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## 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, they 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 ( $\text{Price} = \text{Cost} + \text{Profit}$ ). 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 ( $\text{Price} - \text{Cost} = \text{Profit}$ ). 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 Available 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 allow 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](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](https://www.bportugal.pt/sites/default/files/anexos/pdf-boletim/be_dez2020_p.pdf)
- Barretto, M. (2014). Manual de Iniciação ao Estudo do Turismo. Papyrus.
- 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](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](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 just-in-time in construction. Porto: Faculdade de Engenharia da Universidade do Porto.
- Herzog, J. (1991). P. People: the critical factor 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](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](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](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](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 IPDT Turismo 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*. Cambridge: 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 Politécnico 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](http://www.encontro2010.rj.anpuh.org/resources/anais/8/1276186003_ARQUIVO_anpuh_marceloVidal.pdf).
- Vieira, J. (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.