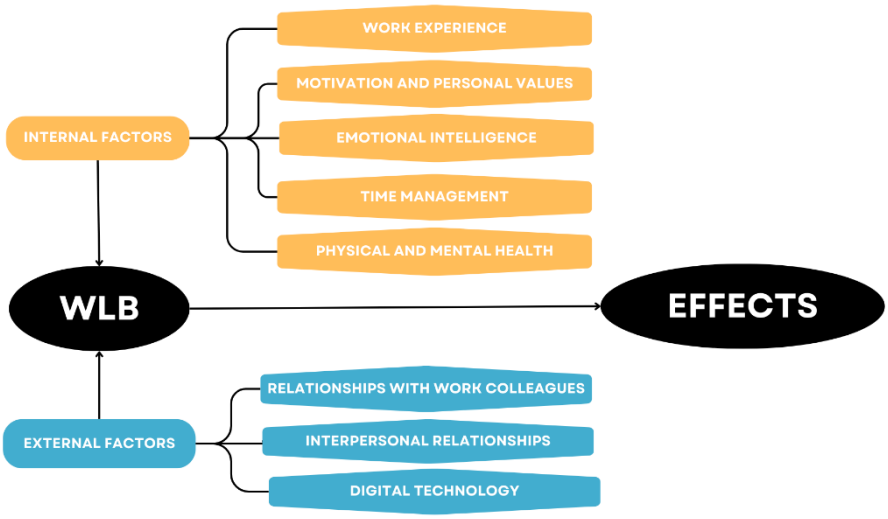
Structural Research Model

The research model presented in Figure 1 seeks to explore the work-life balance (WLB) among health professionals in Portugal, considering challenging working conditions, such as overload and scarcity of resources. The research adopts a qualitative approach, using semi-structured interviews with health professionals in the northern region of Portugal to identify the factors that influence WLB. These factors include internal aspects such as time management, physical and mental health, personal motivations, and emotional intelligence, as well as external factors such as interpersonal relationships and the impact of digital technologies on the workplace. The study aims to understand how these elements affect professionals' well-being, job performance, job satisfaction, and personal life.

The use of semi-structured interviews is an effective approach to collect qualitative data, allowing for in-depth exploration of participants' experiences (Oliveira et al., 2023). Additionally, proper sampling is crucial to ensure that the data collected is representative and relevant to the healthcare context (Campos & Saidel, 2022). The literature on work-family conflicts suggests that these conflicts have a significant impact on the quality of life and well-being of health workers, reflecting the need for strategies that promote a healthy balance (Souza et al., 2019b).

Figure 1

Search Model



Sample

This case study presents the results of interviews conducted with ten health professionals working in national hospitals/health centers, of which 2 are male and 8 female. These professionals were chosen because of their different perspectives; as we see below, they all have different positions in different places and specialties. The family

panorama was also considered in the choice of participants since different family aspects (such as being single, being married or being married with children) provide different inputs and perspectives.

Tabela 1

Sample characterization

	Gender	Age	Profession	Marital Status	Nº of Children
1	F	36	Doctor	Single	0
2	F	26	Nurse	Married	0
3	F	33	Doctor	Single	0
4	F	28	Doctor	Married	0
5	M	37	Nurse	Married	1
6	F	31	Nurse	Married	0
7	M	28	Doctor	Single	0
8	F	33	Doctor	Married	0
9	F	28	Nurse	Single	0
10	F	26	Doctor	Single	0

The case study approach used the qualitative method, specifically semi-structured interviews with health professionals who work in institutions in the Northern region of Portugal. Semi-structured interviews combine a pre-defined set of questions with new open-ended questions that arise during the interaction, allowing the interviewer greater control over what they want to know and enabling spontaneous reflection by the interviewee. This method is suitable for study as it allows you to compare answers to predefined questions, avoiding completely unstructured interviews and providing a deeper understanding of work-life balance.

The qualitative research process values the description and explanation of the phenomenon studied in its natural context, seeking to understand how the balance between personal and professional life affects the lives of health professionals. This healthcare approach often identifies respondents' feelings, opinions, and perceptions on work-life balance (WLB). The interviews, based on a model adapted from Picton (2021), were conducted with 10 health professionals working in high-pressure environments, with questions focused on the influential internal and external factors and the consequences and solutions found to improve WLB.

Discussion of the results

Internal Factors

Work Experience

Healthcare professionals highlighted that work-life balance (WLB) is essential for well-being and that good relationships with colleagues and a collaborative work environment are key factors that help maintain this balance. Most respondents agreed that the ability to adjust schedules and swap shifts with colleagues facilitates WLB, as exemplified by responses such as those of respondents 3 and 7, who mentioned the importance of effective communication and mutual support in the workplace.

On the other hand, the main factors that impair WLB include irregular schedules, working night shifts, weekends and holidays, and the emotional pressure of dealing with patient's health, as reported by interviewees 1 and 10. Additionally, a lack of human resources and increased responsibilities were cited as significant challenges hindering WLB, making it more difficult to separate work from personal life and negatively impacting the mental health and well-being of professionals.

Motivation and Personal Values

Personality and personal values, such as career aspirations, commitment to the profession, and pursuit of personal fulfillment, are key factors that influence how healthcare professionals manage work-life balance. The respondents' responses reinforce this idea, highlighting that everyone’s mindset and personality affect the perception of balance. Interviewee 3 mentions that perfectionists, people with great dedication to work, tend not to perceive the impact on their social life balance as much. In contrast, interviewee 6 points out that some people are naturally more organized and resilient, dealing better with work stress. Interviewee 4 adds that people who are more concerned have greater difficulty in separating their professional and personal lives.

Respondents mentioned various strategies to "disconnect" from work and maintain well-defined aspects of life, such as regular leisure activities and physical exercise, reflecting with colleagues on difficult cases, and participating in social activities with family and friends. However, some, such as interviewees 1 and 8, reported difficulty making this mental separation. Reflection on difficult cases is highlighted by Interviewee 1 as a strategy to balance dedication without letting work consume personal time. Interviewee 7 emphasizes that physical activity and social gatherings are crucial to maintaining a good WLB. These strategies, in line with the literature review, show that self-care and time management are essential for maintaining a healthy work-life balance.

Emotional Intelligence

Personal well-being and family relationships are affected by work performance and conditions, and in this sense, it is important to keep emotional lucidity in mind. Health professionals do a very exhausting type of work on an emotional level, and the deterioration of their emotional state can influence the relationship between the health professional and their patient and affect their treatment. That said, it is important to understand health professionals' methods to help maintain this mental well-being.

All these strategies are addressed in the literature review, where we confirm that the practice of physical exercise, the regular use of vacations, and the maintenance of good personal and professional relationships are then, according to (J. Thimmapuram et al., 2019). Moreover, the interviewees confirmed the main strategies for maintaining a good WLB. Interviewee 1 considers that the main method to help maintain balance in personal life is the use of vacations over time, stating, "Vacation periods distributed throughout the year, without professional commitments in the middle of vacations, short breaks on

strategic dates in the family context." On the other hand, interviewees 4 and 7 state that physical exercise and leisure time are the main methods to maintain WLB, answering questions regarding ways to maintain WLB and mental health respectively "Playing sports. Socializing with family and friends." and "Physical exercise and communication with friends outside the area." element. Interviewee 9 also adds that what helps him to maintain this balance is mainly the "Not taking the problems of work home and vice versa!" element. Interviewee 5 also states, "Routines, being organized, printing a good work methodology, defining priorities...," thus corroborating the strategies addressed, in this case, personal organization, the definition of priorities and maintenance of routines.

Some more strategies to maintain mental health and WLB that had not been addressed in the literature review were noted, namely the practice of coping, corroborated by interviewee 5; interviewee 7 also states that the ability to manage one's schedule is the main factor that helps to maintain one's mental well-being, stating "I chose an area in which I can manage my schedule, and that is fundamental."

Time Management

Effective time management is crucial for healthcare professionals, as it can be the difference between a sustainable career and burnout. Establishing priorities and planning activities are essential strategies to achieve good time management and thus maintain work-life balance (WLB). Interviewees 3 and 4 highlight using agendas to organize tasks, while Interviewee 5 emphasizes defining priorities and strategies. However, some professionals, such as interviewees 2 and 8, reported difficulties managing time, often sacrificing personal time to meet professional demands.

When asked about the evolution of WLB throughout their careers, the answers were divided. Respondents 1, 8, and 10 reported improved ability to manage balance over time, acquiring more management skills, and prioritizing their personal needs. On the other hand, interviewees 3, 4 and 7 noticed a worsening, citing increased professional and personal responsibilities, making it difficult to maintain the WLB. As for prospects, seven interviewees foresee changes, with some, such as respondents 4, 6 and 8, expecting an improvement, especially if they manage to modify working conditions, such as reducing commuting time, to balance personal and professional life better.

Physical and Mental Health

Healthcare professionals face daily working conditions that drive emotional exhaustion and exhaustion, which can lead to a depersonalization of the person themselves and a reduced sense of personal fulfillment.

For all these reasons, it is important to maintain good physical and mental health to combat the challenges encountered daily. In this sense, the interviewees were asked how the state of physical and mental health influences the WLB, and all stated that maintaining the state of physical and mental health is beneficial to maintaining a good balance. In a more impactful way, interviewee one states, "It is a very difficult balance to maintain, which requires me to have full physical and mental capacity, but, on the other hand, the inability to maintain this balance is a source of stress, which can have repercussions on physical health. There are phases. Phases that we know will be more demanding professionally, interspersed with more linear and calm phases. I try to make the most demanding phases challenging in intellectual and practical terms; in this way, I can perceive fatigue as a product of professional fulfillment and gratification. It costs less to try to put into practice the saying, "Those who run for pleasure do not get tired." It is not entirely true, but it costs less." Interviewee 4 also mentions, "If we are mentally well and healthy, it is easier to find

this balance. Anxiety, depression, burnout or the presence of some physical illness makes it more difficult for us to give our best at work and even at home, in relationships with others, which negatively impacts this balance".

It was also asked if the work institution of the respective interviewees sympathizes with any practice to help its employees maintain the WLB. Briefly, 9 out of 10 interviewees stated that no practices or strategies in their work institution help maintain a good balance in their personal and professional lives. It is possible to prove this idea with interviewee 6's answer, "No, not at all. Today, and more than ever, I know that, unfortunately, we are just a number and that if something happens to us, we are easily replaced. Even when we explain a change in our health condition to our Superiors, they cannot always adjust to improve the professional's quality of life". On the other hand, interviewee 9 states that in his work institution, all festive days are celebrated with activities that improve the relationship with co-workers, consequently improving the environment, mental state and the WLB.

External Factors

Interpersonal Relationships

Interpersonal relationships play a crucial role in maintaining WLB. The intensity of work and the increase in working hours are also directly related to the isolation of family and leisure activities, which can negatively impact the quality of personal relationships and, consequently, the WLB.

The health professionals interviewed were asked if they usually miss personal appointments because of work. Unanimously, all interviewees stated that they usually miss family/personal commitments because of work, although to different degrees among them. It is possible to prove this idea through the answer of interviewee 10, who states that "It is rare, but it sometimes happens due to having to stay at work overtime without counting, to finish or continue a specific case. Sometimes I have to postpone/unscheduled things because of this, which makes me seriously frustrated, but look; it has to be.". It is also important to refer to the answer of interviewee 1, who explains: "Yes, it happens. More or less often, it ends up happening. In a profession with mandatory minimum services, it is impossible not to happen. However, the truth is that I was aware of this fact when I chose this profession. I am pleased that, in my service, this happens as few times as indispensable and equally among all employees".

Relationships with Work Colleagues

The health professionals were asked about the difficulty of maintaining good relationships at work due to the nature of their functions. Among the 10 interviewees, only 3 confirmed greater difficulty maintaining good professional relationships, highlighting that stress, work demands, and emotional load are the main obstacles. Other factors, such as working conditions and leadership, were also influential. In contrast, 6 respondents did not notice greater difficulty, and 1 stated that this depends on the type of service. Some interviewees, such as numbers 2 and 6, compare relationships with colleagues to a "second family," emphasizing the importance of a personal will to strengthen these bonds.

Despite the challenges, all respondents reported maintaining good relationships with their colleagues, recognizing that these connections are crucial for a good work environment and work-life balance (WLB). Respondents such as numbers 3 and 6 highlighted that being in a positive environment and having a good relationship with colleagues is key to maintaining motivation and preventing negative emotions from

affecting personal life. However, when asked about institutional strategies to promote these relationships, 9 and 10 interviewees stated that their organizations do not implement such practices, except for interviewee 9, who mentioned holding meetings to strengthen the multidisciplinary team.

Digital Technologies

The dynamics and demands of health professionals' work have changed due to the increasing involvement of technologies, impacting work-life balance (WLB). Technologies, such as teleconsultations, facilitate communication with patients and the organization of care, but they also break down the barriers between professional and personal aspects. Only interviewees 3 and 8 mentioned the use of teleconsultations in their work. Interviewee 3 highlights that, although he receives e-mails from patients outside working hours, he tries to solve everything during working hours, while Interviewee 8 states that teleconsultations do not change his WLB. Other interviewees do not use these technologies but recognize their advantages, such as saving travel time for appointments, as mentioned by interviewee 1.

As for the impact of connectivity provided by technologies, the answers varied. Many interviewees report being bothered outside working hours, mainly by patients, as pointed out by Interviewee 1, or by supervisors, according to Interviewee 7. Overall, healthcare providers see technology as an advantage that facilitates quick access to essential patient information, which improves care. However, some respondents, such as numbers 3 and 4, also warn of the potential intrusive effect of these technologies, which can harm WLB by extending the time connected to work, even outside of working hours. This highlights the duality of these tools: they are a valuable asset for productivity and efficiency, but they can encroach on personal time if left unmanaged.

Conclusion

The term WLB has been appearing in today's society, and the balance between personal and professional life is an extremely important topic. This difficulty in managing professional and personal life influences personal well-being and enhances the emergence of individual problems.

In this sense, and as specified in the objectives of the project, the emergence of WLB in the health sector and how it influences health professionals were then evaluated through a structured literature review, as well as the factors that influence this balance were identified in the literature review and corroborated by the health professionals interviewed. Through a methodology of semi-structured interviews carried out with a sample of 10 health professionals who work in health institutions in the North of Portugal, it was possible to collect the data and opinions of these health professionals that were later analyzed to understand the impact that each of these factors has on the WLB of health professionals, thus fulfilling all the specific objectives proposed. Analyzing the results made it possible to confirm what had already been addressed in the literature review. Health professionals are more affected than other professions when it comes to WLB, due to their work. The main constraints influencing this balance for health professionals are the schedule, shift work and work on festive days such as holidays and weekends. It negatively affects health professionals since they are often forced to miss/reschedule personal gatherings to the detriment of work and the fact that these health professionals deal with people's lives, which carries great emotional weight when cases are more serious, thus negatively influencing the emotional capacity of health professionals and both personal and professional relationships. The main strategies health professionals use to mitigate This imbalance between personal and professional life.

The main strategies found by health professionals, and corroborated by the literature review, as a way to mitigate WLB are the ability to balance time, in the sense of establishing barriers between these two aspects of life and not letting either of them overlap the other; and frequent practice of leisure activities, such as socializing with friends or regular sports; the maintenance of good relationships at work, so it is important to maintain a good environment at work, which consequently helps to maintain personal well-being and WLB.

Factors that influence WLB were also identified to confirm what was found in the literature review. As confirmed, professional experience is a condition for WLB in that the nature of health professionals' work makes them more emotionally affected, making it more difficult to maintain WLB.

It was also possible to confirm that personality is a determining factor in maintaining a stable work-life balance and that health professionals must be emotionally resilient to cope with the nature of work. In this sense, different personalities lead to different dedications to certain aspects of life, such as a person who is more focused on work. That work is the most important part of his life, and he achieves a WLB when he spends more hours working. On the other hand, there are people whose most important aspect of life is personal life, and then the time dedicated to this aspect is already greater than the time dedicated to work.

Maintaining physical and mental health was crucial to increasing stability at work and home. Techniques such as regular physical exercise, space for leisure and family gatherings, and maintaining good relationships at work were identified as the main strategies used to help maintain WLB. With the present study, the practices used by the health institutions where the health professionals in the sample worked were also evaluated to understand if there is any support from the employer to help maintain the well-being of its workers and the good work environment. The vast majority of institutions approached do not present any strategy to help maintain this balance, which can then be a factor to be taken into account for the respective health institutions to increase the well-being of their workers and consequently increase their productivity.

Finally, the impact that technological advances have had on the work of health professionals and their WLB was also evaluated. In general, all respondents stated that digital technologies positively influence their work since they have a greater ability to always be aware of the status of their patients, which guarantees better treatment and also contributes to the well-being of the health professional himself. However, it was also identified that because they are always contactable, it is easier for co-workers, managers, and even patients to get in touch and bother with the personal lives of health professionals. This factor can contribute to breaking down barriers between work and personal life, which worsens WLB.

This case study had limitations that made it difficult to be accurate. In the practical case, the limitation was found: the lack of collaboration on the part of health professionals since only 10 showed interest in collaborating in the interviews, which meant that the sample size was not comprehensive for all ages, number of children, and it was only possible to have two male people. There were also time limitations that made it difficult to carry out deeper research and consequently to carry out more interviews for the timings of health professionals since 15 more health professionals were also contacted who could not submit to the interview in time.

As a proposal to continue the research, it makes sense to consider a greater number of health professionals, which is more comprehensive by interviewing health professionals

who practice throughout the country. It is suggested that the factors identified above be further investigated and new possible factors influencing WLB be analyzed, particularly in large cities and central hospitals.

References

- Bäck-Wiklund, M., Guerreiro, M. das D., Szücs, S., Billquist, L., Barroso, M., & Rodrigues, E. A. (2017). Are Healthcare Organizations Healthy? Quality of Life in Healthcare Work in Northern and Southern Europe. Sociologia Problemas E Práticas, 86. https://doi.org/10.7458/spp20188613534
- Borges, A. C. S., Lopes, L. F. D., Baggio, D. K., & Fabricio, A. (2023). My Home Is No Longer a Safe Place for My Emotional Health: Home-Office Work and Its Consequences on Emotional Health. Revista De Gestão Social E Ambiental, 18(1), e04158. https://doi.org/10.24857/rgsa.v18n1-037
- Braquehais, M. D., Vargas-Cáceres, S., Gómez-Durán, E. L., Nieva, G., Valero, S., Casas, M., & Bruguera, E. (2020). The Impact of the COVID-19 Pandemic on the Mental Health of Healthcare Professionals. In QJM. https://doi.org/10.1093/qjmed/hcaa207
- Campos, C. J. G., & Saidel, M. G. B. (2022). Amostragem Em Investigações Qualitativas: Conceitos E Aplicações Ao Campo Da Saúde. Revista Pesquisa Qualitativa, 10(25), 404–424. https://doi.org/10.33361/rpq.2022.v.10.n.25.545
- Canabarro, J., & Salvagni, J. (2015). Mulheres Líderes: As Desigualdades De Gênero, Carreira E Família Nas Organizações De Trabalho. Revista De Gestão E Secretariado, 6(2), 88–110. https://doi.org/10.7769/gesec.v6i2.347
- Chen, L., Liu, J., Yang, H., Ma, H., Wang, H., Huang, Y., Cheng, H., Tang, D., Liu, M., Luo, H., Qu, H., Shen, D., & Zhang, N. (2018). Work-family conflict and job burn-out among Chinese doctors: the mediating role of coping styles. General Psychiatry, 31(1), e000004. https://doi.org/10.1136/gpsych-2018-000004
- Egreja, C., & Melo, S. M. B. de. (2023). Conciliação Trabalho-Vida Pessoal E Familiar Em Profissões Sob Elevada Pressão: O Caso Dos Enfermeiros, Polícias E Jornalistas. Sociologia Problemas E Práticas, 102. https://doi.org/10.7458/spp202310227750
- Ferreira, D. (2018). Teleconsultas: Ir Ao Hospital Sem Sair De Casa - Implicações Na Relação Médico-Doente. Medicina Interna, 25(1). https://doi.org/10.24950/rspmi/opiniao/1/2018
- Filho, É. M. R., & Junges, J. R. (2018). Burnout Entre Médicos Intensivistas Ou Sociedade Do Burnout. Saúde E Sociedade, 27(3), 809–819. https://doi.org/10.1590/s0104-12902018180007
- Gomes, M. A. de P., & Maranhão, T. L. G. (2020). A Inteligência Emocional E Relações Interpessoais No Ambiente De Trabalho: Uma Revisão Sistemática / Emotional Intelligence and Interpersonal Relations in the Workplace: A Systematic Review. Id on Line Revista De Psicologia, 14(53), 1044–1068. https://doi.org/10.14295/idonline.v14i53.2926
- Gragnano, A., Simbula, S., & Miglioretti, M. (2020). Work–Life Balance: Weighing the Importance of Work–Family and Work–Health Balance. International Journal of Environmental Research and Public Health, 17(3), 907. https://doi.org/10.3390/ijerph17030907
- Greenhaus, J. H., Collins, K. M., & Shaw, J. D. (2003). The Relation Between Work–family Balance and Quality of Life. Journal of Vocational Behavior, 63(3), 510–531. https://doi.org/10.1016/s0001-8791(02)00042-8
- Hai-xia, W., Liu, P., Zhao, X., Li, A., & Xiao, C. (2022). Work-Related Use of Information and Communication Technologies After Hours (W_ICTs) and Work-Family Conflict: A Moderated Mediation Model. Sage Open, 12(3), 215824402211201. https://doi.org/10.1177/21582440221120169

- Hussenoeder, F. S., Bodendieck, E., Jung, F., Conrad, I., & Riedel-Heller, S. G. (2021). Comparing burnout and work-life balance among specialists in internal medicine: the role of inpatient vs. outpatient workplace. Journal of Occupational Medicine and Toxicology, 16(1), 5. https://doi.org/10.1186/s12995-021-00294-3
- Igbinomwanhia, O., Iyayi, O., & Iyayi, F. (2012). Employee Work-Life Balance as an HR Imperative. African Research Review, 6(3). https://doi.org/10.4314/afrrev.v6i3.8
- Kelliher, C., Richardson, J., & Boiarintseva, G. (2018a). All of Work? All of Life? Reconceptualising Work-life Balance for the 21st Century. Human Resource Management Journal, 29(2), 97–112. https://doi.org/10.1111/1748-8583.12215
- McCarthy, A., Darcy, C., & Grady, G. (2010). Work-Life Balance Policy and Practice: Understanding Line Manager Attitudes and Behaviors. Human Resource Management Review, 20(2), 158–167. https://doi.org/10.1016/j.hrmr.2009.12.001
- Metselaar, S., Dulk, L. den, & Vermeeren, B. (2022). Teleworking at Different Locations Outside the Office: Consequences for Perceived Performance and the Mediating Role of Autonomy and Work-Life Balance Satisfaction. Review of Public Personnel Administration, 43(3), 456–478. https://doi.org/10.1177/0734371x221087421
- Oliveira, S. de, Guimarães, O. M., & Ferreira, J. de L. (2023). As Entrevistas Semiestruturadas Na Pesquisa Qualitativa Em Educação. Revista Linhas, 24(55), 210–236. https://doi.org/10.5965/1984723824552023210
- Picton, A. (2021). Work-life balance in medical students: self-care in a culture of self-sacrifice. BMC Medical Education, 21(1), 8. https://doi.org/10.1186/s12909-020-02434-5
- Roberts, D. L., Shanafelt, T. D., Dyrbye, L. N., & West, C. P. (2014). A National Comparison of Burnout and Work-life Balance Among Internal Medicine Hospitalists and Outpatient General Internists. Journal of Hospital Medicine, 9(3), 176–181. https://doi.org/10.1002/jhm.2146
- Rodrigues Filho, E. M., & Junges, J. R. (2018). Burnout entre médicos intensivistas ou Sociedade do burnout. Saúde e Sociedade, 27(3), 809–819. https://doi.org/10.1590/s0104-12902018180007
- SA, B., SF, E.-S., & NM, A. (2023). Work Ability And Work-Family Conflict Among A University Hospital Healthcare Workers: The Effect On Work-Life Balance. Egyptian Journal of Occupational Medicine, 47(3), 83–100. https://doi.org/10.21608/ejom.2023.196757.1306
- Sánchez, H. M., Sbroggio, A. L., Morais, E. G. de, Agostinho, P. L. da S., Poloniato, T. B., & soares, P. grossi. (2018). Avaliação Da Qualidade De Vida De Médicos Clínicos E Cirurgiões. Revista Brasileira Em Promoção Da Saúde, 31(3). https://doi.org/10.5020/18061230.2018.7582
- Santos, C. de L. M., Rodrigues, C. L. P., Silva, L. B. da, Bakke, H. A., Leite, A. S. de M., & Leal, M. M. de A. (2011). Fatores De Estresse Na Atividade De Médicos Em João Pessoa (PB, Brasil). Production, 21(1), 181–189. https://doi.org/10.1590/s0103-65132011005000003
- Schwartz, S. P., Adair, K. C., Bae, J., Rehder, K. J., Shanafelt, T. D., Profit, J., & Sexton, J. B. (2018). Work-Life Balance Behaviours Cluster in Work Settings and Relate to Burnout and Safety Culture: A Cross-Sectional Survey Analysis. BMJ Quality & Safety, 28(2), 142–150. https://doi.org/10.1136/bmjqs-2018-007933
- Shaikh, P., & Dange, U. (2017). Antecedents of Work Life Balance: A Study of Healthcare Sector. Ira-International Journal of Management & Social Sciences (Issn 2455-2267), 8(1), 1. https://doi.org/10.21013/jmss.v8.n1.p1
- Shiiya, N. (2018). Professionalism and Work-Life Balance. Japanese Journal of Cardiovascular Surgery, 47(3), m3-m3_2. https://doi.org/10.4326/jjcvs.47.m3
- Shikhare, R., Umesh, U., Murthy, G., & Kotaiah, B. (2022). Impact of Work Life Balance (WLB) on Job Switching Behavior: An Empirical Study. Ecs Transactions, 107(1), 18663–18672. https://doi.org/10.1149/10701.18663ecst

- Silva, M. da C. de M., & Gomes, A. R. (2009). Stress Ocupacional Em Profissionais De Saúde: Um Estudo Com Médicos E Enfermeiros Portugueses. Estudos De Psicologia (Natal), 14(3), 239–248. https://doi.org/10.1590/s1413-294x2009000300008
- Smith, M. J., Arthur, C. A., Hardy, J., Callow, N., & Williams, D. (2013). Transformational leadership and task cohesion in sport: The mediating role of intrateam communication. Psychology of Sport and Exercise, 14(2), 249–257. https://doi.org/10.1016/j.psychsport.2012.10.002
- Souza, A. C. M. B. de M. e, Sá, R. G. Q. de, & Lemos, A. H. da C. (2019). Em Busca Do Equilíbrio: O Debate Atual Sobre O Conflito Trabalho-Família Nos Periódicos Científicos Brasileiros. Revista De Gestão E Secretariado, 10(3), 89–113. https://doi.org/10.7769/gesec.v10i3.887
- Steele, L. (2019). Work-Life Balance and Healthy Living for Healthcare Professionals. 791–800. https://doi.org/10.1007/978-3-319-95681-7_2
- Thimmapuram, J., Grim, R., Bell, T., Benenson, R., Lavallee, M. E., Modi, M., Noll, D. L., & Salter, R. (2019). Factors Influencing Work–Life Balance in Physicians and Advance Practice Clinicians and the Effect of Heartfulness Meditation Conference on Burnout. Global Advances in Health and Medicine, 8, 216495611882105. https://doi.org/10.1177/2164956118821056
- Wang, H., Liu, P., Zhao, X., Li, A., & Xiao, C. (2022). Work-Related Use of Information and Communication Technologies After Hours (W_ICTs) and Work-Family Conflict: A Moderated Mediation Model. SAGE Open, 12(3), 215824402211201. https://doi.org/10.1177/21582440221120169
- Witzig, T. E., & Smith, S. M. (2019). Work-Life Balance Solutions for Physicians—It's All About You, Your Work, and Others. Mayo Clinic Proceedings, 94(4), 573–576. https://doi.org/10.1016/j.mayocp.2018.11.021

8 - Lean implementation in the tourism area to leverage tourism growth

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Resumo: A gestão Lean tem vindo a aumentar a sua importância nos últimos anos. Há já algumas décadas que deixou de ser vista como uma metodologia exclusivamente adequada às instalações fabris. O poder desta metodologia está generalizado e com crescente notoriedade na área da prestação de serviços. Seguindo este caminho, esta investigação promove a implementação de ferramentas Lean no sector do turismo rural em Cabeceiras de Basto, Portugal. Com o objetivo de compreender a importância das técnicas Lean no turismo, foram implementadas as ferramentas PDCA (Plan, Do, Check, Act), VSM (Value Stream Mapping) e 5S. Com base na implementação de várias ferramentas assentes na metodologia Lean, a organização reconheceu ganhos de desempenho acrescidos. Estes resultados foram confirmados com base num estudo de caso aprofundado, que confirmou as várias etapas de implementação, bem como a análise antes e depois da implementação. Os gestores confirmaram que, ao longo do tempo, se aperceberam da necessidade de conhecer melhor o negócio e as necessidades de melhoria dos processos, a fim de proporcionar estabilidade organizacional e financeira para continuar a expandir o número de casas de turismo. Como resultado, foram reduzidos os desperdícios nos principais processos do negócio, que, através da reorganização, puderam ser realizados de forma coordenada e padronizada, tornando-os mais eficientes. Além disso, foi possível reduzir o consumo de energia, investindo em novos equipamentos, mais sofisticados e com curto retorno do investimento.
Esta investigação traz alguns conhecimentos à área do turismo Lean, explicando como as ferramentas Lean foram implementadas e de que forma a organização alcançou um melhor desempenho organizacional, pelo que é duplamente relevante para os empresários e para o meio académico.

Palavras-chave: turismo rural; melhoria de processos; redução de desperdícios; gestão Lean; turismo Lean.

Abstract: Lean management has increased its importance along the past years. It is since some decades no longer viewed as unique adequate for manufacturing sites. The power of this methodology is widespread and with increased notoriety in the service provider area. Following this path, this research fosters the implementation of Lean tools in the rural tourism sector in Cabeceiras de Basto, Portugal. In order to understand the importance of Lean techniques in tourism, PDCA (Plan, Do, Check, Act), VSM (Value Stream Mapping) and 5S tools were implemented. Based on the implementation of several tools grounded on the lean methodology, the organisation has recognized increased performance gains. These outcomes, were confirmed based on in depth Case Study, which confirmed the several implementation steps, so as the before and after implementation analysis. Managers confirmed that over the time, the become aware that further need of getting to know the business and the needs for process improvement, in order to provide organizational and financial stability to continue expanding the number of tourism houses. As a result, waste was reduced in the main business processes, which, through reorganization, could be carried out in a coordinated and standardized way, making them more efficient. In addition, it was possible to reduce energy consumption by investing in new, more sophisticated equipment with a short return on investment.

This research brings some insight to the lean tourism area, by explaining how the lean tools have been implemented and which way the organization reached to better organizational performance, so it is twofold relevant for entrepreneurs and academia.

Keywords: rural tourism; process improvement; waste reduction; Lean management; Lean tourism.

1. Introduction

Organizations are living in increasingly demanding environments, where customer satisfaction and loyalty, combined with financial stability, are the main factors for the success of any organization. In this sense, there is a need for organizations' strategic priorities to adopt techniques that provide a targeted approach to continuous improvement, allowing them to reduce costs and failures, while increasing the quality and efficiency of the services provided. However, this can be achieved by applying the Lean concept. The Lean concept was originally developed for the industrial sector to meet the needs of product production, but it is also possible to apply it to the rural tourism sector by adapting its tools and concept, particularly to reduce costs and failures, while increasing the quality and efficiency of the services provided, with the aim of obtaining the financial and organizational capacity to expand the business. This means that the new Lean Tourism concept is being addressed, which corresponds to the Lean Management concept applied to tourism (Chaidi, 2014).

By implementing management concepts in the tourism sector, such as Lean Management, there will be direct implications for the development of tourist destinations, increasing the number of tourists and implicitly increasing added value at local, regional and national level. An analysis of the specialized literature (Malihe & Ab-Rahman, 2014; Rauch et al. 2015; Senthilkumar, 2011; Vlachos & Bogdanovic, 2012) shows that Lean management tools have been used in tourism, especially in the hotel sector, and the results have had a positive impact.

Lean management has generated several techniques and tools that are crucial to improving effectiveness and efficiency, which provide the implementation of good management and organizational practices (Figueiredo, 2016). Without exhausting the topic, some of the tools of the Lean philosophy are presented:

1) 5'S is a tool used by Lean Thinking, which aims to improve the quality of products and/or services, the work environment, customer service, the quality of life of employees; educate for simplicity of acts and actions; maximize the use of available resources; reduce working time, expenses, prevent accidents and waste; optimize physical space; improve human relations and increase the self-esteem of employees. (Moreira, 2011);

2) PDCA cycle is used to effectively control the management processes of a business/company on an ongoing basis. (Sokovic & Pavletic, 2007)The objective of the PDCA cycle is to achieve continuous improvement in all stages of a process, by identifying the causes and problems so that solutions and improvements can be implemented in the future to resolve them (Silva, 2016);

3) VSM is a process of identifying all the activities associated with the entire value stream of a given product. (Moreira, 2011)In other words, the VSM is a process of observing and perceiving the current state of production and visualizing it on a process map, as the basis for Lean thinking.

Although the literature on the topic is extensive, this study does not represent the filling of a gap identified in it, but rather responds to the challenge proposed by the promoter of a local rural tourism unit in the northern region of Portugal, understanding that it is a topic of interest to the academic community, the result is presented here in scientific form. In view of the above, the aim of this research is to apply the tools of the Lean methodology to the rural tourism sector in order to increase its effectiveness and efficiency, as well as its sustained growth.

2. Literature review

2.1 Lean Management System

Since the end of the 20th century, we have been living in an era of profound changes in all aspects that affect human activities, in which the economic environment is one of the main ones that is constantly changing, and it is essential for the survival of a business to have low costs, high quality in its products or services and short delivery and production times (Student et al., 2021). To do this, organizations have to develop and restructure all processes efficiently in order to become more competitive and respond to what customers are looking for (Matos, 2012). To cope with these changes, the Lean management system emerged, with the aim of helping organizations to implement a strategy that suits their business so that they can produce more with less.

The Lean Management concept emerged in Japan in the post-World War II period and was applied at the Toyota Motor Company (Gomes, 2012). As a result of the war at the time, Japan was devastated and did not have the resources to make the high investments needed to implement mass production, which characterized the system developed by Henry Ford and General Motors (Womack & Jones, 2003). In addition, there were a number of problems and challenges that had to be overcome in the country, such as, limited domestic market; organized labor and the existence of several vehicle manufacturers around the world interested in entering Japan (Riani, 2006).

From then on, the need arose to create a new management model, thus giving birth to the Toyota Production System or Lean manufacturing, structured by Taiichi Ohno, vice-president of Toyota (Rich & Piercy, 2009).

Lean thinking has triggered a diverse set of management visions, which have given rise to various concepts - Lean Tourism, Lean Services, Lean Manufacturing, Lean Construction - and are used depending on the area or activity in which they are applied. (Womack & Jones, 2003).

Lean Thinking has achieved an enormous worldwide reputation, being applied in all areas of economic activity, from profit and non-profit organizations to the public sector (Pinto, 2014). The validity of Lean principles and solutions is corroborated by the success of organizations such as Toyota Motors Corporation, which has reached the heights of the automotive industry, Dell and Zara, which report significant gains from implementing Lean principles. It is possible to do more with less (cost, processes, effort, equipment, time and space) and also to bring the characteristics of products ever closer to exactly what customers want, all of which increases the organization's ability to become more competitive in international environments (Santos & Lim, 2012).

Lean emerged with the aim of optimizing all processes through the continuous reduction of waste, such as excess products and long customer waiting times. (Invernizzi, 2006). For Matos (2012), the main intentions of this system are: optimization and adaptation of the Lean system, quality, process flexibility, production according to orders, guaranteeing commitment to customers and suppliers, and reducing production costs.

In this way, the foundation of the Lean system is defined by the constant search for the elimination of any and all losses (Pinto, 2014). According to Rocha and Martins (1998), small organizations or organizations with a poor view of the market generally price their products based on the cost of production and the profit margin they want (Price = Cost + Profit). However, in the very competitive and globalized business environment in which organizations find themselves, it is necessary to adopt strategies and tools in order to optimize resources by producing more, with higher quality and less waste, in order to become competitive and thus stand out from the competition. In order to achieve these characteristics, the Target Costing process began to be used. It has significant weight when creating or improving a product, because the cost of production is determined by the selling price and not the other way around (Price - Cost = Profit). Target Costing is characterized by being a strategic cost and results planning tool, used to help organizations obtain the desired profit margin, at a selling price that keeps pace with consumers' ability to pay (Ellram, 2002).

However, as with any management system, there are some obstacles to implementing Lean. Courtois, Martin and Pillet (2003) state that people are the main obstacle when it comes to implementing Lean in organizations. The limitations that workers show when faced with a change in their way of thinking and being creates conflicts and demotivation, and the lack of training provided by organizations and the lack of time to learn is another obstacle, the same authors argue. These difficulties in adapting human resources are compounded by the fact that organizations face constant pressure from the reality of economic change, technological and competitive adaptation, and consequently organizational change, resulting from globalization (Stefano et al., 2006).

Organizations attach great importance to human motivation, unlike in the past, when the priority was to obtain tangible results and the rewards obtained by workers were limited to material aspects (Chambel & Curral, 2008). People continue to be the main challenge for modern organizations, where the main concern is their satisfaction, namely the development of their qualifications, organizational environments that stimulate productivity, commitment and motivation and, fundamentally, the appropriate management of these factors with regard to the complementation between organizational objectives and the personal objectives of the workers (Rocha, 2014).

In this context, the Lean concept is no exception. Despite the successful application of the Lean philosophy in the industrial sector, some of its tools are not easy to implement in the service sector. However, the results are very positive, improving results, reducing waste and creating value for both the organization and the customer (Rocha, 2014).

On the other hand, Lean Management is made up of five basic principles that Jones (1996) groups together in a sequence that serves as the basis for implementing this philosophy in an organization. The five principles are: create value, define the value chain, optimize flow, pull system and strive for perfection.

Value creation is increasingly being discussed, with Cuatrecasas (2006) defining it as the fundamental principle of Lean Management: value, which implies that the product or service and its attributes and characteristics must be opposed to what the customer determines, this being a basic management philosophy. That said, the consumer is the one who really values the product. For the same author, value creation is a two-way process between organizations and customers.

The term value tends to be used to classify or consider a product or service that we acquire or use, inferring that it is the compensation we receive in return for what we pay (Teixeira & Amaro, 2013). The existence of organizations is justified by the "value" that is created for all the people, directly or indirectly, who purchase their products or services (Pinto, 2009). The value conceived by organizations, on the other hand, aims to satisfy the various stakeholders, covering all their needs and interests (Teixeira & Amaro, 2013).

An organization should always be directed in such a way that all its activities are aimed at satisfying all its stakeholders, eliminating all sources that cause waste (Jones & Womack, 1998). Pinto (2009), "(...) 95% of an organization's time is spent carrying out change activities, which do not add value (...) and 40% of the costs of any business result from maintaining change activities" (p. 53). Some examples of this change activity are all the bureaucratic processes, storage, filing of documents, travel, inspections and time wasted in queues (Matos, 2012).

Contrary to the concept of value, the concept of waste is the act of wasting, spending uselessly or overusing something (Panwar et al., 2015). In the business environment, this concept is represented by activities that are carried out and do not add value to the product (Battaglia, 2020). In this way, resources and time are consumed unnecessarily and the products or services offered to the market end up being more expensive than they should be (Piercy & Rich, 2007).

Waste ends up increasing the production costs of products and services, leading organizations to have to charge high prices compared to the value offered. In other words, by producing a product or service at a higher price than the value offered, the organization is at a competitive disadvantage compared to others offering the same value at a lower price (Pinto, 2009).

Kaizen is a concept associated with Lean Management, which is considered the secret to the success of Japanese production methods (Grenho, 2009). According to the same author, this Japanese production system is designed to stimulate change and constant improvement, being inserted into the daily operations of the organization, through the management and use of the collective experience and knowledge of all workers, valuing joint problem solving.

In the same vein, Just in time, which means "at the right time", was also created with the aim of reducing costs and eliminating waste, as well as allowing employees to participate in improvement decisions by streamlining the production process (Chire, 2010). This system is based on the use of a pull system, with the aim of producing the right quantity at the right time, according to the customer's needs (Grenho, 2009). The main advantage of this system is the reduction in stocks, which allows for a reduction in occupied space, a reduction in the costs associated with creating stock and flexibility adapted to the volatility of market needs (Naldinho, 2015).

2.2 Main Lean tools

According to Cruz (2013) the PDCA cycle began in 1930, when market competitiveness began to emerge and many unique products ceased to be unique. This tool is used to achieve improvements in quality management and organizational processes. Thus, it is characterized by being a cycle that begins with the planning of actions, followed by actions carried out after planning, verifying that the planned rules have been complied with and, finally, acting on the reports acquired during verification (Xueying,

2019). This tool aims to provide support in decision-making and ensure the survival of a company. According to Amin (2018), the tool is organized in stages, which are: The application of the PDCA cycle is one of the tools that is directly related to Kaizen, as it is based on the continuous improvement of processes (Cruz, 2013).

Another Lean tool is Value Stream Mapping (VSM), which in Portuguese means Value Stream Planning, which makes it possible to understand and optimize the flow of material and information necessary for the product to circulate through the various stages of the process from the beginning, as a raw material, until it reaches the end customer, as a finished product (Azevedo, 2011). Natalie (2007) describes the VSM as a planning tool since, as well as identifying waste, it also creates solutions to eliminate it. This tool can represent two types of flows in the production unit, the flow of raw materials and the flow of information, such as waiting times and transportation between operations, the number of workers and setup times (machine downtime for adjustments or tool changes). In a nutshell, this tool carries out an analysis of the Value Chain, specifically the various stages of the production process, which allows these stages to be separated in terms of adding value. This analysis identifies points in the organization that could be improved in order to help improve productivity.

For Rother and Shook (2003), the VSM is an essential tool because it makes it easier to visualize the value stream as a whole rather than individual processes; it helps to identify waste, makes decisions about the value chain visible and describes what needs to be done to obtain quantitative values, making it possible to compare the current state with the future. However, Almeida (2012) describes some of the limitations of this tool, such as the difficulty in representing several products from different flows and not showing the problems of transportation and queues.

The last tool that stands out is 5S, which emerged in Japan around 1950 with the aim of helping organizations recover and reorganize during the post-war crisis. There is some debate as to who was the creator of the technique, some references mention that Hiroyuki Hirano was its developer, however most studies indicate that this tool arose from the ideas of Kaoru Ishikawa (Napoleon, 2018). Its application in the workplace aims to promote discipline and process safety, thus ensuring much greater quality and productivity (Almeida, 2012).

In this sense, the 5S method refers to five Japanese terms beginning with the letter "S" providing a method of organizing the workplace, which are described as:

- Seiri (Utilization) - Eliminate what is not useful by separating the necessary from the unnecessary;
- Seiton (Organization) - Organize the workplace by putting everything in its proper place;
- Seiso (Cleaning)- Taking care of the cleanliness and hygiene of the work environment;
- Seiketsu (Standardization) - Drawing up standards and procedures to be followed in relation to what was defined in the previous 3S (use, organization and cleanliness);
- Shitsuke (Discipline) - Incorporating the defined standards and procedures into everyday life.

Over time, the application of the 5S methodology allows processes to become more organized and systematized (Naldinho, 2015). This makes operations easier, reduces material loss and optimizes the time spent on tasks (Azevedo, 2011). However, the application of this tool faces a major challenge due to people's resistance to changing the culture and creating new routines (Rother & Shook, 1999). According to Herzog (1991), change in the organizational context encompasses alterations in people's behaviour, work patterns and values in order to respond to modifications. Eldrod and Tippett (2002) refer a

successful change must therefore involve the three stages of unfreezing the current level, moving to the new level and refreezing that new level. Faced with this process, it is necessary to have leaders who are committed to the routines and duties, training and educating the team, always making the positive impacts on the processes known so that the whole organization recognizes the power of the 5S transformation (Azevedo, 2011).

2.3 Lean Tourism

Lean Tourism is a philosophy that drives an increase in quality and speed of response to the customer by constantly identifying and eliminating waste and reducing the time (Lead Time) spent on each process (Gastal & Cisne, 2010) . Reducing lead time is the time taken from the moment a production order is given, i.e. in tourism when the customer makes a reservation, until everything is ready to receive them (Chire, 2010). The real lead time of each process in a company has to be recognized, since there are organizations that consider lead time to be only the manufacturing time, leaving transport time and order processing time forgotten. Applying this line of thinking to tourism, it can be seen that reducing the time taken for each process is fundamental, as it allows the tourism enterprise to have more flexibility compared to its competitors, thereby increasing value for the customer (Rivera, 2007).

For each specific service offered in a hotel, the customer always defines its value (Araujo, 2001). According to Araújo (2001), from the customer's point of view, the best way to define value is for them to indicate it and then ask them if they would be willing to pay more for the service. If the answer is no, it means that the customer only wants to pay for the tourist experience, and doesn't value the equipment, the space, the material and, above all, the information that is given so that the customer values the service (Orlov & Kankhva, 2021).

For Araújo (2001), in a hotel, the value chain can be built through the set of activities that provide value for the customer. According to the same author, the value activities identified by a hotel's customers are in the areas of accommodation (rooms, reception, floors and laundry), food and beverages, events and leisure (Marín et al., 2011). However, with an external view, suppliers of both raw materials and equipment, tour operators and customers are added. All these areas consume resources and generate costs for the enterprise, so costs, revenues and assets must be allocated to each value activity (Florescu et al., 2014).

The value chain is made up of the set of actions that are carried out in a certain sequence and at the required time, in order to create value for the customer. Each of the processes that take place in a particular area of the hotel corresponds to the value chain of the service provided (Simões, 2013). Although the value activities are substantially important for recognizing a hotel's value chain, they are not independent, but interdependent (Azevedo, 2011). Porter (1989) stated that the activities that generate value are connected within the value chain by links, which means that there is a relationship between the way in which a value activity is carried out and the cost or performance of another activity. Thus, by carrying out these strategic activities with a view to economic growth, a hotel gains a significant advantage over its competitors (Araujo, 2001).

According to this principle, work monitoring needs to follow a flow. Thus, it implies that the process of monitoring work follows a flow, so that it moves through all the activities and as it moves from one to the next, value is added and obstacles (waste) are eliminated, making it easier to achieve customer satisfaction (Simões, 2013). According to Nunes (2021), the elements that hinder the flow are: poor design, variation in processing time, the performance of employees in adopting the methods used, errors and unnecessary passages between departments.

Cruz (2013) states that with the Pull system, customer consumption or customer booking requests indicate the flow of activities and the acquisition of materials. As a result, the flow of productivity is reversed, i.e. the customer starts to "pull the flow of value", reducing the need for stocks and, in return, the hotel is valued. Therefore, as long as the customer hasn't informed us of their request and what they need, nothing should be produced. By way of example, in a hotel, if the production of meals is greater than the occupancy rate, we will have a good part of it thrown away (Garcia, 2016). However, this doesn't mean that you have to reduce the production of meals, but that you have to think about the preparation needed to respond to customer requests.

This principle challenges every person working in the hotel to constantly strive for perfection, i.e. perfectly specified value without involving any waste. To this end, the four principles mentioned above are continually applied through a philosophy of continuous improvement (Simões, 2013).

For Cruz (2013), perfection should be the ultimate goal of using continuous improvement to eliminate waste. Bearing in mind that we have already specified what Value is (defined by the client/guest), established the Value Chain and eliminated waste, added flow to operations and processes and are waiting for the signal from our client to create production, we must then continually strive for perfection by creating value (Rocha, 2014).

Once the other principles have been complied with and put into practice, the hotel will always find new ways to eliminate waste that does not add value to its activities in the course of its processes, taking the end customer/guest into account (Matos, 2012).

According to Pinto (2009), Lean thinking "is based on a dynamic approach, constantly adapting and developing in favor of the success, effectiveness and efficiency of organizations, in this case the Hotel, always in search of customer satisfaction. Perfection is something that must be continually sought, but never found since there is no end to the process of eliminating waste in organizations (Cruz, 2013). It is always possible, in the day-to-day running of organizations, to reduce time, space, errors and costs, providing a product or service that is ever closer to the customer's expectations" (p.33). It's this incessant search that makes it so that organizations don't stand still in their quest to improve the services or products they provide. In this sense, hospitality is constantly developing and improving, as it is a sector that can always grow and innovate (Pedrosa, 2015).

Finally, excellence in hotel services is not only achieved by seeking efficiency, but also by seeking to maximize the organization's potential in order to achieve business objectives (Rocha, 2014). According to the same author, these fundamentals can give rise to customer satisfaction, using a team of professionals who understand the importance of fulfilling their tasks and responsibilities, are fully committed to the proposed objectives and with the intention of providing the best service/value to the customer with maximum efficiency. Customer satisfaction is thus achieved by giving them the service they expect, in the quantity they need, whenever they need it and at the lowest possible cost. In other words, quality, volume and cost (Matos, 2012).

2.4. Tourism in Portugal

In 2020, Portugal and all other world destinations, due to the effects of the COVID-19 pandemic, recorded a sharp drop of 25.9 million in demand for overnight stays, representing 63% less than in 2019. These figures reflect a regression to values observed in 1994 (INE, 2020). In addition, there was also a sharp decrease in international demand, thanks to the restrictions imposed on travel between borders, representing a decrease of 12.3 million overnight stays, or 74.9% less in 2020 (INE, 2021). In short, this scenario

represents a decrease in revenue of 57.6% compared to 2019, meaning a loss of 10 million euros in the economy in 2020 (Turismo de Portugal, 2020).

However, on March 15, 2021, the Lisbon Tourism Exchange presented the 2027 Tourism Strategy, which originated from a national debate with the aim of developing a long-term plan for tourism, in order to develop not only the economy, but also the social and environmental field throughout the territory, placing Portugal as one of the most competitive and sustainable tourist destinations in the world (General Secretariat for the Economy, 2017). The construction of this process involved public and private agents, organizations, institutions, players from sectors complementary to tourism and tour operators, with the aim of identifying priorities, promoting the integration of sectoral policies that influence tourism activity and ensuring the stability of public tourism policies until 2027 (Cabral, 2021). According to the same author, this plan aims to:

As mentioned by Barretto (2014), different types of tourism require different types of accommodation. This means that nowadays, tourist accommodation goes far beyond a hotel chain, where changing consumer habits have led to the emergence of so-called local accommodation, which already existed in the USA (Ribeiro, 2016).

Vieira (2007) points out that rural areas in Portugal are highly attractive due to their agricultural landscapes, biodiversity and historical heritage, thus providing entrepreneurs with countless economic opportunities for tourism in rural areas. This type of tourism contributes to the survival of small and medium-sized farms, particularly in the more disadvantaged inland areas and, in this way, is an important factor in settling the population in low-density areas (Matias, 2018).

Specifically, in Portugal, this sector plays an important role in the national, regional and local economy through its ability to exploit the interior and boost economies, as well as by creating jobs, promoting sustainability, indirectly generating revenue and the growth of other sectors of activity that benefit from tourism (Esmeralda, 2002).

For Teles, Kern and Roberto (2013), the RevPar indicator "Revenue per Avaliable Room", which means revenue per available room, is considered one of the most important indicators in the hotel industry as it shows the performance of the business over a given period. It calculates the average revenue obtained for each available room and is an excellent tool for comparing businesses with different structures.

According to INE 2021 data, in the first nine months of 2021, RevPAR increased by 24.5%, with growth of 26.2% in hotels, 23.3% in local accommodation and 13.9% in rural and residential tourism.

According to INE data (2021), rural tourism was the most resistant to the impact of the pandemic, as it recorded smaller decreases in the number of guests (-37.1%) and overnight stays (-34.1%), compared to hotels (-61.6% and -63.9%) and local accommodation (-66.3% and -65.0%). In addition, it was the only tourism sector that recorded an increase in average revenue per overnight stay during the pandemic, reaching an increase of 8.6%.

As for hotels, which account for 81% of overnight stays, the average revenue per overnight stay was 43.1 euros, representing a drop of 10.5%, and the same happened with local accommodation, where the average price fell to 29.6 euros, reflecting a drop of 11.3% compared to 2019 (INE, Turismo de Portugal, 2021).

The Portuguese Rural Tourism Federation states that the pandemic has brought more demand to rural tourism, as people were afraid to travel to more mass-market places, thus ending up resorting more to this type of tourism that provides a more reserved and healthy environment (Mendes, 2020).

According to Boszczowski and Teixeira (2012), a business can be considered sustainable when it is environmentally friendly, has a viable economy and is socially just. In other words, it is directly related to three basic aspects: environmental, economic and

social. Therefore, this includes actions to make rational use of natural resources, reducing the negative impacts caused by the extraction of raw materials, adopting policies of responsibility towards the community and making a profit in an environmentally friendly way.

3. Methodology

Qualitative exploratory methodology was selected, using the interview method to survey the existing situation, this means that the data was collected from primary sources.

Exploratory research, as the name implies, aims to explore the context of a subject that is the object of study, its purpose is to find all the evidence related to the topic of which there is no knowledge and increase the possibility of carrying out an investigation with greater comprehension, understanding and precision (Piovesan & Temporini, 1995). Qualitative research is concerned with aspects of reality that cannot be quantified and focuses on understanding and explaining the dynamics of social relations (Oliveira, 2011). Cardano (2012) argues that qualitative research works with the universe of meanings, motives, aspirations, beliefs, values and attitudes, which corresponds to a deeper space of relationships, processes and phenomena that cannot be reduced to the operationalization of variables.

The interview is one of the techniques most used by researchers to collect data (Yin, 2015; Dubé & Paré, 2003). The term interview is constructed from two words, between and view, where view refers to the act of seeing, being concerned about something, while Brito (2011) indicates the relationship of place or state in space that separates two people or things. Semi-structured interview was selected to allows spontaneous responses to be obtained, unlike the structured interview, which strictly follows the script predefined by the interviewer (Lima et al., 1999). Trivinos (1987) argues that the semi-structured interview is built on guiding questions, based on theories and hypotheses surrounding the research, which will open up new hypotheses that emerge as the interviewee's answers are received. The same author states that this interview method not only facilitates the description of social phenomena, but also makes it possible to obtain a more detailed explanation and understanding.

The interview guide was composed by eighteen questions in which a characterization of the organization and the team is initially obtained. This is followed by a description of the management tools and some issues related to Lean tools. Finally, the needs for improvement and the objectives for the future are identified.

In addition to semi-structured interviews, the netnography approach was also used (Correia, 2017). This means that using the web to preserve details of the fieldwork was an essential tool, as the same author notes. In addition, Kozinets (2014) considers that this methodological tool broadens the ways of analyzing fieldwork and is inductive in nature.

4. Analysis and Discussion of Results

The cost of restructuring the entire storeroom was not very high, since most of the tasks are simple and the in-house employee, who is responsible for the general maintenance of the entire farm, has the skills and tools to carry them out. It is only necessary to call in a plasterer and a locksmith for small, more technical jobs. The return on investment is obtained in a short space of time by improving the storage space for the clothes, which not only allows the storage process to be carried out more quickly, but also allows less time to be spent preparing the bags.

There was a one-third reduction in the time taken to carry out the task, from 1.5 hours to just 30 minutes. Considering that this task is carried out, on average, 8 times a month, a total of 88 times a year, this translates into a reduction of 88 hours of work.

As far as the task of preparing the bags is concerned, the time taken has been reduced by less than half, which means that previously 11 minutes were spent and now only 3 minutes are needed. On average, 350 bags are made each year, so the reduction in preparation time equates to a difference of approximately 47 hours of each year. In short, all the time saved, which is then transformed into euros, will make it possible to cover the costs inherent in the investment at the end of the year.

House cleaning is one of the main processes, so it needs to be well structured and organized so that it can be carried out quickly and flawlessly.

During the busiest periods, it is necessary to call in external staff due to the increase in workload. Since these workers are not part of the daily routine, they find it more difficult to familiarize themselves with the internal cleaning processes, leading to failures and a slower process.

What's more, because the team is multifaceted, sometimes employees who aren't cleaning on a daily basis end up losing momentum and forgetting some processes or not carrying them out in the best way. To deal with this difficulty, it was necessary to create a cleaning guide that standardized all the processes, i.e. the steps to be carried out in order, so that cleaning is always done quickly and efficiently.

The creation of this cleaning schedule is expected to reduce the time it takes to clean a house by around 15 to 20 minutes. If this reduction is multiplied by the 350 cleanings that are carried out on average each year.

Before the collection was reorganized, each employee put the clothes in the bags without any logical order, which ended up requiring the clothes to be organized in the house, either at the start of the cleaning or during each cleaning phase. This procedure once again led to disorganization in the working method and unnecessary time spent.

Faced with this shortcoming, it is essential to establish an order in which the bags are made so that the employee can always find the work material in the order they need it, as long as they use the cleaning script so that both scripts are in sync.

The bag must be put together according to the cleaning schedule, always following the reverse order so that the last piece of clothing to be put in the bag is the first to be taken out. So, first, the tablecloth and kitchen towels are put in the bag, then the sets of sheets for each room, in which the pillowcases are put in first, then the top sheets and then the bottom sheets. Finally, the set of towels for each bathroom should also be laid out - bath towels, then the bath mat and face towels.

In short, by following this order, the employee will be able to clean the entire house without having to rearrange the bag or look for any items in the bag, saving time, reducing fatigue and making the cleaning process faster and more effective.

As a result of this improvement in the bag-making process, it was possible to see a reduction of around 15 to 20 minutes in the cleaning of a house. If this reduction is multiplied by the 350 cleanings that are carried out on average each year.

A checklist is intended to ensure consistency and integrity in the execution of a task/process and also to help reduce failures (Costa, 2019). The aim is to apply this tool to the processes of outgoing cleaning, in-depth cleaning, checking items in the houses and checking the replacement of the cleaning trolley. All these processes are carried out differently by each employee, leading to disagreements and different opinions about the most appropriate method for carrying out a particular task, such as defining the amount of cutlery in each house or the need to carry out a particular task.

With a view to overcoming this difficulty, a number of checklists were created so that the main processes could follow a standard model and employees could execute them all in the same way and check them whenever necessary.

Some of the checklists had already been created by the manager, but they were unfinished and quite out of date, so they had to be restructured. In agreement with the whole team, all the processes that have to be carried out during the different house cleanings were defined.

Optimizing journeys is essential in this type of tourist development, where the houses are quite far from each other and especially from the storage room, which means that if there is a mistake or unforeseen event, such as a changed item of clothing or a broken light bulb, the employee has to go to the storage room, sometimes even more than once, which on average means a loss of 10 to 15 minutes for each journey.

In order to reduce or eliminate these unnecessary journeys, it is essential that the cleaning trolley, which serves as a support trolley, always has the main objects stored in it that often require the employee to move around. However, the storage space in the car is quite limited, as most of the space is taken up with cleaning utensils, which makes it necessary to make a very rigorous selection of what is most important to have in the car. To do this, there is nothing better than employees, who are the ones who deal with these problems on a daily basis, to identify the most recurring reasons why they make unnecessary trips.

After a meeting with the entire team, it was possible to reach a consensus regarding the main essentials to have in the car, from bedding to kitchen utensils, tools and maintenance items, detergents and some products that are placed in the houses as a gift to customers.

One rule that must be enforced for this improvement to work is that at the end of each day, the employee who has been using the car must have it checked and replaced, otherwise unnecessary journeys will happen again.

Before implementing this improvement in the cleaning trolley, an average of two unnecessary journeys were made for each cleaning carried out on a house. On average, 15 minutes were spent on each journey, which translates into 175 hours taking into account the 350 cleanings carried out, meaning that at the end of the year the journeys represented a significant cost.

The 5S approach tool aims to solve problems of disorganization, clutter, cleanliness and employee training. The methodology described aims to promote the implementation of 5S in a fast, motivating and effective way.

Firstly, all the employees were introduced to the 5S methodology at a meeting, along with the objectives and how it would be implemented. This methodology was divided into phases - selection, organization, maintenance and control.

The methodology was applied in the kitchen, the dining room, the storage room and the cleaning trolley. The whole team went through all the spaces mentioned, taking responsibility for classifying all the objects and equipment according to their frequency of use, as well as the need for any materials or work tools. The classification used the following labels:

- Green - Often;
- Orange - Not often;
- Red- Never or almost never;
- White - Need for an object.

All the objects labeled red were removed, while the orange objects were assessed by the team for their usability and in some cases the number of certain utensils was reduced according to real need. With the white color, it was possible to recognize the lack of certain utensils or tools that were important for carrying out the tasks, and so some were acquired or simply already existed, but were not in the right places.

With this selection, it was possible to identify and evaluate all the utensils and tools according to their usability and real need, which made it possible to reduce and eliminate objects that were simply occupying certain important places and that ended up getting in the way of daily tasks and even promoting disorganization in the workplace.

At this stage, the same method was used to identify all the equipment and utensils using labels, with the aim of assessing whether their location was the most appropriate. This task involved the participation of all the employees, who did all the identification using the following labels:

- Green - You are close to the indicated location;
- Blue- Place in a more suitable location.

At the end of the identification, a meeting was arranged to discuss all the team's disagreements, in order to find the right places for each utensil or piece of equipment, with the main aim of making it practical and easy to use, not letting it interfere with other tasks or promote disorganization.

The results of the implementation of the selection and organization phase show the before and after of the implementation of this tool in the kitchen, where there are two kitchens that are only separated by a room, but have direct access to each other, so they will be referred to as kitchen 1 and kitchen 2. After implementation, it is easy to see the considerable number of objects that have been eliminated and moved to more suitable locations, which has increased the workspace on the worktops, made tasks more efficient, reduced disorganization and internal travel. In the storeroom and the cleaning trolley, spaces have been cleaned and organized, placing objects in more suitable and accessible places for their use, thus making tasks more efficient and faster.

This last stage aims to create routines for using and cleaning the workspaces, with the aim of avoiding disorganization and providing good habits. The following tasks will be carried out:

The aim is for all employees to have cleaning habits so that they always leave the spaces, machines and utensils they have used for a particular task clean, so that the next employee doesn't have to do more cleaning in order to do their job.

This discipline is fundamental to the smooth running of the organization, in which employees must be fully aware of its importance because without it a snowball will always form, which will reach a point where it will not be possible to carry out the tasks in the right way, which will lead to serious failures or errors.

To this end, all employees are required to leave the entire kitchen and dining room clean, tidy and with the waste bags changed, as well as leaving whatever they can in advance or prepared for the next day's use.

In the storage room, the basic rule is to always leave the main table clean and unoccupied, in addition to cleaning the floor. Finally, the cleaning trolley must be left clean and all the cleaning utensils replaced at the end of each use.

The aim of implementing a food storage routine is to eliminate waste, which is mostly caused by faults. The main fault lies in the fact that the FIFO rule is not adhered to, i.e. first in, first out, which means that food left at the end of the shelf ends up being out of date. For this reason, this storage routine must always be adhered to, and at least once a month, a member of staff will have the task of checking the expiry date of all the foodstuffs.

Most of the products used for breakfast, such as yogurt, granola, butter and jams, are produced in-house, which has the advantage of offering customers food without preservatives, which are harmful to health, but the big disadvantage is the short shelf life and sensitivity to certain conditions. Sometimes these foods are not stored in the right way, which means that they end up causing a lot of unnecessary waste. All of this leads to a number of precautions and routines being put in place in order to prolong the shelf life of

these foods as much as possible. The basic rule is to always store these foods in appropriate jars or bottles and to keep them, as necessary, in the fridge or cupboards, so that they are kept in a cool and suitable environment. Before using any food, the employee should check its condition and assess whether or not the product is fit to be delivered to the customer.

After implementing 5S, an improvement was expected in numerous aspects, from cleanliness, organization, elimination of unnecessary items and reduction of trips, with the aim of making tasks more optimized and efficient in order to reduce their execution time. Accounting for this reduced time proved to be a difficult task, as the improvements were applied to small repetitive tasks, which makes it impossible to determine the number of times they are carried out. In order to reach a more realistic conclusion as to how much time was actually reduced in the tasks carried out in the kitchen, the storage room and the cleaning trolley, the time spent at the end of the use of each of these departments was observed and compared with the time that was previously spent, and it was possible to conclude that in the kitchen an average of around 30 minutes was saved and in the storage room and cleaning trolley around 15 minutes. The average number of hours saved for each day of the week, as well as the cost this represents at the end of each week and month.

Although all the employees are capable of doing all kinds of tasks, welcoming customers and selling products in the shop are the ones that everyone, except the Guest Relations Officer, has the most difficulty doing. This is because they are tasks that require training and practice, so that all employees are able to provide the information that customers need.

The service is, in a way, a hallmark of the business, as it is done in such a way that the customer is at ease and feels in a calm atmosphere without too much formality, not applying a standardized discourse as is done in most hotels.

In a meeting with the staff, it was concluded that the main difficulty among the employees is a lack of comfort due to not having much practice and not feeling totally confident, which sometimes leads them to make mistakes, such as forgetting to pass on all the information to the customer. The solution found among everyone is that, whenever possible, during a check-in or product sale, Paulo, who is responsible for customer relations, should be accompanied by one of the other employees in order to gain more experience and feel at ease. To reinforce this, it was suggested that there should be periodic training in customer service and sales in the shop. This training will be given internally by the manager Teresa, who has a background in tourism, and Paulo, who is responsible for guest relations, marketing and sales.

Finally, activities that do not add value for the customer are those that consume only resources, time, space and do not directly contribute to producing what the customer wants, and can be eliminated without compromising the final product (Monteiro, 2013).

In this context, in order to reduce electricity costs, the company will purchase induction hobs for each house in the accommodation, thus saving 70% on the electricity bill.

Another investment that will be made to reduce electricity costs is the replacement of all fluorescent bulbs with LED bulbs, which according to data from Endesa Portugal (2020), provides an average saving of around 75% on lighting costs. In addition to the savings on the electricity bill, LED bulbs have an average lifespan of 3 years, while fluorescent bulbs only have a lifespan of 1 year, requiring them to be replaced annually, which ends up being less advantageous, taking into account the cost of maintenance. To calculate the cost of lighting, you need to look at the average cost of electricity and get the figure that represents the cost of lighting alone, which is around 20%.

When it comes to expenses, the company only uses Excel, which, apart from being a simple and very powerful tool, ends up being a lot of work because all the data has to be

entered manually. As for income, the company has its PMS (Property Management System) from RoomRaccoon, which is a cloud-based hotel reservation management system with a huge range of features, from being able to receive and manage all reservations from channels (such as Booking) or even direct reservations. In addition, RoomRaccoon comes with a multifunctional system capable of managing sales of additional products to the reservation and automatically creating a receipt which is then sent to the customer automatically after checkout; it also automatically sends customer data to the INE (National Statistics Institute) and SEF (Aliens and Borders Service), since for all tourist resorts this task is mandatory and if it were carried out manually it would be very laborious and time-consuming.

With this hotel management tool, a financial and commercial analysis is made over the years, through the reports that are automatically created based on the results obtained throughout the year.

In the near future, the company expects to increase its turnover by increasing the number of tourist homes from six to twelve, so it will be necessary to use a more complete and automated economic and financial management and analysis system.

The implementation revealed a significant improvement in the organizational structure, in which processes are coordinated and standardized in order to be able to offer a higher quality service to the customer, thus increasing their level of satisfaction and consequently improving the company's results, thanks to the contribution of the implementation of Lean tools and the elimination and reduction of waste.

The main benefits obtained were:

- the reduction and elimination of errors and failures;
- increased efficiency in the execution of tasks;
- organization and restructuring of the main areas of work;
- the creation of good habits to keep all the spaces clean and organized;
- the creation of a new service;
- and a significant reduction in energy costs.

All of these improvements were possible without having to invest too much money, and the average return on investment was one year. All the benefits obtained, allowing the company to expand its business consistently and sustainably, as it had intended.

In short, in addition to the financial results, what also stood out was the huge reduction in unnecessary travel that existed due to the lack of organization and planning of processes. Based on the VSM and 5S tools, the main processes were restructured in order to eliminate waste and make tasks more efficient, placing all materials and work utensils in the right place. In addition, another improvement that stood out was the change in the habits/culture of the employees, who, based on the PDCA and Kaizen tools, began to carry out their tasks in a more organized, disciplined way and with an awareness of continuous improvement, always leaving the utensils and workplaces clean and organized.

The conditions are now in place to expand its business in a more consistent and sustainable way, so that it can continue with its plan to expand from the current 6 houses/24 beds to 12 houses/43 beds.

5. Conclusion

Based on economic globalization and technological evolution, business competition is increasing, which means that the hotel industry needs to make a constant effort to innovate in order to make its tourism product attractive and competitive. In turn, the customer profile is becoming increasingly demanding, and it is essential for the survival of

the business to adopt innovation practices in order to respond effectively to the current challenges encountered in the economic context.

The implementation of Lean methodologies is currently being adopted as a business strategy to increase production efficiency, increase customer satisfaction and reduce costs, and its use has led to numerous success stories in various sectors of the economy. However, there are still gaps regarding its application in tourism, especially in rural tourism, which was the first in its sector to implement Lean in its processes, so it can be concluded that there is still a lack of prevalence of Lean in the tourism sector (Rocha, 2014).

The limitations felt throughout this research are related to the above, since, due to the small number of studies related to the applicability of Lean in this sector, it was not possible to obtain a well-founded comparative analysis of other successful cases with the adoption of this tool. However, the biggest obstacle was the need to change the culture of the organization and recognize that the good management methods of the past may no longer be enough to meet the current needs of the business, thus requiring a new way of thinking, acting and managing.

However, there are still some aspects to improve, and as proposals for future work. A suggestion would be to create a guide explaining all the available activities that customers can enjoy during their stay, as well as the places to visit and restaurants in the region. Another point for improvement would be to invest in renewable energies, such as solar panels and thermosiphons, bearing in mind that electricity is the company's main expense, so it is essential to invest in efficient solutions, thus highlighting the company's main motto, sustainability.

Finally, this research demonstrates that the Lean methodology, despite having been developed for the industrial sector, can be properly adapted to the needs of various sectors such as the hotel industry, more specifically in rural tourism, as has been proven in this work. We therefore hope to have contributed to the spread of this methodology in such an important sector of the Portuguese economy and that it will be a seed for future studies.

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Reference:

- Courtois, A., Martin-Bonnefois, C.-B., & Pillet, M. (2003). Production management. Lidel, D.L.
- Almeida, F. (2012). Implementation of Lean Production Principles and Tools in the Finishing Section of a Metal Parts for Automobiles Company. Braga: University of Minho.
- Almeida, P. (2006). The last two decades of the 20th century:. Brasília: Accelerating the world's research.
- Alves, N. (May 2018). Economic Bulletin. Department of Economic Studies, pp. 5-127.
- Amin, A. N. (2018). Conceptual Framework of Lean Ergonomics for Assembly Process: PDCA Approach. Journal of Engineering and Science Research.
- Araujo, A. O. (2001). Contribution to the Study of Performance Indicators for Hotel Enterprises, under the Strategic Management Approach. pp. https://1library.org/document/oy855n0y-contribuicao-ao-estudo-de-indicadores-desempenho-empreendimentos-hoteleiros.html?utm_source=related_list.
- ARAUJO, O. (2001). Contribution to the Study of Performance Indicators for Hotel Developments, under the Strategic Management Approach. pp. https://1library.org/document/oy855n0y-contribuicao-ao-estudo-de-

indicadores-desempenho-empreendimentos-hoteleiros.html?utm_source=related_list.

- Arbos, L. C. (2006). Keys to Lean Management. Spain: GESTIO 2000.
- Azevedo, B. (2011). Lean Production System Implementation Model at INESC Porto. Porto: Faculty of Engineering, University of Porto.
- Bank of Portugal (December 30, 2020). Economic Research Department. Retrieved from Economic Bulletin: https://www.bportugal.pt/sites/default/files/anexos/pdf-boletim/be_dez2020_p.pdf
- Barretto, M. (2014). Manual de Iniciação ao Estudo do Turismo. Papirus.
- Batista, B., Rodrigues, D., Moreira, E. V., & Silva, F. P. (2021). Data Collection Techniques in Research: Interviewing. Aveiro: Center for Research in Didactics and Technology in Training.
- Battaglia, F. (2020). Concept.de. Retrieved from https://conceito.de/desperdicio
- Boszczowski, A., & Teixeira, R. (2012). Sustainable Entrepreneurship and the Entrepreneurial Process: in search of new business opportunities as a solution to social and environmental problems. Economia e Gestão Journal, 141-161.
- Brito, Á. F. (2011). The use of the interview technique.
- Cabral, M. C. (2021). Leading the Tourism of the Future. Turism Strategy 2027, p. http://www.turismodeportugal.pt/pt/Turismo_Portugal/Estrategia/Estrategia_2027/Paginas/default.aspx.
- Caixeta, L. (October 16, 2014). The importance of a company's Mission, Vision and Value. Available. Retrieved from https://www.racecomunicacao.com.br/blog/a-importancia-da-missao-visao-e-valor-de-uma-empresa/
- Cardano, M. (2012). Manual of qualitative research. Brazil: Vozes.
- Carvalho, E., & Santos, R. (7, 2016). Organizational guidelines: a practical analysis of the mission, vision and values in a small company in Mossoró-RN. Accelerating the world's research.
- Chaidi, I. (2014). Tourism and Economic Growth: Comparing. Journal of Economics and Management, 139-157.
- Chire, C. (2010). Lean Manufacturing Slim/Agile Manufacturing. Revista Ingeniería Primero, 64-69.
- Correa, H., & Gianesi, I. (1993). Just in Time, MRPII and OPT: A strategic approach. p. https://www.researchgate.net/publication/262910985.
- Correia, R. R. (March 3, 2017). The Use of Netnographic Method in the Brazilian Management Postgraduate. Revista de Ciências da Administração, 163-175.
- Costa, M. F. (2019). The Importance of the checklist for safe surgery. Coimbra: Coimbra School of Education.
- Cruz, N. (2013). Implementation of Lean Manufacturing tools in the plastic injection process. Portugal: University of Minho School of Engineering.
- Daniliuc, F. (2017). Branch of Specialization in Strategic Destination Management.
- Dantas, N. (2008). The SWOT analysis method as a tool to promote the tourism diagnosis of a location: the case of the municipality of Itabaiana. Caderno Virtual de Turismo, 118-129.
- Dias, S. (2010). Marketing management.
- Dubé, L., & Paré, G. (2003). Rigor in Information System Positivist Case Research. Mis Quarterly, 27(4), 597-635.
- Earth, G. (March 2022). Google Earth. Retrieved from https://www.google.com/intl/pt-PT/earth/
- Economia, M. d. (August 29, 2014). Official Gazette. Obtido de https://dre.pt/application/dir/pdf1sdip/2014/08/16600/0457004577.pdf

- Economia, S. G. (March 2017). General Secretariat for the Economy. Retrieved from Presentation of the Tourism Strategy 2027: https://www.sgeconomia.gov.pt/destaques/apresentacao-da-estrategia-de-turismo-2027-15-de-marco-lisboa.aspx
- Elrod & Tippett (2002). The Death Valley of Change. Journal of Organizational Change Management.
- Endesa Portugal . (November 4, 2020). Lighting: How to optimize consumption and reduce your bill? Retrieved from Endesa: https://www.endesa.pt/particulares/news-endesa/poupan%C3%A7a/iluminacao-como-reduzir-consumo
- Esmeralda, L. (2002). Rural tourism in Portugal. Center for Geography and Regional Planning Studies, Faculty of Social and Human Sciences.
- Falcão, L. (2019). Technical terms of the Tourism environment.
- Figueiredo, E. (2003). GeoJournal Library Shaping Rural Areas in Europe.
- Fischmann, A. A., & Almeida, M. (2007). Strategic Planning in Practice. Atlas.
- Florescu, A., Foris, D., & Barabas, S. (2014). Tourism and Economic Growth: Comparing Malaysia and Singapore. Journal of Economics and Management, 139 - 157.
- Fortinho, P. (2020). Portuguese Nationality. Security in Portugal: the country is the 4th safest in the world: https://www.nacionalidadeportuguesa.com.br/seguranca-em-portugal/
- Garcia, A. (2016). Human Resources Management in the Tourism Industry in Portugal. Vila do Conde: School of Industrial and Management Studies.
- Gastal, S., & Cisne, R. (July 9, 2010). Tourism and its history: rediscussing periodization. https://www.ucs.br/ucs/tplSeminTur2010/eventos/seminario_de_pesquisa_semintur/anais/gt09/arquivos/09/Turismo%20e%20sua%20historia.pdf.
- Gomes, P. (2012). Lean Construction applied to the Hotel Industry. Porto: FEUP.
- Grenho, L. (2009). Last planner system and junt-in-time in construction. Porto: Faculdade de Engenharia da Universidade do Porto.
- Herzog, J. (1991). P. People: the criticai lactor in. Journal of Systems.
- INE. (2019). Tourism in Portugal. Retrieved from Banco de Portugal: http://www.turismodeportugal.pt/pt/Turismo_Portugal/visao_geral/Paginas/default.aspx
- INE. (2020). Tourism of Portugal. Retrieved from Banco de Portugal: http://www.turismodeportugal.pt/pt/Turismo_Portugal/visao_geral/Paginas/default.aspx
- INE. (November 15, 2021). Tourist activity in the first nine months of 2021 profitability has overreached. http:///C:/Users/Lobo/Downloads/15Ativ.Tur%C3%ADstica_Set21.pdf.
- INE. (2021). Tourism in Portugal. Retrieved from Banco de Portugal,: http://www.turismodeportugal.pt/pt/Turismo_Portugal/visao_geral/Paginas/default.aspx
- INE. (February 28, 2022). Press Release . GDP GREW 5.8% YEAR-ON-YEAR AND 1.6% QUARTER-ON-QUARTER IN THE 4TH QUARTER. in the year 2021 as a whole it grew by 4.9%, pp. 1-18.
- Invernizzi, G. (2006). The Lean Manufacturing System applied in an auto parts industry producing automotive filters. Brazil: Universidade Estadual de Campinas.
- IPDT (September 25, 2020). Searches for rural tourism in Portugal peaked during the month of May. Retrieved from IPDTTurismo Consultancy: https://www.ipdt.pt/turismo-rural-pico-maio-covid/
- Jackson, T. L. (1996). Implementing a Lean Management System. Portland Oregon.

- Jones, D. T. (1996). Lean Thinking-Banish Waste and Create Wealth in your Corporation. p. https://www.researchgate.net/publication/200657172.
- Jones, D., & Womack , J. (1998). The Lean Mindset in Business. Rio de Janeiro: Campus Publishing.
- Kozinets, R. (2014). Unveiling Netnography: a theoretical and practical guide. Intercom - RBCC, 339-342.
- Leal, G. (2016). Directorate-General for Agriculture and Rural Development. Retrieved from Characteristics of Tourism in Rural Areas: https://www.dgadr.gov.pt/diversificacao/turismo-rural/caracteristicas-do-turismo-no-espaco-rural
- Lewin, k. (1952). Group Decision and Social Change. Readings in Social Psychology, 207-221.
- Lima, M., Almeida, M., & Lima, C. (1999). The Use of Participant Observation and Semi-Structured Interviews in Nursing Research. Poto Alegre.
- Macedo, L. (March 22, 2010). The tourism boom in the contemporary period. Retrieved from Creative Tourism: http://turismocriativo.blogspot.com/2010/03/o-boom-do-turismo-no-periodo.html
- Machado, D. (2014). INSTITUTIONAL PHILOSOPHY: mission - vision - values . Federal University of Rio Grande do Sul.
- Malihe, M.; Ab-Rahman, M. N. (2014). Increasing Production and Eliminating Waste through Lean Tools and Techniques for Halal Food Organizations. Sustainability, 6, 9179-9204. https://doi.org/10.3390/su6129179
- Marín, A., Jonathan, L., & Granero, E. (2011). Lean Management implementation project in a tourist hotel on the Daurada coast. Master's thesis, Universitat Politècnica de Catalunya.
- Matias, R. (October 5, 2018). Rural tourism in portugal: situation, concept and support. Retrieved from Mercal: https://mercal.pt/turismo-rural-em-portugal/
- Matos, I. M. (2012). Lean Management- Management System Applied to Hospitality. Leiria: School of Tourism and Technology of the Sea.
- Maximiano, A. C. (2006). Management for entrepreneurs: fundamentals of creating and managing new businesses. Pearson Prentice Hall.
- Melo, E. (2016). Strategic Planning within the Concept of Strategic Management. Brazil: Doctum College.
- Mendes, C. (5, 2020). Rural tourism wants to be a solution for vacations and is already seeing an increase in demand. pp. https://www.dn.pt/pais/turismo-rural-quer-ser-solucao-para-ferias-e-ja-sente-aumento-da-procura-12175865.html.
- Ministry of Economy (December 29, 2020). Public consultation. Retrieved from Government of Portugal: https://www.historico.portugal.gov.pt/pt/o-governo/arquivo-historico/governos-constitucionais/gc19/os-ministerios/mee/quero-saber-mais/preciso-de-uma-informacao/20150710-me-consulta-publica-turismo-2020.aspx
- Monego, E., Schwert, F., Medeiros, F., Barros, J., Machado, M., & Silva, R. (2021). Theories of administration and human relations. Ibero-American Journal of Humanities, Sciences and Education-REASE, 255-260.
- Monteiro, C. (March 19, 2013). Record of value-adding (VA) and non-value-adding (NAV) activities. Retrieved from Quality Blog : https://blogdaqualidade.com.br/registro-das-atividades-que-agregam-valor-av-e-que-nao-agregam-valor-nav/
- Moura, P. (2022). Our houses. Retrieved from Quinta do Rapozinho: http://quintadorapozinho.com/servi%c3%a7os.html
- Naldinho, E. C. (2015). Application of Lean and Just-in-Time Methodologies to the Production of Speed Boxes. Porto: FEUP.
- Napoleon, B. (September 5, 2018). Quality tools. Retrieved from https://ferramentasdaqualidade.org/5s/

- Natalie, S. (2007). Lean for Dummies. Cambrige: John Wiley & Sons.
- Nunes, I. (2021). Implementing Lean Practices in Portuguese Manufacturing SMEs. Porto: Portuguese Catholic University.
- Oliveira, A. (2011). A case study of a micro-enterprise located in the city of Barreiras. São Francisco College of.
- Oliveira, D. (2009). Strategic planning. The organizational guidelines.
- Oliveira, M. (2011). Metodologia científica: um manual para a realização de pesquisas em administração. Federal University of Goiás: Catalão: UFG.
- Orlov, A., & Kankhva, V. (December 29, 2021). Lean Construction Concept Used to Develop Infrastructure Facilities for Tourism Clusters. pp. 1-20.
- Panwar, A., Nepal, B., Jain, R., & Rathore, A. (June 15, 2015). Production planning and control: the management of operations. On adopting lean manufacturing principles in, pp. 564-587.
- Pedrosa, G. (2015). Implementation of LEAN in the Food&Beverage sector in the hotel industry. Leiria: Polytechnic Institute of Leiria.
- Pereira, L. (2022). Financial Dictionary. Retrieved from How to calculate Depreciation? Here are 4 methods you can use: https://www.dicionariofinanceiro.com/depreciacao-como-calcular-metodos-calculo/
- Petrocchi, M. (2007). Hospitality: Planning and Management. Pearson Prentice Hall.
- Piercy, N., & Rich, N. (December 2007). Lean transformation in the pure service environment: the case of the call center. Lean transformation in the pure service environment: the case of the call center, pp. 55-75.
- Pinho, M. (2015). National Strategic Tourism Plan. Minister of Economy and Innovation.
- Pinto, J. P. (2009). Lean Thinking - The Philosophy of Winning Organizations. Lidel.
- Pinto, J. P. (2014). Lean Thinking - The Philosophy of Winning Organizations. Lidel Group.
- Piovesan, A., & Temporini, E. R. (1995). Exploratory research: methodological procedure.
- Pires, Ó. (2009). Barrosã Breed. Braga: Association of Barrosã Breeders.
- Porter, M. E. (1989). Competitive advantage: creating and sustaining superior performance. Editora Campus.
- Ramona Ciolac, T. I. (2020). Agritourism Activity-A "Smart Chance" for.
- Rauch, E.; Damiana, A.; Holzner, P.; Matt, D. T. (2015). Lean Hospitality-Application of Lean Management methods in the hotel sector. In Proceedings of the 48th CIRP Conference on Manufacturing Systems, Ischia, Italy, June 24-26, 2015; Volume 41, pp. 614-619.
- Riani, A. (2006). Lean manufacturing applied at Becton Dickinson. Federal University of Juiz de Fora.
- Ribeiro, C. (2016). Trends for the future in hospitality: A study. Aveiro: University of Aveiro.
- Rich, N., & Piercy, N. (2009). Lean transformation in the pure service environment. International Journal of Operations and Production Management.
- Rivera, L. (February 13, 2007). Measuring the impact of Lean tools on the cost-time investment of a product using cost-time profiles. Robotics and Computer-Integrated Manufacturing, pp. 684-689.
- Roberto, J., & Azeitão, J. (2010). Strategic planning and strategic management in SMEs. Repositório Universitário de Évora, 57-67.
- Rocha, S. C. (2014). Applying Lean Six Sigma to the Tourism Sector. Coimbra: Faculty of Science and Technology.

- Rodrigues, F. (April 16, 2018). Lean and Continuous Improvement. Retrieved from https://pt.linkedin.com/pulse/o-lean-e-melhoria-cont%C3%ADnua-francinei-rodrigues
- Rodrigues, S. (2017). History of Thomas Cook. Futurismologist, https://futurismologo.blogspot.com/2017/01/historia-de-thomas-cook.html.
- RoomSketcher (February 2022). What is RoomSketcher? Retrieved from https://www.roomsketcher.com/
- Rother, M., & Shook , J. (1999). Value Stream Mapping to Add Value and Eliminate Muda. Cambridge: Shingo Prize.
- Santos, E., & Lim, C. (2012). DMAICR in an ergonomic risks analysis. ResearchGate, https://www.researchgate.net/publication/278102640.
- Santos, J. (2008). Municipality of Cabeceiras de Basto. Retrieved from https://cabeceirasdebasto.pt/concelho-mapa-de-freguesias
- Santos, S. H. (October 19, 2012). How to define your company's values. Retrieved from Exame: https://exame.com/pme/como-definir-os-valores-da-sua-empresa/
- Senthilkumar, V.B.E. (2011). Lean in Hospitality Services across a State University. Master's Thesis, Texas Tech University, Lubbock, TX, USA; pp. 1-67.
- Silva, L. (2007). The demand for tourism in rural areas. Revista do centro em rede de investigação e antropologia, 141-163.
- Silveira, C. B. (April 2013). Citisystems Logo. Retrieved from https://www.citisystems.com.br/muri-mura-muda/
- Simões, L. M. (2013). Lean Management system applied to F&B das. Instituto Polítecnico Leiria.
- Slack, N., Chambers, S., & Johnston, R. (2002). Production management. 2. ed. Atlas.
- Souza, M. d. (2016). PDCA and Lean Manufacturing: Case Study in Appliance of Quality Process in Alfa Graphics. Anhanguera College of Santa Bárbara.
- Tavares, M. (2005). Strategic management. Atlas.
- Teixeira, C. (2021). Exploratory research - what is it, and how to adopt it in practice? Retrieved from QuestionPro: https://www.questionpro.com/blog/pt-br/pesquisa-exploratoria/
- Teixeira, N., & Amaro, A. (December 2013). Evaluation of financial performance and value creation – a case study. Revista Universo Contábil, 157-178.
- Teles, J., Kern, G., & Roberto, J. (2013). Use of financial performance indicators in hotels in the south of Brazil. Latin American Scientific Journals Network, 354-366.
- Trivinos, A. (1987). Introduction to Research in the Social Sciences. São Paulo: EDITORA ATLAS S.A.
- Vidal, M. d. (July 23, 2010). The Emergence of the Tourism Industry in the World. XIV Encontro Regional da Anpuh-Rio, p. http://www.encontro2010.rj.anpuh.org/resources/anais/8/1276186003_ARQUIVO_anpuh_marceloVidal.pdf.
- Vieira,] (2007). Tourism in Portugal: current situation and future paths. Lisbon: Lusíada Universities.
- Vlachos, I.; Bogdanovic, A.I.(2012). Lean thinking in the European hotel industry. Tour. Manag. 36, 354-363. https://doi.org/10.1016/j.tourman.2012.10.00
- Womack, J., & Jones, D. (2003). Lean Thinking: Banish Waste and Create Wealth in Your Corporation. Simon&Schuster. Fele Peess.
- Xueying, L. (2019). Lean Management in Healthcare Sector . Lisbon: University Institute of Lisbon.
- Yin, R. K. (2015). Case Study Planning and Methods. Bookman.

- Zylstra, K. (2012). Lean Distribution: Applying Lean Manufacturing to Distribution, Logistics, and Supply Chain. Wiley.

9 - Lean management boosted by Value Stream Mapping

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Resumo: O ambiente em constante mudança exige cada vez mais estratégias de gestão eficazes e eficientes. A redução de custos, seja de que tipo for, é extremamente importante nos atuais tempos macroeconómicos que enfrentamos, para que as empresas se mantenham competitivas. Tendo em conta a necessidade de manter um desempenho competitivo, os princípios lean são analisados para compreender como os Value Stream Mappings são capazes de fornecer *insights* relacionados com a melhoria do fluxo de informação e de materiais, para reduzir o tempo de espera e de desperdício. A flexibilidade é extremamente importante, de modo a manter os clientes satisfeitos, preservando os fornecedores atuais, pelo que os resultados desta investigação podem ser replicados a outras necessidades industriais, assim como a organizações de serviços, através da implementação de um Mapeamento do Fluxo de Valor para evidenciar o fluxo de materiais e de informação de uma forma melhorada.
Apesar de os impactos da abordagem Lean já terem sido bastante estudados, esta investigação continua a acrescentar valor a esta área, ao apresentar um estudo de caso concreto da indústria automóvel e os seus resultados relacionados com o mapeamento do fluxo de valor e de materiais. O objetivo da investigação é duplo, ou seja, analisar e mapear o fluxo de materiais pode contribuir para a melhoria contínua, reduzir o desperdício através do mapeamento dos custos que empurram a produtividade para baixo, para o baixo desempenho, de modo a determinar as etapas de implementação realizadas.

Palavras-chave: Filosofia Lean; mapeamento do fluxo de valor; competitividade organizacional; fluxo de materiais e informações.

Abstract: The ever-changing environment increasingly demands effective and efficient management strategies. Cost reduction in any kind is extremely important in the current macroeconomic times we face, so that companies can remain competitive. Bearing the need to keep competitive performance, lean principles are analyzed to understand how Value Stream Mappings are able to provide insides related to information and material flow

improvements, to reduce waiting and waste time. Flexibility is extremely important, in order to keep customers satisfied while preserving current suppliers, so the outcomes of this research might be replicated to other industrial needs, so as to service organisations, by implementing a Value Stream Mapping to highlight the flow of material and information in an improved way.
Despite of lean impacts being already richful studied ground, this research is still adding value to this area, by detailing a concrete Case Study of automotive industry and its outcomes related to the mapping of value and material flow. The research aim is twofold, namely to analyze and map flow of materials can contribute to continuous improvement, to reduce waste by mapping the costs which push productivity down, to underperformance, so as to determine the performed steps of implementation.

Keywords: Lean philosophy; value stream mapping; organizational competitiveness; material and information flow.

1. Introduction

Lean philosophy has achieved considerable interest from Industrial Management in recent years, mentioning that the first VSM value stream mapping (Value Stream Mapping), was created by Taichi Ohno at Toyota, and over the years there have been numerous followers who have added improvements to the original model. Lean philosophy is concerned with process and operations management and is uniquely combined with a focus on people, culture, and leadership (Solaimani et al., 2019).

Womack et al., (1990) refer that the VSM technique was one of the most significant within Industrial Management, because it allows managers a comprehensive view of the flow of information and processes from the supplier to the end customer. Through this circuit the entire value creation circuit is detectable. This mapping can be carried out on a scale, according to specificity, and may encompass the entire production process or only a segmented process. The primary step is planning, according to Jakšič et al. (2011) and Bogataj et al. (2005) assuming a crucial role in favor of production and logistics efficiency.

There are still considerable advantages inherent to the application of the methods, because through the correct mapping of the flow of information and materials, costs inherent to the processes can be reduced (Nicholas et al., 2018). These may consist in the reduction of lead-times for the transformation of raw materials into finished products, transit times, and inventory levels of raw materials, work in progress, and finished products. Naturally, based on these reductions, it may even be possible to reduce the human resources allocated.

In the current macroeconomic context, that continuous improvement is asserting itself in a more solid and robust way in the markets, and consequently, within the respective industries (Madhani, 2020). It becomes imperative to have well allocated tools, in order to meet and preferably exceed customer expectations, thus creating more added value, allowing differentiation between competitors. Nevertheless, the relevance of costs always appears as a parallel figure to continuous improvement, i.e., the intention is on the one hand to maintain or preferably exceed the level of quality, productivity efficiency, allowing lower costs inherent to inventories, labor and waste. Naturally, costs are allied to all this continuous improvement, because the profitability of the company is crucial to its development and economic and financial sustainability. In this way, it is intended to combine the continuous improvement ordered by highly demanding customers, with the possibility of cost reduction, eliminating all activities inherent to the flow of information and materials, considered muda, that is, waste, without added value. The well-known VSM tool, which had its origin in the automobile industry, at Toyota, is analyzed around this efficiency achievement, in favor of continuous improvement (Womack et al., 1990).

This study aims to determine whether the mapping of value and material flows can effectively lead to continuous improvement in an automotive industry, thus the following research questions are posed:

Can material and information flow mapping contribute to continuous improvement, namely waiting, transit and lead-times?

This research aim afford an in-depth analysis, in order to understand by direct observation, the information and material flow, so as to complement this method by interviews in-depth Case Study was performed.

2. Value Stream Mapping (VSM) and Lean Thinking

Organizational environments request quick answers to just-in-sequence demands, based on the large fluctuation and unpredictability of customer orders, in the automotive industry, it becomes inappropriate to mass produce according to Henry Ford's theory. According to Taiichi Ohno's theory, production should be conducted in such a way that it is "pulled", rather than placed in the company's warehouse, at the customer's disposal. Taiichi Ohno called this new philosophy just-in-time production (JIT), because it resembled the supermarket philosophy of placing small quantities on shelves and replenishing them as they are consumed (Ohno, 2019). Products that have a higher turnover are placed in larger numbers, called "high-runners", while products that are consumed less regularly, called "low-runners", are available to the customer in smaller numbers. This philosophy acts as a buffer, allowing the company to be controlled more efficiently, avoiding unnecessary costs for raw materials, work in progress, and finished products. Stavrulaki & Davis (2010) intend, that high volume and low-level products are grouped and coordinated with production and logistics processes. In this way, a combination of efficient and flexible processes will be achieved (Stavrulaki & Davis, 2010).

Lean Management uses less of all components when compared to mass production: half the human resources, half the production space, half the investment in tools; half the engineering times and therefore produces in half the time. Womack and Jones (1996) state that there are three primary steps to flow:

1 - Focus on the actual product, and the specifications of the order itself;

2 - Removal of all impediments and barriers to the entry of the philosophy, flow;

3 - Redefinition of specific practices, in order to eliminate returns, backflows.

The below refered steps must be exercised sequentially and together for the sake of success. Table 1 summarizes previous research on the topic under review.

Table 1
Summary of main themes and authors

Theme	Author
The VSM as a centerpiece of Lean philosophy	Acharya, 2011; Al-Aomar, 201; Alvarez, 2009; Braglia, 2006; Singh and Garg, 2011
The customer-oriented VSM	Agyapong-Kodua, Ajaefobi and Weston, 2009; Chen, 2011
Joint methods:	
VSM and Milkrun	Domingo and Alvarez, 2007
Methods and times	Edtmayr and Kuhlang, 2011
The role of systems and information in VSM and Lean thinking	Cottyn, 2011: Leu and Huang, 2011
The role of VSM in cost reduction and waste elimination	Ross, 2011; Lu and Yang, 2011; Lummus and Vokurka, 2006; Sahoo and Singh, 2008; Stefanic and Gjeldim, 2010
The flow of materials and information as a tool for waste elimination	Teichgraeber and Bucourt, 2012; Alvarez, 2009; Forza and Salvador, 2001; Jonsson and Mattsson, 2008

Source: own elaboration.

Wee and Wu (2009) state that, as far as the practical implications are concerned, VSM can undoubtedly be considered one of the best tools for supply chain management. They mention that the success of the method had its beginning in the implementation of Lean production in the Toyota Production System (TPS). It should be noted that competing companies, despite having similar tools, have not obtained the same results, so there seems to be a hidden/understood "ingredient" on the part of Toyota's competitors.

Porter and Millar (1985) divide a company's activities into primary and secondary activities. Primary activities comprise a direct connection with the production or distribution of a good or service, these being defined as: Supply Logistics; Production; Dispatch Logistics; Marketing and Sales; Customer Service. Secondary activities, in turn, include support activities, which assume an important role, composed of Organization Infrastructure; Human Resource Management; Technological Development; Procurement / Acquisition of goods.

Likewise, Ashayeri & Lemmes (2006) highlight the relevance of a joint effort between processes such as logistics, marketing, sales and top management sustained by successful policies, in order to build an efficient order plan. It is imperative to be able to count on the help of all processes, bearing in mind that the objective is to quantify the impact of planning on the supply chain.

All processes are relevant, however, Bogataj et al. (2005) reveal, that production and logistics services, comprise the origin of the supply market within the chain. According to Acharya, (2011) the primary objective lies in process improvement, based on Lean principles, and the VSM has been considered, as fundamental to the development of material flow.

A measure of operational complexity should be created to be applied before and after the supplier-customer incorporation. Efforts and investments are required to develop internal production capacity, in order to enable the production of the right product at the right price at the right time. Additionally, there is the imminent risk of raw material shortages, which must be circumvented with caution to avoid supply disruptions. The path to success, according to Chen and Blue (2010) consists of a coordinated flow, combining information, materials, resources, inherent processes and services. Singh et al. (2011) state that using VSM, information is captured on each process, showing productive times, such as cycle-time, up-time, changeover time, as well as products being manufactured and the exact human resources required.

Al Aomar (2011) mentions that the triangle that serves as the foundation of Lean focuses on productivity, cycle time and the inventory of products being manufactured. Additionally, value-added activities are highlighted, contrasting with non-value-added activities, in favor of efficiency. Through this tool, Lasa et al. (2008) state that an innovative graph can be built, helping to redefine processes in need of improvement. Whenever an analysis of this magnitude is prepared, the result is certainly the reduction of muda, meaning waste, because managers must eliminate all activities without added value.

It is notorious, that Lean implementation is solidified beyond industrial borders, being applied in several organizations of different activities, including in the services area, recognizing the importance of the power of this tool (Tyagi et al., 2016). Enabling excellent innovation at the service level, lacking fewer intervening human and technological resources. In this way, service providers acquire greater availability for customer service, being more flexible, for additional consultations, not requiring prior scheduling in case of urgency. However, there are some smaller companies that are willing to implement Lean with the objective of quick return, and there are even clinics linked to health, implementing the Lean philosophy, using the VSM, in order to identify the flow of information and material, allowing a subsequent reduction in costs and waiting times (Tyagi et al., 2016).

There is a high level of uncertainty about the actual orders, based on forecasts, referred by Chen and Blue (2010) referring to the "bullwhip effect". The main objective in supply chain management is to deal with future orders and forecast uncertainties, as

mentioned by (Jakšič et al., 2011). In order to be able to rely on additional information, managers should try to obtain capacity forecast information, related to future supply/production capacity, from their customers and suppliers. In addition, it is favorable to conduct regular inventory reviews, relying on an efficient ordering policy, interdependent on stock level/inventory security policies, considering, that the level operates, depending on the forecasts. According to Jakšič et al. (2011) models can be developed based on very specific assumptions.

Nowadays, companies are already more flexible to react, being able to anticipate orders, relying on greater supply capacity. It should be noted that most benefits are considered in an aggregate and interdependent way. Wadhwa et al., (2007) state that agility is central to supporting enterprise-wide integration. Allocating their flexible resources and the entire core components, so that they can offer value-added products and services. Flexibility is seen as a core competence, with regard to resources and processes, exercising for the sake of time and costs. The development of agility is extremely difficult, due to the tacit and multifaceted interrelationship, surrounded by system parameters.

Critical success factors lead to high performance in the chain, highlighting customer and supplier interconnections, as well as communication, information, and technology. They also benefit material flow management, corporate culture, and performance quantification. Thoo et al., (2011) state that managers need to update Supply Chain Management (SCM) strategies based on missions and competitive advantages.

Market Orientation (MO), combined with the implementation of the JIT strategy and Total Quality Management (TQM), allow a broad, macro vision, according to Zelbst et al., (2010). There are effectively programs developed to assist Business Management, focusing on market orientation, as well as direct relationships with the JIT philosophy, TQM parameters and agile manufacturing, in order to achieve success in operational and logistics performance. Market-oriented management strategies have a positive and direct impact on JIT production, and consequently on the quality of production, enabling effective logistics performance. This rigorous analysis requires valuable interaction from all stakeholders, starting with Process Control, Logistics and of course top management.

Over the last decades, almost all large companies have tried to become lean, aiming to be able to add value to customers in a responsible way, looking for new techniques to identify waste. However, several smaller companies, have not yet proceeded to implement this methodology due to the costs, as well as, the physical and human resources, associated with the implementation (Chen & Blue, 2010; Lummus et al., 2006; Rathke et al., 2012; Seth & Gupta, 2005).

Given the current macroeconomic environment, many companies are having to implement lean strategies in order to remain competitive in the marketplace. Lead-times have to be shortened and final costs implicitly reduced. Implementation aids include case studies, interviews, and on-site observations. According to Aguado et al., (2013) the Lean strategic implementation represents a robust contribution on the way to operational excellence by reducing non-value added activities, essentially contributing to industrial performance. VSM is considered the first tool for effective implementation, often coupled with kanban (means card in Japanese and is used to signal production flow) and milkrun techniques (delivery planning by transportation companies). Lean implementation is usually accompanied by VSM techniques, kaizen continuous improvement on visual boards. It is essential that the entire process from the supplier to the customer is investigated based on a thorough coordination and control analysis. The various sectors/processes inherent in a supply chain must be taken into consideration (Aguado et al. (2013).

The overall performance is determined by the interrelationship and interaction of the integral performance. It is extremely important, that this analysis embraces the entire flow, from the suppliers to the final customer. When it comes to production development,

performance is crucial, based on costs, lead-times and wait-times. The main objective, according to Green et al., 2010; Pattanaik & Sharma (2009) is to reduce waiting times, queues, movements and administrative times, leading to reduced delivery times for the customer.

Regarding the layout (arrangement of work cells), during the Lean implementation process, it can be in line or cell. Cell production is extremely pertinent to Production Management, allocating machines in several cells, with production distributed according to a specific group/family, in order to make cells independent from each other (Pattanaik & Sharma, 2009). In this way, the handling of materials is significantly faster, the products being manufactured are reduced, along with the set-up time (time needed for the change of machines and tools), obtaining a developed production and an effective operational control. The next step is to distinguish product families in order to allocate products to the appropriate cells. Lean implementation concepts should be harmonized, using takt-times, (useful production time/customer order time), optimizing production and the flow between cells, reducing non-value-added actions, optimizing material handling, avoiding bottlenecks, i.e., production with interruptions called bottlenecking and consequent waiting times.

Leu et al., (2011) analyzed e-logistics implementation management models, knowing that this management model quickly shows results, so it should be analyzed in 1st "1-tier" suppliers. Despite its limitations, regarding the impossibility of updating production and logistics in an automatic and dynamic way, the VSM tool assumed a fundamental role in management a few years ago. Thus, Leu et al., (2011) tried to adapt VSM so that it could be used in simulations, allocating objects, and in the future could be applied in industrial companies. In addition to these innovations, algorithms were allocated for data transfer, as well as information from VSM to tables.

2.1. The role of systems and information in VSM and Lean thinking

VSM is a tool focused on the overall flow of production processes. The mapping should also involve information flow, in order to be able to signal and control production. The first step should be to obtain information, through mapping, prior to implementation. The goal is to reduce inventories between processes, promoting productivity and lead-time reduction. The primary step in Industrial Management and Service Provision should consist of obtaining process information through VSM (Danese et al., 2012). Consequently, inventory levels will be reduced, promoting production, avoiding errors or possible delays.

The VSM tool considers all processes covered, mapping the flow of information and materials from all components within the flow, including production, suppliers and their customers (Braglia et al., 2006; Forno et al., 2014). VSM is remarkably efficient because it includes in addition to production processes, the information flow that controls and commands production (Braglia et al., 2006). Cottyn et al. (2011) state, that in the past, the possibility of joining information technology to Lean principles was considered unsustainable. However, nowadays this junction is crucial to good production performance, so that nowadays they go "hand in hand".

Organizations that implement lean principles do have considerable advantages, with regard to costs and quality, when compared to mass production (Kumar et al., 2006). The innovative production method is an evolution in the production strategy, according to (Hodge et al., 2011; Lu et al., 2011; Mahapatra & Mohanty, 2007) aiming to achieve efficiency, focusing on: waste reduction; production evolution (elimination of non-value added activities); the reduction of instability regarding suppliers and customers; providing managers with a real vision, so that they can execute accordingly.

The initial goal is to describe all steps of the current process in order to portray the current situation, called the Current State Value Stream Map. Each Process Manager is asked several questions, such as:

- Do the tasks inherent to the process add value to the customer?
- Do they produce positive results?
- Does the output maintain the desired quality level?
- Is the process flexible?
- Can production lots easily be changed?
- Is there excess capacity?

It is essential to determine whether the information received by the client, referring to a particular product, is in accordance with the objective. Timely deliveries are also subject to analysis and evidence in the information and flow map. All processes without added value should be excluded, while inefficient processes, lacking capabilities and/or resources should be developed, in order to elaborate the "Future State Value Stream Map". By comparing the current and future VSM, one can easily see the reduction of waste, i.e. non-value added activities.

According to Agyapong-Kodua et al. (2009) companies have to adapt to the business reality by adapting to the market, maintaining effective pricing in accordance with customer needs. The current scenario depicts constant fluctuations in the market, Mross et al. (2010) reveal that companies feel forced to keep up with progress. Under these current conditions VSM has proven to be triumphant, building on its faculties of analysis at the level of waste within production as well as in other intervening processes. Arlbjørn et al. (2011), Lummus et al. (2006) mention that the core lies essentially in reducing inventories by half, consequently eliminating waste and non-value added activities, along with reducing defects, optimizing production quantity, increasing product variety. In turn, Hodge et al. (2011) complete this reasoning by stating that Lean principles are constant, what differs are the methods of application, depending on the structure, production and internal procedures. The goal is always to maximize customer satisfaction.

Also Tenent et al. (2009) refer that the implementation absorbs immense human capital, based on the exchange of information between experts Álvarez et al. (2009), Danese et al. (2012), Lummus et al. (2006) understand that the primary implementation of the Lean Management technique descending from the automotive industry, could spread in other business areas, including the provision of services. Currently this is a reality, as the Lean philosophy is already applied also to services (Maciel et al., 2021; Morell-Santandreu et al., 2021; Nedeliakova et al., 2020).

2.2. The flow of materials and information as a tool for waste elimination

Based on this innovative form, production instructions are transmitted according to customer requirements, i.e. there is only an instruction to produce if the previous unit has been consumed, or the minimum safety stock level has been reached. Through this production theory, obsolescence is avoided, along with exaggerated stock levels, unnecessary raw material acquisition costs and labor. Achieving perfection, and maximizing customer satisfaction, through the pull strategy, which symmetries the entire process according to customer requests (Lu et al., 2011). The improvement of the internal process, referring to investments, connecting the knowledge applied to Logistics, and respective financial performance is highlighted by Birou et al. (2011) in order to produce, according to orders, MTO (make to order), or alternatively, to stock, MTS (make to stock). There is a positive relationship between internal process development, the investment of financial performance in companies with MTO orientation, because in this way they avoid exaggerated inventories, when compared with production philosophies for MTS storage. The practical aspect, highlights the knowledge of logistics activities, planned and integrated in the tacit knowledge.

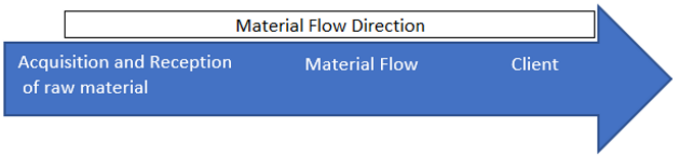
J. P. Womack et al. (1990)state that for a company to create value, it must abandon the classic work model, in which human resources were allocated by departments.

Companies become much more functional when composed of processes, in favor of the continuous flow of the product. Obeying the corporate hierarchy, in order to be able to make them more flexible and functional.

According to Womack, Jones and Womack et al. (1990) through restructuring, responsible managers are able to develop capabilities according to their ideals much more easily, because the flow of work is more direct, that is, more continuous, without structures resistant to change. It is imperative that those in charge have knowledge of the procedures and tasks inherent to the same process, so that they can ascertain the locations of the muda, that is, of the waste.

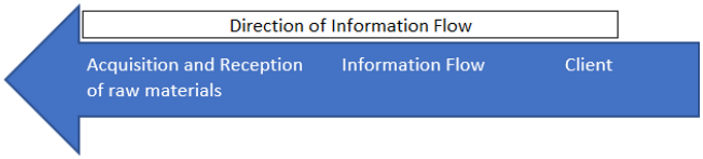
Value creation has assumed a vital role in companies, so two steps are considered the main ones, according to Esper et al. (2010): (1) obtaining information through the marketing process, and (2) ordering according to the supply chain. Thus, it is essential to pay close attention to Figure 1 and Figure 2 below, because the flow of information and materials constitute the value stream. As we can see, it is imperative to pay attention to the flow of materials, because it must be in line with the customer's request, which is received through the flow of information. The sum of these two flows will originate the global value stream, which is perceived by the customer, so it is important that the customer's expectations are exceeded.

Figure 1
Material Flow Direction



Source: own elaboration.

Figure 2
Information Flow Direction



Source: own elaboration.

In favor of the development of competitive advantage, Anvari et al., (2011) that the implementation of Lean theory allows sustained progress because it is based on an integrated socio-technological system. It can be complemented by a dynamic model, analyzing variations in production requirements, and significant reductions can be seen in lead times, work in process, and inventories. Jonsson and Mattsson (2008) highlight the importance inherent to planning methods, in order to control the flow of materials, with regard to inventories and raw material acquisition.

According to Green et al. (2010) and Rathke et al. (2012) simulations related to fluctuating requirements allow for a readjustment of the work cells. Additionally Rathke et al., (2012) refer that in a case study in the medical field, it was proven that only 1/3 of the processes revealed added value (Lu et al., 2011).

also investigated on site for several months, analyzing the Engineering procedures related to the processes adopted by a company in China. They concluded that ¼ of the activities have no added value, taking into account that many Engineering procedures showed gaps, exemplifying; the creation of drawings; the compilation of mass production documents, the checking and signing of Engineering documents, the creation of programs, the creation of packaging queues, among others. Based on VSM, Lu et al. (2011) concluded that there are two problem areas: cycle times and orders with Engineering technical changes. Trentin et al., (2011) warn, that the successful implementation of management practices, such as, just-in-time, TQM quality policies, or engineering, depend essentially on the organization of the company, and communication and information should be highlighted.

2.3. VSM - Implementation Failures

LPD (Lean Product Development) is considered one of the most powerful resources in achieving value maximization, increasing product quality, reducing lead times, so that it can provide lower PD (Product Development) product development costs (Salgado & Dekkers, 2018). However, several companies have failed to implement it, due to inherent flaws or inaccuracies. Although this Lean philosophy dates back to the previous century, this philosophy is still very current serving as a guide on the way to business success, according to

Several multinational companies have been instructed to focus on producer responsibility, with the goals being (1) to re-establish high production levels; and (2) to introduce the life cycle concept. Companies must possess their natural instincts, regarding the benefits of short-term maximization, and multi-cycle application, in order to maximize lifespan. Horizontal collaboration, or vertical integration, can decrease the effect of the "gap" (information technology failure) by sharing planning and control systems.

Through horizontal collaboration, high returns are obtained, both in terms of costs inherent in production, the detection of possible failures or improvements to be implemented, as well as demonstrable waste (Gjeldum et al., 2011). Wee and Wu (2009) wonder about the fact that Toyota has successively achieved success based on its competencies - allowing the elimination of waste according to the long-term philosophy. Wee and Wu (2009) gathered several ideas about Lean implementation and applied the theory to a case study, looking at how the supply chain affects product cost and quality. Consequently, they concluded that through VSM process indicators related to quality development and lead time reduction are evidenced, although the application is costly and time consuming.

The limitation of the use of the Lean tool in industrial companies, regarding the adoption of industrial concepts, in the face of redesign and development of production system was performed based on on-site analyses in six companies with Lean perspectives using the VSM. Serrano Lasa et al., (2009) concluded that the failures were due to inadequate application of the respective tools, i.e., they did not explore all the functions inherent in the same tool, in addition to gaps regarding the interconnection of theory and practical application. Based on these case studies, the authors conclude that, possible communication failures could be correctly overcome by the stakeholders. Top management lacked adequate preparation for the introduction and implementation of the tool. Managers, through efficient application, may verify productive gains in relation to the "output", reducing the volume of work in progress and finished product, consequently counting on greater productive gains. (Serrano Lasa et al., 2009).

The proper functioning of a supply chain needs the fundamental support of information and communication technologies, as they support the business processes inherent to the supply chain (Carvalho et al., 2010). The first organizational step should consist of an internal functional and organizational integration. Managers working with customers and suppliers must solidify external relationships to maintain equally solid and enriching internal relationships.

In fact, human capital is more critical than technology in the implementation of SCM, so the right people must be placed first and then the technologies must be allocated. The relationships between information technology and competitive advantage cannot be applied globally across divergent cultural environments and industrial settings. (Halldórsson et al., 2008; Lai et al., 2006)

Information technology (IT) concentrates a company's competitive advantage, therefore the integration of these technologies is extremely pertinent in order to align IT strategy with business strategy. Tenent et al. (2009) further elaborated on the administrative application along with the development of product-related activities from an independent perspective. IT applications are extremely relevant within industrial companies, based on the current economic situation, however, they need a detailed observation regarding the processes involved in the flow of a given company, according to Ou-Yang and Chang, (2000) and Wang et al., (2011). The main objective lies in the flow of information and material flow, along with the overall management processes.

Ou-Yang and Chang, (2000) are concerned, the most common method consists of automatic production systems, describing for this, the functions based on information processes, proposing an integrated organizational model, regarding functions and information. Along with this development, the integrated transfer was detailed during the implementation process, in order to circumscribe steps - respective steps between processes, reducing product development times. Within several companies, activities inherent in this context were investigated, and it was found that the problem lies in the coordination of product development systems, so that due diligence was taken with regard to the interaction of processes, based on a simulation process, which captures information and proceeds to interactive computerized construction.

3. Methodology

The use of the qualitative method in management control research has become common to study the impacts of globalization, particularly at the business level of multinationals Baxter and Chua, (2003) as it provides analysis of the complexity of social phenomena (Yin, 2015). Corroborating these arguments, Piekkari, R., Welch, (2009) argued that qualitative research is fundamental to the study of multinationals as it allows for interpreting and understanding the multiplicity of contexts, i.e., the organizational context, the cultural context and the institutional context, as well as, their interconnection. Qualitative methodology was adopted, namely a case study, as being one of the powerful methodology for in-depth analysis (Yin, 2015). The purpose of this process is to collect comprehensive, systematic, in-depth and robust information on the topic under analysis (Baxter & Jack, 2008).

Bearing in mind the aim of this research, namely mapping the flow of materials that can contribute to continuous improvement, mapping the information flow that can contribute to continuous improvement, so as understand, if continuous improvement helps companies reduce waste and its costs. Consequently, the following techniques: observation and interview were identified as the ones that fits research’s aim. Thus, the sample was selected based on the intentional principle, i.e., it represents a convenience sample. In this company the Process Managers who manage the processes inherent to the production chain were selected. Additionally, in order to compare the data collected during the interviews, we carried out direct observation in the production sector, in four distinct periods, during the two shifts, on two consecutive work days. The direct

observations occurred at different times, in order to determine whether the production flow changes according to the shift status, that is, beginning or end of shift. Both procedures occurred during the year 2021.

Table 2
Interviewees experience

Managers	Age	Qualifications	Function	Experience
1	35	Higher Education	Production Manager	7
2	37	Higher Education	Client Manager - Finished Goods Logistics	12
3	40	High School	Packaging Manager	25
4	37	Higher Education	Cutting/Laminating/Preparation Manager	8
5	35	Higher Education	Planning Manager	12
6	43	High School	Purchasing Manager - Raw Materials Logistics	24
7	42	High School	Warehouse Manager	21
8	36	Higher Education	Unit Manager	13

Source: own elaboration.

The Process Managers perceive the flow mapping as a useful tool for continuous improvement and waste reduction. However, its success may be associated with the degree of knowledge of the tool

4. Results and Discussion

Considering the research aim, namely mapping the flow of materials that can contribute to continuous improvement, mapping the information flow that can contribute to continuous improvement, so as understand, if continuous improvement helps companies reduce waste and its costs.

In order to confirm whether the mapping of the flow of materials can contribute to continuous improvement, it is verified, that although the production runs at a smooth pace, in which, there is already a stability as to the routine of tasks, the workflow does not occur without interruptions, because it is verified, for example, that the seamstresses have to get up, so that small materials can be supplied. Besides this intervention, the entire flow of material is conducted based on human intervention. It is verified that, despite the production lines integrating young employees, they are perfectly integrated into the production environment. There is a phase that precedes mass production, in which employees are prepared for the same mass production, in order to avoid possible failures or inadaptations to the environment. The wheeled carts, called pallets, are prepared by employees manually and then delivered to production by employees, called distributors. Regarding the identification of whether the mapping of the flow of information can contribute to continuous improvement, it is clear that the flow of information is coordinated so as not to disturb its proper functioning, noting, however, that the flow of information also lacks human intervention. However, it is verified, that the flow of information lacks human monitoring and indication, and it is not seen that this flow works in an automated way. Often the production manager goes to the production giving instructions, as well as, one sees the Packaging or the Magazine interacting with the Production, in order to obtain information. According to Rahani and Al-Ashraf (2012), the mapping of the material flow may contribute to the continuous improvement, which was verified in this research based

on the interview responses. Indeed, mapping is important so that the company can minimize costs and be competitive, so the same proposition can be validated.

As far as cost reduction is concerned, all the interviewees have unanimous opinions, that cost reduction is very important, and that it is necessary to invest in continuous improvement in order to be competitive. The mapping of flows may contribute to the identification of waste, including waiting times, transit times and lead-times, as highlighted by Pattanaik and Sharma (2009) and Green, Lee and Kozman (2010). It was found that managers are of the opinion that mapping enables the streamlining of work processes, allowing them to function effectively and efficiently. Also, through direct observation it was evident that, although the flow is coordinated in a structured way, it could be made more efficient, avoiding waiting times between sectors. Regarding the thought that the mapping of flows may contribute to the identification of waste, including waiting times, transit times and lead-times, it should be noted that the system is adapted to be able to correspond without the prior definition of the map of flows, working in an optimized manner, however the same process can be overcome by outlining the flows. The delivery of wheeled carts and racks (pallets) is done manually, in order to be available at the beginning of the shift, so that the supervisors can distribute the materials to the production lines, despite being a manual allocation, it does not cause any production stoppage. There are effectively the distributors present in production to supply the production lines, seeing that they put the small materials in a specific place, under the sewing table, which implies that the seamstresses get up, stop production, so that the same materials can be allocated in the proper place. Information flow mapping can contribute to continuous improvement", it can be seen that in a general way all the interviewees affirm its agreement, referring to it as extremely pertinent. This idea is completed with the statements of the Packaging Manager, and the Manager 4, who identify, that it is easier to connect and analyze the process circuit, by predefining the flow. In the opinion of Manager 5, the predefinition is important to be able to react to possible problems or bottlenecks, also allowing the identification of improvements, says the Unit Manager.

Continuous improvement helps reduce waste and its costs, for companies, it is evident that although the company is structured for human intervention, this can be made more efficient, reducing the so frequent intervention of employees, optimizing their work, reducing, in turn, unnecessary costs to the company. According to what we saw, this need to adapt to new conditions, to a possible new functioning of the flow of information and materials, does not seem to be an obstacle, despite the fact that the employees already work in a very systematic way, with a considerable manual contribution. After the production of the respective upholstery, these are placed in dedicated carts, to be collected by the magazine, for inspection and subsequent delivery to packaging. Again, there is human intervention, because these are picked up by the magazine as the magazine needs work, i.e., if the magazine has too much work, production will necessarily check more full carts waiting to be picked up. Consequently, the finished product, after inspection, is placed in white carts, in order to proceed to packaging, so that it can be packed and then shipped to the customer. According to Manager 5 said during the interview, *"it is always important to have a notion of our flows, to realize our problems, our bottlenecks, our obstacles so that we can solve them".* Although in this productive area there is a lot of human intervention in what concerns the flow of information and materials, it is clear that the productive flow already follows a very recurrent form, facilitating the routine. It can be seen, that effectively, employees present "on the ground" production, assume a key role, because as stated by Unit Manager, *"on the ground is where things happen",* they are the ones who interact with the other processes, and try to solve any problems, referring to the Customer Manager, "They are the first to detect any problem or failure". It is noticeable that, according to proposition number three, *"The mapping of flows can contribute to the identification of waste, including waiting times, transit times and lead-times",* the development and application of a flow mapping of information and materials, is considered of added value, both upstream and downstream of the company, according to the words of the Customer Manager, will allow the "streamlining of all work processes" achieving a

good organization. Continuous improvement helps companies reduce waste and its costs, Manager 4, says, *"it is very important that we have a perfect idea of the flow through a VSM type diagram",* because he says, that this way there is a better possibility of reaction.

As regards the mapping of the information flow may contribute to continuous improvement, this was validated by the answers obtained from the interviewees, which is in line with what was identified by Bell (2005). Managers consider that the predefinition is important to guide and analyze the process circuit, allowing, if necessary, to correct possible problems. It was verified through direct observation that although the company works at a continuous pace, there are certain flows that could be optimized for the sake of continuous improvement. As confirmed by Mahapatra and Mohanty (2007), Hodge et al. (2011) and Lu, Yang and Wang (2011), continuous improvement helps to reduce waste and its costs, for companies. Such a finding was also evidenced in the present study, where Managers stated that the possibility of quick responses in a timely manner leads without a doubt to continuous improvement, regarding the needs or issues faced. It was also verified that the flow depends a lot on human intervention, so that one can bet on continuous improvement in benefit of lower costs for the company.

According to more than 1/3 of the managers, the Packaging Manager, the Purchasing Manager and the Warehouse Manager, the possibility of quick answers to the questions or needs faced, is seen as of great value. The Production Manager, in line with his colleagues, also identifies advantages, considering that it allows the company to be faster, optimizing transports and consequently reducing inherent costs. Also, Manager 5, states, *"The elaboration of an information flow mapping always brings added value".* The idea of flow visualization, and relevance, of visual projection, is again mentioned by the Production Manager.

Collaborators that work at the shop-floor are the ones that detect firsthand possible failures or delays, so the Production Manager considers that interaction is essential, and the Customer Manager also points out that they are the first to detect any problem or failure. Referring to the words of the Packaging Manager 3 *"the employees are the ones who know the day-to-day difficulties, such as the barriers that they have to overcome, it is an asset, they are inserted in the way we want to make the map".* The same opinion is shared by the Purchasing Manager, who states that employees should take an active role, because *"they are the ones who understand and know the difficulties that exist on the ground".* Manager 5 shares that they should be able to interact, because they know certain details, which are usually important for the respective process and consequently for the smooth running of the company.

In turn, Manager 4 mentions that the employees present in the field should be able to participate, in order to get to the detail, as mentioned by Manager 5, however, he emphasizes that they should not be the ones to proceed with the design, because that will require other technical knowledge. Referring to the statement of the Unit Manager, it is indeed crucial that there is an interaction between the people present on the ground and the other employees of the company, even stating that *"it is essential to work, because the ground is where things happen, so for the VSM to make sense there has to be a very strong connection between the ground, and ultimately, between the person who leads this project".*

The Process Managers perceive the flow mapping as *"a useful tool for continuous improvement and waste reduction. However, its success may be associated with the degree of knowledge of the tool",* it appears that the managers consider that the mapping is favorable to the definition of the flow of information and materials, all interviewees state that the visualization is effectively important. According to the words of M1*"I consider extremely important any tool that visually projects the supply chain",* it is clear that a visualization is easier to interpret, so at the outset can be better understood, and consequently, better applied in reality. Manager 2, along with the Manager 4 and Manager 5, consider that the visualization of the operation is important because it is easy to understand and allows to create a perfect sense of the flow, allowing us to get closer to

the intended reality. Manager 6 mention that it is always favorable. The workflow can be made simpler and more dynamic, points out the Packaging Manager. Manager 8 also mentions that it provides a more systematized operation. As for the thought that Process Managers perceive flow mapping as a useful tool for continuous improvement and waste reduction, but its success may be associated with the degree of knowledge of the tool (Mahapatra & Mohanty, 2007; Hodge et al.2011; Lu, Yang & Wang, 2011), it was also found in this research. In fact, it was found that in general this tool was known by a small number of employees. The managers who were familiar with this tool knew it only from a theoretical perspective, or from its application at clients and/or suppliers. During the Interviews, this was emphasized by all the interviewees.

In summary, it can be seen that all Process Managers, although they do not have a tool like the VSM in operation, believe it to be of enormous relevance, because it allows a simplistic visual projection, involving not only a single process, but the entire plant, including customers and suppliers, i.e., the entire supply chain. They state that with the possibility of linking the flow of information and materials, the whole chain can become more productive by reducing inventory levels, intermediate stocks, raw material levels, lead-times, and waiting times. Making it possible, to make the company more competitive, based on shorter response time to the customer, being more efficient and competitive.

It was clear that during the interviews, the Process Managers mentioned that the employees present in the field are a crucial vehicle of information, so they must be involved in analysis of value and material flow, including quoting the Production Manager 1, who states: *"essential and decisive for good results. Likewise, the Unit Manager, in addition to all other interviewees, reiterates the importance of production employees, unit manager considers that "on the ground is where things happen".*

It is noticeable that the work environment is calm and tranquil, without any abnormalities. Table 4 shows the summary of these observations made during two different productive days in different periods.

Table 3
Summary of observations

	Yes	No	Not observed
Checklist	**Sum**		
The production is currently working.	xxxx		
There is lighting in the workplaces.	xxxx		
There is a correct indication of the layout.	xxxx		
The sewing machines are working normally.	xxx	x	
The employees have occupation.	xxxx		
The productive environment is calm.	xxxx		
There is a coordinated information flow.	xxxx		
The flow of information runs without human intervention.	x	xxx	
The flow of materials occurs without interruption.	x	xxx	
The flow of materials proceeds without human intervention.	x	xx	x
The flow of materials between staging and production takes place without supply failures on the production lines.	xxxx		
The finished product is allocated to the appropriate location.	xxxx		
They collect the produced upholstery in a timely manner.	xxx		x
The searched finished product is immediately delivered to the packaging.		xx	xx

Source: own elaboration.

Despite the different days, the flow of information and materials occurs in a similar way in the various periods observed.

Regarding the issue inherent to the cooperation of the processes involved and their participation in the design of flows, the interviewees generally affirm, 100%, that cooperation is essential. Manager 5 also states that all processes must be involved, an opinion shared by Manager 4, who emphasizes that participation is important. Referring to the Warehouse Manager, the map has to obey to a key feature, because as the Manager

says, "the map first of all has to be dynamic". Effectively is a fundamental condition, to the correct preparation of the map, because this in no way can remain static, without updating, having to show the situation and operation of the company, and all the processes involved, according to the Unit Manager.

5. Conclusion

Considering the actual performance focus in industrial and non-industrial organizations, the focus f this research relies on value creation, based on waste reduction. To understand, if mapping materials and information flow can contribute to continuous improvement, as well as the identification of waste, including waiting times, transit times and lead-times, thus allowing waste reduction and its costs for companies. Since these propositions were verified based on the interviews with the Process Managers, we wanted to know whether they perceive flow mapping as a useful tool for continuous improvement and waste reduction. However, its success may be associated with the degree of knowledge of the tool.

Highlighting the need to identify, if or how the flow of materials helps to contribute to continuous improvement. No workflow occurs without unexpected interruptions, but the aim is to identify these, to define improvement steps, in order to minimize actions without added value, so as task, movements, or excess of workflow. Another relevant topic is to try to reduce human intervention through automatic milk-runs, for instance. All in all, on hand of a VSM, all the flows, namely material and information are gathered, presented in one chart, to allow a complete a concrete overview of organization’s performance, to afterwards, identify the flows or tasks that do not create value and might be banished (Womack et al., 1990; Womack & Jones, 1996).

Propositions were analyzed based on a Case Study conducted in an industrial company dedicated to the production of components for the Automotive Industry. To this end, Interviews were conducted with the Process Managers, based on a uniform script, with semi-structured questions, and completed by Direct Observations of the production environment on two days, two shifts, as well as two distinct periods, in order to obtain a more comprehensive range of findings.

Based on the propositions initially established, intersecting all the information collected through the literature review, and seeing this completed through the case study, it appears that the propositions initially defined can be effectively validated in full. It is concluded that the correct definition of the flow of materials and information can contribute to continuous improvement. Facilitating the identification of waste, namely waiting times, transit times, and lead-times, enabling the reduction of waste and inherent costs. This relevance of information and material flow mapping is perceived by the Process Managers, considering it useful for continuous improvement and waste reduction. It should, however, be noted that its success is associated with the degree of knowledge of the tool.

Generally speaking, all companies should analyze the functioning of their processes, to avoid errors and delays in the flow of supplies. The Lean Management method is considered truly essential; however, it needs a long implementation phase and extreme rigor in its implementation. It is imperative that pre-implementation precautions are carefully followed to avoid possible failures. All cost reduction is extremely important in the current macro-economic that we face, so that companies can continue to be competitive. Likewise, flexibility is of utmost relevance today, in order to keep customers satisfied while preserving current suppliers.

The limitations of this study reside in the selected methodology, since it is qualitative, namely a Case Study, which, for this specific research, was deemed to be the most appropriate, has its limits, since it does not contain quantitative analysis, and therefore there is a limitation regarding generalization to other contexts. The Case Study carried out in an industrial company involved, based on the Interviews, all the Processes of the manufacturing unit, since they were carried out with all the Process Managers related to

the production flow. The Direct Observations, however, were only made to the production sector.

Throughout this research, themes and areas emerged that raised interest for future research, namely, in this particular case, it is considered advantageous in a future study to proceed to the Direct Observation of the Processes that directly supply the production sector, in order to analyze and compare their respective flows. Additionally, in addition to the opinions of the Process Managers, it would be advisable to involve the perspectives of employees in a more executive position, in order to be able to contrast their statements and observations. It would be appropriate to associate more quantitative research methods, in order to complete certain gaps inherent in the qualitative method, namely with regard to the Case Study.

It is also considered advantageous to include in a next Case Study a range of industrial companies in the same area, to be able to verify the applicability of the tool within the same companies, ascertaining possible divergences or gaps. Additionally, it will be advantageous to focus a Case Study in the Services area, making the research also focus on a non-industrial area, in order to be able to ascertain and compare the results obtained in different areas.

Based on this research, the application of this tool for mapping the flow of information and materials leads to continuous improvement, and therefore an advantage is evident in the application of the same in the industrial company, in which it was verified, advising its replicability to other sectors and entities.

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References:

- Acharya, T. K. (2011). Material handling and Process Imprvement using Lean Manufacturing Principles. International Journal of Industrial Engineering: Theory, Applications, and Practice, 18(7).
- Aguado, S., Alvarez, R., & Domingo, R. (2013). Model of efficient and sustainable improvements in a lean production system through processes of environmental innovation. Journal of Cleaner Production, 47, 141–148.
- Agyapong-Kodua, K., Ajaefobi, J. O., & Weston, R. H. (2009). Modelling dynamic value streams in support of process design and evaluation. International Journal of Computer Integrated Manufacturing, 22(5), 411–427.
- Al Aomar, R. A. (2011). Applying 5S LEAN Technology: An infrastructure for continuous process improvement.
- Álvarez, R., Calvo, R., Peña, M. M., & Domingo, R. (2009). Redesigning an assembly line through lean manufacturing tools. The International Journal of Advanced Manufacturing Technology, 43, 949–958.
- Anvari, A., Zulkifli, N., Yusuff, R. M., Hojjati, S. M. H., & Ismail, Y. (2011). A proposed dynamic model for a lean roadmap. African Journal of Business Management, 5(16), 6727.
- Arlbjørn, J. S., Freytag, P. V., & Haas, H. de. (2011). Service supply chain management: A survey of lean application in the municipal sector. International Journal of Physical Distribution & Logistics Management, 41(3), 277–295.
- Ashayeri, J., & Lemmes, L. (2006). Economic value added of supply chain demand planning: A system dynamics simulation. Robotics and Computer-Integrated Manufacturing, 22(5–6), 550–556.

- Baxter, J., & Chua, W. F. (2003). Alternative management accounting research—whence and whither. Accounting, Organizations and Society, 28(2–3), 97–126. https://doi.org/10.1016/S0361-3682(02)00022-3
- Baxter, P., & Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. The Qualitative Report, 13(4), 544–559. https://doi.org/10.46743/2160-3715/2008.1573
- Birou, L., Germain, R. N., & Christensen, W. J. (2011). Applied logistics knowledge impact on financial performance. International Journal of Operations & Production Management, 31(8), 816–834.
- Bogataj, M., Bogataj, L., & Vodopivec, R. (2005). Stability of perishable goods in cold logistic chains. International Journal of Production Economics, 93, 345–356.
- Braglia, M., Carmignani, G., & Zammori, F. (2006). A new value stream mapping approach for complex production systems. International Journal of Production Research, 44(18–19), 3929–3952.
- Carvalho, H., Azevedo, S. G., & Cruz-Machado, V. (2010). Supply chain performance management: lean and green paradigms. International Journal of Business Performance and Supply Chain Modelling, 2(3–4), 304–333.
- Chen, A., & Blue, J. (2010). Performance analysis of demand planning approaches for aggregating, forecasting and disaggregating interrelated demands. International Journal of Production Economics, 128(2), 586–602.
- Cottyn, J., Van Landeghem, H., Stockman, K., & Derammelaere, S. (2011). A method to align a manufacturing execution system with Lean objectives. International Journal of Production Research, 49(14), 4397–4413.
- Danese, P., Romano, P., & Bortolotti, T. (2012). JIT production, JIT supply and performance: investigating the moderating effects. Industrial Management & Data Systems, 112(3), 441–465.
- Esper, T. L., Ellinger, A. E., Stank, T. P., Flint, D. J., & Moon, M. (2010). Demand and supply integration: a conceptual framework of value creation through knowledge management. Journal of the Academy of Marketing Science, 38, 5–18.
- Forno, A. J. D., Pereira, F. A., Forcellini, F. A., & Kipper, L. M. (2014). Value Stream Mapping: a study about the problems and challenges found in the literature from the past 15 years about application of Lean tools. The International Journal of Advanced Manufacturing Technology, 72, 779–790.
- Gjeldum, N., Veža, I., & Bilić, B. (2011). Simulation of production process reorganized with value stream mapping. Tehnički Vjesnik, 18(3), 341–347.
- Green, J. C., Lee, J., & Kozman, T. A. (2010). Managing lean manufacturing in material handling operations. International Journal of Production Research, 48(10), 2975–2993.
- Halldórsson, Á., Larson, P. D., & Poist, R. F. (2008). Supply chain management: a comparison of Scandinavian and American perspectives. International Journal of Physical Distribution & Logistics Management, 38(2), 126–142.
- Hodge, G. L., Goforth Ross, K., Joines, J. A., & Thoney, K. (2011). Adapting lean manufacturing principles to the textile industry. Production Planning & Control, 22(3), 237–247.
- Jakšič, M., Fransoo, J. C., Tan, T., De Kok, A. G., & Rusjan, B. (2011). Inventory management with advance capacity information. Naval Research Logistics (NRL), 58(4), 355–369.
- Jonsson, P., & Mattsson, S.-A. (2008). Inventory management practices and their implications on perceived planning performance. International Journal of Production Research, 46(7), 1787–1812.
- Kumar, M., Antony, J., Singh, R. K., Tiwari, M. K., & Perry, D. (2006). Implementing the Lean Sigma framework in an Indian SME: a case study. Production Planning and Control, 17(4), 407–423.

- Lai, J., Sunderland, B., Xue, J., Yan, S., Zhao, W., Folkard, M., Michael, B. D., & Wang, Y. (2006). Study on hydrophilicity of polymer surfaces improved by plasma treatment. Applied Surface Science, 252(10), 3375–3379.
- Lasa, I. S., Laburu, C. O., & de Castro Vila, R. (2008). An evaluation of the value stream mapping tool. Business Process Management Journal, 14(1), 39–52.
- Leu, J.-D., Huang, Y.-T., & Lu, W.-J. (2011). E-LOGISTICS OF GLOBAL MANUFACTURING ENTERPRISE: A CASE STUDY. International Journal of Industrial Engineering, 18(7).
- Lu, J.-C., Yang, T., & Wang, C.-Y. (2011). A lean pull system design analysed by value stream mapping and multiple criteria decision-making method under demand uncertainty. International Journal of Computer Integrated Manufacturing, 24(3), 211–228.
- Lummus, R. R., Vokurka, R. J., & Rodeghiero, B. (2006). Improving quality through value stream mapping: A case study of a physician's clinic. Total Quality Management, 17(8), 1063–1075.
- Maciel, F., Cruz, M., Vasconcelos, V., de Oliveira, B. F., Freitag, A. E. B., & da Fonseca Nicolay, R. T. (2021). Renda do Petróleo: Uma revisão sistemática da literatura. Research, Society and Development, 10(9), e38110918320–e38110918320.
- Madhani, P. M. (2020). Enhancing supply chain efficiency and effectiveness with Lean Six Sigma approach. International Journal of Project Management and Productivity Assessment (IJPMPA), 8(1), 40–65.
- Mahapatra, S. S., & Mohanty, S. R. (2007). Lean manufacturing in continuous process industry: an empirical study.
- Morell-Santandreu, O., Santandreu-Mascarell, C., & Garcia-Sabater, J. J. (2021). A model for the implementation of lean improvements in healthcare environments as applied in a primary care center. International Journal of Environmental Research and Public Health, 18(6), 2876.
- Mross, K., Stefanic, M., Gmehling, D., Frost, A., Baas, F., Unger, C., Strecker, R., Henning, J., Gaschler-Markefski, B., & Stopfer, P. (2010). Phase I study of the angiogenesis inhibitor BIBF 1120 in patients with advanced solid tumors. Clinical Cancer Research, 16(1), 311–319.
- Nedeliakova, E., Hudakova, M., Masar, M., Lizbetinova, L., Stasiak-Betlejewska, R., & Šulko, P. (2020). Sustainability of railway undertaking services with lean philosophy in risk management—Case study. Sustainability, 12(13), 5298.
- Nicholas, L., Ooi, S. Y., Pang, Y. H., Hwang, S. O., & Tan, S.-Y. (2018). Study of long short-term memory in flow-based network intrusion detection system. Journal of Intelligent & Fuzzy Systems, 35(6), 5947–5957.
- Ohno, T. (2019). Toyota production system: beyond large-scale production. Productivity press.
- Ou-Yang, C., & Chang, R. H. (2000). Applying an integrated analysis method to develop a shop floor control system. The International Journal of Advanced Manufacturing Technology, 16, 353–369.
- Pattanaik, L. N., & Sharma, B. P. (2009). Implementing lean manufacturing with cellular layout: a case study. The International Journal of Advanced Manufacturing Technology, 42, 772–779.
- Piekkari, R., Welch, C. e P. (2009). The Case Study as Disciplinary Convention: Evidence from International Business Journals. Organizational Research Methods, 12(3), 567–589.
- Porter, M. E., & Millar, V. E. (1985). How information gives you competitive advantage. Harvard Buiness Review, 63(4), 149. https://doi.org/10.1038/bdj.2007.481
- Rathke, H., Guettler, F. V, Rump, J., Rathke, J., Hamm, B., Teichgraeber, U., & de Bucourt, M. (2012). Abstract No. 14: Comparison of four radiofrequency ablation systems at target volumes of 3 and 5 cm in an ex vivo bovine liver model-ablation validation, RFA time and technical features. Journal of Vascular and Interventional Radiology, 3(23), S9–S10.

- Salgado, E. G., & Dekkers, R. (2018). Lean product development: nothing new under the sun? International Journal of Management Reviews, 20(4), 903–933.
- Serrano Lasa, I., Castro, R. de, & Laburu, C. O. (2009). Extent of the use of Lean concepts proposed for a value stream mapping application. Production Planning & Control, 20(1), 82–98.
- Seth*, D., & Gupta, V. (2005). Application of value stream mapping for lean operations and cycle time reduction: an Indian case study. Production Planning & Control, 16(1), 44–59.
- Singh, B., Garg, S. K., & Sharma, S. K. (2011). Value stream mapping: Literature review and implications for Indian industry. International Journal of Advanced Manufacturing Technology, 53(5–8), 799–809. https://doi.org/10.1007/s00170-010-2860-7
- Solaimani, S., Talab, A. H., & van der Rhee, B. (2019). An integrative view on Lean innovation management. Journal of Business Research, 105, 109–120.
- Stavrulaki, E., & Davis, M. (2010). Aligning products with supply chain processes and strategy. The International Journal of Logistics Management, 21(1), 127–151.
- Tenent, R. C., Barnes, T. M., Bergeson, J. D., Ferguson, A. J., To, B., Gedvilas, L. M., Heben, M. J., & Blackburn, J. L. (2009). Ultrasmooth, large-area, high-uniformity, conductive transparent single-walled-carbon-nanotube films for photovoltaics produced by ultrasonic spraying. Advanced Materials, 21(31), 3210–3216.
- Thoo, A. C., Huam, H. T., Yusoff, R. M., Rasli, A. M., & Hamid, A. B. A. (2011). Supply chain management: success factors from the Malaysian manufacturer's perspective. African Journal of Business Management, 5(17), 7240–7247.
- Trentin, A., Salvador, F., Forza, C., & Rungtusanatham, M. J. (2011). Operationalising form postponement from a decision-making perspective. International Journal of Production Research, 49(7), 1977–1999.
- Tyagi, A., Tripathi, K. M., Singh, N., Choudhary, S., & Gupta, R. K. (2016). Green synthesis of carbon quantum dots from lemon peel waste: applications in sensing and photocatalysis. RSC Advances, 6(76), 72423–72432.
- Wadhwa, S., Mishra, M., & Saxena, A. (2007). A network approach for modeling and design of agile supply chains using a flexibility construct. International Journal of Flexible Manufacturing Systems, 19, 410–442.
- Wang, C., Quesada-Pineda, H., Kline, D. E., & Buehlmann, U. (2011). Using value stream mapping to analyze an upholstery furniture engineering process. Forest Products Journal, 61(5), 411–421.
- Wee, H. M., & Wu, S. (2009). Lean supply chain and its effect on product cost and quality: a case study on Ford Motor Company. Supply Chain Management: An International Journal, 14(5), 335–341.
- Womack, J., Jones, D., & Ross, D. (1990). The machine that changed the world. Simon & Schuster.
- Womack, J., & Jones, T. (1996). Banish Waste and Create Wealth in Your Corporation. Simon & Schuster.
- Womack, J. P., Jones, D. T., & Ross, D. (1990). The Machine that Changed the World (First Printing). New York.
- Yin, R. (2015). Case study research: design and methods - Applied social research methods series (6th ed.-). Thousand Oaks, CA: Sage Publications, Inc..
- Zelbst, P. J., Green, K. W., Abshire, R. D., & Sower, V. E. (2010). Relationships among market orientation, JIT, TQM, and agility. Industrial Management & Data Systems, 110(5), 637–658.

Appendix - Interview script

I. Motivation of interviewees and legitimization of the interview

o Informing the interviewees about the ongoing research.

o Ask for their cooperation, stressing the importance of it.

o Request permission for audio recording of the interview.

II. General data collection
o Identify the employment status of respondents
1. What is your name and position?
2. Allow me to question your age and level of education.
3. What is your professional background, and seniority in the company?
4. How has your professional path been?
III. Respondents' opinion about the value chain
o Identifying the picture they have of the value stream mapping
o Understand what role they assign to mapping the flow of information and materials
5. In your point of view, how important is cost reduction?
6. The predefinition of the flow of information and materials is vital for the correct unfolding of the processes?
7. Knows the technique of analysis of the flow of information and materials VSM (Value Stream Mapping)?
8. Understands, that the application, of a VSM mapping, is favorable to the definition of the flow of information and materials?
IV. Identify the representations of the interviewees about the involvement of the processes o Understand how the interviewees understand this progress, as being an asset.
o Identify possible strategies of articulation between intra-company processes and extra-company
9. Through the implementation of this map, VSM, all processes could be make you more productive, reducing lead times, and inventory levels extraordinary?
10. What is the advantage of the map regarding the acquisition of raw materials? Do you understand that the transport of raw materials, in groupage type transports, is favorable to the reduction of the transit-time and delivery frequency?
11. The elaboration and application of an information and material flow mapping, is considered, of added value, both upstream and downstream of the company. What are the relevance, in your point of view?
12. Inherent to each process, what benefits may follow from the implementation of VSM?
V. Respondents' representation of overall stakeholder involvement.
o To know the respondents' conceptions about the transversal application of mapping
o Identify future trends and needs.
13. The mapping status is dynamic, so it needs to be updated. Understands that Is the cooperation of the processes involved relevant in the design of the flows? The collaborators present "on the ground" should be able to interact in the design of the respective map?
14. Are there any suggestions that you would like to mention, regarding the efficient elaboration of the map value stream?

10 - A adaptação do projeto psicoeducativo “Juntos a Cuidar”, para Mini Workshops “Juntos a Cuidar” para Cuidadores

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Resumo:

Muitos progressos prodigiosos a nível científico se têm verificado. Tais avanços desencadearam repercussões a nível tecnológico, socioeconómico e na área da saúde, os quais condicionaram a uma vida mais longa. Mas a maior longevidade nem sempre é sinónimo de uma vida funcional, independente e sem problemas de saúde. Pelo contrário, o número de indivíduos dependentes e/ou com invalidez e aumentou, devido à maior prevalência de doenças crónicas e incapacitantes que desafiam muitos dos princípios fundamentais da vida de qualquer pessoa. É neste cenário que surge o Cuidador, que assumirá a responsabilidade pelos cuidados deste indivíduo.

Muitas vezes não têm informação nem formação para o papel que irá desempenhar.

Ser cuidador de alguém está associado à intensidade da carga de trabalho que implica o exercício do papel de cuidador, advém o depauperamento biológico, psíquico, social e o desequilíbrio financeiro.

O objetivo deste trabalho é a avaliação do alcance da adaptação do Programa Psicoeducativo “Juntos a cuidar ”para Mini Workshops. Para dar resposta à questão – Quantos cuidadores conseguimos capacitar?

Os resultados obtidos com a adaptação do programa revelaram que foi um sucesso, pois tivemos uma adesão de cerca de 191% a mais do que no formato inicial do público-alvo.

Palavras-chave: Cuidador; Programa Psicoeducativo; Capacitação.

Abstract

Many prodigious scientific advances have been made. Such advances triggered repercussions at a technological, socioeconomic and health level, which led to a longer life. But greater longevity is not always synonymous with a functional, independent life without health problems. On the contrary, the number of dependent and/or disabled individuals has increased, due to the greater prevalence of chronic and disabling diseases that challenge many of the fundamental principles of any person's life. It is in this scenario that the Caregiver appears, who will assume responsibility for the care of this individual.

They often have no information or training for the role they will play.

Being someone's caregiver is associated with the intensity of the workload that the role of caregiver entails, resulting in biological, psychological and social depletion and financial imbalance.

The objective of this work is to evaluate the scope of adapting the Psychoeducational Program “Together to Care” for Mini Workshops. To answer the question – How many caregivers can we train?

The results obtained with the adaptation of the program revealed that it was a success, as we had a response of around 91% more than in the initial format of the target audience.

Keywords: Caregiver; Psychoeducational Program; Training

Introdução

Em Portugal, a família continua a ter o papel de principal responsável pelas tarefas de cuidar da pessoa em idade avançada e dependente, mesmo com as modificações a que a família tem sido sujeita ao longo dos anos. Normalmente, existe uma preocupação de não recorrer à institucionalização, pois esta decisão contribui para a imagem social depreciativa conotada como abandono.

A aquisição do papel de cuidador ocorre normalmente por duas vias: por iniciativa da própria pessoa que se transforma num cuidador ou no seguimento de um acontecimento súbito e para o qual não encontra uma resposta, acabando por assumir esse papel.

Com o aparecimento da Gerontologia e Geriatria como conhecimento científico, o envelhecimento aparece como objeto de estudo de várias ciências, evidenciando-se uma visão pluridisciplinar deste fenómeno (Sequeira, 2018, p. 9).

A noção de envelhecimento tem variado longo dos tempos, depende de acordo com as atitudes, crenças, cultura, conhecimentos e relações sociais de cada época (Sequeira, 2018, p. 9).

As capacidades e as competências do idoso, são outros aspetos que importam salientar uma vez que está relacionado com a sua dependência. Segundo Schaie e Willis (1999) citado por Sequeira (2018, p.11), a competência para a vida diária dos idosos está relacionada com o padrão de funcionamento nas tarefas de rotina, de acordo com um modelo hierárquico de competências, onde o comportamento significativo tem por base dimensões subjacentes ao processo cognitivo.

Foi no século XX a partir da década de 90 que os cuidadores ganharam visibilidade enquanto objeto de estudo (EC, 2018). Os estudos sobre o tema decorrem da importância que os cuidados e os cuidadores têm assumido na prestação de cuidados a pessoas idosas na sociedade (Plöthner et al., 2019) in Carvalho (2021, p.20).

Cuidar é um conceito que tem vindo a evoluir ao longo das últimas três décadas afirma Carvalho (2021, p.21) citando São José (2016). Antes da década de 90 do século passado, os estudos sobre o tema centravam-se no cuidar no sentido de uma relação unidirecional, na qual um cuidador ativo e independente cuidava de uma pessoa passiva, a pessoa idosa. Cuidar era, assim, um trabalho oneroso, mas efetuado com amor, ou seja, implicando uma atividade e uma relação intra e interpessoal (Carvalho (2021, p.21)).

Ao chegarmos aos anos 2000, o conceito de cuidar de uma pessoa idosa é concebido como um processo emocional que influencia as decisões e as satisfações com o cuidar. É na década de 2010, que o cuidar ganha uma nova visão, com a constatação de que esta relação se baseia na interdependência/reciprocidade e que pode ser tanto negativa quanto positiva. Tendo por base estas premissas, os contextos onde os cuidadores e as pessoas que recebem cuidados estão inseridos é fundamental, já que o cuidado está vinculado à cidadania (direito a ser cuidado e ter cuidados). Por outro lado, as relações de cuidar encontram-se na interseção de dicotomias como público/privado, informal/formal e trabalho não remunerado/remunerado (São José, 2016) in Carvalho (2021, p.21). Assim, cuidar remete tanto “para uma disposição quanto uma atividade, materializada em processos que envolvem pelo menos um cuidador e uma pessoa cuidada, ambos com identidades sociais próprias. É um processo relacional, pois é uma ação voltada para o outro, geralmente com o objetivo último de promover o seu bem-estar” (São José, 2016, p. 68).

Por outro lado, “o cuidar é baseado na interconetividade e interdependência, ancorada no parentesco e/ou outros tipos de relações sociais, e pode ocorrer no

domínio do Estado e/ou outros domínios sociais e em diferentes locais ou configurações. Em termos relacionais pode ser fundado no amor, no dever ou em outras razões e, como atividade, pode incluir diferentes tipos de tarefas, que são realizadas sob certas condições de trabalho e com o uso de uma determinada abordagem" (São José, 2016, p. 68).

Cuidar é um processo que remete para "a repartição de tarefas entre os membros da família, homens e mulheres" dentro e fora da família (Gil, 2020, p. 12). Mas mais do que um processo é também uma ação de "criação, manutenção e oferta de apoios materiais, afetivos, cognitivos, sociais e culturais, ações essas pautadas por princípios de solidariedade, compromisso e obrigação. Estes cuidados são essenciais à manutenção e ao desenvolvimento da família e da sua cultura" (Neri, 2002, p. 38).

Assim, "o cuidado é a condição prévia que permite a eclosão da inteligência e do carinho; e o orientador antecipado de todo o comportamento para que seja livre e responsável e tipicamente humano. O cuidado é o gesto amoroso com a realidade, o gesto que protege e dá serenidade e paz. Sem cuidado, nada do que está vivo sobrevive. O cuidado é a força principal que se opõe à lei da entropia, o desgaste natural de todas as coisas, pois tudo o que cuidamos dura muito mais" (Boff,2003) in Cardoso (2019, p.93).

Sousa, Figueiredo e Cerqueira (2006, p. 56) explicitam que o processo de assunção do papel de cuidador "(...) ao mesmo tempo que um membro da família assume a responsabilidade da prestação de cuidados, os outros descartam-se". Devido a uma maior envolvência do cuidador no processo de cuidar, verifica se um maior distanciamento dos restantes membros da família, consolidando-se a intransmissibilidade do cuidado. Importa então, percebermos porque é que, apesar do que comporta ser prestador de cuidados, há motivos que levam as pessoas a assumir este papel.

Para corroborar os dados anteriores também a Nijboer in Galvão (2019, p. 294), aponta as necessidades do cuidador como fulcrais são:

- Informação sobre os cuidados e sobre o estado do doente, assim como o modo de atuar com este, de cuidar;
- Manter a vida familiar o mais saudável e estável possível;
- Tempo para acompanhar o dependente;
- Sentir que está presente e que pode ajudá-lo;
- Ser visto, de ser escutado e de ter acompanhamento.

Uma das formas de prestar auxílio e suporte aos cuidadores são os programas de intervenção psicoeducativa. Esta é uma metodologia de intervenção que integra recursos sociais, apoio e ajuda profissional de forma otimizada, constituindo assim,

uma medida de elevada importância terapêutica. Contemplam uma intervenção de suporte educativo e de suporte emocional, permitindo ao cuidador obter conhecimentos, e partilhar dúvidas e vivências, através de momentos estruturados para o efeito, proporcionando a normalização de sentimentos e de vivências/experiências.

O grande objetivo é ajudar os cuidadores, a aumentarem as suas competências, autoeficácia e autoconfiança para lidar com as situações, disponibilizando informação acerca de serviços formais, facilitando o desenvolvimento de redes informais de suporte e desenvolverem os seus recursos internos para melhor se ajudarem e ajudarem quem cuidam.

Na revisão feita pela autora Ferreira (2020 p. 7) que consistiu em analisar: 1 programa psicoeducativo, 5 programas de treino de competências, 2 programas psicoeducativos com treino de competências, 2 programas de intervenção psicossocial e 5 programas multicomponentes para cuidadores. Verificou que as variáveis de resultados transversais aos diferentes designs de programas são a diminuição do fardo subjetivo e da sintomatologia depressiva, sendo também estas as variáveis que sofrem alterações favoráveis nos grupos de intervenção.

Programa Psicoeducativo "Juntos a Cuidar"

Este programa desenvolvido pela associação AMARA - Associação pela Dignidade na Vida e na Morte; foi fundada em finais de 2003, fruto da inspiração de Tsering Paldrön (Emília Teresa Marques Rosa) e de Miguel Borges. Tem como missão "fazer um acompanhamento existencial de pessoas com doença crónica, avançada e progressiva e também das suas famílias, no domicílio, em hospitais e em outras instituições". Nesse sentido, prepara voluntários e profissionais de saúde para o efeito. Desse modo, contribui para que a doença, o envelhecimento e a morte sejam encarados como parte do processo natural que é a vida.

Tendo em conta as premissas da associação, este programa surge como uma estratégia de apoio aos cuidadores, dotando-os de conhecimento específico relacionado com a prestação de cuidados de carácter multidisciplinar, que visa não só o aumento de competências relacionadas com o saber, como também a sua integração num grupo que, tendo em comum a experiência de cuidar, promova a entreajuda, beneficiando simultaneamente de uma rede de apoio social.

Os objetivos do Programa Psicoeducativo "Juntos a Cuidar" consistem em capacitar os cuidadores para minimizar os riscos psicossociais e fisiológicos decorrentes desta atividade.

Pretende-se facilitar a formação técnica, de cuidados físicos e de posicionamento, complementados por noções da Neuropsicologia que facilitem a

deteção de sintomas e sensibilizá-los para a estimulação cognitiva.

Desenvolver capacidades de “escuta ativa”, autocuidado e técnicas de coping para a minimização dos riscos de burnout (sobrecarga).

Para além da formação técnica específica, esta formação evidencia a necessidade do autocuidado dos cuidadores. Fornece novos recursos como a prática de meditação e a criação de um diário que ajudam, nomeadamente, a tomar consciência das emoções e dar um novo significado ao dia-a-dia.

Por último estabelecer Grupos de Entreajuda que permitam o convívio esclarecido e a partilha de vivências e experiências.

A operacionalidade do Programa:

• Local das sessões: o programa psicoeducativo “Juntos a Cuidar” será desenvolvido através de uma plataforma online.

• Número de sessões: o presente programa é composto por 9 sessões (às quais se juntam sessões de avaliação).

• Necessária a participação em todas as sessões e estas são sequenciais.

• Frequências das Sessões: uma vez por semana.

Tabela 1 - Número de sessões, duração de cada uma e o total das sessões

Sessões	Número	Duração T
Estatuto do(a) Cuidador(a) Informal	1	100min
Empoderar o(a) Cuidador(a) Informal	2	100min
Cuidar	3	100min
Ajudas técnicas	4	100min
Patologias e prevenção	5	100min
Autocuidado	6	100min
Bem-estar	7	100min
Lidar com a demência	8	100min
Presente e Futuro	9	100min
Total	9	900min

Avaliação do Programa "Juntos a Cuidar" a junho de 2022

Neste processo de implementação do Programa deparámo-nos que até à data só tínhamos conseguido chegar a 23% do objetivo de adesão (48 Cuidadores em 210) ao Programa.

Fez-se uma reflexão em que se indagou

Tabela 2 - Levantamento de necessidades, riscos e problemas em junho de 2022	
Necessidades	Divulgação mais alargada e focadas nos Cuidadores Adesão dos Cuidadores Chegar a pessoas que estão pouco presentes nas redes sociais
Risco	Disponibilidade dos Cuidadores para participarem plenamente Exposição e reflexão sobre as suas vivências Morte da pessoa que estão a cuidar, desistência do programa
Problemas	Cuidadores não se reconhecerem com a designação "Cuidadores Informais" Ser um programa longo, com obrigatoriedade de ir a todas as sessões. Os Cuidadores têm medo de se confrontar com as suas vulnerabilidades.

Mas para isto acontecer é necessário fazer ajustes e estar disponível para mudar, em tempo real na implementação do Programa.

Foi o que se fez, estamos em tempo de mudança, com uma nova abordagem para o mesmo desafio, agora com as seguintes premissas:

- Temas mais diversificados que façam mais sentido para os Cuidadores.
- Não ser obrigatório a participação em todas as sessões, embora não se possa avaliar o impacto da intervenção, se a participação não é homogénea. No entanto, a não obrigatoriedade pode se potenciar a adesão às sessões.
- A prática da meditação ser no final da sessão, uma vez que nem sempre todos conseguem chegar a horas às sessões. Assim no final permite que vão mais

tranquilos descansar.

- Fazer mais workshops abertos à comunidade, para chamar mais atenção para o tema dos cuidadores e a sua sobrecarga;
- Dar apoio a algumas associações de cuidadores que não tenham recursos para o fazer autonomamente.
- Incluir uma avaliação qualitativa capaz de mostrar alguns efeitos mais específicos no dia-a-dia do cuidador, atendendo aos relatos informais reportados pelos cuidadores.

Mini Workshops "Juntos a Cuidar"

Os Mini-workshops são um tempo de aprendizagem de saberes práticos para os cuidadores e de partilha de experiências, no combate ao estigma, solidão e isolamento, tendo em vista ganhos de saúde e maior qualidade de vida e cidadania ativa.

Tem como objetivos iguais aos do Prgrama Psicoeducativo "Juntos a Cuidar":

- Disponibilizar apoio emocional que ajude os cuidadores a superarem a instabilidade emocional e o isolamento, mediante o contacto com pessoas que tiveram experiências idênticas e que possuem respostas e estratégias positivas para o desafio
- Adquirir e reforçar atitudes positivas face à integração em diferentes contextos (família, amigos, trabalho, comunidade)
- Facilitar a expressão de sentimentos, emoções e pensamentos
- Favorecer o conhecimento e a mobilização de recursos pessoais
- Promover o reconhecimento dos sinais de alarme devido a comportamentos;
- Partilhar experiências e saberes
- Definir e identificar estratégias para superar a adversidade
- Obter ganhos de saúde
- Promover o empoderamento dos cuidadores para o processo de cuidar da pessoa com dependência, em contexto domiciliário.
- Capacitar o cuidador informal como auxiliar da pessoa cuidada na realização das atividades diárias
- Promover nos cuidadores a sua valorização e que estes reconheçam as suas qualidades e limitações durante o processo de cuidar

A operacionalidade do Programa:

- Local das sessões: será desenvolvido através de uma plataforma online.
- Número de sessões: o presente programa é composto por 9 sessões.
- A participação não é obrigatória em todas as sessões e elas não são sequenciais.

- Frequências das Sessões: uma vez por semana.

Tabela 3 - Número de sessões, duração de cada uma e o total das sessões		
Sessões	**Número**	**Duração T**
Cuidados e higiene	1	100min
Principais patologias e prevenção	2	100min
Facilitar a relação com a pessoa com demência	3	100min
Práticas simples de estimulação cognitiva	4	100min
Falar e escutar com o coração	5	100min
Cuidar de mim, sem culpa	6	100min
Pacificar-se com a morte	7	100min
Coragem para abraçar a vida no seu todo	8	100min
Avaliação	9	100min
Total	9	900min

Resultados

Estas tabelas foram construídas tendo em conta os Cuidadores que se inscreveram.

Tabela 4 - Número de Cuidadores Programa Psicoeducativo "Juntos a Cuidar"		
Datas	**Objetivo nº de Cuidadores**	**Nº alcançado de Cuidadores**
2021	20	15
Até agosto de 2022	40	33
Total	60	48

Tabela 5 - Número de Cuidadores Mini Workshops "Juntos a Cuidar"		
Datas	**Objetivo nº de Cuidadores**	**Nº alcançado de Cuidadores**
2022	20	17
2023	65	75
Total	85	92

Tabela 6 - Frequência dos Cuidadores Mini Workshops "Juntos a Cuidar"	
Nº Workshops	**Cuidadores Inscritos**
1	9
2	11
3	9
Todos	67

Tabela 7 - Balanço geral de Cuidadores capacitados		
Datas	**Objetivo nº de Cuidadores**	**Nº alcançado de Cuidadores**
2021	20	15
2022	50	50
2023	65	75
Total	135	140

Considerações Finais

Ser Cuidador é uma missão complexa e multifacetada. Muitas vezes não têm informação nem formação para o papel que irá desempenhar, nem a noção do que está acontecer.

Considerando o Cuidador quanto à sua condição de saúde, este é mais vulnerável. É mais suscetível a doenças crónicas, apresenta uma saúde global mais débil, é mais suscetível à depressão e ansiedade, manifestações álgicas, perturbações intestinais, alterações cardiovasculares, agravamento de patologias crónicas, alterações do estado emocional, alterações do peso, morbilidade psiquiátrica, diminuição da autoestima, alterações de sono e repouso e fadiga (Fernandes e Garcia, 2009; Jani-Le Bris, 1994; Sousa, Figueiredo e Cerqueira, 2006) in Machado (2013, p.78).

O objetivo deste trabalho é a avaliação do alcance da adaptação do Programa Psicoeducativo “Juntos a cuidar” para Mini Workshops. Para dar resposta à questão – Quantos cuidadores conseguimos capacitar?

Neste processo de implementação do Programa deparámo-nos que até à data de agosto de 2022 só tínhamos conseguido chegar a 23% do objetivo de adesão (48 Cuidadores em 210) ao Programa Psicoeducativo “Juntos a Cuidar”.

Ao ver os resultados de adesão, rapidamente percebeu-se que se tinha de atuar. Com um painel diferente de ofertas de temas das sessões e com um novo formato.

Os resultados obtidos com a adaptação do programa revelaram que foi um sucesso, pois tivemos uma adesão de cerca de 191%, 92 Cuidadores capacitados em relação aos 48 no mesmo período.

Referências Bibliográficas

- Cardoso, Pedro de Calheiros (2019). Estratégias para os cuidados individualizados. In Moura, Cláudia (Coord.), O perfil no mosaico da intervenção gerontológica (1ª edição, pp. 293-303). Seda Publicações (Maio, 2019)
- Carvalho, Maria (2021). Relatório Científico Estudo sobre o Perfil do Cuidador Familiar/Informal da Pessoa Sénior em Portugal”. CENTRO DE INVESTIGAÇÃO Centro de Administração e Políticas Públicas (CAPP) | Instituto Superior de Ciências Sociais e Políticas (ISCSP) Universidade de Lisboa (ULisboa).

- EC - European Comission (2018). Informal Care in Europe Exploring Formalisation, Availability and Quality. Brussels. Disponível em: http://cite.gov.pt/pt/destaques/complementosDestqs2/Informal_care.pdf (consultado em 21 de julho de 2010).
- Ferreira, Inês (2020). DISSERTAÇÃO DE MESTRADO “Programas de Suporte a Cuidadores Informais de Idosos e de Doentes Crónicos: uma revisão sistemática”. Universidade de Lisboa
- Galvão, Ana Maria (2019). O perfil do cuidador e ética na intervenção. Competências necessárias para exercício das boas práticas gerontológicas. In Moura, Cláudia (Coord.), O perfil no mosaico da intervenção gerontológica (1ª edição, pp. 293-303). Seda Publicações (Maio, 2019)
- Gil, A. P. (2020). Os cuidados familiares à luz da teoria da ambivalência sociológica: «Os dois lados da moeda». In Manuel João Rodrigues Quartilho (Coord.), Psiquiatria Social e Cultural, Diálogos e Convergência (pp.399-420). Coimbra: Imprensa da Universidade de Coimbra.
- Machado, Paulo (2013). Papel do Prestador de Cuidados - Contributo para promover competências na assistência do cliente idoso com compromisso do Autocuidado – Universidade Católica Portuguesa, Instituto de Ciências da Saúde Porto, Fevereiro de 2013.
- Neri, Anita Liberalesso e Carvalho, Virgínia Ângela M. de Lucena (2002). O Bem-estar do Cuidador: Aspectos Psicossociais. [autor do livro] Elisabete Viana de Freitas, [et al.] Tratado de Geriatria e Gerontologia. Rio de Janeiro: Guanabara-Koogan, 2002
- São José, J. de (2016). Do que estamos a falar quando falamos de cuidados? Uma revisão conceptual da literatura. Sociologia, Problemas e Práticas, 81, 57-74. https://doi.org/10.7458/SPP2016816958
- Sequeira, Carlos.(2010 e 2018). Cuidar de Idosos com Dependência Física e Mental. Lisboa: Lidel Edições Técnicas, 2010. ISBN: 978-972-757-717-0 (1ª e 2ª edição)
- Sousa, Liliana, Figueiredo, Daniela e Cerqueira, Margarida (2006). Envelhecer em Família. – os cuidados familiares na velhice. Porto: Ambar, 2006. ISBN 972-43-1152-X .

11 - The Influence of Waiting Time on Customer Satisfaction: An Empirical Study

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Resumo: Para garantir melhores resultados, as organizações precisam focar no indicador mais importante que os clientes podem fornecer: a satisfação, que pode ser afetada por fatores como o tempo de espera, resultando na adoção de medidas eficientes e eficazes para a sua redução. Assim, o objetivo deste artigo é compreender a influência do tempo de espera na satisfação dos clientes, bem como os fatores que influenciam o tempo de espera e a satisfação dos clientes nas unidades avaliadas pela DiaSaúde- Unidade Privada de Saúde, Lda. Foi efetuado um estudo quantitativo com recurso a ferramentas de estatística descritiva e inferencial. A recolha de dados foi efetuada através de um questionário que obteve 171 respostas. Verificou-se que a complexidade do serviço e os fatores de distração da sala de espera não influenciam a satisfação do cliente com o tempo de espera, enquanto que a perceção e expetativa do tempo de espera e o ambiente físico da sala de espera influenciam. Verificou-se ainda que a satisfação com o tempo de espera afeta a satisfação final do utente. Por fim, verificou-se que o tempo de espera é um elemento chave na satisfação do utente com a instituição de saúde.

Palavras-chave: satisfação do cliente; tempo de espera; filas de espera; instituições de saúde; comportamento do consumidor.

Abstract: To ensure better results, organizations need to focus on the most important indicator that customers can provide: satisfaction, which can be affected by factors such as waiting time, resulting in the adoption of efficient and effective measures to reduce it. The aim of this article is therefore to understand the influence of waiting time on customer satisfaction, as well as the factors that influence waiting time and customer satisfaction in the units evaluated by DiaSaúde- Unidade Privada de Saúde, Lda. A quantitative study was carried out using descriptive and inferential statistical tools. The data was collected using a questionnaire which received 171 responses. It was found that the complexity of the service and the distracting factors of the waiting room do not influence customer satisfaction with waiting time, while the perception and expectation of waiting time and the physical environment of the waiting room do, and it was also found that satisfaction with waiting time affects the final satisfaction of the user. In summary, it was found that waiting time is a key element in user satisfaction with the healthcare institution.

Keywords: customer satisfaction; waiting time; queues; healthcare facilities; consumer behavior.

1. Introduction

Health is extremely important in people's lives, and everyone wants it. A World Health Organization (WHO) (1898) considered that health cannot be defined solely as the absence of disease, but must take into account the component of physical well-being, as well as mental and social elements.

Currently, the sector has several weaknesses, such as waiting times. We often hear news about the long waiting times that patients have to endure for emergency care, first consultations and surgeries, both in the public and private sectors. In addition to these factors, we must also mention the waiting time between check-in and the start of the appointment, which has always been and continues to be a factor in users' lives.

Although the health sector is continually in the spotlight, 2020 will be marked by the year of exponential overload in the sector, due to the declaration of the Covid-19 pandemic.

According to the Organization for Economic Cooperation and Development (OECD) (n.d.) the number of medical consultations per capita fell slightly compared to the previous year. In Portugal, there was a decrease in the number of primary care consultations and hospital medical consultations of 38.54% and 11.39%, respectively, according to data from the National Health Service (SNS) (National Health Service, n.d.-a, n.d.-b) the same was true of surgery and other health services.

According to Ferreira et al. (2018) waiting time and customer satisfaction are inversely proportional, i.e. the longer the waiting time, the lower the customer satisfaction and vice versa.

Therefore, this relationship must be analyzed meticulously because, according to Prakash (2010) customer satisfaction is a relevant factor for measuring quality in the health sector, because it allows users to be involved in decision-making (Mpinga & Chastonay, 2011).

As a general objective, this research aims to understand the influence of waiting times on customer satisfaction in the private healthcare units of DiaSaúde- Unidade Privada de Saúde, Lda. In order to achieve this general objective, we have the following specific objectives:

- To analyze customer satisfaction with regard to waiting times experienced by clients of the Physical Medicine and Rehabilitation, Clinical Analysis and Medical Clinic services;
- Identify the impact of perceived waiting time on customer satisfaction;
- Recognize the impact of expected waiting times on customer satisfaction;
- To verify the impact of the physical environment of the waiting room on customer satisfaction;
- To discover the impact of waiting room distraction factors on customer satisfaction;
- Understand the impact of the complexity of the service provided on customer satisfaction;
- To see if customer satisfaction with waiting times has an impact on satisfaction.

2. Literature review

2.1 Concept of satisfaction

The first research into satisfaction emerged in the 1970s, when companies realized the importance of satisfaction as a crucial variable in marketing-related behaviors (Évrard, 1993).

According to Adah and Folorunso (2015) satisfaction has polysemic characteristics, as well as being present in various areas of activity, such as psychology, marketing, economics, among others. Thus, there are different definitions of the concept by different authors, such as, Oliver (1993) defined satisfaction as a response on the part of

consumers resulting from previous expectations and the discrepancy between expectations and perceptions. In addition Woodruff (1997) argued that satisfaction is influenced by past and present experiences, adding that it is the result of fulfilling the expected purpose (Ekinci, 2003).

In the view of Westbrook and Oliver (1991) satisfaction is an emotional state resulting from a cognitive component, where, according to Oliver (1980) there is a comparison between expectations and perceived results, which consequently leads to the formation of beliefs and judgments, and the emotional component, whereby Maister (1984) states that satisfaction is the result of the difference between perceptions and expectations. Thus, if perceptions are higher than expectations, customer satisfaction should occur, otherwise there will be dissatisfaction.

According to López-Mosquera and Sánchez (2014) researchers have considered that the cognitive aspect is insufficient in determining satisfaction, demonstrating that the affective aspect must also be taken into account, where the individual's feelings are an essential component, which only began to be addressed in studies as determinants of satisfaction from the 90s onwards (Palací et al., 2019).

Satisfaction is studied in various fields, such as customer satisfaction, employee satisfaction, patient satisfaction, in the case of the health sector, among others (Cliton & Wellington, 2013).

2.2 User satisfaction

Consumers are becoming more sophisticated about the type of care they receive, providers are becoming more attentive to customer concerns and competition for patients has intensified (Cleary & McNeil, 1988). It is therefore important to measure an important indicator for health professionals and authorities in order to define better strategies and procedures for better resource allocation and priority setting: customer satisfaction (Mpinga & Chastonay, 2011), according to Gill and White (2009) an objective of healthcare organizations. Heidegger et al. (2006) argued that customer satisfaction represents much more than an objective, as it is related to clinical results, economic measures and health-related quality of life. Worldwide, user satisfaction studies are frequently implemented (Ng & Luk, 2019) and, despite being considered subjective, they have an impact on the management of health services, as well as on the behavior of professionals, say Mpinga & Chastonay (2011) citing previous research such as Barry et al. (2006) and Greko et al. (2001). Previous research by Williams (1994) stated that it was important to measure user satisfaction so that their views could be integrated into the functioning of the health sector

and because it is an auxiliary tool for identifying problems and difficulties found in health services and gaps in their quality. In addition to all these factors, companies have to look at satisfaction from a number of different perspectives, such as sociological ones (Taylor, 2009) and legal (Mpinga & Chastonay, 2011).

Mpinga and Chastonay (2011) argued that patient satisfaction is influenced by factors ranging from the quality and accessibility of medical care to patient information and participation, along with other factors (Figure 1).

Figure 1

Key concepts of patient satisfaction

Source: Adapted from Mpinga, E.; Chastonay, P. (2011). "Satisfaction of patients: A right to health indicator?".

To Santiago and Lu (2023) accessibility, efficiency, quality of service, technical quality, interpersonal relationships, continuity of care, finances, future preferences and overall satisfaction are key concepts in user satisfaction, and are fundamental to the user's favorable opinion of the service provided. On the other hand, there is evidence that factors such as age, gender and level of education have an influence on user satisfaction (Kalaja, 2023). Ferreira et al. (2001) also mentioned that women, along with younger people, are the most dissatisfied, and the aspects most disapproved of by the study sample are attendance and lack of timetables, related to waiting times. Despite this Thi et al. (2002) found that these variables had little effect on customer satisfaction. Additionally, Pérez-Goiz et al. (2009) concluded in their study that waiting time was indicated as the most dissatisfying factor when evaluating customer satisfaction, which is in agreement with Alrasheedi et al. (2019) who found that the cause of greatest patient satisfaction is waiting time.

It can be seen that these factors influence the quality of services, which is in line with the arguments put forward by Kumasey (2014) stated that several authors believe that quality is linked to the cognitive part, while the emotional part is connected to satisfaction, which is why it is important that, despite having different meanings, satisfaction and quality are not confused. Brady and Robertson Brady and Robertson (2001) stated that satisfaction is the result of quality, while Dabholkar (1995) stated that quality is preceded by satisfaction. There are also authors who believe that satisfaction can precede and follow service quality, as in the case of Martínez-Tur et al. (2001). In the view of Álvarez-García et al. (2019) one of the most widely used management tools is quality, which is indispensable. In addition, quality is a key factor in an organization's success (Dagger & Sweeney, 2007). Montes and Fuentes (2005) refer to service quality as a differentiation strategy that boosts productivity and profitability, as well as expanding the company's image and achieving customer loyalty.

In this context, Kelley and Hurst (2006) presented a framework for quality indicators in the healthcare sector, involving 23 countries and the WHO. It should be noted that only in the United Kingdom and the United States of America were national documents found relating to waiting time performance. Table 1 shows the indicators for four countries and the WHO:

Table 1

Concepts relating to technical quality in healthcare

Country / Quality concepts	United Kingdom	Canada	Australia	United States of America	WHO
Acceptability		*			
Accessibility	*	*	*	*	
Suitability		*	*		
Capacity	*	*			
Competence	*	*	*		
Continuity		*	*		
Effectiveness	*	*	*	*	*
Efficiency		*	*	*	*
Equity		*	*	*	*
Patient centeredness	*	*	*	*	*
Safety		*	*	*	
Sustainability		*	*		
Waiting times	*			*	

Source: Adapted from Kelley, E., & Hurst, J. (2006). "Health care quality indicators project: conceptual framework paper".

It is important to understand the impact of waiting times on satisfaction, given that long waiting times are a factor in relatively all health service organizations and play a significant role in reducing access to health care and patient dissatisfaction. (Mohsin et al., 2007). Additionally, Ndukwe et al., (2011), considered that long waiting times are the result of inefficiency and poor management of resources, which can result in competitors taking away customers in a very competitive sector (Nie, 2000). In an analysis that aimed to better understand the satisfaction of outpatients in Chinese tertiary hospitals, 35 studies were carried out, 22 of which presented the satisfactory and unsatisfactory factors, Li et al. (2020) found that 15 referred to waiting times. In addition, nine categorized this variable as a factor of dissatisfaction. Afolabi and Erhun (2003) showed that final patient satisfaction is intrinsically related to satisfaction with waiting time, reinforcing that waiting time is an essential factor in assessing the quality of health services, and consequently proves to be a valuable tool for assessing patient satisfaction (Alrasheedi et al., 2019). The same authors conducted a study to verify the relationship between patient satisfaction in a primary healthcare organization in Saudi Arabia, finding that there is a relationship between satisfaction and marital status, as well as between education and professional status. In addition, 27.90% of the study sample waited between 21 and 30 minutes to be seen, and of the 620 individuals, 13.78% were dissatisfied with the waiting time.

In the study carried out by Hill and Joonas (2005) it was found that waiting time has a negative impact on the likelihood of recommending the service, i.e. the longer the waiting time, the less likely the patient is to make a recommendation. In line with Liang (2019) it is necessary to examine how to make queues a more pleasant condition in order to improve customers' perception of waiting time.

2.3 Queues

Furnham et al. (2020) ensured that the functioning of many organizations continues to depend fundamentally on queues. Despite this, it is not yet possible to understand the impact of the queuing environment in order to increase the waiting time that the customer is willing to wait, improving their experience and consequently reducing frustration.

Maister (1984) stated that the waiting time customers endure should be a concern for managers and, in addition to analyzing measurable aspects, they should examine how this waiting is experienced. In this way, he states that managers should pay attention to customer service and customer perceptions and expectations.

In the study carried out by Chu et al. (2019) evaluating the factors that can affect the way patients respond to different waiting times, it was found that many of the patients wanted to wait for their appointment in a productive and pleasant way. Many of them were already prepared with books and cell phones, while others reported reading pamphlets, advertisements and magazines, among others. Additionally, Jones and Peppiatt (1996) carried out a comparison between a control group and an experimental group, with access to television during waiting times, to assess this topic. The authors found that the difference between the perceived waiting time and the actual waiting time was 71.8 seconds and 48.1 seconds for the control group and the experimental group, respectively. In this way, one can arrive at the perception that busy time seems shorter than unoccupied time.

Maister (1984) stated that users' tolerance of waiting times depends on the individual's perception of the value of the service. Thus, consumers are generally prepared to wait longer for the benefit of experiencing a high-value service. (Kostecki, 1996). The same author believes that the tolerable waiting time is affected by the relationship between the quality of the service and its price, specifying that the more attractive this relationship is, the longer the customer will be willing to wait.

Another aspect to take into consideration is the complexity of the health service provided, which for Kannampallil et al. (2011) is a relative concept, but it increases with the number of elements, relationships and their uniqueness. The complexity of health services has a directly proportional relationship with waiting times, i.e. as one factor increases, the other will also increase (McIntyre & Chow, 2020). In other words, it can be said that the higher the value of the service, the longer the waiting time the patient can expect.

A characteristic aspect of queues is the sight of individuals waiting simultaneously without interacting with each other or, as is the case with long waiting times, developing a dialogue. The study carried out by Jones and Hwang (2005) evaluated the differences between the perception and reality of the waiting time of patients who waited alone, and found that there were significant differences in the calculation, with the perception of the waiting time being higher than what the study sample waited in reality. Organizations

should therefore encourage customers to use group waiting (Maister, 1984) because solitary waits seem longer than group waits.

The comfort of the waiting room should also be taken into account (Hensley & Sulek, 2007). In the study carried out by Spechbach et al. (2019) on factors affecting waiting time, it was found that a large proportion of the patients in the sample were unhappy or very unhappy with the comfort conditions in relation to other patients, furniture, etc. From another perspective, the study carried out by Fadhilah et al. (2018) found that the comfort of the waiting room positively and significantly affects the perception of waiting time and satisfaction, more specifically Baker and Cameron (1996) stated that this variable affects satisfaction with waiting time.

Based on the review presented above and in order to meet the objectives set, the following research hypotheses are presented:

H1: Customer satisfaction with waiting time depends on perceived waiting time;

H2: Customer satisfaction with waiting time depends on the expected waiting time;

H3: Customer satisfaction with waiting times depends on the physical environment of the waiting room;

H4: Customer satisfaction with waiting times depends on the distracting factors in the waiting room;

H5: Customer satisfaction with waiting times depends on the complexity of the service provided;

H6: Customer satisfaction depends on their satisfaction with waiting times.

3. Methodology

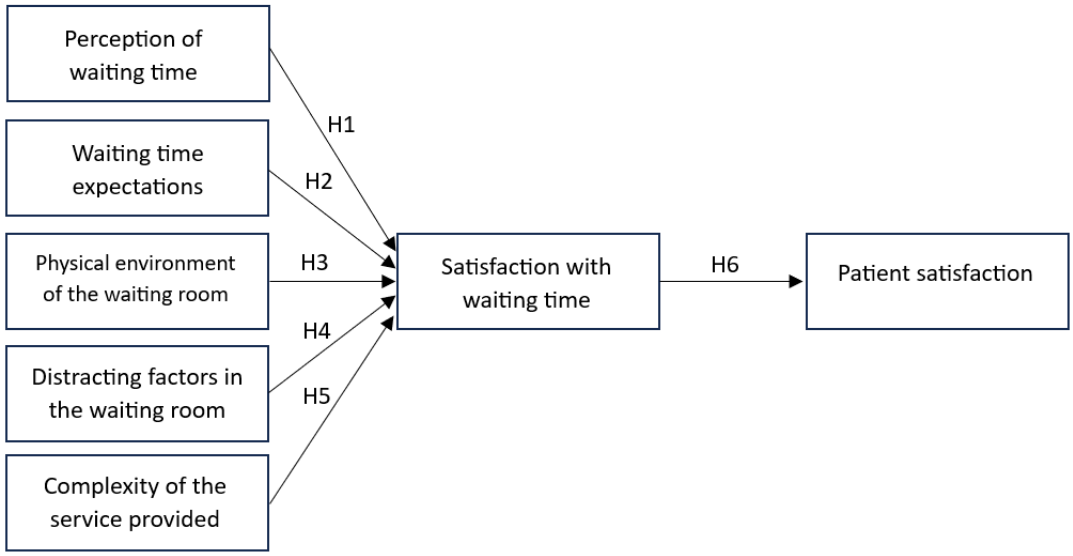
In the field of Management, several studies have been published using quantitative methodology (Groenland & Dana, 2020). In order to carry out this research, we chose quantitative methodology, which, according to the same authors, is ideal for summarizing large amounts of data and formulating generalizations based on statistical tools and hypothesis testing, in order to assess the relationship between variables. In addition, the questionnaire was used because it allows direct information to be obtained more quickly about the respondents' behaviors, characteristics and opinions (Lu et al., 2021).

From the perspective of Singh and Masuku (2014) the sampling technique and the size of the sample play a crucial role in research that uses a questionnaire as a data collection tool. In this research, the respondents were selected randomly and free from bias, which led to the sample being determined as random. In this type of sample, all individuals have the same chance of taking part in the study, and it is the most commonly used when researchers select their sample (Noor et al., 2022).

Data analysis using the quantitative method requires the determination of variables and relationships (Punch, 2003). Before determining the dependence of the variables, it is necessary to carry out the research design. This is the output of the researcher's ideas and interconnects the main components of the research in order to answer the research questions (Asenahabi, 2019). Thus, the research design is presented (Figure 2):

Figure 2

Research design



Source: Own elaboration

It can be said that the independent variables are the perception of waiting time, the expectation of waiting time, the physical environment and distracting factors of the waiting room and the complexity of the service. On the other hand, the dependent variables are user satisfaction and satisfaction with waiting time, which can also be considered an independent variable, as it aims to verify its influence on customer satisfaction.

The questionnaire was the data collection instrument, which followed the requirements defined by Wilson (2007) clear and persuasive objectives, well-ordered and impartial questions. The importance of these requirements lies in the validity and reliability of the data obtained (Saunders et al., 2009). The questionnaire is divided into three parts. The first consists of six questions to obtain data on the users' sociodemographic characteristics, namely gender, age, marital status, among others. The second part includes data on the factors that affect satisfaction with waiting times, consisting of 18 questions. Finally, the third part relates to general and user satisfaction, with three questions. The questionnaire is essentially made up of closed-answer questions, in which answer options are suggested, as well as open-answer questions, in which the answers are constructed by the respondent themselves, avoiding filling in the blanks. (Connor Desai & Reimers, 2019). Verbal scales with ordering were also used, which according to Celeste and Moniz (2019) are characterized by the statement of opinion based on a previously structured hierarchy, and are widely used to measure customer satisfaction; and the Likert scale, which allows the researcher to collect a large amount of data easily. (Nemoto & Beglar, 2014).

In order to implement the questionnaires, authorization was requested from the Board of Directors of DiaSaúde - Unidade Privada de Saúde, which gave its positive opinion for the study to begin at Clinimefa- Serviços de Assistência Médica, S.A. and C.F.F.- Clínica Fisiátrica de Fafe, Lda. The questionnaires were then filled in by the users and, at the end of the data collection, it was found that all the questionnaires were valid, resulting in a total of 171 respondents, made up of 66 respondents in Physical Medicine and Rehabilitation, 53 respondents in Clinical Analysis and 52 respondents in Clinical Medicine.

After collecting the data, a frequency study was initially used to organize the data. It was also decided to use hypothesis testing because it represents a tool that aids decision-making by using a set of probabilistic methods to avoid relying on subjective data, offering uniform decision criteria (Pereira & Leslie, 2009). The same authors point out that this tool depends on several stages, such as establishing the null hypothesis, selecting the most appropriate statistical test and the level of significance, among others.

With regard to statistical tests, it was decided to use Pearson's chi-square test (χ^2), which is used when both variables are qualitative in order to determine whether the difference between them is significant (Connelly, 2019) Student's t-test and the Analysis Of Varience (ANOVA) test are used to compare variables of different natures, i.e. qualitative and quantitative. On the one hand, the Student's t-test compares up to two

variables, while, on the other hand, the ANOVA test equates three or more variables (Mishra et al., 2019). In addition, a regression study was carried out, which is one of the most important aspects of statistics (Allen, 2004). The same author indicates that this type of study makes it possible to ascertain whether the relationship between two variables is significant or not, i.e. it makes it possible to establish a relationship between the dependent variable and the independent variable.

The significance level was set at 0.05, which corresponds to a 95% confidence interval. This type of analysis can be carried out using software which, according to Arkkelin (2014)allows statistical results to be obtained from descriptive to more complex analyses. SPSS (Statistical Package for the Social Service) has the greatest advantage of being able to deal with a large set of data with several associated variables, as well as the flexibility to carry out multiple data analyses along with graphical representation. (Rahman & Muktadir, 2021). In this case, version 29.0.1.0 of the software was used. Excel 2019 was also used.

4. Characterization of the Business Group DiaSaúde- Unidade Privada de Saúde, Lda.

DiaSaúde- Unidade Privada de Saúde, Lda. is a private limited company owned by Clinimefa- Serviços De Assistência Médica, S.A. and Rilhadas- Investimentos, S.A. in equal shares. The company is based in Fafe, Portugal. It has a share capital of 5,000 euros. The firm is active in the management of health units, the provision of health care and the rental of real estate. It is covered by the Code of Economic Activities (CAE) under primary code 86906, which corresponds to Other Human Health Activities, and by secondary code 68200, which corresponds to the Rental of Real Estate.

The activity carried out by the organization began on December 2, 2008 at the aforementioned headquarters and is a project that involves various areas of medicine, such as Physiatry, Medical Specialties, Diagnosis and Imaging and Dental Medicine. In order to make it possible to provide these services, several clinics that were already working in the city of Fafe joined forces.

One of the most important investments was the creation of a heated swimming pool, which concentrates treatment, prevention and leisure activities, leading to the creation of various therapeutic groups, where hydrotherapy plays a fundamental role. Leisure classes have recently been created, involving groups of a similar age, with common interests and

goals, in the presence of a Physical Education teacher and, if necessary, a Physiotherapist.

Reference should also be made to the companies that make up DiaSaúde - Unidade Privada de Saúde, Lda. DiaFafe - Centro de Diagnóstico e Imagiologia, S.A. and MediFafe - Clínica de Medicina Dentária, Lda. are only linked to the aforementioned company because they rent the space, while Clinimefa - Serviços De Assistência Médica, S.A. and C.F.F. - Clínica Fisiátrica de Fafe, Lda. are directly related to it.

5. Analysis of results and discussion

5.1 Characterization of the sample

The sample consists of 171 individuals, 132 of whom are female (77.19%) and the remaining 39 male (22.81%). On the other hand, we found that in all the contexts assessed, the majority of respondents were female.

In the Medical Clinic context, 86.54% of respondents were female, while 13.46% were male. In the Clinical Analysis and Physical Medicine and Rehabilitation contexts, 69.81% and 75.76% were female and 30.19% and 24.24% male, respectively.

The ages are distributed between 12 and 92, with an average age of approximately 53. More specifically, the setting with the highest average age ($\overline{x}$) is Clinical Analysis ($\overline{x} \approx 57.02$), while the average of the Medical Clinic setting is the lowest ($\overline{x} \approx 47.08$), according to the descriptive statistics carried out in the SPSS software.

With regard to marital status, it can be seen that, in general, most of the respondents are married, corresponding to a percentage of approximately 66.08% (113 respondents), followed by singles, who represent around 18.71% of the sample. In addition, 14 of the 171 respondents are widowed and 7.01% are divorced or have another marital status.

The statistics presented on this point mirror what happens at a private level, where the majority of respondents are also married or single, as can be seen in the following figure.

Around 69.01% of the respondents have academic qualifications equivalent to 1st cycle, 2nd cycle, 3rd cycle and secondary education, and approximately 8.19% have no academic qualifications. In particular, we can see that, in the context of the Medical

Clinic, the most frequently held academic qualifications are 1st cycle, Secondary Education and Degree, held by the same number of people. On the other hand, despite the fact that most of the respondents in the Clinical Analysis and Physical Medicine and Rehabilitation contexts have the same academic qualifications as those in the context presented above, there is a predominance of the 1st cycle. As for the respondents' professional situation, approximately 41.5% of the sample are workers, 33.3% are retired, 5.26% are students or unemployed and 14.62% have another professional situation. Only in the context of Physical Medicine and Rehabilitation were there more retired people.

Regarding the residence of the participants, 77.19% of the sample lives in Fafe. In addition, 97.08% of the sample lives in the Ave sub-region, and it was found that residents of Braga, Chaves and Porto also used the services. It should also be noted that two individuals do not live in Portugal: one lives in Lugo, Spain and the other in Bern, Switzerland. The two individuals who live abroad used the services of the Medical Clinic and Clinical Analysis.

5.2 Factors affecting satisfaction with waiting times

When asked about the complexity of the reason that led them to use the service, 40.35% of respondents thought that the reason was complex, followed by 38.60% who thought that the reason was not very complex, while 17.54% thought that the reason was very complex. The remainder were unable to assess the complexity of the reason that led them to use the services of the companies. More specifically, most of the users of the Medical Clinic (57.69%) consider the reason to be not very complex, while the users of Physical Medicine and Rehabilitation (56.06%) consider the reason for providing the service to be complex. With regard to Clinical Analyses, users' opinions are divided. Almost half of those surveyed in this context consider the reason to be not very complex and around 32.08% believe that the cause is not very complex.

With regard to perceived waiting time, table seven shows that 94.15% of customers perceive a relatively low waiting time, namely 112 people understood that they waited less than 5 minutes, while 49 perceived that they waited between five and 15 minutes (Table 2).

Table 2
Waiting time as perceived by respondents

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Less than 5 minutes	112	65,50%	65,50%	65,50%
5-15 minutes	49	28,65%	28,65%	94,15%
16-30 minutes	5	2,92%	2,92%	97,08%
31-45 minutes	1	0,58%	0,58%	97,66%
46-60 minutes	1	0,58%	0,58%	98,25%
More than 60 minutes	3	1,75%	1,75%	100,00%
Total	171	100,00%	100,00%	

Source: Adapted from SPSS

On the other hand, five people waited more than 30 minutes, while the same percentage of people waited between 31 and 45 minutes and 46 and 60 minutes (0.58%). In addition, 1.75% waited more than an hour for the service to be provided. If a comparison is made between the perceived waiting time and the actual waiting time, 78.95% of the sample's perception is in line with reality, as can be seen in the following table (Table 3). In addition, 32 people said they waited less than they actually did, while four believed they waited longer than they actually did.

Table 3

Comparison between perceived and actual waiting times

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Less than real time	32	18,71%	18,71%	18,71%
Same as real time	135	78,95%	78,95%	97,66%
Better than real time	4	2,34%	2,34%	100,00%
Total	171	100,00%	100,00%	

Source: Adapted from SPSS

In particular, 48 out of 52 respondents believe that they waited less than five minutes or between five and 15 minutes in the Medical Clinic. In addition, 53.58% of the individuals perceived a shorter time than reality, with only one person believing they had waited longer than reality. With regard to Physical Medicine and Rehabilitation, 74.24% of those questioned believed that they had waited less than five minutes, and there were no perceptions of more than 30 minutes. As a result, there were no perceptions that were longer than the real time and 62 people seemed to wait for the same length of time as the reality. Finally, in the context of Clinical Analysis, three respondents believed they were waiting longer than 60 minutes, although 40 people perceived they were waiting less than

five minutes. Compared to the actual waiting time, a large proportion (84.91%) perceived it to be the same as the actual time, but this was the context in which there was a higher percentage of perception than the actual time (5.66%).

It was also considered assertive to ask whether being accompanied during the waiting time helped to reduce the perception of the waiting time. Of the 171 respondents, only 44 (25.73%) were accompanied and 127 (74.27%) had no company at all.

The 44 people who were accompanied during the waiting time for the service to start also had to answer the question "Do you think that being accompanied contributed to a reduction in the perception of waiting time?". After analyzing the answers, it was found that 36 respondents (21.05%) answered yes and only 8 (4.68%) answered no.

In fact, the respondents who answered yes were of the opinion that the fact that they were accompanied helped to reduce their perception of the waiting time, and this was true in all the contexts analyzed.

In general, the majority of respondents expected to wait up to 15 minutes, and in Physical Medicine and Rehabilitation they expected to wait up to five minutes, while in Medical Clinic and Clinical Analysis they expected to wait between five and 15 minutes. Furthermore, none of the respondents said they expected to wait more than 45 minutes.

When comparing expected and actual waiting times, it was found that users' expectations, in general and in particular, are in line with the actual waiting time. 97 people (56.73%) said that their expectations were equal to the actual waiting time. 41 users (23.98%) said that it was shorter than the actual time and 33 individuals (19.30%) said that their expectations were longer than the actual time. With regard to frustration with waiting times, it can be seen that, in general, users don't feel it very much.

We also thought it would be important to ask whether the user would be willing to wait longer for the service to start, and if so, to quantify it. The users of Clinimefa - Serviços de Assistência Médica, S.A. and C.F.F.- Clínica Fisiátrica de Fafe, Lda. who made up the sample were mostly willing to wait longer, and it should be noted that in the context of Physical Medicine and Rehabilitation, none of the respondents refused to do so, however, in the context of Clinical Analysis, 3 of the respondents refused to do so.

From a quantitative perspective, it can be seen that on average customers are willing to wait approximately 37.25 minutes longer, as can be seen in table 4.

Table 4

Quantification of Additional Waiting Time

N	Valid	167,00
	Omitted	4,00
Average		37,25
Median		30,00
Standard deviation		34,92
Interval		410,00
Minimum		10,00
Maximum		420,00

Source: Adapted from SPSS

The longest average time respondents would be willing to wait was for medical appointments ($\overline{x} \approx 48.53$), where there was also a maximum waiting time of 420 additional minutes.

When asked, "Do you think that the waiting time factor is important when evaluating the service?" 80.70% of respondents answered positively, with the same trend in each context. However, when respondents are asked to choose the most important factor for evaluating the service, they mostly indicate the quality of the service, and it should be noted that in the various contexts, as in general, this factor is chosen by more than 95% of respondents, as can be seen in table 5.

Table 5

Most Important Factor for Respondents' Evaluation of the Service

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Quality of service	167	97,66%	97,66%	97,66%
Quality/price ratio	3	1,75%	1,75%	99,42%
Other	1	0,58%	0,58%	100,00%
Total	171	100,00%	100%	

Source: Adapted from SPSS

Next, various factors linked to the physical environment of the waiting room were listed and it was possible to see that the average rating of each individual for all these aspects was approximately 4.83 (Table 6).

Table 6

Factors Evaluated Related to the Physical Environment of the Waiting Room

		Comfortable chairs	Ambient temperature	Luminosity	Noise	Cleaning conditions
N	Valid	171	171	171	171	171
	Omitted	0	0	0	0	0
Average		4,68	4,80	4,89	4,85	4,95
Median		5	5	5	5	5
Standard deviation		0,91	0,61	0,44	0,42	0,38
Interval		4	3	3	2	3
Minimum		1	2	2	3	2
Maximum		5	5	5	5	5

Source: Adapted from SPSS

When the evaluation is carried out without taking into account the different contexts, it can be seen that the lowest average corresponds to the comfort of the chairs and the highest to the cleanliness conditions, with respondents' opinions ranging from "Strongly Disagree" to "Strongly Agree". In particular, the same is true, with the exception of the General Practice setting, where the noise factor also has the lowest average and opinions range from "Disagree" to the highest level possible.

As for the distracting factors in the waiting room, the vast majority of respondents did not use any of the factors, which was also confirmed in each of the contexts. With regard to the 'cell phone or Wi-Fi' factor, 46 respondents used it and 125 did not. As for the 'television' factor, 147 people said they didn't watch it and only 24 said they did. The factor 'advertisements, leaflets or magazines' received 167 negative responses and only 4 positive ones.

5.3 General satisfaction and satisfaction with waiting times

To the question "Were you satisfied with the waiting time?" 161 out of 171 respondents answered yes.

The same trend was seen in the different contexts, supported by the percentage of more than 92% who answered yes. Despite this, the highest number of users

dissatisfied with this factor, albeit low, was found in the Physical Medicine and Rehabilitation context.

Respondents were also asked to indicate how satisfied they were with all the factors, from one, which stands for "Very Dissatisfied", to five, which stands for "Very Satisfied". The average level of satisfaction without taking into account the different contexts is 4.63, with a minimum of 3 and a maximum of 5. In the event of a more detailed evaluation, the level of satisfaction ranged from "Indifferent" to "Very Satisfied", with the exception of the Medical Clinic, where users were "Satisfied" and "Very Satisfied". It also has the best average for the assumption it evaluates ($\overline{x}\approx 4.77$), followed by Physical Medicine and Rehabilitation ($\overline{x}\approx 4.59$) and Clinical Analysis ($\overline{x}\approx 4.55$).

Finally, they were asked if they would recommend the service provided, and 98.83% (169 users) would recommend the service and only 1.17% (2 users) would not recommend the service. It's important to note that these two individuals were questioned in the context of a medical consultation.

5.4 Construction and validation of hypotheses

In order to be able to draw clearer conclusions, the null (H0) and alternative (H1) hypotheses should be constructed, using a significance level of 5%, which means that if p-value < 0.05, H0 is rejected, and if p-value ≥ 0.05, H0 is not rejected.

• H1: Customer satisfaction with waiting time depends on perceived waiting time.

The test used to carry out the verification was the ANOVA test (Table 7).

Table 7

ANOVA Test to Verify the Dependence of Customer Satisfaction on Waiting Time and Perceived Waiting Time

	Sum of squares	df	Mean square	f	Sig.
Between groups	15,973	1	15,973	23,543	<,001
Within groups	114,659	169	0,678		
Total	130,632	170			

Source: SPSS

As p < 0.05, the null hypothesis is rejected and there are highly significant statistical differences. Therefore, it can be concluded with 95% confidence that customer satisfaction with waiting time depends on perceived waiting time.

• H2: Customer satisfaction with waiting time depends on the expected waiting time.

The ANOVA test found that $p < 0.05$, which leads to the rejection of the null hypothesis and the verification that there are significant statistical differences.

Table 8

ANOVA Test to Verify the Dependence of Customer Satisfaction on Waiting Time and Expected Waiting Time

	Sum of squares	df	Mean square	f	Sig.
Between groups	2,569	1	2,569	5,553	,020
Within groups	78,180	169	,463		
Total	80,749	170			

Source: SPSS

It can therefore be concluded with 95% confidence that customer satisfaction with waiting time depends on the expected waiting time.

• H3: Customer satisfaction with waiting times depends on the physical environment of the waiting room.

First, the average of each respondent's assessment of all the factors related to the physical environment of the waiting room was calculated ($\bar{x} \approx 4.83$).

The test used was Student's t, as shown in Table 9.

Table 9

Student's t-test to verify the dependence of customer satisfaction on waiting time and the physical environment of the waiting room

						Significance				95% confidence interval of the difference	
		f	Sig.	t	df	Unilateral p	Bilateral p	Mean difference	Standard error mean	Lower	Upper
Units	Equal variances assumed	,107	,744	-,163	198	,435	,871	-,006	,039	-,083	0,07
	Equal variances not assumed			-,166	111,088	,434	,869	-,006	,038	-,082	,069

Source: SPSS

As the p-value is equal to 0.011, i.e. p-value < 0.05, H0 is rejected and there are statistical differences. Therefore, it can be concluded with 95% confidence that customer satisfaction with waiting time depends on the physical environment of the waiting room.

• H4: Customer satisfaction with waiting times depends on the distracting factors in the waiting room.

Firstly, the percentage for each affirmative answer was calculated for each individual, and then the sample average was calculated ($\bar{x} \approx 0.15$).

The Student's t-test showed that the p-value was 0.744. This means that the p-value is > 0.05, so that H0 cannot be rejected.

Table 10

Student's t-test to verify the dependence between customer satisfaction with waiting time and waiting room distraction factors

						Significance				95% confidence interval of the difference	
		f	Sig.	t	df	Unilateral p	Bilateral p	Mean difference	Standard error mean	Lower	Upper
Units	Equal variances assumed	6,617	,011	-1,290	169	,099	,199	-,050	,039	-,126	,026
	Equal variances not assumed			-1,133	77,453	,130	,261	-,050	,044	-,138	,038

Source: SPSS

Therefore, it can be concluded with 95% confidence that customer satisfaction with waiting time does not depend on the distracting factors of the waiting room.

• H5: Customer satisfaction with waiting times depends on the complexity of the service provided.

The χ^2 test showed that the p-value is equal to 0.205. This means that H0 is not rejected, as the p-value is > 0.05.

Table 11

χ^2 Test To Verify Dependence Between Customer Satisfaction And Service Complexity

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	4,579[a]	3	,205
Likelihood ratio	5,545	3	,136
Linear-by-linear association	1,793	1	,181
N of valid cases	171		

Source: SPSS

In short, it can be concluded with 95% confidence that customer satisfaction with waiting times does not depend on the complexity of the service.

• H6: Customer satisfaction depends on their satisfaction with waiting times.

The test used to verify this was the ANOVA test, the results of which are shown in Table 12.

Table 12

ANOVA Test To Verify Dependence Between Customer Satisfaction And Customer Satisfaction With Waiting Time

	Sum of squares	df	Mean square	f	Sig.
Between groups	,809	2	,405	7,900	<,001
Within groups	8,606	168	,051		
Total	9,415	170			

Source: SPSS

As p-value < 0.05, the null hypothesis is rejected and it can be seen that there are highly significant statistical differences. Therefore, it can be concluded with 95% confidence that customer satisfaction depends on their satisfaction with the waiting time. In short, the validation of the hypotheses shows the following scenario (Table 13):

Table 13

Summary of Hypothesis Validation

Hypotheses	H0 is rejected	H0 is not rejected
H1: Customer satisfaction with waiting time depends on perceived waiting time	✓	
H2: Customer satisfaction with waiting time depends on expected waiting time	✓	
H3: Customer satisfaction with waiting time depends on the physical environment of the waiting room	✓	
H4: Customer satisfaction with waiting times depends on the distracting factors in the waiting room		✓
H5: Customer satisfaction with waiting times depends on the complexity of the service provided		✓
H6: Customer satisfaction depends on their satisfaction with waiting times	✓	

Source: Own elaboration

5.5 Discussion of results

After carrying out the descriptive and inferential analyses and presenting the results, it is necessary to analyze them and compare them with the literature reviewed.

With regard to the characterization of the sample, it can be seen that females are more representative and most of the respondents are aged between 40 and 80. The majority of respondents are also married (66.08%), have a third-level education (52.05%) and 41.5% are working. In addition, 77.2% of the respondents live in the area where the companies operate. Thus, it was found that education and gender have no influence on final user satisfaction, contrary to the arguments of Kalaja (2023), although female respondents were more satisfied than male respondents, this does not corroborate the study by Ferreira et al, (2001). In the same vein, there is no relationship between satisfaction and marital status and final situation, contrary to Alrasheedi et al. (2019). In addition, it was inferred that age affects satisfaction, as stated by Kalaja (2023) stated, in a negative way, which means that as the age of the sample increases, there is a decrease in satisfaction, which refutes what was explained by Ferreira et al. (2001).

With regard to motive, it can be seen that most of the sample classifies it as not very complex, which in the view of McIntyre & Chow (2020) should result in a reduction in waiting times. Despite this, according to hypothesis five, there was no dependence between the perceived waiting time and the complexity of the reason that led the patient to use the service.

The fact of being accompanied while waiting for the service to start reduced the perceived waiting time, although there were no very significant differences compared to individuals who waited alone, refuting what was said by Jones and Hwang (2005) who argued that there were significant differences between the perception of waiting time of individuals who experienced an accompanied and solitary wait.

It was found that the vast majority of the sample would wait longer, if necessary, for the service to begin, which in the view of Kostecki (1996) is accepted due to the expectation of a higher quality service or an attractive price/quality ratio. In fact, 95.32% of respondents who would wait longer indicated that the quality of the service provided was the most important factor in their assessment. So, on the one hand, we can corroborate the author's opinion but, on the other hand, we can rule out the relationship between price and quality, which was recognized by 1.75% of respondents.

Contrary to the study by Spechbach et al. (2019) the sample in this study was satisfied with the conditions offered by the waiting room. In addition, it was confirmed that perception, satisfaction with waiting time, according to hypothesis three, and in general are affected by this factor, but in different ways. Perception and satisfaction with waiting time are influenced significantly and less considerably, and no conclusions were reached as to the positivity of the relationship. On the other hand, the facts pointed out by Fadhilah et al. (2018) regarding the connection between comfort and satisfaction.

Despite the statements by Chu et al. (2019) the number of users who used their cell phones was low, and this was more pronounced when it came to leaflets, advertisements and so on. Regarding television viewing, it was not possible to reach concrete conclusions as in the study carried out by Jones and Peppiatt (1996) but it was found that a third of the individuals indicated a waiting time that was in line with reality. Furthermore, hypothesis four showed that customer satisfaction is not affected by these conditions.

If 167 respondents considered service quality to be the most important factor, it can be said that service satisfaction will have a major contribution to make to this factor. The majority of respondents were "Very Satisfied". Despite this, it was not possible to obtain more conclusive data on this point, such as the conclusions of the study by Zaid et al. (2020).

From another perspective, as in the analysis carried out by Boudreaux et al. (2000)it was found that there is a relationship, although in this case it was not considered significant, between satisfaction and recommendation.

This research contradicts the calculation pointed out by Maister (1984) in order to verify whether or not there would be satisfaction, because all the users who indicated that their perception of the waiting time was shorter than their expectations were "Satisfied" or "Very Satisfied" with the service. In addition, hypotheses one and two showed that these factors influence satisfaction with waiting times, strengthening the opinion of Oliver (1993).

Finally, it was found that, in fact, final patient satisfaction is related to satisfaction with waiting times, as stated by Afolabi and Erhun (2003) stated. In addition, hypothesis six validated that these components have a very significant relationship.

6. Conclusions

Customer satisfaction is a factor that should always be taken into account by companies, because as well as being an essential indicator, it influences various business decisions, as well as the likelihood of the customer recommending the service. In this study, special attention was paid to user satisfaction, which is intrinsically related to waiting times between check-in and the start of the service.

Several authors refer to waiting time as a major dissatisfaction factor in the provision of health services, stating that companies should use strategies to reduce the perception of waiting time.

With this research, it was possible to conclude that the perception and expectation of the waiting time, the physical environment of the waiting room affect the user's satisfaction with the waiting time which, in turn, affects the overall satisfaction of the patients of the companies Clinimefa - Serviços de Assistência Médica, S.A. and C.F.F.- Clínica Fisiátrica de Fafe, Lda.

This type of study is essential for healthcare organizations, as it allows management staff to see the service through the customer's eyes, helping to identify possible gaps, which should result in increased quality and customer satisfaction. The results of this research are not only intended to support the decision making of company management, but also of all employees, in order to know the opinion of users regarding the factors that affect waiting times and to be able to use tools to improve the patient's perspective on these factors.

The limitations observed during this research were the failure to receive a response from an institution where the study was intended, which made it impossible to carry out a comparative study between two companies providing health services, and the delay in

obtaining authorization from the Board of Directors to implement the study. With this in mind, it would be interesting to carry out a study in the future to compare data between two institutions, especially if one of them was private and the other public, in order to better understand user satisfaction with waiting times.

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References

- Adah, P., & Folorunso, E. (2015, July). Satisfaction.
- Afolabi, M. O., & Erhun, W. O. (2003). Patients\'response to waiting time in an out-patient pharmacy in Nigeria. Tropical Journal of Pharmaceutical Research, 2(2), 207–214.
- Allen, M. P. (2004). Understanding regression analysis. Springer Science & Business Media.
- Alrasheedi, K. F., Al-Mohaithef, M., Edrees, H. H., & Chandramohan, S. (2019). The association between wait times and patient satisfaction: findings from primary health centers in the Kingdom of Saudi Arabia. Health Services Research and Managerial Epidemiology, 6, 2333392819861246.
- Álvarez-García, J., González-Vázquez, E., Del Río-Rama, M. de la C., & Duran-Sanchez, A. (2019). Quality in customer service and its relationship with satisfaction: an innovation and competitiveness tool in sport and health centers. International Journal of Environmental Research and Public Health, 16(20), 3942.
- Arkkelin, D. (2014). Using SPSS to understand research and data analysis.
- Asenahabi, B. M. (2019). Basics of research design: A guide to selecting appropriate research design. International Journal of Contemporary Applied Researches, 6(5), 76–89.
- Baker, J., & Cameron, M. (1996). The effects of the service environment on affect and consumer perception of waiting time: An integrative review and research propositions. Journal of the Academy of Marketing Science, 24, 338–349.
- Boudreaux, E. D., Ary, R. D., Mandry, C. V, & McCabe, B. (2000). Determinants of patient satisfaction in a large, municipal ED: the role of demographic variables, visit characteristics, and patient perceptions. The American Journal of Emergency Medicine, 18(4), 394–400.

- Brady, M. K., & Robertson, C. J. (2001). Searching for a consensus on the antecedent role of service quality and satisfaction: an exploratory cross-national study. Journal of Business Research, 51(1), 53–60.
- Chu, H., Westbrook, R. A., Njue-Marendes, S., Giordano, T. P., & Dang, B. N. (2019). The psychology of the wait time experience–what clinics can do to manage the waiting experience for patients: a longitudinal, qualitative study. BMC Health Services Research, 19(1), 1–10.
- Cleary, P. D., & McNeil, B. J. (1988). Patient satisfaction as an indicator of quality care. Inquiry, 25–36.
- Cliton, A., & Wellington, T. (2013). A theoretical framework of users satisfaction/dissatisfaction theories and models. 2nd International Conference on Arts, Behavioral Sciences and Economics Issues, Pattaya Thailand.
- Connelly, L. (2019). Chi-square test. Medsurg Nursing, 28(2), 127.
- Connor Desai, S., & Reimers, S. (2019). Comparing the use of open and closed questions for Web-based measures of the continued-influence effect. Behavior Research Methods, 51, 1426–1440.
- Dabholkar, P. A. (1995). A contingency framework for predicting causality between customer satisfaction and service quality. ACR North American Advances.
- Dagger, T. S., & Sweeney, J. C. (2007). Service quality attribute weights: how do novice and longer-term customers construct service quality perceptions? Journal of Service Research, 10(1), 22–42.
- Fadhilah, A., Azzuhri, M., & Andarini, S. (2018). The effect of clarity of information and comfort of waiting room on satisfaction with drug service through perception of waiting time. Jurnal Aplikasi Manajemen, 16(2), 205–214.
- Ferreira, D. C., Marques, R. C., Nunes, A. M., & Figueira, J. R. (2018). Patients' satisfaction: the medical appointments valence in Portuguese public hospitals. Omega, 80, 58–76.
- Ferreira, P. L., Luz, A., Valente, S., Raposo, V., Godinho, P., & Felício, E. D. (2001). Determinantes da satisfação dos utentes dos cuidados primários: o caso de Lisboa e Vale do Tejo. Revista Portuguesa de Saúde Pública, 53–61.
- Furnham, A., Treglown, L., & Horne, G. (2020). The psychology of queuing. Psychology, 11(3), 480–498.
- Gill, L., & White, L. (2009). A critical review of patient satisfaction. Leadership in Health Services, 22(1), 8–19.
- Groenland, E., & Dana, L.-P. (2020). Qualitative methodologies and data collection methods: Toward increased rigour in management research. World Scientific.

- Heidegger, T., Saal, D., & Nuebling, M. (2006). Patient satisfaction with anaesthesia care: what is patient satisfaction, how should it be measured, and what is the evidence for assuring high patient satisfaction? Best Practice & Research Clinical Anaesthesiology, 20(2), 331–346.
- Hensley, R. L., & Sulek, J. (2007). Customer satisfaction with waits in multi-stage services. Managing Service Quality: An International Journal, 17(2), 152–173.
- Hill, C. J., & Joonas, K. (2005). The impact of unacceptable wait time on health care patients' attitudes and actions. Health Marketing Quarterly, 23(2), 69–87.
- Jones, P., & Hwang, J.-L. (2005). Perceptions of waiting time in different service queues.
- Jones, P., & Peppiatt, E. (1996). Managing perceptions of waiting times in service queues. International Journal of Service Industry Management, 7(5), 47–61.
- Kalaja, R. (2023). Determinants of Patient Satisfaction with Health Care: A Literature Review. European Journal of Natural Sciences and Medicine, 6(1), 41–52.
- Kannampallil, T. G., Schauer, G. F., Cohen, T., & Patel, V. L. (2011). Considering complexity in healthcare systems. Journal of Biomedical Informatics, 44(6), 943–947.
- Kelley, E., & Hurst, J. (2006). Health care quality indicators project: conceptual framework paper.
- Kostecki, M. (1996). Waiting lines as a marketing issue. European Management Journal, 14(3), 295–303.
- Kumasey, A. S. (2014). Service quality and customer satisfaction: Empirical evidence from the Ghanaian public service. European Journal of Business and Management, 6(6), 172–181.
- Li, Y., Gong, W., Kong, X., Mueller, O., & Lu, G. (2020). Factors associated with outpatient satisfaction in tertiary hospitals in China: a systematic review. International Journal of Environmental Research and Public Health, 17(19), 7070.
- Liang, C.-C. (2019). Enjoyable queuing and waiting time. Time & Society, 28(2), 543–566.
- López-Mosquera, N., & Sánchez, M. (2014). Cognitive and affective determinants of satisfaction, willingness to pay, and loyalty in suburban parks. Urban Forestry & Urban Greening, 13(2), 375–384.
- Lu, M., Cui, T., Huang, Z., Zhao, H., Li, T., & Wang, K. (2021). A systematic review of questionnaire-based quantitative research on MOOCs. The International Review of Research in Open and Distributed Learning, 22(2), 285–313.
- Maister, D. H. (1984). The psychology of waiting lines. Citeseer.

- Martínez-Tur, V., Peiró, J. M., & Ramos, J. (2001). Calidad de servicio y satisfacción del cliente [Quality of service and customer satisfaction]. Madrid: Síntesis.
- McIntyre, D., & Chow, C. K. (2020). Waiting time as an indicator for health services under strain: a narrative review. INQUIRY: The Journal of Health Care Organization, Provision, and Financing, 57, 0046958020910305.
- Mishra, P., Singh, U., Pandey, C. M., Mishra, P., & Pandey, G. (2019). Application of student's t-test, analysis of variance, and covariance. Annals of Cardiac Anaesthesia, 22(4), 407.
- Mohsin, M., Forero, R., Ieraci, S., Bauman, A. E., Young, L., & Santiano, N. (2007). A population follow-up study of patients who left an emergency department without being seen by a medical officer. Emergency Medicine Journal, 24(3), 175–179.
- Montes, F. J. L., & Fuentes, M. del M. F. (2005). Gestión de la calidad empresarial: Fundamentos e implantación. Pirámide.
- Mpinga, E. K., & Chastonay, P. (2011). Satisfaction of patients: a right to health indicator? Health Policy, 100(2–3), 144–150.
- Ndukwe, H. C., Tayo, F., & Sariem, N. (2011). Factors influencing waiting time in outpatient pharmacy of Lagos University Teaching Hospital.
- Nemoto, T., & Beglar, D. (2014). Likert-scale questionnaires. JALT 2013 Conference Proceedings, 1–8.
- Ng, J. H. Y., & Luk, B. H. K. (2019). Patient satisfaction: Concept analysis in the healthcare context. Patient Education and Counseling, 102(4), 790–796.
- Nie, W. (2000). Waiting: integrating social and psychological perspectives in operations management. Omega, 28(6), 611–629.
- Noor, S., Tajik, O., & Golzar, J. (2022). Simple random sampling. International Journal of Education & Language Studies, 1(2), 78–82.
- OCDE. (n.d.). Health Care Utilisation : Consultations. Website Da OECD Statistics.
- Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. Journal of Marketing Research, 17(4), 460–469.
- Oliver, R. L. (1993). Cognitive, Affective, and Attribute Bases of the Satisfaction Response. Journal of Consumer Research, 20(3), 418–430. https://doi.org/10.1086/209358
- Organization, W. H. (1898). Constitution.
- Palací, F., Salcedo, A., & Topa, G. (2019). Cognitive and affective antecedents of consumers' satisfaction: A systematic review of two research approaches. Sustainability, 11(2), 431.

- Pereira, S. M. C., & Leslie, G. (2009). Hypothesis testing. Australian Critical Care, 22(4), 187–191.
- Pérez-Goiz, R., Vega-Malagón, G., & Martínez-Martínez, M. L. (2009). Satisfacción de los usuarios en el servicio de urgencias en un hospital de segundo nivel. Revista Médica Del Instituto Mexicano Del Seguro Social, 47(6), 637–642.
- Prakash, B. (2010). Patient satisfaction. Journal of Cutaneous and Aesthetic Surgery, 3(3), 151.
- Punch, K. F. (2003). Survey research: The basics. Sage.
- Rahman, A., & Muktadir, M. G. (2021). SPSS: an imperative quantitative data analysis tool for social science research. Int. J. Res. Innov. Soc. Sci, 5, 300–302.
- Santiago, S., & Lu, J. (2023). Patient Satisfaction in Teledermatology: an Updated Review. Current Dermatology Reports, 1–4.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). Research methods for business students. Pearson education.
- Serviço Nacional de Saúde. (n.d.-a). Consultas Médicas Hospitalares. Website Do Serviço Nacional de Saúde.
- Serviço Nacional de Saúde. (n.d.-b). Consultas Médicas nos Cuidados de Saúde Primários. Website Do Serviço Nacional de Saúde.
- Singh, A. S., & Masuku, M. B. (2014). Sampling techniques & determination of sample size in applied statistics research: An overview. International Journal of Economics, Commerce and Management, 2(11), 1–22.
- Spechbach, H., Rochat, J., Gaspoz, J.-M., Lovis, C., & Ehrler, F. (2019). Patients' time perception in the waiting room of an ambulatory emergency unit: a cross-sectional study. BMC Emergency Medicine, 19(1), 1–10.
- Taylor, K. (2009). Paternalism, participation and partnership—the evolution of patient centeredness in the consultation. Patient Education and Counseling, 74(2), 150–155.
- Thi, P. L. N., Briancon, S., Empereur, F., & Guillemin, F. (2002). Factors determining inpatient satisfaction with care. Social Science & Medicine, 54(4), 493–504.
- Westbrook, R. A., & Oliver, R. L. (1991). The dimensionality of consumption emotion patterns and consumer satisfaction. Journal of Consumer Research, 18(1), 84–91.
- Williams, B. (1994). Patient satisfaction: a valid concept? Social Science & Medicine, 38(4), 509–516.
- Wilson, C. E. (2007). Designing useful and usable questionnaires: you can't just" throw a questionnaire together". Interactions, 14(3), 48-ff.
- Woodruff, R. B. (1997). Customer value: the next source for competitive advantage. Journal of the Academy of Marketing Science, 25(2), 139–153.

- Zaid, A. A., Arqawi, S. M., Mwais, R. M. A., Al Shobaki, M. J., & Abu-Naser, S. S. (2020). The impact of Total quality management and perceived service quality on patient satisfaction and behavior intention in Palestinian healthcare organizations. Technology Reports of Kansai University, 62(03), 221–232.

Webgraphy

- Bank of Portugal (2022). Analysis of private companies providing healthcare. Consulted on 12/05/2023, at https://bpstat.bportugal.pt/conteudos/publicacoes/1350
- Bank of Portugal (n.d.). Sector Tables. Consulted on 12/05/2023, at https://www.bportugal.pt/QS/qsweb/Dashboards
- Google Maps (n.d.). Location of the company DiaSaúde- Unidade Privada de Saúde, Lda. Consultado a 21/04/2023, em https://www.google.com/maps/place/Diasa%C3%BAde+-+Unidade+Privada+De+Sa%C3%BAde,+Lda./@41.4485856,8.1696958,17z/data=!3m2!4b1!5s0xd24e85da928bc01:0x104559c9ab66f2ee!4m6!3m5!1s0xd24e85dc00738ab:0x34eeffdc132ff81d!8m2!3d41.4485856!4d-8.1696958!16s%2Fg%2F1q62h_46d?entry=ttu
- National Statistics Institute (2022). Current expenditure on health increased by 12.2% in 2021, reaching 11.2% of GDP-2021".Consulted on 12/05/2023, at https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaques&DESTAQUESdest_boui=540875581&DESTAQUESmodo=2.
- Sabi (n.d.). Distribution of shares in Clinimefa- Serviços de Assistência Médica, S.A.. Consulted on 09/05/2023, at https://login.bvdinfo.com/R0/SabiNeo
- Sabi (n.d.). Distribution of shares in MediFafe- Clínica de Medicina Dentária, Lda. Consulted on 09/05/2023, at https://login.bvdinfo.com/R0/SabiNeo
- Sabi (n.d.). Turnover and EBITDA of MediFafe- Clínica de Medicina Dentária, Lda. Consulted on 09/05/2023, at https://login.bvdinfo.com/R0/SabiNeo
- Sabi (n.d.). Turnover and EBITDA of Clinimefa- Serviços de Assistência Médica, S.A.. Consulted on 09/05/2023, at https://login.bvdinfo.com/R0/SabiNeo
- Sabi (n.d.). Turnover and EBITDA of C.F.F. - Clínica Fisiátrica de Fafe, Lda. Consulted on 09/05/2023, at https://login.bvdinfo.com/R0/SabiNeo
- Sabi. (n.d.). Governing Bodies of the company DiaFafe- Centro de Diagnóstico e Imagiologia, S.A.. Consulted on 09/05/2023, at https://login.bvdinfo.com/R0/SabiNeo
- Sabi (n.d.). Turnover and EBITDA of the company DiaFafe- Centro de Diagnóstico e Imagiologia, S.A.. Consulted on 09/05/2023, at https://login.bvdinfo.com/R0/SabiNeo

- National Health Service (n.d.-a). Hospital Medical Consultations. National Health Service website. Retrieved March 13, 2023, from https://transparencia.sns.gov.pt/explore/dataset/01_sica_evolucao-mensal-das-consultas-medicas-hospitalares/analyze/?disjunctive.regiao&disjunctive.instituicao&sort=tempo&dataChart=eyJxdWVyaWVzIjpbeyJjaGFydHMiOlt7InR5cGUiOiJjb2x1bW4iLCJmdW5jIjoiU1VNIiwieU
- National Health Service (n.d.-b). Medical Consultations in Primary Health Care. National Health Service Website. Retrieved March 13, 2023, from https://transparencia.sns.gov.pt/explore/dataset/evolucao-das-consultas-medicas-nos-csp/table/?sort=tempo
- DiaSaúde website (n.d.). Composition of the DiaSaúde group. Consulted on 21/04/2023, at https://diasaude.com/sobre-nos/
- DiaSaúde website (n.d.). Services provided by Clinimefa- Serviços de Assistência Médica, S.A.. Consulted on 21/04/2023, at https://diasaude.com/clinica-medica/
- DiaSaúde website (n.d.). Services provided by MediFafe- Clínica de Medicina Dentária, Lda. Consulted on 21/04/2023, at https://diasaude.com/medicina-dentaria/
- DiaSaúde website (n.d.). Valências da empresa C.F.F.- Clínica Fisiátrica de Fafe, Lda. Consulted on 21/04/2023, at https://diasaude.com/medicina-fisica-e-reabilitacao/
- DiaSaúde website (n.d.). Valências da empresa DiaFafe- Centro de Diagnóstico e Imagiologia, S.A.. Consulted on 21/04/2023, at https://diasaude.com/exames-complementares-de-diagnostico/

12 – O que os alunos das universidades seniores fizeram durante a pandemia do covid-19

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Resumo: As universidades seniores (UA) são espaços de educação não formal, abertos a pessoas com mais de 50 anos, que oferecem cursos, oficinas, palestras, visitas, viagens e outras atividades, de acordo com os interesses e as necessidades dos seus participantes (Fragoso et al., 2017). A situação de pandemia provocada pela COVID-19, que se iniciou em março de 2020 trouxe consigo uma série de restrições e dificuldades para o funcionamento dessas instituições. A presente investigação tem como objetivo analisar a participação dos idosos nas atividades propostas pelas universidades seniores em Portugal em tempo de pandemia, procurando compreender se e como esta iniciativa se adaptou, resistiu e se reinventou face à crise sanitária, social e económica que o mundo atravessou. Com base nos resultados preliminares desta investigação podemos concluir que os idosos, de modo geral, se reinventaram durante este período, buscando recursos tais como atividades online e um maior uso das redes sociais. Além disso, eles aumentaram a frequência em atividades físicas e intelectuais. Esses dados podem sugerir o porquê da percentagem alta de participantes sem sintomas depressivos, em média metade dos alunos das universidades seniores que não participaram nas atividades online. A partir de tudo que foi explorado aqui pode-se afirmar que tanto a RUTIS e as UA, a partir das ações online da Universidade Sénior Virtual, quanto os próprios idosos superaram os tempos difíceis de COVID 19 por meio da reinvenção de seus quotidianos e modos de se relacionar com as pessoas, tendo em vista as restrições inerentes ao período.
Palavras-chave: COVID-19; Universidades Seniores; Portugal.

Abstract: Senior universities (U3A) are non-formal education spaces, open to people over 50 years of age, which offer courses, workshops, lectures, visits, trips and other activities, according to the interests and needs of their participants (Fragoso et al., 2017). The pandemic situation caused by COVID-19, which began in March 2020, brought with it a series of restrictions and difficulties for the functioning of these institutions. The present investigation aims to analyze the participation of elderly people in the activities proposed by senior universities in Portugal during the pandemic, seeking to understand how this initiative adapted, resisted and reinvented itself in the face of the health, social and economic crisis that the world has experienced. Based on the results of this investigation, we can conclude that elderly people, in general, reinvented themselves during this period, seeking resources such as online activities and use of social networks. Additionally, they

increased their frequency of physical and intellectual activities. These findings may suggest the reason for the high percentage of participants without depressive symptoms, on average half of the senior university students who had not taken part in the online activities. From everything explored here, it can be said that both RUTIS and U3A, based on the online actions of the Virtual Senior University, and the elderly themselves overcame the difficult times of COVID 19 through the reinvention of their daily lives and ways of relating with people, taking into account the restrictions inherent to the period.
Keywords: covid-19, Senior universities, Portugal.

1.introdução

O envelhecimento populacional constitui um fenómeno global que apresenta desafios e oportunidades significativos para as sociedades contemporâneas. Entre os desafios mais prementes incluem-se questões associadas à saúde, segurança, inclusão social e qualidade de vida da população idosa. Por outro lado, as oportunidades que emergem deste contexto englobam o potencial de aprendizagem contínua, participação cívica, contributo social e realização pessoal dos idosos. Neste enquadramento, as universidades seniores (US) assumem-se como iniciativas de caráter educativo e social destinadas a promover o envelhecimento ativo, saudável e participativo, por meio de atividades culturais, formativas, recreativas e solidárias.

As universidades seniores configuram-se como espaços de educação não formal, direcionados para indivíduos com mais de 50 anos, proporcionando uma diversidade de atividades, como cursos, oficinas, palestras, visitas e viagens, adaptadas às necessidades e interesses dos participantes. Estas instituições operam frequentemente em articulação com escolas, autarquias, associações, fundações e outras entidades, e contam com o envolvimento voluntário de docentes, coordenadores, animadores e alunos. Os objetivos centrais das universidades seniores incluem a promoção da aprendizagem ao longo da vida, o estímulo à interação social, o reconhecimento das competências e saberes acumulados pelos idosos, o fortalecimento da autoestima e bem-estar, bem como a valorização da sua participação cívica e solidária na comunidade (Fragoso et al., 2017).

A Associação Rede de Universidades da Terceira Idade (RUTIS) é uma associação sem fins lucrativos, fundada em 2005, que tem como missão apoiar, representar e coordenar as universidades seniores em Portugal, bem como promover a sua qualidade, a sua visibilidade e o seu reconhecimento. A RUTIS oferece às universidades seniores associadas diversos serviços e benefícios, como formação, consultoria, certificação, divulgação, intercâmbio, eventos, projetos, protocolos, etc. (RUTIS, 2020). Segundo o último levantamento, em 2024, existiam 405 universidades seniores em Portugal, com cerca de 65 mil alunos e 7500 mil professores voluntários (RUTIS, 2024) e 90% das US estão agregadas nesta rede.

A pandemia de COVID-19, iniciada em março de 2020 e com repercussões ainda visíveis em 2024, introduziu um conjunto de restrições que impactaram significativamente o funcionamento destas instituições. Entre os constrangimentos identificados destacam-se o confinamento, o distanciamento físico, a interrupção das atividades presenciais, a diminuição de recursos financeiros e humanos, a necessidade de adaptação às tecnologias digitais e o agravamento de fenómenos como o isolamento social, ansiedade e depressão entre a população idosa (Santos et al., 2020). Estes fatores contribuíram para uma redução na frequência e na qualidade das atividades oferecidas pelas universidades seniores, ameaçando a sua sustentabilidade e a capacidade de cumprir a sua missão educativa e social.

Este estudo tem como objetivo principal analisar o impacto da pandemia de COVID-19 na participação dos idosos nas atividades promovidas pelas universidades seniores

em Portugal, com o intuito de compreender as estratégias adotadas por estas instituições para se adaptarem, resistirem e reinventarem perante as adversidades impostas pela crise sanitária, social e económica global. Os objetivos específicos consistem em investigar as alterações nos hábitos dos seniores em Portugal durante a pandemia e examinar a natureza da relação mantida com as universidades seniores neste período.

Propõe-se a hipótese de que os hábitos dos participantes nas universidades seniores em Portugal sofreram alterações significativas durante a pandemia, embora se tenham verificado também casos de inovação e superação que contribuíram para a continuidade e, em alguns casos, para o aumento da frequência nas atividades propostas. A pertinência deste estudo fundamenta-se na atualidade do tema, na escassez de investigações específicas sobre este tópico e na contribuição potencial para o avanço do conhecimento científico e para a prática educativa e social no âmbito das universidades seniores.

2. Fundamentação teórica

As universidades seniores desempenham um papel fundamental na promoção da aprendizagem ao longo da vida entre a população idosa, oferecendo oportunidades que ultrapassam a mera aquisição de conhecimentos. Estas iniciativas visam igualmente o desenvolvimento de competências, atitudes e valores que permitem aos idosos manterem-se atualizados, criativos e críticos perante as transformações sociais (Paúl & Ribeiro, 2012). Além disso, constituem espaços de interação social, promovendo o convívio, a partilha, a amizade e o apoio mútuo, fatores que contribuem para mitigar problemas como o isolamento, a solidão, a exclusão e a discriminação frequentemente vivenciados por esta faixa etária (Fragoso et al., 2017).

Evidências empíricas destacam os benefícios das universidades seniores na saúde física, mental e emocional dos seus participantes. Entre os impactos relatados estão melhorias na autoestima, bem-estar, satisfação pessoal, felicidade, qualidade de vida e até na longevidade (Paúl & Ribeiro, 2012). Adicionalmente, estas instituições têm mostrado eficácia na prevenção e mitigação de problemas de saúde associados ao envelhecimento, como demência, Alzheimer, depressão, ansiedade, stress, hipertensão, diabetes e obesidade (Fragoso et al., 2017).

Outro aspeto relevante é a promoção da cidadania ativa e da solidariedade entre os idosos. Por meio de projetos de voluntariado, cooperação e intervenção social, os participantes das universidades seniores contribuem tanto no âmbito institucional quanto no contexto mais amplo da sociedade (Alves et al., 2019). No entanto, estas instituições enfrentam desafios significativos que podem limitar o seu impacto e sustentabilidade. Entre as principais dificuldades estão a escassez de recursos humanos, materiais e financeiros, a insuficiência de formação e motivação dos profissionais envolvidos, a gestão e organização das atividades, e a dificuldade em divulgar e atrair novos alunos (Paúl & Ribeiro, 2012).

Adicionalmente, as universidades seniores enfrentam desafios estruturais, como o limitado reconhecimento por parte das políticas públicas. Apesar do seu potencial para fomentar o envelhecimento ativo, estas instituições nem sempre recebem os incentivos, orientações ou parcerias necessárias para o seu desenvolvimento e consolidação (Fragoso et al., 2017). Paralelamente, observam-se limitações na inclusão e diversidade, com a reprodução de desigualdades relacionadas com género, classe, etnia, território, cultura e níveis de escolaridade, o que restringe o acesso de grupos mais vulneráveis, como idosos pobres, isolados, dependentes, analfabetos ou migrantes (Alves et al., 2019).

A pandemia de COVID-19, iniciada em março de 2020, agravou estes desafios, introduzindo restrições que afetaram o funcionamento das universidades seniores. Entre os impactos observados estão o confinamento, o distanciamento físico, a suspensão das atividades presenciais, a redução de recursos, a necessidade de adaptação às tecnologias digitais e o aumento de problemas psicológicos como isolamento, ansiedade e depressão entre os idosos (Santos et al., 2020).

Um estudo conduzido por Santos et al. (2020), envolvendo 28 universidades seniores associadas à Associação Rede de Universidades da Terceira Idade (RUTIS) em Portugal, revelou que a pandemia teve um impacto significativo no funcionamento destas instituições. As universidades enfrentaram encerramentos temporários, cancelamento de atividades, redução de serviços e reorganização dos seus recursos humanos. Paralelamente, verificou-se um impacto negativo na saúde mental e emocional dos alunos, que relataram sentimentos de solidão, medo, frustração e saudades da convivência e das atividades anteriormente proporcionadas.

Contudo, o mesmo estudo evidenciou a resiliência das universidades seniores, que implementaram estratégias inovadoras para dar continuidade às suas atividades. Modalidades como ensino à distância, online e misto foram adotadas, bem como o recurso a ferramentas digitais como telefone, e-mail, WhatsApp, Facebook, Skype e Zoom para manter o contacto e o apoio aos alunos. Além disso, algumas universidades seniores deram continuidade ou ampliaram projetos de voluntariado, solidariedade e intervenção social, demonstrando capacidade de adaptação e reinvenção perante a crise (Santos et al., 2020).

3. Metodologia

A presente pesquisa foi realizada entre os meses de março e julho de 2021 e contou-se com a participação de 322 alunos seniores. Foi utilizado como instrumento de coleta de dados questionários, os quais foram disponibilizados na própria plataforma de ensino a distância da RUTIS.

Trata-se de uma pesquisa quantitativa e todos os alunos da Universidade Senior Virtual foram convidados a participar. Os dados foram tratados a partir do programa estatístico *Statistical Package for the Social Science*. E a análise da pesquisa foi realizada por grupo etário, sexo e estado conjugal.

Estes são dados preliminares, cujos resultados finais serão posteriormente publicados.

Dos 322 inquiridos, 78% tinham entre 50 e 74 anos e 22% tinham 75 anos ou mais. Além disso, participaram da pesquisa 230 mulheres e 72 homens. 61% relataram viver, na ocasião da pesquisa, com o cônjuge. Importante salientar que a maioria, 87%, começou a participar de Universidades Seniores em 2020 ou antes e apenas 9 iniciou durante a pandemia, em 2021.

4. Resultados

No presente estudo, observou-se uma predominância de indivíduos idosos, tanto do sexo feminino quanto do masculino, sem sintomas depressivos. Esse grupo demonstrou aumento na realização de atividades de lazer, tais como caminhada, meditação, culinária, jardinagem e leitura, em comparação ao período pré-pandêmico. Paralelamente, verificou-se maior participação em atividades online e projetos, acompanhada por uma redução no contato presencial com amigos e familiares. Testes estatísticos, incluindo Qui-quadrado e/ou exato de Fisher, indicaram diferenças significativas entre os sexos em relação à prática de culinária e à perceção da ausência de Universidades Seniores.

A análise da distribuição dos participantes nas faixas etárias de 50 a 74 anos e ≥75 anos, considerando características sociodemográficas, de saúde e de lazer, revelou padrões semelhantes. Em ambas as faixas etárias, predominou a ausência de sintomas

depressivos, acompanhada por um aumento nas atividades de lazer e na participação online, bem como pela diminuição do contato com amigos. Contudo, enquanto os participantes com idade ≥75 anos relataram manutenção do contato com amigos, aqueles na faixa etária de 50 a 74 anos indicaram um agravamento dessa relação. Além disso, o uso de medicamentos foi mais prevalente entre os idosos mais velhos. Testes de associação mostraram diferenças estatisticamente significativas entre as faixas etárias em variáveis como sintomas depressivos, início de participação nas Universidades Seniores, envolvimento em atividades online e uso de redes sociais, além do uso de medicamentos e da frequência de contato com amigos.

Na análise dos participantes segundo a presença ou ausência de cônjuge, foram identificadas diferenças relacionadas às características sociodemográficas, de saúde e de lazer. Tanto os idosos com cônjuge quanto aqueles sem cônjuge apresentaram maior prevalência de ausência de sintomas depressivos e aumento na realização de atividades de lazer, participação online e diminuição do contato com amigos, em comparação ao período pré-pandêmico. Contudo, indivíduos com cônjuge demonstraram menor envolvimento em projetos e mantiveram um nível de contato familiar similar ao anterior. Por outro lado, participantes sem cônjuge relataram maior consumo de medicamentos. Testes estatísticos revelaram diferenças significativas entre os grupos em variáveis como sintomas depressivos, participação online e em projetos, uso de medicamentos e contato com amigos e familiares.

5. Considerações finais

Durante a pandemia de COVID-19, os alunos das Universidades Seniores em Portugal enfrentaram mudanças significativas em sua rotina e no dia a dia. Com as restrições sanitárias e o distanciamento social, muitas atividades presenciais foram suspensas, impactando especialmente as interações sociais e as atividades coletivas, que são centrais para o modelo dessas instituições.

Os alunos seniores adaptaram-se ao contexto pandêmico com um aumento na participação em atividades online, incluindo aulas e projetos promovidos remotamente. Paralelamente, houve um crescimento no envolvimento em atividades de lazer individuais, como leitura, jardinagem, culinária, meditação e caminhadas, ajudando a preencher o tempo e manter a saúde mental.

Apesar dessas adaptações, muitos relataram um declínio no contato presencial com amigos e familiares, o que trouxe desafios emocionais e sociais. A falta de acesso a algumas atividades específicas, como as Universidades Seniores, também foi percebida como uma perda significativa, especialmente para as mulheres, que mencionaram essa ausência com maior frequência.

Essas alterações de rotina evidenciam a resiliência e a capacidade de adaptação desse grupo etário, mas também destacam a importância das atividades coletivas e do contato social para o bem-estar dos alunos das Universidades Seniores.

Este estudo teve como objetivo analisar o dia a dia dos idosos participantes da RUTIS durante o período pandêmico, com o intuito de compreender como essa iniciativa se adaptou, resistiu e se reinventou diante da crise sanitária, social e econômica decorrente da COVID-19.

Os resultados da pesquisa indicaram que, durante a pandemia, a maioria dos participantes não apresentou sintomas depressivos (88,2%) e que houve aumento significativo na adesão às atividades realizadas de forma online. A suspensão das

atividades presenciais das Universidades Seniores foi amplamente sentida, conforme relatado pela maioria dos entrevistados (271 participantes).

Adicionalmente, observou-se que tanto homens quanto mulheres ampliaram a realização de atividades de lazer durante o período, destacando-se práticas como caminhadas, meditação, culinária, jardinagem e leitura. A análise por faixa etária revelou diferenças relevantes. Participantes com idade igual ou superior a 75 anos mantiveram o contato com amigos, enquanto aqueles entre 50 e 74 anos relataram piora nas interações sociais. Além disso, os indivíduos mais velhos apresentaram maior uso de medicamentos em comparação aos mais jovens.

A presença ou ausência de um cônjuge também demonstrou influências no comportamento dos participantes. Idosos com cônjuge registraram menor participação em projetos e consideraram o contato familiar inalterado, enquanto aqueles sem cônjuge relataram maior uso de medicamentos.

Com base nos dados obtidos, foi possível confirmar a hipótese de que os hábitos dos participantes das Universidades Seniores em Portugal foram significativamente alterados durante a pandemia. O estudo destacou a capacidade de reinvenção dos idosos, que utilizaram recursos como atividades online e redes sociais para ocupar o tempo e se manterem ativos. Paralelamente, houve aumento na frequência de atividades físicas e intelectuais, o que pode explicar a elevada porcentagem de idosos sem sintomas depressivos, um resultado que contrasta com os dados globais sobre a prevalência de depressão em tempos de pandemia.

Os resultados sugerem que tanto a RUTIS, com as ações da Universidade Sénior Virtual, quanto os próprios participantes superaram os desafios impostos pela COVID-19 por meio da adaptação de seus cotidianos e relações interpessoais às restrições do período. Ademais, foi constatado aumento na adesão às tecnologias de informação e comunicação, corroborando a tese de que as Universidades Seniores proporcionam oportunidades contínuas de aprendizagem ao longo da vida.

Referencias:

- Alves, M Alves, M., Fragoso, A., & Ribeiro, M. L. (2019). Universidades seniores em Portugal: Histórias, experiências e expetativas. Edições Afrontamento.
- Fragoso, A., Gonçalves, T., Ribeiro, M. L., Monteiro, R., Quintas, H., Bago, J., Fonseca, G., & Santos, E. (2017). Educação de adultos em Portugal (2000-2015): Investigação, políticas e práticas. Edições Afrontamento.
- OMS. (2002). Active ageing: A policy framework. World Health Organization. https://apps.who.int/iris/bitstream/handle/10665/67215/WHO_NMH_NPH_02.8.pdf
- Paúl, C., & Ribeiro, O. (2012). Manual de gerontologia: Aspetos biocomportamentais, psicológicos e sociais do envelhecimento (2a ed.). Lidel.
- RUTIS. (2020). Quem somos. Rede de Universidades Seniores. https://www.rutis.pt/quem-somos/
- Santos, E., Ribeiro, O., Teixeira, L., Brandão, D., & Paúl, C. (2020). Impact of COVID-19 pandemic on the senior universities program in Portugal. Frontiers in Public Health, 8, 582882. https://doi.org/10.3389/fpubh.2020.582882
- UE. (2012). Envelhecimento ativo e solidariedade entre gerações: Um quadro de referência europeu. Comissão Europeia. https://ec.europa.eu/eip/ageing/library/active-ageing-and-solidarity-between-generations-european-framework_pt

13 - Avaliação do Desperdício Alimentar numa Instituição Particular de Solidariedade Social

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Resumo

As Instituições Particulares de Solidariedade Social (IPSS) são constituídas por iniciativa de particulares, sem fins lucrativos, com objetivos claramente definidos no bem comum e alicerçados por uma diversidade de serviços, nomeadamente os serviços de alimentação, que têm como objetivo servir refeições nutricionalmente equilibradas e seguras do ponto de vista higio-sanitário, contribuindo para a manutenção e/ou recuperação da saúde dos utentes. Numa IPSS, o desperdício alimentar pode ser um dos fatores comprometedores da viabilidade financeira da Instituição e, no caso dos serviços de alimentação, é frequentemente considerado um indicador de qualidade. Este trabalho pretendeu estudar o desperdício alimentar, sob a forma de restos e sobras, numa IPSS portuguesa. Para a quantificação das sobras recorreu-se ao método da pesagem do total produzido em cada refeição e não distribuído, enquanto que para a quantificação dos restos recorreu-se à técnica de registo fotográfico por indivíduo, antes e após a refeição. O estudo teve incluiu 49 pessoas, 63% (n = 31) do sexo feminino e 37% (n = 18) do masculino, com idade média de 82 anos. No dia da recolha de dados, foram produzidos um total de 201,0 kg de alimentos, dos quais apenas 157,7 kg (78,45%) foram consumidos. Observou-se que em todas as refeições havia sobras, 7,3 kg (29,48%) ao pequeno-almoço, 4,9 kg (4,91%) ao almoço, 4,8 kg (21,44%) ao lanche e 10,4 kg de sobras (18,77%) ao jantar. A percentagem média de restos ao pequeno-almoço foi de 3,1%, ao almoço de 10,9%, ao lanche de 7,0% e ao jantar de 9,0%. Os resultados obtidos no presente estudo permitem concluir que tanto o índice de sobras como o índice de restos no Serviço de Alimentação da Instituição estão acima dos limites máximos recomendados, apontando para um elevado desperdício alimentar, que pressupõe a implementação de um conjunto de medidas com vista à sua redução e melhoria da gestão do serviço.

Palavras-chave: Idoso; Instituição Particular de Solidariedade Social; Desperdício Alimentar; Serviço de Alimentação

Abstract

Private Social Solidarity Institutions (IPSS) are established by private individuals, on a non-profit basis, with clearly defined objectives for the common good and based on a variety of services, namely food services, which aim to serve nutritionally balanced meals and safe from a hygienic and sanitary point of view, contributing to the maintenance and/or recovery of users' health. In an IPSS, food waste can be one of the factors compromising the financial viability of the Institution and, in the case of food services, it is often considered an indicator of quality. This work aimed to study food waste, as: 1. Processing and Cooking Surplus; 2. Consumption Waste, in a Portuguese IPSS. To quantify Processing and Cooking Surplus, the method of weighing the total amount produced in each meal and not distributed was used, while to quantify Consumption Waste, the technique of photographic recording per individual, before and after the meal, was used. The study included 49 people, 63% (n = 31) female and 37% (n = 18) male, with an average age of 82 years. On the day of data collection, a total of 201.0 kg of food was produced, of which only 157.7 kg (78.45%) was consumed. It was observed that there was Consumption Waste at all meals, 7.3 kg (29.48%) at breakfast, 4.9 kg (4.91%) at lunch, 4.8 kg (21.44%) at snack and 10.4 kg of Consumption Waste (18.77%) at dinner. The average percentage of Consumption Waste at breakfast was 3.1%, at lunch 10.9%, at snack 7.0% and at dinner 9.0%. The results obtained in this study allow us to conclude that both the Processing and Cooking Surplus index and the Consumption Waste index in the Institution's Food Service are above the maximum recommended limits, indicating a high level of food waste, which presupposes the implementation of a set of measures focusing waste reduction and improving service management.

Keywords: Elderly; Private Institution of Social Solidarity; Food Waste; Food Service.

Introdução

O envelhecimento populacional é considerado um dos maiores desafios da saúde pública contemporânea (Souza et al, 2021). O número de idosos tem vindo a aumentar e estima-se que em 2080 o número de idosos será de 3 milhões (INE, 2020), sendo Portugal o 2.º país mais envelhecido em comparação com outros países da União Europeia (PORDATA, 2024). As Instituições Particulares de Solidariedade Social (IPSS) assumem um papel fundamental na intervenção social pois têm respostas específicas para satisfazer e apoiar este grupo social mais vulnerável (República Portuguesa, 2015). Aliado aos restantes serviços prestados pelas IPSS, o Serviço de Alimentação tem como objetivo fundamental servir refeições nutricionalmente equilibradas, diversificadas (Hoefnagels, 2023), equiponderadas e seguras em termos higiosanitárias, com vista à preservação ou recuperação da saúde das pessoas (Bradacz, 2023; Ricarte et al, 2008; Henriques, 2013). Uma alimentação desadequada nutricionalmente pode traduzir-se no agravamento geral do seu estado de saúde dos idosos com especial incidência na diminuição da imunidade, acarretando maior propensão de doenças, e no aumento da prevalência para a depressão e demência (República Portuguesa, 2017a; Marques, 2008; Fazzio, 2012). Assim, a alimentação é uma atividade fundamental para a saúde, independência e qualidade de vida (República Portuguesa, 2017a).

Numa IPSS, havendo uma valência que sirva alimentos, ética e moralmente, a redução do desperdício alimentar é particularmente relevante; veja-se, que a nível mundial, em 2050, a população deve atingir os 9 mil milhões de habitantes, ou seja, será necessário alimentar mais de 20 % do que atualmente, sendo que destas, estima-se que cerca de 800 milhões de pessoas estejam subnutridas (República Portuguesa, 2017b) e, segundo um estudo da PERDA, um sexto da população passa fome (PERDA, 2012). Para além disso, de acordo com o Parlamento Europeu “as estimativas demonstram que

88 milhões de toneladas de alimentos são desperdiçados na UE todos os anos. A produção e a eliminação de desperdícios alimentares na UE conduzem à emissão de 170 milhões de toneladas de CO2 e consomem 261 milhões de toneladas de recursos. O Objetivo de Desenvolvimento Sustentável (ODS) 12, na sua Meta 12.3 visa, até 2030, reduzir para metade o desperdício alimentar *per capita* a nível mundial, do retalho e do consumidor, e reduzir as perdas de alimentos ao longo das cadeias de produção e de abastecimento, incluindo as perdas pós-colheita." (Parlamento Europeu, 2017).

Durante vários anos não se encontrou uma definição consensual para o conceito de desperdício alimentar. Recentemente, (Boiteau e Pingali, 2023) fizeram uma revisão das várias definições utilizadas em contexto técnico-científico e concluíram que uma definição com base na da Food and Agriculture Organization (FAO), reunirá maior aceitação, assim, considera-se desperdício Alimentar:.

> "A perda e o desperdício alimentar [Food loss and Food Waste] correspondem a uma redução na quantidade ou na qualidade da porção comestível dos alimentos destinados ao consumo humano, quando os alimentos são redirecionados para usos não alimentares ou quando ocorre uma diminuição do valor nutricional, da segurança alimentar ou de outros aspetos de qualidade, desde o momento em que os alimentos estão prontos para a colheita ou abate até ao consumo." (Boiteau e Pingali, 2023).

O desperdício alimentar é um problema à escala mundial, tal como é um indicador cujo controlo, quantificação e diminuição é imprescindível no sentido de aumentar a rentabilidade de um Serviço de Alimentação, otimizando a sustentabilidade das Organizações (Bradacz, 2023; Henriques, 2013; Nonino-Borges et al, 2006; Moura et al, 2009; Vanin et al, 2008).

Em Portugal é habitual considerar-se que restos são os alimentos que depois de distribuídos não foram consumidos, ou seja, que foram devolvidos no prato do utente (Henriques, 2013; Moura et al, 2009; Augustini et al, 2008; Gomes et al, 2012), com causas multifatoriais. Quando o índice ultrapassa os níveis toleráveis pode-se influir a insatisfação com a refeição/ementa, a falta de adaptação ao meio institucional/serviços, a fragilidade decorrente de patologias ou situações marcantes de vida, entre muitos outros (Bradacz, 2023), admitindo-se como aceitável uma percentagem inferior a 10% (Henriques, 2013; Augustini et al, 2008; Gomes et al, 2012). Por sua vez, as sobras são todos os alimentos confecionados que não chegam a ser servidos no prato, admitindo-se como aceitável uma percentagem até 3% (Henriques, 2013; Gomes et al, 2012; Vaz, 2006; Rabelo et al, 2016) e a sua avaliação permite determinar a eficiência da gestão do Serviço de Alimentação (número de refeições a servir, controlo de quantidades/porções), e, consequemente adotar medidas de redução de desperdícios e custos (Ricarte et al, 2008; Henriques, 2013; Augustini et al, 2008; Gomes et al, 2012).

Nonino-Borges et al. (2006) referem uma classificação para as unidades de alimentação que propõe como "ótimo" se o desperdício alimentar for menor de 5%, entre 5 e 10% "bom", entre 10 e 15% "regular" e mais que 15% "mau".

É conhecida a escassez de estudos que se debrucem sobre o desperdício alimentar no terceiro setor, em específico em instituições geriátricas, assim este trabalho pretendeu estudar o desperdício alimentar, sob a forma de restos e sobras, numa IPSS portuguesa

Metodologia

Desenvolveu-se um estudo de carácter quantitativo, observacional e analítico. Tratou-se de um estudo centrado na contabilização do desperdício alimentar sobre a forma de restos e sobras com a alimentação diária dos utentes de uma IPSS durante um dia, onde foram produzidas e fornecidas quatro refeições, especificamente pequeno-almoço, almoço, lanche e jantar.

Para a realização deste estudo foram utilizados métodos validados e já utilizados em estudos semelhantes à presente investigação, nomeadamente métodos diretos ou indiretos, respetivamente a pesagem e o método fotográfico.

A amostra utilizada foi obtida por seleção não probabilística e de conveniência, sendo incluídos neste estudo todos os utentes (49 pessoas) que fizeram as quatro refeições no Serviço de alimentação da Instituição.

O início do estudo deu-se com avaliação de parâmetros antropométricos de todos os utentes que realizam as refeições nas instalações da Instituição: peso, altura (e a partir destes dois o IMC, Índice de Massa Corporal), circunferência da cintura e da anca. Na obtenção do peso foi utilizada a balança Body Analysis Scale 2000, com capacidade máxima de 150 kg e com uma precisão de 100 gramas.

Para calcular a altura e considerando que os indivíduos da amostra tinham dificuldade de mobilização, utilizou-se a fórmula para estimativa indireta da altura (Chumlea, 1998). Assim, com o idoso sentado ou deitado, posicionou-se o membro inferior de modo a formar um ângulo de 90º entre o calcanhar e o joelho. Usou-se uma fita métrica maleável, colocando-a na superfície anterior do membro inferior esquerdo desde o calcanhar até 3 cm acima da rótula, registando-se o comprimento com aproximação de 0,1cm.

No que se refere à vertente clínica, a Instituição disponibilizou uma listagem com as patologias de cada utente.

Previamente à recolha de dados para quantificação do desperdício alimentar, e dada a grande variedade de componentes e de recipientes usados na sua distribuição, todos foram tarados individualmente e identificados.

A contabilização dos restos foi feito através de método indireto, nomeadamente o fotográfico, sendo que todas as refeições servidas foram fotografadas antes do utente iniciar a refeição e após finalizar a mesma. Posteriormente, as quantidades de alimento foram estimadas e quantificadas em gramas, por uma nutricionista. Para garantir a correta quantificação dos alimentos, foram elaboradas etiquetas de 8 cm com uma codificação atribuída a cada utente, sendo colocadas ao lado de cada prato para registo fotográfico. Todas as fotografias foram realizadas com o mesmo equipamento e pelo mesmo técnico.

No que concerne à contabilização das sobras foi utilizado o método da pesagem, cujo processo consistiu na pesagem individual de todos os alimentos produzidos no início de cada refeição antes de seguirem para a linha de distribuição. Seguidamente, e após a distribuição, os recipientes que regressavam à cozinha e não estivessem vazios eram pesados novamente para registo do peso de sobras, num formulário previamente construído para este fim. As pesagens foram realizadas numa balança de marca CAS modelo EB, com precisão de 20 gramas e uma capacidade máxima de 150 Kg.

O tratamento estatístico dos dados foi efetuado nos programas Microsoft Office Excel 2007 e SPSS (Statistical Package for Social Sciences) versão 20.0® para Windows. Foram utilizados testes não-paramétricos, atendendo à pequena dimensão da amostra e ao facto de não se conhecer a distribuição exata da população, pois verificou-se que as variáveis não têm distribuição normal. Na caracterização da amostra, foram utilizadas medidas estatísticas de tendência central e de dispersão (média, mediana e desvio padrão).

A abordagem inicial foi a análise de alguns parâmetros, tais como, a distribuição de idades dos participantes, o cálculo das médias do peso, IMC, patologias mais prevalentes e tipos de dietas promovidas pela Instituição. Seguidamente procedeu-se à verificação das hipóteses pré-estabelecidas, aplicando primeiramente o teste de Kolmogorov-Smirnov para verificar a normalidade e, posteriormente, utilizaram-se testes não paramétricos. Todos estes testes foram realizados com um nível de significância de 5%.

A presente investigação respeitou integralmente os princípios éticos aceites pela comunidade de investigação e pela Declaração de Helsínquia, tais como confidencialidade, respeito, honestidade nas relações estabelecidas e garantia dos direitos dos que participaram voluntariamente neste trabalho de investigação.

Não foram equacionados quaisquer danos para os participantes, imputáveis ao presente estudo, sendo que poderão usufruir com a melhoria do Serviço prestado pela Instituição mediante os resultados obtidos.

Resultados

A população do estudo incluiu todos os utentes que fizeram as refeições no Serviço de Alimentação da Instituição. No total dos 49 utentes, 63% (n=31) eram do sexo feminino e 37% (n=18) do sexo masculino, com uma média de idades de 82 anos, tendo a pessoa mais velha 98 anos e a mais nova 38 anos (Tabela 1).

No que se refere ao IMC, e tendo por base os valores de referência de IMC para idosos segundo Lipschitz citado pela literatura (25), apenas 2% (n=1) dos utentes se encontrava desnutrido e é do género feminino, cerca de 46% (n=23) dos utentes (16% homens, 30% mulheres) encontrava-se num IMC de Eutrofia, enquanto que 50% (n=25) dos utentes (20% homens, 30% mulheres) apresentava um IMC de obesidade (Tabela 1). As doenças mais prevalentes da população estudada eram as doenças do sistema circulatório, representando um total de 57,1% (n=28), dos quais 61% mulheres (n=17) e 39% homens (n=11), seguidas das doenças endócrinas nutricionais e metabólicas e as doenças mentais e comportamentais, ambas com 46,9% (n=23), cujo total da população 74% (n=17) são mulheres e 26% (n=6) são homens (Tabela 1).

Tabela 1

Características sociodemográficas, antropométricas, clínicas e dietéticas da população

Total n(%)	49	(100%)
Género Feminino n(%)	31	(63%)
Género Masculino n(%)	18	(37%)
Idade _ anos (média; DP)	82,2	SD=9,8
Peso _ Kg (média;DP)	66,3	SD= 12,6
IMC _ Kg/m2 (média;DP)	28,3	SD= 5,1
Diagnóstico Clínico n(%)		
I. Doenças infeciosas e parasitárias	1	(2,04%)
II. Neoplasias	2	(4,08%)
III. Doenças do sangue e dos órgãos hematopoiéticos e alguns distúrbios que envolvem este mecanismo	10	(20,41%)
IV. Doenças endócrinas, nutricionais e metabólicas	23	(46,94%)
V. Doenças mentais e comportamentais	23	(46,94%)
VI. Doenças do Sistema nervoso	6	(12,24%)
VII. Doenças oculares	4	(8,2%)
VIII. Doenças do ouvido e do processo da mastóide	3	(6,12%)
IX. Doenças do Sistema Circulatório	28	(57,14%)
X. Doenças do Sistema Respiratório	3	(6,12%)

XI. Doenças do Sistema Digestivo	12	(24,5%)
XII. Doenças de pele e do tecido subcutaneo	2	(4,08%)
XIII. Doenças do sistema músculo-esquelético e do tecido conjuntivo	17	(34,69%)
XIV. Doenças do sistema geniturinário	6	(12,24%)
XVIII. Sintomas, sinais e dados clinicos ou laboratoriais anormais não classificados acima.	7	(14,29%)
Prescrição da dieta n(%)		
Geral	15	(30,61%)
Apta a Diabéticos	13	(26,53%)
Hipocalórica	11	(22,45%)
Hipocalórica/hiperproteica	3	(6,12%)
Outra	7	(14,29%)
Modificação da textura n(%)		
Não modificada	33	(67,35%)
Cortada	16	(32,65%)
Mole/Picada	0	(0,00%)
Cremosa/Pastosa	0	(0,00%)

No dia da recolha de dados, foram produzidos um total de 201,03 kg de alimentos, dos quais apenas 157,71 kg (78,45%) foram consumidos.

A ementa do pequeno-almoço era constituída por cevada, chá ou leite, com pão com manteiga, bolacha maria, bolacha água e sal ou farinha láctea. Ao lanche havia mais uma opção para além da primeira refeição, pão com doce. Quanto às refeições principais a ementa ao almoço foi creme de abóbora, medalhões de pescada no forno com batata e couve cozida e, a sobremesa melão, enquanto que ao jantar foi creme de abóbora, com arroz de coelho e feijão-verde cozido terminando com banana como fruta.

Ao pequeno-almoço foram produzidos 24,80 kg de alimentos e distribuídos 17,49 kg obtendo-se 7,31 kg (29,48%) de sobras correspondente a uma de quantidade de 0,15 kg de alimento que foi produzida para cada utente mas que não chegou a ser consumida. Os alimentos que compõem a refeição com maior quantidade de sobras foram a farinha láctea 92,3% (0,3kg) e a cevada 73,6% (1,84L) e o alimento com menos quantidade de sobras foi o pão 4,4% (0,1Kg) (Tabela 2).

Tabela 2

Distribuição das sobras por componente da refeição de Pequeno-Almoço

	PEQUENO-ALMOÇO								
	Pão (kg)	Bolacha Maria (kg)	Bolacha de água e sal (kg)	Leite (L)	Cevada (L)	Chá (L)	Manteiga (kg)	Farinha Láctea (kg)	TOTAIS
Peso dos Alimentos Produzidos (Kg)	2,25	0,44	0,14	14,00	2,50	5,00	0,14	0,32	24,80

Peso das Sobras (Kg)	0,10	0,18	0,08	2,20	1,84	2,52	0,08	0,30	7,31
Índice de Sobra (%)	4,44	40,91	57,14	15,71	73,60	50,50	57,14	92,31	29,48
Sobra *per capita* (Kg)	0,002	0,0037	0,0016	0,0449	0,0376	0,0515	0,0016	0,0061	0,15

Ao almoço foram produzidos no total 98,72 kg e distribuídos 93.87kg obtendo-se 4,85kg de sobras (4,91%), correspondente a uma quantidade de 0,06kg de alimento que foi produzida para cada utente mas que não foi servida. Deste total, a componente do almoço que mais sobras teve foram a componente glucídica com 3kg (13,45%). A única componente que não obteve sobras foi a sopa (Tabela 3).

Tabela 3

Distribuição das sobras por componente da refeição de Almoço

	ALMOÇO						
	Proteico (kg)	Glucídico (kg)	Hortícolas (kg)	Sopa (kg)	Sobremesa (kg)	Pão (kg)	TOTAIS
Peso dos Alimentos Produzidos (Kg)	15,00	22,30	7,00	34,56	15,76	4,10	98,72
Peso das Sobras (Kg)	0,90	3,00	0,25	0,00	0,26	0,44	4,85
Índice de Sobra (%)	6,00	13,45	3,57	0,00	1,65	10,73	4,91
Sobra *per capita* (Kg)	0,011	0,035	0,003	0,000	0,003	0,005	0,06

Ao lanche prepararam-se 22,15 kg de alimentos e sobraram 4,75 kg (21,44%) que corresponde a uma quantidade de 0,10 kg de alimento que foi produzida para cada utente mas que não chegou a ser fornecida. O alimento que compõe a refeição com maior quantidade de sobras foi a farinha láctea com 78,33% de sobras (0,24kg) e o doce apresenta o componente com menos sobras, 44,44% (0,16kg). As bolachas maria e as bolachas de água e sal não sobraram nesta refeição (Tabela 4).

Tabela 4

Distribuição das sobras por componente da refeição de lanche

	LANCHE									
	Pão (kg)	Bolacha Maria (kg)	Bolacha de água e sal (kg)	Leite (L)	Cevada (L)	Chá (L)	Manteiga (kg)	Doce (kg)	Farinha Láctea (kg)	TOTAIS
Peso dos Alimentos Produzidos (Kg)	1,87	0,44	0,08	9,00	2,50	7,53	0,08	0,36	0,30	22,15
Peso das Sobras (Kg)	0,86	0,00	0,00	2,50	0,50	0,50	0,00	0,16	0,24	4,75
Índice de Sobra (%)	45,74	0,00	0,00	27,78	20,00	6,64	0,00	44,44	78,33	21,44

Sobra *per capita* (Kg)	0,017	0,000	0,000	0,051	0,010	0,010	0,000	0,009	0,005	0,10

Na refeição do jantar foram produzidos no total 55,36kg para 60 e distribuídos 44,97kg, obtendo-se 10,39kg de sobras (18,77%) que corresponde a 0,17kg de sobras por pessoa, ou seja, a quantidade de alimento produzida para cada utente mas que não chegou a ser distribuída. Deste total a componente do jantar que mais sobras teve foi o pão com 1,1kg (25,35%) e a componente glucídica foi a que obteve menor percentual de sobras com 15% (0,3kg) (Tabela 5).

Tabela 5

Distribuição das sobras por componente da refeição de jantar

	JANTAR						
	Proteico (kg)	Glucídico (kg)	Hortícolas (kg)	Sopa (kg)	Sobremesa (kg)	Pão (kg)	TOTAIS
Peso dos Alimentos Produzidos (Kg)	7,66	2,00	5,00	26,36	10,00	4,34	55,36
Peso das Sobras (Kg)	1,55	0,30	1,08	4,72	1,64	1,10	10,39
Índice de Sobra (%)	20,23	15,00	21,60	17,91	16,40	25,35	18,77
Sobra *per capita* (Kg)	0,026	0,005	0,018	0,079	0,027	0,018	0,17

A maior percentagem de restos ao pequeno-almoço foi verificada no pão, com uma média de 5,2% (SD=12,51) e ao lanche de 7,9% (SD=11,93). Não se verificaram restos dos restantes componentes sólidos, glucídicos, do pequeno-almoço (bolacha maria, bolacha de água e sal ou farinha láctea). Relativamente às bebidas, ao pequeno-almoço o leite apresentou uma percentagem média de restos de 4.3% (SD=6.35) e ao lanche aumenta para 13,1% (SD=10,00), enquanto que a cevada ou chá têm médias de restos de 3,2 % (SD= 8,23), 11,2% (SD=16,35), respetivamente para pequeno almoço e lanche (Tabela 6).

Tabela 6

Distribuição dos restos por componente do Pequeno-almoço e Lanche

Componentes	*n*	Média	Mediana	Desvio padrão	Intervalo de Confiança (95%)	
					Limite Mínimo	Limite Máximo
Pequeno-almoço						
Pão	39	5,2	0,00	12,51	1,157	9,2703
Leite	36	4,3	0,00	6,34	2,1122	6,4064
Cevada/ Chá	20	3,2	0,00	8,23	-1,5371	7,9657
Lanche						
Pão	33	7,9	3,00	11,93	3,5581	12,0177
Leite	32	13,1	10,00	9,64	9,5709	16,5228

Cevada/ chá	25	11,2	0,00	16,35	4,4520	17,9480

Não se verificaram diferenças estatisticamente significativas entre os restos das bebidas (p-value=0.655).

A maior percentagem de restos ao almoço foi verificada no pão, com uma média de 20,6% (SD=16,92), seguido do componente proteico com 19,6% (SD=29,12) e glucídico, cuja percentagem é de 17,1% (SD=28,71). No que concerne ao jantar, o alimento que apresenta a maior percentagem de restos é o hortícola com uma média de 22,5% (SD=33,40), seguido do pão cuja média de restos é de 18,5% (SD=12,30). Verificaram-se restos em todos os componentes de ambas as refeições, salientando-se a sopa como o componente com menor percentagem de restos ao almoço, com uma média de 4,5% (SD=10,37). Ao jantar a sobremesa e a sopa são os alimentos menos rejeitados, com médias de 2,3% (SD=7,23) e de 5,1% (SD=8,21), respetivamente (Tabela 7).

Tabela 7

Distribuição dos restos por componente do almoço e jantar

Componentes	*n*	Média	Mediana	Desvio padrão	Intervalo de Confiança (95%)	
					Limite Mínimo	Limite Máximo
Almoço						
Sopa	48	4,5	2,11	10,37	1,4974	7,5221
Proteico	43	19,6	8,33	29,12	10,6776	28,5988
Glucídico	46	17,1	0,00	28,71	8,5433	25,5928
Hortícola	40	11,1	0,00	22,72	3,8025	18,3344
Pão	15	20,6	16,67	16,92	11,184	29,927
Sobremesa	44	14,0	0,00	25,21	6,3512	21,679
Jantar						
Sopa	48	5,1	2,50	8,21	2,7149	7,4816
Proteico	34	14,8	2,50	20,91	7,4722	22,0657
Glucídico	37	15,5	0,00	22,85	7,9274	23,166
Hortícola	36	22,5	0,00	33,40	11,2208	33,8189
Pão	23	18,5	16,67	12,30	13,160	23,796
Sobremesa	38	2,3	0,00	7,23	-1,085	4,648

Ao almoço a percentagem de restos da sopa é significativamente inferior em relação à dos componentes proteico (p-value=0.000) e glucídico (p-value=0.005), bem como do pão (p-value=0.003). Verificou-se ainda uma percentagem de restos significativamente superior no pão comparativamente à sobremesa (p-value=0.026) (Tabela 8).

Ao jantar a percentagem de restos da sopa é significativamente inferior à dos componentes proteico (p-value=0.039) e glucídico (p-value=0.0540), bem como do pão (p-value=0.000). Verificou-se ainda uma percentagem de restos significativamente inferior na sobremesa comparativamente à sopa (p-value=0.011), componentes proteico (p-value=0.007), glucídico (p-value=0.002), hortícola (p-value=0.002), bem como de pão (p-value=0.004). Verificou-se, igualmente, que a percentagem de restos de hortícolas é significativamente superior do que no componente proteico (p-value=0,049) (Tabela 8).

Tabela 8

Análise comparativa por componente do almoço e jantar

Tabela 8

Jantar		Sopa *p-value*	Proteico *p-value*	Glucídico *p-value*	Hortícola *p-value*	Pão *p-value*	Sobremesa *p-value*	Almoço
	Sopa		0.000	0.005	0.387	0.003	0.114	
	Proteico	0.039		0.600	0.179	0.387	0.682	
	Glucídico	0.040	0.936		0.499	0.593	0.697	
	Hortícola	0.079	0.049	0.212		0.958	0.375	
	Pão	0.000	0.091	0.097	0.302		0.026	
	Sobremesa	0.011	0,007	0.002	0.002	0.004		

A percentagem média de restos do Pequeno-almoço foi de 3.1% (SD=6.83), valor significativamente inferior ao do almoço (Média=10.9%, SD=11.04; p-value=0.000), do lanche (Média=7,0%, SD=6,43; p-value=0.000) e do jantar (Média=9.0%, SD=9.45; p-value=0.000) (Tabela 9). Nas restantes refeições não se verificaram diferenças estatisticamente significativas entre as percentagens de restos.

Tabela 9

Distribuição de restos por refeição

Refeições	Média	Mediana	Desvio padrão	Intervalo de Confiança (95%)	
				Limite Mínimo	Limite Máximo
Pequeno-almoço	3,1	0,00	6,83	1,1240	50,4950
Almoço*	10,9	8,33	11,04	7,7592	14,1033
Lanche*	7,0	6,25	6,43	4,8607	9,1460
Jantar*	9,0	6,39	9,45	6,2788	11,7080

* Significativamente diferente (p=0.000) da percentagem de resto do Pequeno-almoço.

Foi aplicado o teste de correlação de Spearman para identificar se existia relação entre o sexo e a quantidade de restos, bem como entre o IMC e a quantidade de restos, não se verificando correlação estatisticamente significativa. Para verificar diferenças entre a idade e a quantidade de restos, aplicou-se o teste Mann-Whitney, que evidenciou não existirem diferenças estatisticamente significativas.

Discussão dos resultados

No presente estudo, a quantificação do desperdício foi obtida através da avaliação das sobras e restos.

Na avaliação das sobras, encontrou-se percentagem média de sobras para o pequeno-almoço de 29,48% correspondente a 15 g por pessoa, ao almoço de 4,91% o que equivale a 6 g de sobras por utente, na refeição do lanche apurou-se uma média de 21,44% correspondente a 10 g por pessoa e ao jantar obteve-se uma média de sobras de 18,77% que resulta em 17 g por utente.

Estes valores são bastante acima da percentagem recomendada, embora os resultados vão ao encontro dos obtidos no estudo de Rabelo e Alves (2016) e Gomes et

al (2012). No entanto, Abreu mencionado por Henriques (2013), defende não existir uma percentagem universal ideal de sobras, sendo que cada Serviço de Alimentação deve monitorizar os seus desperdícios e estipular o seu percentual de sobras de acordo com as suas particularidades, utilizando os valores estipulados na literatura apenas como referência (Edwards, 2009; Henriques, 2013; Augustini et al, 2008; Gomes et al, 2012).

Embora a ementa institucional seja devidamente planeada, o elevado índice de desperdício indica a necessidade de implementar medidas e estratégias de intervenção para aprimorar o planeamento ou a execução das refeições (Gomes et al, 2012; Rabelo et al, 2016; Ribeiro, 2002), como a elaboração de fichas técnicas e a sua aplicação, a formação dos trabalhadores afetos ao Serviço que percecionam que o seu trabalho não necessita do uso de recursos técnicos (Gomes et al, 2012).

Salienta-se que os resultados do pequeno-almoço não são representativos da verdadeira quantidade de desperdício deste Serviço de Alimentação, dado que as quantidades para confeção são sobrestimadas para que a maioria das sobras deste sejam aproveitadas para o lanche, sendo, para isso, armazenadas respeitando os princípios de qualidade e segurança alimentar.

No que se refere aos resultados das percentagens de restos, nas refeições de pequeno-almoço e lanche é evidente que os utentes preferem os componentes sólidos glucídicos como bolacha maria, bolacha de água e sal ou farinha láctea, pois não se verificaram restos. Quanto aos restantes componentes, a percentagem média de restos é aceitável, exceto nos componentes líquidos do lanche, cujas médias ultrapassam os 10% (Média Leite = 13,1% e Média Cevada/chá = 11,2%), podendo ser explicado pelo facto de os utentes terem um horário de ingestão hídrica pouco tempo antes da hora de lanche e também por alterações inerentes ao processo de envelhecimento como a perda da sensação de sede (Li, Xiao e Zhang, 2023).

Relativamente ao almoço e jantar, observaram-se restos em todos componentes, salientando-se que em ambas as refeições se verifica que os idosos apresentam uma percentagem de restos significativamente inferior na sopa, o que poderá indicar a influência dos hábitos culturais e preferências pessoais (Castro, 2002; Jomori et al, 2008), sendo o único componente em ambas as refeições dentro do limite de referência e cuja percentagem de resto é aceitável.

Ao almoço verifica-se que todos os componentes ultrapassam os limites de referência considerados aceitáveis para percentagem de restos, sendo os componentes hortícola e proteico os que mais restam, o que poderá indicar um descontentamento com a ementa (medalhões de pescada), tendo em conta os hábitos de vida anteriores à institucionalização (Silva et al, 2020). Para além disso, observou-se ainda que uma percentagem de restos do pão superior à da sobremesa, evidenciando a apetência para o doce, que pode ser explicado pela modificação da perceção de gosto que o envelhecimento determina, tal como sugeriu um estudo realizado por De Jong, De Graaf e van Staveren (1996), cujos resultados evidenciaram que os idosos preferiam preparados mais doces e sabores mais fortes, traduzindo o efeito da compensação pela perda de capacidades sensoriais, neste caso o paladar (Fazzio,2012; Jomori et al, 2008; De Jonh et al, 1996; De Boer et al, 2013; Dorner et al, 2010).

Ao jantar é evidente que os idosos preferem a sopa e a sobremesa, sendo os únicos componentes com percentagens de restos aceitáveis. Estes resultados evidenciam a necessidade de utilizar estes dois componentes de refeição para garantir o maior aporte nutricional aumentando a densidade energética e proteica, podendo ser utilizados, inclusive, para transportar suplementos nutricionais, tais como os modulares proteicos e glucídicos (Villarroel et al, 2012; JA Grieger et al, 2007). Do ponto de vista de gestão de custos, da sustentabilidade e da ecologia dos serviços de alimentação das instituições de apoio geriátrico, parece pertinente reduzir o número de indivíduos a quem se disponibiliza um prato principal, garantindo em alternativa todo o aporte nutricional através da sopa e da sobremesa.

O estudo feito por Ricarte et al (2008) encontrou valores de percentagem de restos aceitáveis abaixo do máximo recomendado, tal como o de Augustini et al (2008). Contudo, o estudo elaborado por Moura et al (2009) e o efetuado por Henriques (2013) ultrapassam os limites máximos de referência.

As diferenças entre os restos totais por refeição, significativamente inferiores no pequeno-almoço comparativamente às refeições principais, podem ser explicadas pelo tipo de alimentos incluídos, mas também e principalmente pelo volume total da refeição. Parece fundamental, para garantir um bom aporte nutricional e reduzir os custos e desperdícios, disponibilizar refeições de pequeno volume com elevada densidade nutricional (Villarroel et al, 2012; JA Grieger et al, 2007).

Neste estudo, a percentagem de restos pode estar relacionada com o tipo de população, atendendo a que o processo de envelhecimento acompanha-se, normalmente, por uma série de alterações físicas, fisiológicas, psicológicas, económicas e sociais que influenciam o comportamento aos mais diversos níveis, um dos quais o alimentar, que pode comprometer o estado nutricional. Associado a este processo, existem fatores que poderão influenciar as preferências alimentares, entre os quais os pessoais (preferências e hábitos alimentares), ambientais (cultura e estilo de vida), estado de saúde (estado de humor, situações de doença aguda, patologias crónicas e degenerativas, alterações sensoriais, dificuldades de mastigação e/ou deglutição, perturbações digestivas, polimedicação), a própria institucionalização e as características dos alimentos, como o seu sabor, aroma, textura e aspeto (Marques, 2008; Fazzio, 2012; Jomori et al, 2008; De Jonh et al, 1996; De Boer et al, 2013; Viana, 2010).O comprometimento sensorial no envelhecimento acarreta alterações na ingestão alimentar e na capacidade de se autoalimentar, pois a diminuição das sensações do paladar e odor traduzem-se numa diminuição do prazer associado ao alimento (Jomori et al, 2008; De Jonh et al, 1996; De Boer et al, 2013; Viana, 2010; Amarantos et al, 2001; Bidoglio et al, 2006; Araújo, 2013), da mesma forma que a perda dos dentes, uso de próteses dentárias mal adaptadas, higiene oral deficitária e a sensação de boca seca aumentam os problemas associados à mastigação e deglutição (Araújo, 2013; Jales et al, 2005; Catão et al, 2011; Lima at al, 2009; Oliveira et al, 2014) e, por isto, os idosos, evitam certos tipos de alimentos como carnes, frutos e vegetais frescos, podendo estes fatores contribuir para o elevado índice de restos, sendo necessário a substituição na dieta de alimentos duros por alimentos menos consistentes (Catão et al, 2011; Oliveira et al, 2014).

Assim, é muito importante que as Instituições tenham em conta os gostos e preferências alimentares dos seus utentes, até porque o aumento da satisfação com a alimentação e um momento de refeição tranquilo pode prevenir complicações de saúde, tal como promover um momento de interação social, melhorando o humor da pessoa e consequentemente potenciar o consumo de alimentos ingeridos, traduzindo-se em maior satisfação dos utentes na refeição ingerida, redução de desperdício e, por sua vez de custo, melhorando a eficiência do Serviço de Alimentação e, neste sentido, a sustentabilidade da Instituição (Ricarte et al, 2008; Henriques, 2013; Moura et al, 2009; Vanin et al, 2008; Cervi et al, 2005; Gomes et al, 2012; Rabelo et al, 2016; Ribeiro, 2002; Castro, 2002; Lopes, 2011).

Tendo em conta todos os resultados, é essencial implementar um conjunto de medidas de combate ao desperdício alimentar, como por exemplo, quantificação e controlo o desperdício (monitorização diária das sobras alimentares e periódica dos restos), padronização das quantidades a serem preparadas (capitações), dos métodos de confeção e do modo de empratar. Igualmente, deverá garantir-se a avaliação periódica das ementas, através do grau de satisfação alimentar dos utentes, adaptando-as aos hábitos, gostos e preferências alimentares destes e, por último, estabelecer um programa de sensibilização para todos os utentes e trabalhadores a fim de os consciencializar para a presente problemática e suas repercussões aos mais diversos níveis (Ricarte et al, 2008; Henriques, 2013; Moura et al, 2009; Vanin et al, 2008; Gomes et al, 2012; Rabelo et al, 2016; Ribeiro, 2002; Castro, 2002; Lopes, 2011).

Como limitações ao presente estudo menciona-se a questão da amostra não ser representativa da população, tendo por base uma seleção aleatória dos indivíduos ou em estudos de comparação entre diferentes populações (instituições congéneres), bem como o facto dos valores encontrados não serem representativos do desperdício total de alimentos no Serviço. Não obstante, é um bom ponto de partida para estudos mais ambiciosos, pois seria muito interessante avaliar a origem/causa deste desperdício alimentar e/ou o seu custo financeiro para análise do impacto na demonstração de resultados líquidos de um determinado período e, consequentemente influência na gestão financeira.

Conclusões

Os resultados obtidos do presente estudo permitem concluir que tanto o índice de sobras como o índice de restos estão acima dos limites máximos recomendados, apontando para um elevado desperdício alimentar. A percentagem de sobras encontrada evidencia oportunidades de melhoria no processo de planeamento, produção e/ou distribuição. Por sua vez, relativamente à percentagem média de restos nas refeições principais poderá refletir insatisfação com a refeição, provável falta de adaptação do utente, atendendo ao facto de estar em ambiente institucional.

Estudos futuros, de caráter longitudinal e intervencionais, poderão complementar estes resultados e contribuir para decisões baseadas em evidências científicas mais robustas.

Acreditamos que o presente estudo possa oferecer informações valiosas às IPSS que prestam apoio à Terceira Idade, contribuindo para o aprimoramento da gestão do Serviço de Alimentação e, consequentemente, para uma melhor satisfação das necessidades e expectativas dos utentes.

Referenciâs:

- Amarantos, E., Martinez, A., Dwyer, J. (2001). *Nutrition and quality of life in older adults*. Journals of Gerontology.
- Araújo, M.L.A. (2013). *A Desidratação no Idoso* [Dissertação de mestrado, Universidade Fernando Pessoa]. Faculdade Ciências da Saúde. Porto.
- http://hdl.handle.net/10284/4177
- Augustini, V., Kishimoto, P., Tescaro, T., Almeida, F. (2008). *Avaliação do Índice de Resto-Ingesta e sobras em Unidade de Alimentação e Nutrição (UAN) de uma empresa metalúrgica na cidade de Piracicaba/SP*. Revista Simbio-Logias. 1(1):99-110.
- Bidoglio, M., Calcinoni, O., Laureati, M., Pagliarini, E. (2006). *Sensory acceptability of traditional food preparations by elderly people*. Elsevier. Food Quality and Preference. 17. 43-52.
- Boiteau, J. M., & Pingali, P. (2023). Can we agree on a food loss and waste definition? An assessment of definitional elements for a globally applicable framework. *Global Food Security, 37,* 100677. https://doi.org/10.1016/j.gfs.2023.100677
- Bradacz, D. (2023). *Modelo de Gestão de Qualidade para o Controle de Desperdícios de Alimentos em Unidades de Alimentação e Nutrição* [Dissertação de mestrado, Universidade Federal de Santa Catarina]. Florianópolis: Universidade Federal de Santa Catarina.
- http://repositorio.ufsc.br/xmlui/handle/123456789/85188
- Castro, M. (2002). *Fatores determinantes do desperdício de alimentos no Brasil* [Dissertação de mestrado, Universidade Estadual do Ceará]. Fortaleza.

- https://siduece.uece.br/siduece/trabalhoAcademicoPublico.jsf?id=24376
- Catão MHCV, Xavier AFC, Pinto TCA. (2011). *O impacto das alterações do sistema estomatognático na nutrição do idoso*. Rev Bras Ciênc Saúde. 9(29):73-8.
- Cervi, A., Franceschini, S. C. C., Priore, S. E. (2005). *Análise crítica do uso do índice de massa corporal para idosos*. Revista de Nutrição. Campinas, 18 (6):765-775
- Chumlea et al. (1998).*Prediction of stature from knee height for black and white adultsand children with application to mobility-* -impaired or handicapped persons. Journal of American Dietetic Association. 94(12):1385-8.
- De Boer, A., Ter Horst, G. J., & Lorist, M. M. (2013). *Physiological and psychosocial age-related changes associated with reduced food intake in older persons*. Ageing research reviews. 12(1), 316–28.
- De Jong, N., De Graaf, C., van Staveren, A. (1996). *Effect of sucrose in breakfast items on pleasantness and food intake in the elderly*. Physiology and Behaviour. 60(6):1453-1462
- Dorner, B., Friedrich, E., Posthauer, M. (2010) *Practice Paper of the American Dietetic Association: Individualized Nutrition Approaches for Older Adults in Health Care Communities*. Journal of the American Dietetic Association. 110(10):1554-1563.
- Fazzio, D. (2012). *Envelhecimento e Qualidade de Vida - Uma Abordagem Nutricional e Alimentar*. Artigo de Revisão. Revisa. 1(1):76- 88.
- Gomes, G., Jorge, M. (2012). *Avaliação do Índice de Resto-ingestão e Sobras em uma Unidade Produtora de Refeição Comercial em Ipatinga MG*. Nutrir Gerais. 6(10):857-868
- Henriques, S. (2013). *Avaliação e Controlo de Desperdícios Alimentares numa Instituição de Apoio à Terceira Idade*. Faculdade de Ciências da Nutrição e Alimentação. Universidade do Porto. https://repositorio-aberto.up.pt/bitstream/10216/67453/2/23996.pdf
- Hoefnagels, F.A., Patijn, O.N., Meeusen, M.J. *et al* (2023). *The perceptions of food service staff in a nursing home on an upcoming transition towards a healthy and sustainable food environment: a qualitative study*. *BMC Geriatr* 23, 784.
- Instituto Nacional de Estatística (2020). *Projeções de População Residente 2018-2080*. Lisboa: INE, 2020. https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaques&DESTAQUESdest_boui=406534255&DESTAQUESmodo=2&xlang=pt
- Jales MA, Cabral RR, Silva HJ, Cunha DA. (2005). *Características do sistema estomatognático em idosos: diferenças entre instituição pública e privada*. Rev CEFAC. 7(2):178-87.
- Jomori, M., Proença, R., Calvo, M. (2008). *Determinantes de escolha alimentar*. Revista de Nutrição. 21(1):63-73.
- Li S, Xiao X, Zhang X (2023). *Hydration Status in Older Adults: Current Knowledge and Future Challenges*. Nutrients. 15(11):2609.
- Lima RMF, Amaral AKFJ, Aroucha EBL, Vasconcelos TMJ, Silva HJ, Cunha DA. (2009). *Adaptações na mastigação, deglutição e fonoarticulação em idosos de instituição de longa permanência*. Rev CEFAC. 11(supl3):405-22.
- Lopes, A. (2011). *Avaliação do desperdício alimentar num restaurante universitário no Brasil* [Trabalho final de licenciatura, Universidade Atlântica]. Barcarena. http://hdl.handle.net/10884/632
- Marques, F. (2008). *Estado Nutricional e Ingestão Alimentar numa População de Idosos Institucionalizados* [Dissertação de mestrado, Universidade de Coimbra]. Faculdade de Medicina da Universidade de Coimbra. https://hdl.handle.net/10316/18108
- Moura, P.N., Honaiser, A., Bolognini, M.C.M. (2009). *Avaliação do índice de resto ingestão e sobras em unidade de alimentação e nutrição* (U.A.N.) do colégio agrícola de Guarapuava (PR). Revista Salus-Guarapuava (PR) 3 (1):15-22.

- Nonino-Borges, C., Rabito, E., Silva, K., Ferraz, C., Chiarello, P., Santos, J., Marchini, J. (2006). *Desperdício de alimentos intra-hospitalar*. Revista de Nutrição. Campinas, 19 (3):349-356.
- Oliveira, B. S., Delgado, S. E., Brescovici, S. M. (2014). *Alterações das funções de mastigação e deglutição no processo de alimentação de idosos institucionalizados*. Revista Brasileira de Geriatria e Gerontologia. 17(3):575-587
- Parlamento Europeu, Comissão Ambiente, Saúde Pública e Segurança Alimentar (2017). *Resolução do Parlamento Europeu sobre a iniciativa para uma utilização mais eficiente dos recursos*: reduzir os resíduos alimentares, melhorar a segurança alimentar. https://oeil.secure.europarl.europa.eu/oeil/en/document-summary?id=1490347
- PERDA (2012) – *Projeto de Estudo e Reflexão sobre o Desperdício Alimentar*, CESTRAS
- PORDATA (2024). *Índice de Envelhecimento e outros indicadores de envelhecimento*. https://www.pordata.pt/pt/estatisticas/populacao/populacao-residente/indice-de-envelhecimento-e-outros-indicadores-de
- Rabelo, N. e Alves, T. (2016). Avaliação do percentual de resto-ingestão e sobra alimentar em uma unidade de alimentação e nutrição institucional. R. bras. Tecnol. Agroindustr., Ponta Grossa. 10(1):2039-2052.
- República Portuguesa. (2015). *Lei n.º 76/2015, de 28 de julho: Primeira alteração ao Decreto-Lei n.º 172-A/2014, de 14 de novembro, e sexta alteração ao Estatuto das Instituições Particulares de Solidariedade Social*. Diário da República n.º 145/2015, Série I de 2015-07-28.
- República Portuguesa (2017a). Estratégia Nacional Para o Envelhecimento Ativo e Saudável 2017-2025. Lisboa https://www.sns.gov.pt/wp-content/uploads/2017/07/ENEAS.pdf
- Ricarte, M., Fé, M., Lopes, A., Santos, I. (2008). *Avaliação do Desperdício de alimentos em uma Unidade de Alimentação e Nutrição Institucional em Fortaleza* - CE. Saber científico, Porto Velho; 1(1):158 https://periodicos.saolucas.edu.br/index.php/resc/article/view/1553/1203
- República Portuguesa, Lisboa (2017b). Estratégia Nacional e Plano de Ação de Combate ao Desperdício Alimentar – *Desperdício alimentar zero: Produção sustentável para um consumo responsável*. Lisboa. https://www.portugal.gov.pt/download-ficheiros/ficheiro.aspx?v=%3D%3DBAAAAB%2BLCAAAAAAABAAzNjc0AgB0LXTsBAAAAA%3D%3D
- Ribeiro, C. (2002). *Análise de perdas em unidade de alimentação e nutrição (UANs) industriais: estudo de caso em restaurantes industriais* [Dissertação de mestrado, Universidade Federal de Santa Catarina]. Florianópolis. Universidade Federal de Santa Catarina. http://repositorio.ufsc.br/xmlui/handle/123456789/82680
- Silva, J. D. de C., Alencar, M. do S. S., Sousa, L. A. de, & Castro, L. da C. (2020). *Eating Attitudes and Life Habits of Institutionalized Elderly People in the Northeast Capital*. *Research, Society and Development*, *9*(8), e468985278
- Souza EM, Silva DPP, Barros AS (2021). *Educação popular, promoção da saúde e envelhecimento ativo: uma revisão bibliográfica integrativa.* Ciênc Saúde Coletiva. 26(4):1355-1368.
- União Europeia (2016). *Combating Food Waste: an opportunity for the EU to improve the resource-efficiency of the food supply chain*. Luxemburgo. Special Report. NO 34
- Vanin M, Novello D. (2008). *Avaliação do desperdício no pré-preparo de saladas em uma unidade de alimentação e nutrição*. Rev Salus-Guarapuava. 2(2):51-62.
- Vaz, C. (2006). *Restaurantes: controlando custos e aumentando lucros*. Brasília.
- JA Grieger, CA Nowson, (2007). *Nutrient intake and plate waste from an Australian residential care facility*. European Journal of Clinical Nutrition.61:655–663
- Viana, M.F.R. (2010). *Determinantes do Consumo Alimentar de Doentes Hospitalizados* [Dissertação de mestrado, Universidade do Porto]. Porto.

- Villarroel, R. M., Sangrà, R. A., Massaguer, L. P., Codina, A. F. (2012). *Assessment of food consumption, energy and protein intake in the meals offered in four Spanish nursing homes*. Nutrición Hospitalaria. 27(3):914-921

14 - TRABALHO COLABORATIVO ENTRE PROFESSORES DO ENSINO REGULAR E EDUCAÇÃO ESPECIAL NA OPERACIONALIZAÇÃO DAS MEDIDAS DE SUPORTE À APRENDIZAGEM E À INCLUSÃO

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Resumo: Este estudo teve como objetivo central analisar e conhecer as práticas de colaboração entre os professores do ensino regular e os professores de educação especial. Foi efetuada uma pesquisa do tipo exploratória e descritiva, de abordagem qualitativa, utilizando-se como técnica a entrevista semiestruturada a 10 professores de educação especial de escolas, cada um pertencente a uma escola, dos distritos de Aveiro e Viseu. Os dados recolhidos foram categorizados e tratados através da análise de conteúdo de acordo com a metodologia proposta por Bardin (2011). Os resultados permitiram concluir que continua a haver muito por fazer no que respeita às práticas de trabalho colaborativo entre os docentes, já que este é realizado, maioritariamente, de forma informal, fora do horário de trabalho e em locais inadequados. As barreiras a esse trabalho são várias, apesar da avaliação da experiência colaborativa ser positiva, de acordo com o mencionado pelos docentes. Os fatores facilitadores, como a empatia, a disponibilidade, a sensibilidade dos docentes e a sua visão positiva acerca dos alunos com NE devem ser aproveitados para desenvolver melhores práticas.
Palavras-chave: Educação Especial; Ensino Regular; Medidas de Suporte à Aprendizagem e à Inclusão; Trabalho Colaborativo.

Abstract: The main objective of this study was to analyze and understand collaboration practices between regular and special education teachers. An exploratory and descriptive research was carried out, with a qualitative approach, using the technique of semi-structured interviews with 10 special education teachers from schools, each belonging to a different school, in the districts of Aveiro and Viseu. The collected data were categorized and treated through content analysis according to the methodology proposed by Bardin (2011). The results allowed us to conclude that there is still a lot to be done with regard to collaborative work practices among teachers, since this is mostly carried out informally, outside working hours and in inappropriate places. There are several barriers to this work, despite the evaluation of the collaborative experience being positive, according to what was mentioned by the professors. Facilitating factors such as empathy, availability,

sensitivity of teachers and their positive view of students with SEN should be used to develop better practices.

Keywords: Special Education; Regular education; Measures to Support Learning and Inclusion; Collaborative Work.

Introdução

A temática da educação inclusiva tem adquirido notoriedade crescente, tornando-se, cada vez, mais debatida no meio educacional, no sentido de procurar desenvolver, no quotidiano, ações concretas que permitam uma educação de qualidade para todos os que estão inseridos no contexto escolar. A educação inclusiva é, atualmente, um conceito amplo que visa atender às necessidades educativas de todos os alunos, mediante diferentes ofertas de educação e formação. Assim, a educação inclusiva parte do princípio de que todas as crianças, independentemente das suas capacidades, dificuldades e especificidades devem ter as mesmas oportunidades no que concerne à aprendizagem (Mondal, 2021). O DecretoLei n.º 54/2018, de 6 de julho, alterado pela Lei n.º 116/2019, de 13 de setembro, que estabelece os princípios e as normas que garantem a inclusão enquanto processo que visa dar resposta à diversidade, constituiu um marco que veio favorecer a inclusão de crianças com Necessidades Educativas (NE).

O sistema educacional inclusivo baseia-se na conceção de que se um aluno não está a conseguir aprender, o problema está no sistema educacional e não no próprio aluno. Assim, as dificuldades surgem devido a fatores como: metodologias de ensino e de currículos rígidos e inflexíveis, ambiente inacessível, falta de capacitação dos professores, má qualidade de ensino de um modo geral, falta de apoio governamental, os quais tornam o sistema educacional responsável pelo insucesso escolar do aluno (Tyagi, 2016).

Apesar de todos os avanços desenvolvidos no sentido de dar uma resposta educacional adequada a todos os alunos, independentemente das suas especificidades, ainda existem muitos obstáculos no que concerne à verdadeira implementação da educação inclusiva. Os professores nem sempre conseguem responder a todos os alunos, especialmente em turmas com uma grande diversidade (Lança, 2017). Ademais, a inclusão de crianças com NE no ensino regular implica uma preparação maior por parte dos docentes e um trabalho de colaboração estreito com os professores de Educação Especial (EE) (Nunes, 2012). Conforme referido por Paulo e Casado (2021), este trabalho colaborativo traz benefícios a nível da partilha de informação, da colaboração e do esforço dos intervenientes no sentido de criar estratégias que resultem em planos de intervenção eficazes, cujo objetivo principal é ir de encontro aos alunos, reduzindo a sua problemática. Os autores acrescentam, ainda, que o trabalho colaborativo entre os docentes na promoção da inclusão pode levar à maximização das capacidades individuais do aluno, ajudando-o a sentir-se seguro, valorizado e estimado (Paulo & Casado, 2021). Nesse seguimento, Florêncio (2019) acrescenta que o trabalho colaborativo entre professores é de extrema importância, na medida em que contribui para a evolução do aluno de acordo com as suas potencialidades e dificuldades. Por conseguinte, a escola deve criar condições para que os docentes tenham mais espaço para a comunicação e troca de saberes e ideias (Florêncio, 2019). Não obstante, as relações de colaboração entre professores de EE e de professores do ensino regular (ER) são frequentemente condicionadas por muitos fatores, como a falta de coordenação a nível de horários, o número de alunos por turma e o elevado número de horas de trabalho burocrático (Correia, 2013).

Neste seguimento, este artigo tem como objetivo central conhecer as práticas de colaboração entre os professores do ER e os professores de EE, esperando-se contribuir para o aprimoramento das práticas colaborativas nas escolas, as quais permitam uma prática educativa mais eficiente e que dê resposta às necessidades dos alunos.

1. Enquadramento teórico

1.1. Educação inclusiva

A educação inclusiva compreende a educação de alunos com NE em contextos de ensino regular; um processo que implica a transformação das escolas para atender a todas as crianças (Mitchell, 2015). Apesar de o conceito, na maioria das vezes, fazer menção à inclusão de alunos com NE, alguns teóricos e especialistas referem-no de um modo mais abrangente, integrando todos os grupos minoritários e marginalizados na escola (Kirschner, 2015). A educação inclusiva tem como objetivo primordial oferecer uma educação de qualidade a todos os alunos, com igualdade de oportunidades de acesso, de aprendizagem e de sucesso. É um processo que requer uma mudança significativa de mentalidades, bem como uma reestruturação dos sistemas e uma ação coordenada a vários níveis, como jurídico, político, organizacional, pedagógico, educativo (Kyriazopoulou et al., 2023).

Apesar de a educação inclusiva estar na lista de prioridades das reformas educativas na maioria dos países europeus, tendo-se já alcançado progressos nos últimos anos, ainda existem muitos desafios e barreiras à implementação efetiva da educação inclusiva (Kyriazopoulou et al., 2023), devido a diversos factores, como: a falta de formação, competências e motivação por parte dos professores e dos serviços psicopedagógicos (Popovska Nalevska & Popovski, 2019); a falta de recursos humanos e físicos por parte das escolas, como por exemplo, a falta de professores ou professores com um número elevado de alunos por turma e a não disponibilização de materiais adequados (Pinho, 2017). A esse respeito, Cardoso (2011) alega que uma verdadeira escola inclusiva deve não só adotar uma filosofia de respeito pelas diferenças, mas também possuir recursos humanos e materiais adequados, no sentido de intervir de modo efetivo, quando os alunos necessitam.

Neste processo, é também importante o papel das famílias, nomeadamente a colaboração entre a família e a escola (Corres-Medrano et al., 2022).

1.2. O Papel do Professor do ER

O professor do ER desempenha um papel extremamente importante no processo de ensino-aprendizagem, dado que interage e se relaciona diretamente e continuamente com os alunos, motivando-os, partilhando com eles experiências, transmitindo-lhes saberes e observando as necessidades por eles manifestadas (Detomini & Mariotini, 2017). No contexto da educação inclusiva, o professor do ER é, uma vez mais, uma figura de relevo, contribuindo significativamente para o desenvolvimento de uma cultura, políticas e práticas inclusivas (Shevchenko et al., 2020).

Não obstante, a gestão da diversidade é considerada uma fonte de preocupações para os professores do ER que, frequentemente, se deparam com dificuldades acrescidas na prática pedagógica por eles desenvolvida (Arroja, 2017).

A participação do professor do ER, neste contexto, passa por analisar as dificuldades com que se depara na gestão do currículo e organizar a sua prática pedagógica com recurso a estratégias diferenciadas (Do Vale, 2021). Ademais, o professor do ER deve colaborar com o professor do EE para o auxiliar a definir os objetivos e conteúdos a desenvolver com os alunos com NE, de forma a promover o seu potencial, bem como o de toda a turma em geral (Pinho, 2017). O trabalho colaborativo entre professores é extremamente necessário para o desenvolvimento dos alunos (Florêncio, 2019).

1.3. O Papel do Professor do EE

O professor de EE é uma pessoa com formação especializada adicional, detentor de competências adequadas para trabalhar com crianças e jovens com NE, de modo direto ou como consultor, contribuindo com estratégias e adaptações das práticas pedagógicas (Condeça, 2014).

São várias as modalidades de atendimento dos alunos NE nas escolas públicas portuguesas, observando-se a atribuição de uma importância crescente ao ensino em sala de aula, onde o aluno com NE está junto com colegas sem NE, mesmo contando com apoio especializado dentro da sala. No entanto, existem outras formas de atendimento a estes alunos, como a intervenção individualizada ou em pequenos grupos, realizada numa sala à parte (Correia & Fernandes, 2019). O Decreto-Lei n.º 54/2018 de 6 de julho, alterado pela Lei n.º 116/2019, de 13 de setembro, vem reforçar a parceria necessária entre o professor de EE, quando necessária, na operacionalização das medidas de suporte à aprendizagem e inclusão, na diferenciação pedagógica, ou aplicação dos princípios do Desenho Universal para a Aprendizagem (DUA).

Conforme referido por Florêncio (2019), para que haja realmente uma inclusão, é extremamente necessário haver colaboração entre os professores de forma a permitir a evolução do aluno, em função das suas potencialidades e dificuldades.

A esse respeito, Casal e Fragoso (2019) alertam que é importante que a própria escola implemente condições para que os professores tenham mais espaço para a comunicação e para a troca de saberes e ideias. Sem esquecer que o trabalho colaborativo não é exclusivo da relação entre professores do ensino regular e do EE, deve abranger todo o sistema de ensino-aprendizagem (Casal & Fragoso, 2019).

2. Enquadramento Metodológico

2.1. Objetivos e questões de investigação

O objetivo central da presente investigação é conhecer as práticas de colaboração entre os professores do ER e os professores de EE. Como objetivos específicos, pretendeu-se: (i) Analisar o enquadramento legal da inclusão, relativamente ao trabalho colaborativo entre os professores do ER e do EE; (ii) Conhecer práticas de colaboração entre professores do ER e do EE; (iii) Identificar as estratégias desenvolvidas pelos professores do ER e do EE. A partir destes objetivos, foram traçadas as seguintes questões de investigação: “Quais as estratégias utilizadas pelos professores do ensino regular à luz do Decreto-Lei nº. 54/2018?”; “De que modo os professores de EE e os professores do ER desenvolvem um trabalho colaborativo no sentido da inclusão dos alunos com NE?”; “Quais as estratégias desenvolvidas com maior frequência em práticas colaborativas?”.

2.2. Tipo de estudo

Foi desenvolvido um estudo exploratório e descritivo (Gil, 2008), enquadrado na metodologia qualitativa, que compreende estudos produzidos sob a visão epistemológica subjetiva (Montero & León, 2007).

2.3. Amostra

A amostra é constituída por 10 professores de EE, cada um pertencente a uma escola, situadas nos distritos de Aveiro e Viseu.

2.4. Recolha de dados

Como instrumento de recolha e avaliação de dados, foi aplicada a entrevista semiestruturada aos docentes de EE que aceitaram participar na investigação, tendo-lhes

sido previamente informado verbalmente da natureza e do objetivo da mesma. Foi-lhes também fornecido um documento assegurando a confidencialidade e o anonimato dos seus depoimentos. No mesmo documento foi, igualmente, pedida a autorização para a gravação áudio. A entrevista foi constituída por 11 perguntas para apurar as perceções dos docentes de EE acerca do trabalho colaborativo. O guião da entrevista foi efetuado com base na revisão da literatura sobre o tema, tendo sido posteriormente analisado, validado e retificado por professores especialistas até se conseguir obter a sua versão final. Além das entrevistas, recorreu-se à análise documental, como abordagem complementar e ao processo de triangulação.

O local de recolha de dados foi decidido em função da disponibilidade dos docentes, tendo sido efetuado via Zoom, de modo a facilitar o processo.

2.5. Tratamento e análise de dados

As entrevistas foram submetidas a análise de conteúdo de acordo com a metodologia proposta por Bardin (2011). Assim, este processo comportou três fases: a pré-análise (organização do material e "leitura flutuante"); a exploração do material (criação da categorização); e o tratamento dos resultados (fase de inferir e interpretar os resultados).

Depois de transcritas as 10 entrevistas, estas foram submetidas, então, a análise de conteúdo, adequadamente segmentada e codificada, obtendo-se dessa forma as várias unidades de registo. A partir destas, foram inferidos os indicadores comuns a todas elas e efetuada uma associação às subcategorias e categorias.

3. Apresentação dos Resultados

A organização da apresentação dos resultados é efetuada em função dos objetivos do estudo. Em primeiro lugar, são apresentados os resultados relativos às medidas de suporte à aprendizagem e à inclusão desenvolvidas pelos professores do ER e EE; em segundo, são apresentados os resultados relativos às práticas de colaboração entre professores de ER e professores de EE desenvolvidas com maior frequência em práticas colaborativas; e, por último, são apresentados os resultados referentes às medidas de suporte à aprendizagem e inclusão desenvolvidas com maior frequência em práticas colaborativas.

Como forma de suporte à análise realizada, apresentar-se-ão, sempre que o conjunto de situações o justificar, as unidades de registo mais pertinentes e representativas das categorias e subcategorias expostas.

Trabalho colaborativo entre os professores do ER e EE

Alguns professores referiram que as práticas colaborativas são realizadas com grande frequência de forma presencial ou online (via zoom). Outros mencionaram que são realizadas por email e, na maioria das vezes, em momentos fora do horário de trabalho, de modo não remunerado e informal, como por exemplo, nos intervalos, no almoço, depois de acabarem as aulas. Isto é visível no discurso dos entrevistados, como por exemplo:

> *Os horários dos professores não comtemplam tempo para essa articulação. A que é feito é de forma informal, durante os intervalos / corredores. Claro que também é usado os meios de comunicação digital,*

mas, TUDO por os intervenientes entenderem a necessidade desta articulação e despenderem do seu tempo pessoal para o poderem realizar (Entrevistado 3).

É desenvolvido através de meios/ferramentas digitais, telefone, em momentos de intervalo (almoço...). (Entrevistado 5).

Na instituição onde leciono este trabalho é desenvolvido de forma regular, quer presencialmente, quer usando as plataformas online (Entrevistado 7).

Foi possível verificar que a perceção dos professores de EE em relação à contribuição do professor de ER para a inclusão dos alunos é maioritariamente positiva, no sentido em que consideraram que este tem um papel importante e essencial, sendo um principal agente de inclusão, sobretudo no que concerne a criar um clima de empatia, de bem-estar e de acolhimento em sala de aula; no respeito à diversidade e à diferença; no desenvolvimento de atividades focadas nas especificidades de cada um e nas inteligências múltiplas e no acompanhamento do aluno, sem fazer exceções.

Na minha opinião esforçam-se pela inclusão e por aplicar as medidas e há sempre muita preocupação se o que estão a fazer está correto. Muitos professores também já procuram formação na área da Inclusão, de forma a facilitar a sua aplicabilidade (Entrevistado 1).

As contribuições do professor de ensino regular são fundamentais para uma verdadeira inclusão. O professor do ensino regular é o principal agente de inclusão dos alunos. A forma como este profissional olha para o aluno e o inclui será a forma como todos os alunos e a restante comunidade educativa acolhe esse aluno (Entrevistado 2).

Todos os docentes sem exceção, desempenham um papel fundamental na promoção de ambientes de aprendizagem inclusivos, caracterizados por um clima de aula positivo, promotor de empatia, de valorização, de respeito e de bem-estar (Entrevistado 8).

Perceção do trabalho colaborativo dos professores do ER e EE

A opinião dos professores de EE sobre as práticas de colaboração com os professores do ER é de um modo geral, favorável. Quase a totalidade dos participantes considerou que esta colaboração é extremamente importante, no sentido em que permite melhorar o processo de aprendizagem do aluno com NE e de todos num modo geral, com o objetivo de ultrapassarem as suas dificuldades, ao fomentar as capacidades individuais de cada um, a nível de esclarecimento de dúvidas, na implementação de estratégias de trabalho e na adaptação do sistema de avaliação, em conformidade com o Decreto-Lei aplicado.

O trabalho colaborativo é de extrema importância para o trabalho conjunto e para facilitar o processo de aprendizagem dos alunos, com o objetivo ultrapassarem as suas dificuldades, não só dos alunos que os professores de Educação Especial apoiam, mas de todos alunos em geral (Entrevistado 1).

Este trabalho colaborativo é essencial para se fomentar as potencialidades de cada um dos alunos e melhorar o trabalho realizado com

> *a turma no seu todo, pois frequentemente os restantes alunos da turma beneficiam das atividades planeadas conjuntamente pelo docente de educação especial e pelo professor do ensino regular (Entrevistado 7).*
>
> *Na teoria, o trabalho colaborativo é extremamente importante, para esclarecimento de dúvidas, estratégias de trabalho, ajuda na aplicação do artigo 28º (adaptações ao processo de avaliação) (Entrevistado 9).*

A maioria dos docentes referiu que não existem disciplinas em que o trabalho colaborativo é mais fácil ou mais difícil, uma vez que isso irá depender de fatores, como a disponibilidade e a vontade dos professores. Apenas um dos professores referiu que a disciplina em que considerava o trabalho colaborativo mais fácil era a de Estudo do Meio, devido à sua experiência académica e profissional. Esse mesmo professor referiu que a disciplina em que considerava o trabalho colaborativo mais difícil era a de Matemática, devido ao programa definido pelo Ministério da Educação e aos manuais usados, bem como pelo facto de nem todos os docentes ensinarem da mesma forma a matéria.

> *Não existem disciplinas mais ou menos difíceis, difícil é mudar mentalidades, e ainda há um grande percurso a percorrer no que diz respeito à educação inclusiva (Entrevistado 8).*
>
> *Julgo que na área de Matemática, porque para além do programa definido pelo Ministério da Educação e dos manuais utilizados, por vezes, nem todos os colegas ensinam da mesma forma um determinado conteúdo, obrigando-me, assim, a consultar a colega previamente para saber, concretamente, como irá desenvolver esse mesmo conteúdo (Entrevistado 6).*

As barreiras mencionadas pelos docentes no que concerne à prática colaborativa, estão relacionadas com a falta de tempo; a ausência de conhecimentos demonstrada por alguns docentes relativamente à legislação e às práticas a utilizar com alunos com NE; a pouca flexibilidade a nível de horários para que sejam efetuadas reuniões formais frequentemente; a falta de coordenação nos horários dos professores; a carga de trabalho excessivo; o excesso de burocracia, tirando tempo que poderia ser dedicado ao debate e à reflexão; a falta de interesse, disponibilidade e sensibilidade perante a inclusão por parte de alguns docentes; a carência de recursos humanos em vários agrupamentos; e, por fim, a falta de um horário estipulado para o trabalho de articulação.

> *O excesso de burocracia, o tempo dedicado ao preenchimento de documentos ocupa grande parte da carga horária destinada ao trabalho colaborativo, tirando tempo ao diálogo e à reflexão (Entrevistado 2).*
>
> *Uma das principais barreiras para o desenvolvimento do trabalho colaborativo é também o tempo que os docentes têm para se reunir ou discutir assuntos concretos e estratégias, planificarem e reavaliarem o seu trabalho (Entrevistado 6). Os recursos humanos disponíveis em cada agrupamento ou a falta destes também influencia o sucesso do trabalho colaborativo (Entrevistado 7).*

No que concerne aos fatores facilitadores, foram identificados os seguintes: a empatia e o esforço que os professores demonstram, o que ajuda todo o trabalho de colaboração; a mudança de mentalidades para entender o valor da educação inclusiva; a existência de uma maior compatibilidade de horários; as mudanças que ocorrem a nível

de políticas favoráveis à inclusão; o reconhecimento pelo trabalho efetuado com os alunos; a procura de soluções por parte dos docentes para ultrapassar barreiras ao processo de ensino-aprendizagem; a existência de espírito de interajuda e de cooperação e, por fim, a adoção de uma visão positiva relativamente a todo o processo colaborativo.

> *A disponibilidade e vontade que todos têm para centrar a atividade pedagógica em práticas de Educação Inclusiva. A visão positiva sobre o trabalho colaborativo, a certeza que este contribui favoravelmente para os desempenhos profissionais e para o sucesso educativo dos alunos (Entrevistado 2).*
>
> *Um dos principais fatores facilitadores é, sem dúvida, a empatia entre os colegas. Pois, contactamos com colegas mais disponíveis e que gostam de partilhar connosco o seu trabalho e/ou as suas preocupações (...) (Entrevistado 6).*
>
> *Um dos principais fatores facilitadores de um bom trabalho colaborativo prendem- se com uma maior compatibilidade de horário, especialmente se houver alguma hora em comum marcada no horário dos docentes (Entrevistado 7).*

No que respeita à Avaliação da experiência colaborativa com os professores do ER, a maioria respondeu que a mesma tem sido positiva e muito positiva, satisfatória, benéfica e enriquecedora, apesar das barreiras existentes já mencionadas. Conforme se pode verificar nos seguintes discursos:

> *Avalio a minha experiência como muito positiva porque, como desde o início demonstro a minha disponibilidade para ajudar e para colaborar, a relação com os meus colegas sempre foi boa e profícua, de aprendizagem contínua (Entrevistado 1).*
>
> *Apesar de todos os condicionantes já referidos, considero a minha experiência muito satisfatória e benéfica para os alunos (Entrevistado 3).*
>
> *Considero que até ao momento tem sido muito enriquecedora. Tenho aprendido imenso com as colegas, não só nos momentos de partilha de materiais e/ou experiências, como também na participação direta na sala de aula. Claro que a colaboração não é fácil com todos os colegas, como já referi, pois nem todos se mostram disponíveis para colaborar comigo, alguns limitam-se a "enviar-me" os alunos para eu apoiar, como se fossem somente da minha responsabilidade (Entrevistado 6).*

Apenas dois docentes reportaram opiniões diferentes, um a referir que tem sido uma luta constante e outro a mencionar que tem tido várias experiências com os docentes do ER com quem tem trabalhado, apesar de ter notado uma mudança de mentalidades, conforme se pode constatar nos seguintes discursos:

> *Tem sido uma luta constante na implementação da escola inclusiva, na mudança de mentalidades, na mudança para uma educação com ambientes mais inclusivos, onde os alunos têm um papel mais ativo na dinâmica da sala de aula (Entrevistado 8).*
>
> *Durante os meus anos de trabalho pelos diferentes agrupamentos por onde trabalhei já tive experiências muito diferentes em termos de trabalho com*

> *os docentes do ensino regular. Contudo, tenho vindo a constatar que nos últimos anos se nota uma preocupação e sensibilidade cada vez maior com a inclusão dos alunos com necessidades específicas (Entrevistado 7).*

Estratégias desenvolvidas com maior frequência em práticas colaborativas

As estratégias mais desenvolvidas pelos professores no âmbito do trabalho colaborativo foram as seguintes: avaliação (adaptada); a diferenciação pedagógica com ações em turma; a diversificação na gestão do grupo, do espaço, do tempo, das estratégias e dos materiais; a discussão, diálogo e análise do perfil dos alunos; a realização de reuniões multidisciplinares para partilhar ideias e saberes com outros profissionais; a realização de reflexões sobre a melhoria das estratégias a adotar e, por fim, a definição das estratégias de intervenção e a seleção de materiais a utilizar.

> *(...) manter o diálogo constante com os colegas, no início e no fim das aulas (Entrevistado 1).*
>
> *Diferenciação pedagógica, flexibilidade curricular, adequação dos espaços, respeito pelos ritmos e estilos de aprendizagem dos alunos, adequação ao nível das condições de avaliação (Entrevistado 5).*
>
> *As medidas de suporte à inclusão em que se pode desenvolver mais estratégias é a diferenciação pedagógica com ações em turma (Entrevistado 7).*
>
> *Diferenciação pedagógica, Flexibilidade curricular, Diversificação na gestão do grupo, do espaço, do tempo, das estratégias e dos materiais (Entrevistado 8).*

4. Discussão dos resultados

Este estudo teve como objetivo central conhecer as práticas de colaboração entre os professores do ensino regular e os professores de EE. Como objetivos específicos pretendeu-se: i) Analisar o enquadramento legal da inclusão relativamente ao trabalho colaborativo entre os professores do ER e EE; ii) Conhecer práticas de colaboração entre professores do ER e EE; iii) Identificar as estratégias desenvolvidas pelos professores do ER e EE.

O trabalho colaborativo é extremamente importante para promover a educação inclusiva, sendo que numa escola onde esse trabalho envolve diversos profissionais, o processo de aprendizagem apresenta mais hipóteses de ocorrer com sucesso. Como tal, é fundamental que os professores de EE ajudem e apoiem os professores do ER de modo que estes possam trabalhar efetivamente com os alunos com NE. Por outra parte, também é importante que os professores do ER forneçam o apoio necessário aos alunos com NE e envolvam os professores de EE em todo o processo (Martins, 2022).

Os resultados das entrevistas efetuadas aos professores de EE mostraram que as práticas de apoio colaborativo entre estes e os professores de ER são frequentemente desenvolvidas em contexto informal e fora do horário de trabalho, muitas vezes, nos corredores ou através de meios digitais, como via zoom ou por email. Estes resultados estão em concordância com os de Lança (2017) que verificou que o trabalho colaborativo entre professores do ER e os professores do EE do 1º ciclo, era maioritariamente informal e realizado no final das aulas ou nos intervalos, por email.

Os professores de EE consideraram que a contribuição do professor do ER é importante para a inclusão dos alunos. Também de acordo com Detomini e Mariotini, (2017), o professor do ER é bastante importante, uma vez que é a pessoa que se relaciona diretamente com os alunos, estimulando-os, partilhando experiências com eles, além de deter um papel de observador das necessidades demonstradas por estes.

Os professores de EE, de um modo global, consideraram as práticas de colaboração com os professores do ER positivas. Também no estudo de Figueira (2016) os professores revelaram perceções positivas a nível do trabalho colaborativo, referindo que existia um clima agradável e eficiente entre todos, bem como um ambiente de equipa positivo, que contribuiu para a melhoria das práticas pedagógicas dos alunos com NE.

Foram identificadas barreiras à prática colaborativa, nomeadamente a falta de tempo; a ausência de conhecimentos demonstrada por alguns docentes, relativamente à legislação e às práticas a utilizar com alunos com NE; a pouca flexibilidade a nível de horários; a falta de coordenação nos horários dos professores; a carga de trabalho excessivo; o excesso de burocracia ("roubando" tempo que poderia ser dedicado ao debate e à reflexão); a falta de interesse, disponibilidade e sensibilidade perante a inclusão por parte de alguns docentes; a carência de recursos humanos em vários agrupamentos e a falta de um horário estipulado para o trabalho de articulação. Estes resultados vão ao encontro da literatura sobre o tema, sendo que foram vários os estudos que mencionaram barreiras à prática colaborativa entre professores do ensino regular e de EE (Al-Natour et al., 2015; Casal & Fragoso, 2019; Figueira, 2016; Lança, 2017). A título de exemplo, também no estudo de Casal e Fragoso (2019), os resultados mostraram que as dificuldades do trabalho colaborativo entre docentes do ER e do EE estavam relacionadas com a escassez de recursos, devido ao número reduzido de professores de EE, e com a comunicação entre os profissionais. Apesar das barreiras, os dados mostraram que os professores deste estudo, de um modo geral, consideraram que a experiência colaborativa com os professores de ensino regular tem sido boa. Também no estudo de Lança (2017), apesar de terem sido reveladas dificuldades na prática colaborativa, os professores referiram que a experiência havia sido positiva, na medida em que os docentes se mostravam sempre disponíveis e interessados.

No presente estudo foram também assinalados fatores facilitadores ao trabalho colaborativo, como a empatia, o esforço, a disponibilidade, a visão positiva, a sensibilidade à diversidade por parte dos professores, as políticas de inclusão, o espírito de cooperação e interajuda entre todos, a obtenção de reconhecimento e a existência de horários mais compatíveis. Resultados idênticos foram encontrados numa revisão da literatura efetuada por Paulsrud e Nilholm (2020) ao identificarem vários facilitadores à colaboração entre professores do ensino regular e de EE, como as políticas educacionais, a atitude e a cooperação entre os professores e a flexibilidade a nível de horários laborais.

Por fim, as estratégias mais desenvolvidas pelos professores no âmbito do trabalho colaborativo foram as seguintes: avaliação (adaptada); a diferenciação pedagógica; a diversificação na gestão do grupo, do espaço, do tempo, das estratégias e dos materiais; a discussão, diálogo e análise do perfil dos alunos; a realização de reuniões multidisciplinares para partilhar ideias e saberes com outros profissionais; a realização de reflexões sobre a melhoria das estratégias a adotar e, por fim, a definição das estratégias de intervenção e a seleção de materiais a utilizar. Não foram encontrados estudos que avaliassem as estratégias mais desenvolvidas pelos professores no âmbito do trabalho colaborativo, pelo que se torna difícil discutir estes resultados. Contudo, pode dizer-se que estas são medidas eficazes e promotoras da inclusão escolar, estando em concordância com as medidas assinaladas no Christovam e Cia (2013), nomeadamente a partilha de informações/saberes e a discussão entre professores e a adaptação do conteúdo e do material didático.

Conclusões e considerações finais

De uma forma geral, o presente estudo concluiu que as práticas colaborativas entre os professores de ER e de EE ocorrem, na maioria dos casos, de uma forma informal, frequentemente, realizadas fora do contexto laboral e em locais inadequados; e, que os professores tentam colaborar entre si, na maioria das vezes, existindo vontade, espírito de cooperação e uma visão positiva acerca da inclusão de alunos com NE, porém, as

barreiras identificadas impedem que esse trabalho seja realizado de forma apropriada e eficaz. Concluiu-se, também, que ainda existe um longo caminho a percorrer relativamente ao trabalho colaborativo entre os professores e à inclusão dos alunos com NEE. Foram identificadas várias estratégias desenvolvidas pelos professores no âmbito da prática colaborativo, todavia, depreende-se que há muitos aspetos que têm de ser modificados de forma a que esta prática seja implementada de modo eficaz e não apenas como um recurso dispensável.

Neste sentido, seria pertinente que a escola criasse condições para que os docentes tivessem mais oportunidades de comunicar e trocar ideias, pontos de vista e saberes.

Assim, as escolas devem reavaliar os horários dos professores, de forma a permitir que tenham maior flexibilidade de tempo e horários compatíveis, para se conseguirem articular. A própria burocracia requerida, deve ser posta para segundo plano ou minimizada, uma vez que acaba por fazer com que os professores despendam de tempo que poderia ser aproveitado para outras funções mais importantes como o diálogo, a reflexão, a partilha de saber, entre outras.

O trabalho colaborativo não se restringe apenas à relação entre professores de EE e ER, abrangendo todo o sistema de ensino-aprendizagem, podendo contribuir, efetivamente, para uma maior inclusão. Assim, o trabalho colaborativo representa uma das vias mais eficazes para o desenvolvimento da educação inclusiva.

As conclusões aqui expostas permitiram dar resposta aos objetivos traçados inicialmente, não obstante foram identificadas limitações que importa mencionar. A primeira limitação está relacionada com o tamanho da amostra, pelo que de futuro seria importante realizar estudos que englobassem uma amostra mais significativa. A segunda limitação prende-se com a metodologia do estudo, baseada em entrevistas, pelo que futuramente seria importante realizar estudos de natureza quantitativa ou mista, de forma a obter uma maior riqueza e fiabilidade a nível de resultados. A terceira limitação está relacionada com a falta de estudos com os mesmos objetivos que este e com a mesma população-alvo, o que acabou por condicionar a comparação dos resultados com outras pesquisas efetuadas. Seria interessante, também, a realização de estudos com o objetivo de conhecer a perceção dos professores de ER sobre a prática colaborativa. Muito embora as limitações explanadas, acredita-se que este estudo possa contribuir para um maior conhecimento acerca desta temática, assim como para a implementação de estratégias que favoreçam o trabalho colaborativo entre os docentes de maneira a melhorar a inclusão escolar dos alunos com NE

Referências:

- Al-Natour, M., Al-Zboon, E., & Alkhamra, H. (2015). Examining collaboration and constrains on collaboration between special and general education teachers in mainstream schools in Jordan. International Journal of Special Education, 30(1), 1-14. https://eric.ed.gov/?id=EJ1094801
- Bardin, L. (2011). Análise de Conteúdo. Edições 70.
- Christovam, A., & Cia, F. (2013). O envolvimento parental na visão de pais e professores de alunos com necessidades especiais. Revista Brasileira de Educação Especial, 19(4), 563–582.
- https://www.scielo.br/j/rbee/a/fQfvBkfRhymjxNv5NTs4VBG/?format=pdf&lang=pt
- Correia, L.M. (2013). Educação Inclusiva ou Integração de crianças com Necessidades Educativas Especiais? Um estudo numa sala de aula de Jardim de Infância. Porto Editora

- Decreto-Lei n.º 54/2018, de 6 de julho (2018). Diário da República n.º 129/2018, Série I de 2018-07-06. https://dre.pt/dre/detalhe/decreto-lei/54-2018-115652961
- Detomini, G., & Mariotini, S. (2017). Fracasso no exercício do ofício docente: Consequências da desvalorização social da profissão docente? Cadernos de Educação: Ensino e Sociedade, 4(1), 368–383.
- https://unifafibe.com.br/revistasonline/arquivos/cadernodeeducacao/sumario/50/23062017194324.pdf
- Figueira, V. (2016). Trabalho colaborativo entre o professor titular de turma e o professor de educação especial face à inclusão de alunos com necessidades especiais [Dissertação de mestrado, Instituto Politécnico de Portalegre, Escola Superior de Educação e Ciências Sociais]. Repositório Comum.
- https://comum.rcaap.pt/bitstream/10400.26/23027/1/Vanda%20Figueira%20-%20Tese.pdf
- Florêncio, F. (2019). A perceção dos professores do 3.º ciclo face à inclusão de alunos com necessidades especiais [Dissertação de mestrado, Universidade do Algarve, Escola Superior de Educação e Comunicação]. UAlg. http://hdl.handle.net/10400.1/14925
- Gil, A. (2008). Como elaborar projetos de pesquisa. Atlas.
- Lança, M. (2017). O trabalho colaborativo entre os professores de educação especial e os professores do ensino regular do 1º ciclo [Dissertação de mestrado, Instituto Politécnico de Beja, Escola Superior de Educação]. IPBeja.
- http://hdl.handle.net/20.500.12207/4642
- Lei n.º 116/2019, de 13 de setembro, Diário da República n.º 176/2019, Série I de 2019-09- 13, páginas 12 – 35. https://dre.pt/dre/detalhe/lei/116-2019-124680588
- Martins, M., Santos, R., & Denari, F. (2022). O trabalho colaborativo: parcerias entre professores do ensino comum e do ensino especial. Conjecturas, 22(3), 167–181. Recuperado de https://conjecturas.org/index.php/edicoes/article/view/699
- Mondal, A. (2021). Needs, Importance and Barriers of Inclusive Education in India. International Journal of Current Research in Education, Culture and Society, 5(1), 23– 28. https://www.researchgate.net/publication/353270204_Needs_Importance_and_Barriers_of_Inclusive_Education_in_India
- Montero, I., & León, O. (2007). A guide for naming research studies in Psychology. International Journal of Clinical and Health Psychology, 7(3), 847-862. https://www.redalyc.org/pdf/337/33770318.pdf
- Nunes, D. (2012). O trabalho cooperativo entre o docente de educação especial e o educador do ensino regular: contributos para a inclusão de crianças com NEE [Dissertação de mestrado, ESEJD - Escola Superior de Educação João de Deus]. Repositório Comum. http://hdl.handle.net/10400.26/2583
- Paulo, M., & Casado, J. (2021). Inclusão de crianças com NEE no ensino regular: Análise numa perspetiva de trabalho colaborativo entre o docente de educação especial e o docente do ensino regular. INFAD Revista de Psicología, 2(3), 203-208. https://revista.infad.eu/index.php/IJODAEP/article/view/2287/1978
- Paulsrud, D., & Nilholm, C. (2020). Teaching for inclusion – a review of research on the cooperation between regular teachers and special educators in the work with students in need of special support. International Journal of Inclusive Education, 1–15. https://doi.org/10.1080/13603116.2020.1846799
- Tyagi, G. (2016). Role of Teacher in Inclusive Education. International Journal of Education and Applied Research, 6(1), 115–116. http://ijear.org/vol61/TEP2016/34-gunjantyagi.pdf

15 - PERCEÇÃO DA IMPORTÂNCIA DO CONTROLO INTERNO PARA UMA GESTÃO EFICAZ

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Resumo: Atualmente, o controlo interno é uma das ferramentas essenciais da gestão pois permite confirmar e garantir toda a credibilidade da informação das Organizações ao nível de transações e procedimentos.

Este trabalho pretende estudar a perceção da importância do Sistema de Controlo Interno (SCI) para uma gestão mais eficaz no Instituito Politécnico de Bragança (IPB) e para a realização do estudo, foi aplicado um inquérito a todos os responsáveis das unidades orgânicas do IPB, Presidente, Vice-Presidentes, Diretores e Subdiretores, assim como a todos os Responsáveis de Setor do IPB, nomeadamente financeiro, economato, recursos humanos, qualidade, manutenção e serviços académicos.

O estudo teve uma população de 13 pessoas, dos quais 54% (n=7) Dirigentes e 46% (n=6) Técnicos. Destes, 77% (n=10) sabem o que é um Sistema de Controlo Interno (SCI) e 69% (n=9) afirmam a existência deste no IPB, sendo que a maioria, 53%, refere que as normas do controlo interno são divulgadas a todos os trabalhadores. Relativamente à importância da existência de um SCI, a maioria dos inquiridos, 54% (n=8), entende como a mais importante a "A avaliação da eficácia dos controlos e o seu ajustamento deverão ser feitos periodicamente" e quanto às áreas que entendem que devem ser intensificados procedimentos de controlo interno, concluiu-se que a maioria dos inquiridos, 84,62% (n=11), referem a área Orçamental, nomeadamente, na rubrica Pagamentos e no Fundo de maneio, com igual resultado.

Os resultados obtidos no presente estudo permitem concluir que a maioria dos inquiridos está informado sobre o que é o SCI, quais os seus objetivos, importância e vantagens para as Organizações.

Palavras-chave: Controlo Interno, Sistema de Controlo Interno, Setor Público, SCI, IPB.

Abstract: Actually, internal control is one of the essential tools of management because it allows to confirm and guarantee all the credibility of the information of the Organizations in the level of transactions and procedures.

This work intends to study the perception of the importance of the Internal Control System (ICS) for a more effective management in the Polytechnic Institute of Bragança (IPB) and in order to carry out the study, a survey was carried out on all the heads of the organic units of the Polytechnic Institute of Bragança (IPB), President, Vice-Presidents, Directors and Subdirectors, as well as all IPB Sector Officers, Economato, human resources, quality, maintenance and academic services.

The study had a population of 13 people, 54% (n = 7) of the Leaders and 46% (n = 6) of the Thechnician. Of these, 77% (n = 10) know what an Internal Control System (ICS), and this 69% (n = 9) affirm their existence in the IPB, with a majority of 53% reporting that control standards are disclosed to all employees. Regarding the importance of the existence of an ICS, the majority of respondents, 54% (n = 8), considered as the most important the "Evaluation of the effectiveness of controls and their adjustment should be made periodically" and for the areas Who understand that internal control procedures should be intensified, it was concluded that the majority of the respondents, 84.62% (n = 11), refer to the Budget area, namely, Payments and Working Capital, with the same result.

The results obtained in the present study allow us to conclude that the majority of respondents are informed about what the Internal Control System is, its objectives, importance and advantages for the Organizations.

Keywords: Internal Control, Internal Control System, Public Sector, ICS, IPB.

Introdução

O setor público exige uma gestão que seja, concomitantemente, eficiente e eficaz, tendo em conta o seu papel central enquanto maior setor da economia nacional. Nos últimos anos, a componente financeira deste setor tem sido caracterizada por restrições orçamentais, o que impõe a adoção de uma gestão rigorosa, com práticas inspiradas no setor privado, com ênfase na melhoria dos mecanismos de controlo operacional.

O contexto vivenciado durante a crise económica das décadas 80 a 90, levou à implementação de reformas na gestão pública, orientadas para a adoção de medidas que procurassem otimizar a eficiência, assegurando, simultaneamente, a qualidade dos serviços prestados e a satisfação dos cidadãos, com o objetivo de reduzir as disparidades existentes entre a gestão pública e a gestão privada (Relatório da OCDE, 2001).

Segundo Simões dos Santos (1999), as universidades e os institutos politécnicos, enquanto entidades pertencentes à administração pública, estão submetidos a uma crescente pressão para adotar modelos de gestão que garantam, de forma integrada, a máxima eficácia e eficiência na gestão dos recursos, alinhando-se às exigências contemporâneas de performance e sustentabilidade organizacional.

Assim, em 1998, surge o Decreto-Lei n.º 166/98, de 25 de Junho, que institui o sistema de controlo interno da administração financeira do Estado (SCI), dependente do Governo e articulado com o Ministério das Finanças, definindo no seu preâmbulo o SCI como:

> …um modelo articulado, integrado e coerente, estruturado em três níveis, com definição das entidades responsáveis e dos princípios fundamentais de atuação, que habilitem a uma melhor coordenação e utilização dos recursos afetos à função controlo". Segundo o artigo 2.º do mesmo Decreto-Lei, o SCI visa assegurar o controlo de forma coerente e articulada nas componentes orçamental, económica, financeira e patrimonial no âmbito da Administração Pública, definindo controlo interno (CI), no n.º 2 do mesmo artigo, como "…verificação, acompanhamento, avaliação e informação sobre a legalidade, regularidade e boa gestão, relativamente a actividades, programas, projectos, ou operações de entidades de direito público ou privado, com interesse no âmbito da gestão ou tutela governamental em matéria

> de finanças públicas, nacionais e comunitárias, bem como de outros interesses financeiros públicos nos termos da lei.

O Tribunal de Contas (1999) define o Controlo Interno (CI),no Anexo I, parágrafo 50, como o

> … conjunto dos processos e meios que permitem respeitar o orçamento e os regulamentos em vigor, salvaguardar os ativos, assegurar a validade e autenticidade dos registos contabilísticos e facilitar as decisões de gestão, especialmente através da colocação à disposição, no momento oportuno, da informação financeira.

Numa perspetiva internacional, num estudo publicado com o título Internal Control — Integrated Framework do Committee of Sponsoring Organizations of the Treadway Comission (COSO, 2013), o CI é

> um processo da responsabilidade do Conselho de Administração, Direcção e outros membros da organização, com o objectivo de proporcionar um grau de confiança razoável na concretização dos seguintes objectivos em três categorias: • eficácia e eficiência das operações; • fiabilidade do relato financeiro; • conformidade com leis e regulamentos aplicáveis.

O referido relatório identifica cinco componentes, nomeadamente ambiente de controlo, avaliação de riscos, atividades de controlo, informação e comunicação e monitorização, determinantes para atingir os três objetivos (eficácia e eficiência das operações, confiança da informação financeira e cumprimento do quadro normativo), partilhados ao nível da hierarquia e das atividades.

Em Portugal, a Ordem dos Revisores Oficiais de Contas (OROC) adota a definição prevista na ISA 315, que enfatiza os controlos associados às demonstrações financeiras. Segundo a IFAC (2018), controlo interno é o "processo concebido, implementado e mantido pelos encarregados de governação, órgão de gestão e outro pessoal para proprocionar segurança razoável acerca da consecução dos objetivos de uma entidade com respeito à fiabilidade do relato financeiro, eficácia e eficiência das operações e cumprimento das leis e regulamentos aplicáveis. O termo "controlo" refere-se a qualquer aspeto de um ou mais componentes do controlo interno"

Loureiro, M. (2015) subscreve, referindo que

> *o controlo interno permite à organização alcançar os seus objetivos principais, assegurar que as operações relacionadas com a sua estratégia funcionam de modo efetivo, que atuam em conformidade com as leis e regulamentos aplicáveis, que os seus ativos se encontram protegidos de roubos ou fraudes e que a informação financeira é preparada e reportada com precisão, de modo a proporcionar aos seus investidores uma tomada de decisão sustentada e consciente. É, portanto, um processo desenhado para cumprir os objetivos da organização e que começa no topo desta, com os quadros de direção e de gestão a criar e reforçar a estrutura e harmonia dos controlos, contudo, envolve todas as pessoas da organização, indo além dos controlos internos de relato financeiro.*

Fachada (2014) citando Costa (2010: 224), refere que a Norma de Procedimentos de Auditoria 54 da American Institute of Certified Publics Accounts (AICPA) caracteriza o controlo interno em duas vertentes, nomeadamente em controlo interno administrativo e em controlo interno contabilístico, tal como faz o Tribunal de Contas (1999).

Após a apresentação de algumas definições e conceitos relativas ao controlo interno, nas quais se verificam elementos comuns é de extrema importância perceber quais os objetivos deste controlo, sendo que para o Tribunal de Contas (1999: 48) são:

> Salvaguardar os activos; Garantir a legalidade e a regularidade das operações; Garantir que todas as operações, e apenas essas, foram correctamente autorizadas, liquidadas, ordenadas, pagas e registadas; Assegurar a oportunidade,

> a confiança e a integridade das informações de gestão; Promover a economia e a eficiência das operações ou actividades da empresa; Assegurar que os resultados correspondem aos objectivos definidos.

Como supramencionado, a legislação obriga à adoção de medidas de CI impondo a necessidade dos organismos conceberem e possuírem um SCI, sendo que o setor da educação não pode prescindir deste, como se interpreta do ponto 2.9 do POC-Educação (MFE, 2000) e do artigo 9.º do DL n.º 192/2015, que aprova o Sistema de Normalização Contabilística para as Administrações Públicas (MF, 2015). O subponto 2.9.3 do ponto 2.9 do POC-Educação, Portaria n.º 794/2000, refere que

> O sistema de controlo interno deverá incluir princípios básicos que lhe dão consistência e que são: Segregação de funções; O controlo das operações; A definição de autoridade e de responsabilidade; O registo metódico dos factos.

Conceição (2012) citando o Guia Prático Implementação de um Sistema de Controlo Interno (2004), resume

> Em suma, um bom sistema de controlo interno assegura o acompanhamento das actividades do organismo, reforça a confiança nas contas, registos e documentos de suporte e a confiança de terceiros.

Assim, o controlo interno cada vez mais é uma das ferramentas mais importantes da gestão, no que diz respeito ao controlo da situação económica numa organização, assim como o controlo de situações de desperdícios e fraudulentas.

Brito, A. (2021), refere-se ao 'Princípio da Definição de Autoridade e Responsabilidade', mencionado, também, pelo Tribunal de Contas (1999) para o funcionamento do sistema de controlo total, pelo que deve ser proporcionada formação permanente ao pessoal, sendo requisito, visto que um trabalhador deve possuir a formação adequada e inerente às autoridades e responsabilidades que lhe estão definidas e associadas.

Com a obrigatoriedade de adoção do Sistema de Normalização Contabilística – Administração Pública (SNC-AP), a partir de 2017, segundo o Ministério das Finanças (2015) o sistema de controlo interno deverá passar a englobar

> o plano de organização, as políticas, os métodos e os procedimentos de controlo, métodos e procedimentos definidos pelos responsáveis que contribuam para assegurar o desenvolvimento das atividades de forma ordenada e eficiente, incluindo a salvaguarda dos ativos, a prevenção e deteção de situações de ilegalidade, fraude e erro, a exatidão e a integridade dos registos contabilísticos e a preparação oportuna de informação orçamental e financeira fiável.

Estudo

Metodologia

O principal objetivo deste artigo é analisar a perceção da importância do sistema de controlo interno para uma gestão mais eficaz no Instituto Superior Politécnico de Bragança.

Para alcançar o objetivo foi elaborado um inquérito por questionário, de raiz, composto essencialmente por questões fechadas, utilizando uma escala de medida, com o intuito de analisar as várias alternativas de resposta e, deste modo, facilitar a aplicação de técnicas estatísticas, nomeadamente uma escala ordinal, do tipo Likert, com uma série de cinco categorias, das quais o inquirido deve selecionar uma, sendo estas Nada adequado(1), Pouco adequado (2), Nem pouco adequado, nem adequado (3), Adequado (4) e Muito Adequado (5) ou Nada importante (1), Pouco importante (2), Nem pouco importante, nem importante (3), Importante (4), Muito importante (5) e Discordo Totalmente (1), Discordo (2), Não concordo, nem discordo (3), Concordo (4) e Concordo

Totalmente (5), permitindo medir o grau de importância relativamente às proposições de opinião. Com esta escala pretende-se avaliar 32 questões, divididas em 2 grupos principais, sendo que o primeiro grupo – Enquadramento geral do Sistema de Controlo Interno (SCI) - conta com uma 9 questões com recurso a esta escala e o segundo grupo - Sistema de Controlo Interno (SCI) no IPB - contempla 23 questões com escala do tipo *Likert*. As restantes questões são do tipo dicotómica ou de opção única.

Optou-se por administrar o questionário pela *web* através do do *limesurvey.org*, permitindo uma maior confidencialidade ao inquirido e facilitando o tratamento de dados, uma vez que são exportados para o formato Excel e para o SPSS.

Após criado e testado, o *link,* foi enviado, para os dirigentes e técnicos do IPB, nomeadamente, ao Presidente, Vice-Presidentes, Diretores e Subdiretores, assim como a todos os Responsáveis de Setor do IPB, nomeadamente financeiro, economato, recursos humanos, qualidade, manutenção e serviços académicos, sendo uma amostra não probabilística e de conveniência.

O presente estudo incidiu sobre todos os responsáveis das unidades orgânicas e responsáveis de setor do IPB, perfazendo um total de 24 pessoas, dos quais se obtiveram 13 respostas, obtendo-se uma taxa de resposta de 54,17%.

Desenvolveu-se um estudo de carácter descritivo, cujo tratamento estatístico dos dados foi efetuado nos programas Microsoft Office Excel 2013 e SPSS (Statistical Package for Social Sciences) versão 20.0® para Windows. No nosso estudo foram utilizados testes não-paramétricos, atendendo à pequena dimensão da amostra e ao facto de não se conhecer a distribuição exata da população, pois verificou-se que as variáveis não têm distribuição normal. A abordagem inicial foi a distribuição por categoria dos inquiridos, procedendo-se, de seguida, à verificação da hipótese pré-estabelecida, H1:A importância atribuída ao SCI para uma gestão eficaz está positivamente relacionada com a categoria profissional, aplicando primeiramente o teste de Kolmogorov-Smirnov para verificar a normalidade e, posteriormente, utilizaram-se testes não paramétricos. Todos estes testes foram realizados com um nível de significância de 5%.

A presente investigação respeitou integralmente os princípios éticos aceites pela comunidade de investigação e pela Declaração de Helsínquia, tais como confidencialidade, respeito, honestidade nas relações estabelecidas e garantia dos direitos dos que participaram voluntariamente neste trabalho de investigação. Não foram equacionados quaisquer danos para os participantes, imputáveis ao presente estudo, sendo que poderão usufruir com a melhoria da gestão dos serviços mediante os resultados obtidos.

Análise e Discussão de Resultados

O questionário foi subdividido em 3 grupos, nomeadamente A - Identificação do inquirido, B - Enquadramento Geral do Sistema de Controlo Interno e C - Sistema de Controlo Interno no IPB.

Quanto ao grupo A - Identificação dos inquiridos, assume-se como a população do estudo todas as pessoas que responderam ao inquérito, sendo um total de 13 inquiridos, dos quais 54% (n=7) eram dirigentes e 46% (n=6) técnicos.

O grupo B - Enquadramento geral do sistema de controlo interno tem como fundamento a análise de 3 questões, que permitem perceber quais os conhecimentos genéricos do inquirido acerca do SCI.

Assim, relativamente ao conhecimento do que é um sistema de controlo interno, 77% (n=10) responderam que sabem o que é em prol de 23% (n=3) que revelaram não saber no que consiste um SCI.

De seguida, para diversas definições de SCI, solicitou-se a atribuição de um grau de adequabilidade de nada adequado e muito adequado, revelando que apenas 46,2% (n=6), entende a definição mais completa, nomeadamente, “Corresponde ao plano de organização e aos métodos ou procedimentos adotados pela Administração de uma entidade para auxiliar a atingir o objetivo de gestão, e resultam do planeamento, organização e orientação da gestão” como muito adequada, encontrando-se a mesma percentagem para a atribuição de adequado e apenas 7,7% (n=1) considerou que a definição era mais ou menos adequada.

De acordo com o estabelecido no nº 1 do artigo 2º da Portaria nº 794/2000, de 20 de Setembro, o “POC – Educação é obrigatoriamente aplicável a todos os organismos do Ministério da Educação, bem como aos organismos autónomos sob sua tutela que não tenham a natureza, forma e designação de empresa pública.” Este subsistema contabilístico obriga à aprovação de um sistema de controlo interno, definido nos termos do ponto 2.9. da mesma Portaria. Assim, apesar da obrigatoriedade da existência de um controlo interno desde o ano de 2000, 23% dos inquiridos, ainda atualmente, não sabe ao que respeita um SCI.

Relativamente aos objetivos do SCI, a maioria dos inquiridos, nomeadamente 61,5% (n=8) considerou que o SCI é muito importante para “garantir a legalidade e a regularidade das operações”, seguido de 53,8% (n=7) dos inquiridos que entendem que permite salvaguardar “a integridade e exatidão dos registos contabilísticos”. Um dos objetivos do SCI, nomeadamente, “a execução dos planos e políticas superiormente definidos” foi aquele que obteve o mesmo número de respostas na escala “nem muito, nem pouco importante” e “importante” com uma percentagem de 23,10% (n=3) para ambas.

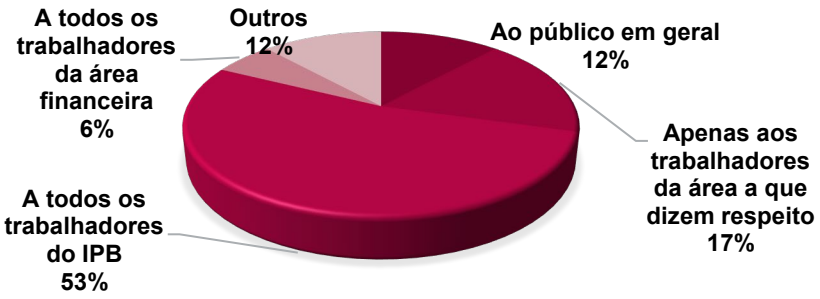
O grupo C - Sistema de Controlo Interno no IPB tem como fundamento a análise de 8 questões que permitem analisar o conhecimento sobre o SCI implementado e em funcionamento no IPB.

Relativamente ao conhecimento da existência de um sistema de controlo interno no IPB, a maioria dos inquiridos responde afirmativamente 69 % (n=9), enquanto 31% (n=4) alegam desconhecê-lo, embora 100% (n=13) considere importante a sua existência. Não deixa de ser preocupante a representatividade de respostas que não sabe da existência de um sistema de controlo interno na instituição onde trabalha, tal como acontece em relação ao conhecimento da existência de Manual de SCI, cujo 15,4% (n=2) dos inquiridos respondem não saber se o IPB possui ou não um manual, dos quais um pertence à categoria de Dirigente e o outro à de Técnico. Apesar disso, 84,6% (n=11) dos inquiridos responderam que o IPB possui um manual de SCI e deste, a maioria, 72,7% (n=8) responde que conhece os procedimentos constantes do manual do SCI em prol de 27,3% (n=3) que não sabe o seu conteúdo.

Quanto à questão da divulgação das normas de controlo interno existentes, a maioria dos inquiridos 52,94% (n=9) responderam que a divulgação é realizada a todos os trabalhadores do IPB, 5,88% (n=1) afirma só serem divulgadas aos trabalhadores da área financeira e 12% (n=2) responde outros métodos de divulgação, nomeadamente o facto de não saberem responder (Figura 1).

Figura 1

Divulgação das Normas do Controlo Interno



No que concerne, à importância de um SCI, foram explanadas diversas afirmações para as quais os inquiridos teriam de atribuir um grau de concordância de 1 - Discordo Totalmente a 5 – Concordo Totalmente, obtendo-se os seguintes resultados:

Tabela 1

Importância da existência de um Sistema de Controlo Interno

Importância da existência de um SCI	Discordo Totalmente		Discordo		Não concordo, nem discordo		Concordo		Concordo Totalmente	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
O Sistema de Controlo Interno assegura a conformidade com as leis e regulamentos.	0	0,00	0	0,00	3	23,08	5	38,46	5	38,46
O Controlo Interno é uma ferramenta de gestão.	0	0,00	1	7,69	2	15,38	4	30,77	6	46,15
O Controlo Interno é um instrumento de avaliação para o cumprimento de normas e procedimentos.	0	0,00	1	7,69	2	15,38	5	38,46	5	38,46
O Sistema de Controlo Interno garante a legalidade e regularidade das operações.	0	0,00	2	15,38	5	38,46	5	38,46	1	7,69
O órgão de gestão deverá ser o responsável pelo planeamento, instalação e supervisão do Sistema de Controlo Interno.	0	0,00	3	23,08	3	23,08	2	15,38	5	38,46
O Sistema de Controlo Interno garante a execução dos planos e políticas superiormente definidas.	0	0,00	2	15,38	5	38,46	5	38,46	1	7,69
A existência do Regulamento de Controlo Interno contribui para um cumprimento mais eficiente das normas de ética pelos trabalhadores.	0	0,00	1	7,69	5	38,46	5	38,46	2	15,38
Importância da existência de um SCI	Discordo Totalmente		Discordo		Não concordo,		Concordo		Concordo Totalmente	

					nem discordo					
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Um Controlo Interno eficaz pode ajudar os gestores a identificar, avaliar e gerir o risco.	0	0,00	0	0,00	2	15,38	5	38,46	6	46,15
Um Controlo Interno eficaz pode ajudar os gestores a identificar, avaliar e gerir o risco.	0	0,00	0	0,00	2	15,38	5	38,46	6	46,15
O Regulamento de Controlo Interno é uma importante ferramenta de prevenção.	0	0,00	0	0,00	4	30,77	6	46,15	3	23,08
O Regulamento de Controlo Interno é uma ferramenta essencial para o controlo e prevenção da ocorrência de possíveis erros e fraudes	0	0,00	0	0,00	2	15,38	5	38,46	6	46,15
O Controlo Interno deverá ser extensível e focalizado apenas aos níveis hierárquicos intermédios e baixos da organização.	6	46,15	4	30,77	1	7,69	2	15,38	0	0,00
Um Sistema de Controlo Interno garante a eficiência da gestão e qualidade da informação.	0	0,00	2	15,38	3	23,08	4	30,77	4	30,77
A avaliação da eficácia dos controlos e o seu ajustamento deverão ser feitos periodicamente.	0	0,00	0	0,00	2	15,38	3	23,08	8	61,54
O Regulamento de Controlo Interno é importante sempre que surge uma questão/ dúvida para a qual não tem solução.	2	15,38	4	30,77	6	46,15	1	7,69	0	0,00
O Regulamento de Controlo Interno é atualizado sempre que as exigências assim o determinem.	0	0,00	1	7,69	2	15,38	7	53,85	3	23,08
Importância da existência de um SCI	Discordo Totalmente		Discordo		Não concordo, nem discordo		Concordo		Concordo Totalmente	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
A implementação se um Sistema de Controlo	1	7,69	0	0,00	3	23,08	3	23,08	6	46,15

Interno conduz à eficácia e eficiência das operações.										
O Sistema de Controlo Interno contribui para a confiança e fiabilidade das demonstrações financeiras.	0	0,00	0	0,00	3	23,08	4	30,77	6	46,15
O Sistema de Controlo Interno permite a salvaguarda dos ativos da Organização.	0	0,00	1	7,69	4	30,77	3	23,08	5	38,46
O Sistema de Controlo Interno permite o registo e atualização do imobilizado da Organização.	0	0,00	1	7,69	7	53,85	2	15,38	3	23,08
A implementação do Sistema de Controlo Interno gera mais custos que benefícios	4	30,77	5	38,46	3	23,08	1	7,69	0	0,00

A afirmação “A avaliação da eficácia dos controlos e o seu ajustamento deverão ser feitos periodicamente”, obteve a concordância total da maioria dos inquiridos 61,5% (n=8).

Inversamente, “A existência de um código de conduta é desnecessária, já que todos os colaboradores sabem quais são as suas tarefas e responsabilidades.”, “O Controlo Interno deverá ser extensível e focalizado apenas aos níveis hierárquicos intermédios e baixos da organização.” e “A implementação do Sistema de Controlo Interno gera mais custos que benefícios” resultam nas percentagens mais altas de discordâncias, respetivamente, com 46,2% (n=6) a responder “Discordo totalmente” para a primeira e segunda questão, sendo que, ainda assim existem inquiridos a concordar, respetivamente 7,69% (n=1) e 15,38% (n=2) para a primeira e segunda questão. Quanto à última questão, 30,8% (n=4) dos inquiridos discordam totalmente e 38,5% (n=5) discordam desta, apesar de 7,69% (n=1) concordar. Os resultados de concordância traduzem alguma preocupação, atendendo ao facto de que o CI deve proporcionar um grau de confiança razoável na concretização da eficiência e eficácia dos recursos, logo será importante perceber a razão pela qual 15,38% dos inquiridos entende que se traduz em mais custos que benefícios, sendo esta uma das principais limitações subjacentes ao sistema de controlo interno, uma vez que a escassez de recursos económicos leva a que todas as entidades tenham que considerar os custos e benefícios resultantes do estabelecimento de controlos, o relatório COSO – “Integrated Framework” refere aspetos bastante importantes na determinação deste. Seria igualmente importante comprovar se os custos e benefícios evidenciados com a implementação do sistema de controlo interno se vieram efetivamente a concretizar, demonstrando-o a todos os trabalhadores (Tabela 1).

Tabela 2

Distribuição das áreas a intensificar os procedimentos de controlo interno

Na sua opinião, em que áreas entende que devem ser intensificados procedimentos de controlo interno?	Freq.	%
Na Orçamental, no cabimento	10	76,92
Na Orçamental, no compromisso	10	76,92
Na Orçamental, na amortização de pagamento	6	46,15
Na Orçamental, no pagamento	11	84,62

Na Orçamental, na liquidação	9	69,23
Na Orçamental, na cobrança	9	69,23
No Fundo de maneio	11	84,62
Nos Inventários	9	69,23
Nos Recursos Humanos	9	69,23
No Imobilizado	8	61,54
Nas Disponibilidades	7	53,85

A maioria dos inquiridos, 84,62% (n=11), referem a área Orçamental, nomeadamente, na rubrica Pagamentos e a área Fundo de maneio como aquelas necessitam de uma intensificação dos procedimentos de controlo interno (Tabela 2), indo de encontro à literatura no que concerne às questões eminentes na área dos pagamentos.

Foi aplicado o teste de correlação de Spearman para identificar se existia relação entre a categoria profissional e a questão fundamental “Considera a existência de um SCI importante numa organização?”, não se verificando correlação estatisticamente significativa, pois a resposta foi constante, nomeadamente todos os inquiridos responderam sim à questão. Verificou-se a correlação entre as diversas afirmações relativas à importância da existência de um SCI e a categoria profissional, que também evidenciou não existirem diferenças estatisticamente significativas.

Conclusão

Os resultados obtidos do presente estudo permitem concluir que dos 13 inquiridos, 54% (n=7) são Dirigentes e 46% (n=6) são Técnicos. Destes, 77% (n=10) sabem o que é um sistema de controlo interno e 69% (n=9) afirmam a existência deste no Instituto Politécnico de Bragança, sendo que a maioria, 53%, refere que as normas do controlo interno são divulgadas a todos os trabalhadores, o que não contraria o desconhecimento dos restantes inquiridos.

Relativamente à importância da existência de um SCI, a maioria dos inquiridos, 61, 54% (n=8), entende das diversas afirmações propostas, a mais importante como a “A avaliação da eficácia dos controlos e o seu ajustamento deverão ser feitos periodicamente”. Quanto às áreas que entendem que devem ser intensificados procedimentos de controlo interno, concluiu-se que a maioria dos inquiridos, 84,62% (n=11), referem a área Orçamental, nomeadamente, na rubrica Pagamentos e no Fundo de maneio, com igual resultado.

Como limitações ao presente estudo menciona-se o facto da questão da amostra não ser representativa da população, tendo por base uma seleção aleatória dos indivíduos ou em estudos de comparação entre diferentes populações (instituições congéneres), bem como o facto dos valores encontrados não serem representativos. Outra das limitações deste artigo foi a dificuldade na obtenção de respostas aos questionários enviados à população em estudo, o que se repercutiu na amostra final, sendo que, estando nós a falar de um público-alvo muito concreto, o número de respostas dadas não correspondeu às nossas expectativas.

Acreditamos que o presente estudo possa fornecer informação útil às Instituições de Ensino Superior Públicas, contribuindo para melhoria da eficiência e eficácia da gestão dos serviços e, naturalmente, para a melhoria destes, que por sua vez se traduzirá no aumento da satisfação dos alunos e trabalhadores.

Referências:

- Brito, A. (2021). Implementação de um Sistema de Controlo Interno na empresa "José da Conceição Brito & Filhos, Lda". Dissertação de Mestrado em Auditoria Empresarial e Pública – Especialização em Auditoria Financeira. Instituto Superior de Contabilidade e Administração de Coimbra. Coimbra. Acedido em 30 de novembro de 2024, em: https://comum.rcaap.pt/bitstream/10400.26/38749/1/Andreia_Brito.pdf
- Conceição, S. (2012). Estudo do controlo interno nas Instituições de Ensino Superior - contributo para a credibilidade da informação financeira. Dissertação. Instituto Superior de Contabilidade e Administração do Porto. Porto. Acedido em 30 de novembro de 2024, em: https://recipp.ipp.pt/bitstream/10400.22/1193/1/DM_SandraConcei%C3%A7%C3%A3o_2012.pdf
- COSO (2013). Internal Control - Integrated Framework - Executive Summary. Acedido em 30 de novembro de 2024, em: https://www.coso.org/_files/ugd/3059fc_1df7d5dd38074006bce8fdf621a942cf.pdf
- Fachada, F. (2014). Sistema de Controlo Interno na Administração Central do Estado: o caso dos organismos do Ministério das Finanças. Dissertação de Mestrado em Gestão. Faculdade de Economia da Universidade de Coimbra. Coimbra. Acedido em 30 de novembro de 2024, em: https://estudogeral.uc.pt/bitstream/10316/27499/5/Sistema%20de%20Controlo%20Interno%20na%20Administra%C3%A7%C3%A3o%20Central%20do%20Estado.pdf
- IFAC (International Federation of Accountants) (2018).Manual das Normas Internacionais de Controlo de Qualidade, Auditoria, Revisão, Outros Trabalhos de Garantia de Fiabilidade e Serviços Relacionados, Edição 2018, Parte I. Ordem dos Revisores Oficiais de Contas. Acedido em 30 de novembro de 2024, em: Manual de Normas 1_OROC_2019.pdf
- Loureiro, M. (2015). O Sistema de Controlo Interno nas Instituições financeiras. Dissertação de Mestrado em Auditoria. Instituto Superior de Contabilidade e Administração de Lisboa. Lisboa. Acedido em 30 de novembro de 2024, em: https://repositorio.ipl.pt/bitstream/10400.21/5379/1/20120195_%20O%20Sistema%20de%20Controlo%20Interno%20nas%20Institui%c3%a7%c3%b5es%20Fin.pdf
- MF - Ministério das Finanças (2015). Decreto-Lei n.º 192/2015, que aprova o Sistema de Normalização Contabilística para as Administrações Públicas; in Diário da República – 1.ª Série, n.º 178 de 11 setembro.
- MFE - Ministérios das Finanças e da Educação (2000). Portaria n.º 794/2000, que aprova o Plano Oficial de Contabilidade para o Setor da Educação; in Diário da República – I SérieB, n.º 218, de 20 de setembro.
- MF - Ministério das Finanças (1998) Decreto-Lei n.º 166/98, que institui o sistema de controlo interno da administração financeira do Estado; in Diário da República – I Série-A, n.º 144, de 25 de Junho.
- MF - Ministério das Finanças (1997) Decreto-Lei n.º 232/97, que aprova o Plano Oficial de Contabilidade Pública; in Diário da República – I Série-A, n.º 203, de 3 de setembro.
- TC - Tribunal de Contas (1999) Manual de Auditoria e Procedimentos, volume I; Lisboa.

16 – Os beneficios da práctica do Walking Football

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Resumo: O walking football (futebol a andar) modalidade criada em 2011 na Inglaterra, combina os benefícios da atividade física moderada com aspectos sociais e cognitivos, sendo especialmente atrativa para populações mais velhas. Estudos indicam que participantes regulares apresentam uma melhoria significativa na capacidade cardiovascular, com redução de 15% na frequência cardíaca em repouso após 12 semanas de prática (Arnold et al., 2015). Houve também um aumento de 20% na força muscular em membros inferiores e redução da massa gorda em média de 3 kg. Em termos sociais, o desporto promoveu inclusão, com 86% dos praticantes relatando maior interação social e menos isolamento (MacRae et al., 2020). Do ponto de vista mental, houve reduções no nível de stress e melhorias de até 30% nas escalas de bem-estar foram observadas (Taylor e Pringle, 2021). Além disso, outros estudos destacam como esta modalidade serve como ferramenta inclusiva e de baixo impacto, promovendo autonomia, prevenindo o declínio funcional e aumentando a qualidade de vida geral. Este artigo revisita alguns estudos que evidenciam este impacto positivo desta modalidade na saúde física, mental e social nos praticantes mais velhos.
Palavras-chave: Walking football; Atividade física; Saúde mental; Socialização; Bem-estar.

Abstrat: Walking football, created in 2011 in England, combines the benefits of moderate physical activity with social and cognitive aspects, and is especially attractive to older people. Studies indicate that regular participants show a significant improvement in cardiovascular capacity, with a 15 per cent reduction in resting heart rate after 12 weeks of practice (Arnold et al., 2015). There was also a 20% increase in muscle strength in the lower limbs and a reduction in fat mass by an average of 3kg. In social terms, the sport promoted inclusion, with 86 per cent of practitioners reporting greater social interaction and less isolation (MacRae et al., 2020). From a mental point of view, there were reductions in stress levels and improvements of up to 30 per cent in well-being scales were observed (Taylor and Pringle, 2021). In addition, other studies highlight how this modality serves as an inclusive and low-impact tool, promoting autonomy, preventing functional decline and increasing overall quality of life. This article revisits some of the studies that show the positive impact of this sport on the physical, mental and social health of older practitioners.
Keywords: Walking football; Physical activity; Mental health; Socialization; Well-being.

Introdução

A prática regular de atividades físicas tem sido amplamente reconhecida como fundamental para a promoção da saúde física e mental. Estudos indicam que modalidades adaptadas, como o walking football (WF), podem proporcionar benefícios significativos

em diversas dimensões da saúde. O envelhecimento da população mundial traz desafios como o aumento de doenças crônicas, isolamento social e perda de funcionalidade.

Modalidades como o walking football surgem como alternativas eficazes para combater esses desafios, especialmente entre indivíduos com mais de 50 anos. Este artigo explora os impactos dessa modalidade, destacando estudos recentes e seu papel na melhoria da qualidade de vida dos praticantes em diferentes contextos culturais e regionais.

Os primeiros eventos de WF em Portugal aconteceram em 2014 e em 2015 com os torneios internacionais no Algarve (a Eurocopa em Albufeira e no Browns Sports em Vilamoura), que decorrem até hoje. Em 2016 a Fundação Benfica através do projeto europeu European Football for Development Network (EFDN) trouxe para Portugal este novo projeto desportivo para os seniores. Em 2017 a RUTIS (Associação Rede de Universidades da Terceira Idade) juntou-se à Fundação Benfica para a promoção deste desporto e em 2022 é criado pela RUTIS o projeto Walking Football Portugal (WFP), que em 2024 passou a Associação Walking Football Portugal. Em 2023 a Federação Portuguesa de Futebol apresentou o seu próprio projeto de WF.

Desde 2017 que já foram realizados dezenas de torneios regionais de WF envolvendo centenas de seniores. Estes torneios no Algarve e os promovidos pela WFP são diferentes nas suas regras e organização e espelham um pouco a realidade do WF na Europa e no mundo que é caracterizado por uma variedade enorme de regras e modelos.

Os torneios internacionais no Algarve (assim como a maioria dos internacionais) de WF têm guarda-redes, os jogos têm uma duração média de 40 minutos (2 x 20), as equipas são masculinas ou femininas com 6 jogadores e há escalões por idades (ex: 50-59; 60-70 anos ou mais 70). Os torneios do WFP não tem guarda redes; os jogos têm uma duração média de 10 minutos, as equipas são mistas (homens e mulheres) com 6 jogadores e não há escalões por idades.

Apresentamos um resumo das regras do WFP: O walking football é uma variante do futebol, para maiores de 50 anos, onde não se pode correr, só andar. As equipas são constituídas por seis jogadores de campo, preferencialmente de ambos os sexo e não existe guarda-redes. O campo utilizado é semelhante ao campo de futsal (20m x 40m), as balizas têm 3m x 1m, (normalmente usa-se uma fita ou uma faixa para adaptar as balizas normais a esta modalidade, só se pode rematar de fora da área e a bola não pode subir acima de 1 metro de altura e não há fora de jogo. A organização das equipas, dos jogos e dos torneios nacionais é da responsabilidade do WFP. As equipas podem ter de 6 a 22 elementos. A inscrição das equipas e nos torneios é gratuita (www.walkingfootball.pt)

Podemos observar na tabela 1, alguns dados estatísticos de um jogo-treino entre duas equipas do distrito de Bragança a 30 de outubro de 2024 e que contou com 21 jogadores (12 homens e 9 mulheres), constituído por 3 jogos de 15 minutos cada.

Tabela 1: Dados estatísticos dos jogadores

Estatística Descritiva

	Média	Desvio-padrão	Mínimo	Máximo
Idade	68.667	6.763	53	78
Peso	68.095	13.375	48	93
Altura	1.621	0.103	1.480	1.90
IMC	25.834	4.142	18.365	35.09
Tempo	58.952	7.201	49.000	67.00
Tempo em movimento	9.857	4.767	3	22
Distância (KM)	0.788	0.305	0.340	1.54
Calorias	340.190	123.368	87	614
RC médio	99.286	18.243	58	130
RC máximo	132.048	21.883	89	172

Fonte: Fernandes, H. (2024), Instituto Politécnico de Bragança / Escola Superior de Saúde

Em abril de 2024 estavam inscritas 92 equipas no WFP, de todo o país (incluindo ilhas), com uma média de idade de 69 anos e com 35% de mulheres.

Os motivos para a grande adesão dos seniores a esta nova modalidade são essencialmente três:

- É divertido. Qualquer atividade (desportiva, formativa, cultural) que se faça para seniores (ou para qualquer outro grupo) tem que ser divertida, caso contrário dificilmente funciona. E jogar futebol é divertido, seja a correr ou a andar. A participação nos torneios com outras equipas, um pouco por todo o país, é igualmente divertida e um excelente momento de convívio e desportivismo. Muitos atletas, especialmente as senhoras, nunca tinham jogado futebol e isso trouxe-lhes uma experiencia completamente nova e emancipadora.

- É saudável. As equipas treinam entre 2 a 3 vezes por semana, durante sensivelmente uma hora, sendo notável ver o desenvolvimento que alguns jogadores apresentam posteriormente a nível de coordenação, resistência, acuidade visual e espacial e orientação. Os resultados foram mais visíveis nas senhoras e nas pessoas mais velhas, com ganhos gerais a nível de saúde e capacidade física.

- Espírito de grupo e de equipa: Para muitos dos atletas esta é a primeira vez que fazem efetivamente parte de uma equipa desportiva. E ir aos treinos, vestir um equipamento, ter um treinador, colegas de equipa e adversários, jogar em torneios regionais e nacionais, receber medalhas, cumprimentar os árbitros e ouvir as claques a puxar por eles, é toda uma experiencia única que vivem e que aumenta em muito o sentido de presença e identidade com a organização/clube.

Metodologia

Este artigo é fundamentado numa revisão sistemática da literatura, reunindo estudos publicados entre 2011 e 2024 sobre o impacto do walking football na saúde física, mental e social. As fontes incluem artigos científicos, relatórios institucionais e estudos de caso de várias regiões do mundo. A análise considerou critérios de inclusão como idade dos participantes (maiores de 50 anos), frequência de prática e resultados documentados em saúde. Além disso, foram incluídas análises de programas comunitários em países como Portugal, Reino Unido e Brasil, onde o walking football tem ganhado destaque.

Benefícios Físicos

Pesquisas como a de Arnold et al. (2015) apontam melhorias significativas na aptidão cardiovascular e na massa muscular em participantes de programas regulares de walking football. Além disso, houve redução na gordura corporal e aumento da flexibilidade, contribuindo para a prevenção de doenças crónicas como diabetes tipo 2 e osteoporose. Estudos conduzidos no Reino Unido indicam que 90% dos participantes relataram maior energia e disposição após apenas 12 semanas de prática. Em Portugal, um estudo mostrou que participantes caminharam, em média, 3,5 km por sessão, classificando o esforço físico como moderado (Fernandes, 2023).

A modalidade tem se mostrado eficaz na reabilitação física. Por exemplo, o programa PROSTATA_MOVE, realizado com pacientes com cancro de próstata, demonstrou melhorias na força muscular e equilíbrio, destacando a segurança e aplicabilidade do walking football em populações clinicamente vulneráveis (Capela et al., 2023). Um estudo realizado sobre o futsal recreativo (semelhante ao WF) indicou que a prática deste desporto, durante 3 meses teve um efeito benéfico na tensão arterial dos atletas (Teixeira, J., Krustrup, P., Castagna, C., Mohr, M., Pereira, R., Carneiro, I., … Póvoas, S. (2024).)

Um estudo realizado por Fernandes (2023), indicou que os atletas caminham em média 4km (incluindo aquecimento, jogos e tempos de repouso) num torneio do WFP com a duração aproximada de 4 horas.

Benefícios Mentais

Estudos de Taylor e Pringle (2021) demonstraram que a prática do walking football está associada à redução do stress e à melhoria do humor, contribuindo para a saúde mental. Além disso, observou-se um impacto positivo na cognição, com participantes relatando melhorias na memória e atenção após 12 semanas de prática regular. Outro estudo destacou que 70% dos participantes relataram maior capacidade de lidar com desafios emocionais (Cholerton, 2019). A modalidade também é uma ferramenta valiosa para indivíduos com condições como a demência. Um estudo qualitativo conduzido com 18 participantes e seus cuidadores destacou como o walking football promove memórias corporais e melhora a autonomia, além de oferecer algum alívio para os cuidadores (MacRae et al., 2020).

Benefícios Sociais

O Walking football tem sido eficaz na promoção da socialização e na redução do isolamento social. Como descrito por MacRae et al. (2020), a modalidade favorece a criação de laços interpessoais e o fortalecimento da comunidade entre os praticantes. Iniciativas como a da Age-UK mostram que 90% dos participantes mantiveram vínculos sociais formados durante as sessões, indicando a eficácia da modalidade em promover inclusão (Karania, 2015). Em contextos comunitários, programas de walking football têm integrado populações intergeracionais, promovendo a coesão social e solidariedade.

Um estudo de Costa (2024) indicou que os jogadores estão bastante satisfeitos com a pratica desta modalidade (participaram no estudo 212 atletas do WFP do continente e ilhas), 31% dos atletas não praticava desporto anteriormente; 98% dos atletas sente-se revigorado depois de jogar; 82% sente-se totalmente satisfeito a jogar e 17% sente-se muito satisfeito. (in Record).

Um inquérito em Inglaterra (com 1.527 respostas) indica que 71,4% dos atletas joga essencialmente pelo convivio e interação social e 37,8% respondeu para fazer amigos (WFA, 2022).

Impacto Comunitário e Políticas Públicas

A implementação do walking football em programas de saúde pública tem mostrado resultados promissores. A inclusão de pessoas com condições como diabetes e demência em programas adaptados reforça o potencial da modalidade como ferramenta de promoção de saúde (Mendes et al., 2018).

Neste sentido, “Corepal, Zhang, Grover, Hubball & Ashe (2020) atestaram que os praticantes de Walking Football valorizavam a identidade da equipa e a colaboração e cooperação entre os membros da mesma, circunstância que denota que uma intervenção

a este nível parece promover um impacto positivo na sensação geral de bem-estar e nas relações sociais. Esta é tanto ou mais importante na medida em que os mesmos autores comprovaram que esta modalidade adaptada é encarada enquanto meio privilegiado de Atividade Física quando comparada com uma ida ao ginásio (considerada enfadonha) ou com outros desportos (os quais são encarados como perigosamente desafiadores)", Rodrigues, A., Afonso, J., & Ramalho, A. (2021).

A ideia de tornar o futebol acessível a todos, independentemente da sua condição fisica é um dos objetivos fundamentais da estratégia de sustentabilidade da UEFA para 2030, consubstanciado na sua política de saúde e bem-estar (UEFA, 2024).

Conclusão

A prática de walking football emerge como uma solução acessível e eficiente para a promoção da saúde física, mental e social entre os mais velhos. Além dos benefícios individuais, a modalidade também contribui para o fortalecimento de comunidades mais saudáveis e inclusivas. Estudos futuros devem aprofundar a investigação em populações específicas e ampliar o conhecimento sobre suas aplicações. A continuidade de programas institucionais e a expansão para novos grupos etários são estratégias fundamentais para maximizar seu impacto ou "os técnicos de intervenção geriátrica devem entender os desportos coletivos, como por exemplo o Walking Football, enquanto versão adaptada da configuração tradicional do Futebol, como um mecanismo suscetível de ser concretizado uma vez que denota provocar efeitos benéficos tanto a nível intrapessoal como no âmbito dos vínculos sociais", Rodrigues, A., Afonso, J., & Ramalho, A. (2021).

Referências:

- Arnold, J., Bruce Low, S., and Sammut, L. (2015). The impact of 12 weeks walking football on health and fitness in men over 50 years of age. BMJ Open Sport Exerc Med, 1, e000048.
- Capela, A., et al. (2023). Effects of walking football on adherence, safety, quality of life and physical fitness in patients with prostate cancer: Findings from the PROSTATA_MOVE randomized controlled trial.
- Cholerton, R. (2019). Experiences influencing walking football initiation in adults aged 55 to 75 years. Journal of Aging and Physical Activity.
- Fernandes, H. (2023). Kms e esforço realizado num torneio de WF. Instituto Politécnico de Bragança.
- Karania, V. (2015). Walking football as a tool for inclusion. Age-UK.
- MacRae, R., et al. (2020). Modifying walking football for people living with dementia: lessons for best practice. Sport in Society, 1-14.
- Mendes, R., et al. (2018). Applicability and safety of a walking football program for individuals with type 2 diabetes.
- Record (2024), https://www.record.pt/futebol/detalhe/walking-footbal-congresso-em-guimaraes-apresenta-estudo-que-confirma-satisfacao-do-atletas
- Rodrigues, A., Afonso, J., & Ramalho, A. (2021). Prática de desportos coletivos na população envelhecida: síntese de evidências científicas. *Revista INFAD De Psicología. International Journal of Developmental and Educational Psychology.*, *3*(2), 17–28. https://doi.org/10.17060/ijodaep.2021.n2.v3.2266
- Taylor, D., and Pringle, A. (2021). Investigating the effect of walking football on the mental and social well-being of men. Football and Society, 23(7), 805–820.
- Teixeira, J., Krustrup, P., Castagna, C., Mohr, M., Pereira, R., Carneiro, I., … Póvoas, S. (2024). Post-exercise hypotension and recreational futsal: Effects of a 3-month intervention and association with resting blood pressure adaptations. *Journal of Sports Sciences*, *42*(16), 1519–1528. https://doi.org/10.1080/02640414.2024.2400806
- UEFA (2024). www.uefa.com/news-media/news/0291-1bfacd164642-bd52d14758e9-1000--new-walking-football-toolkit-available/
- WFA (2022). The state of the game: Walking Football Survey, Walking Football Association, England.