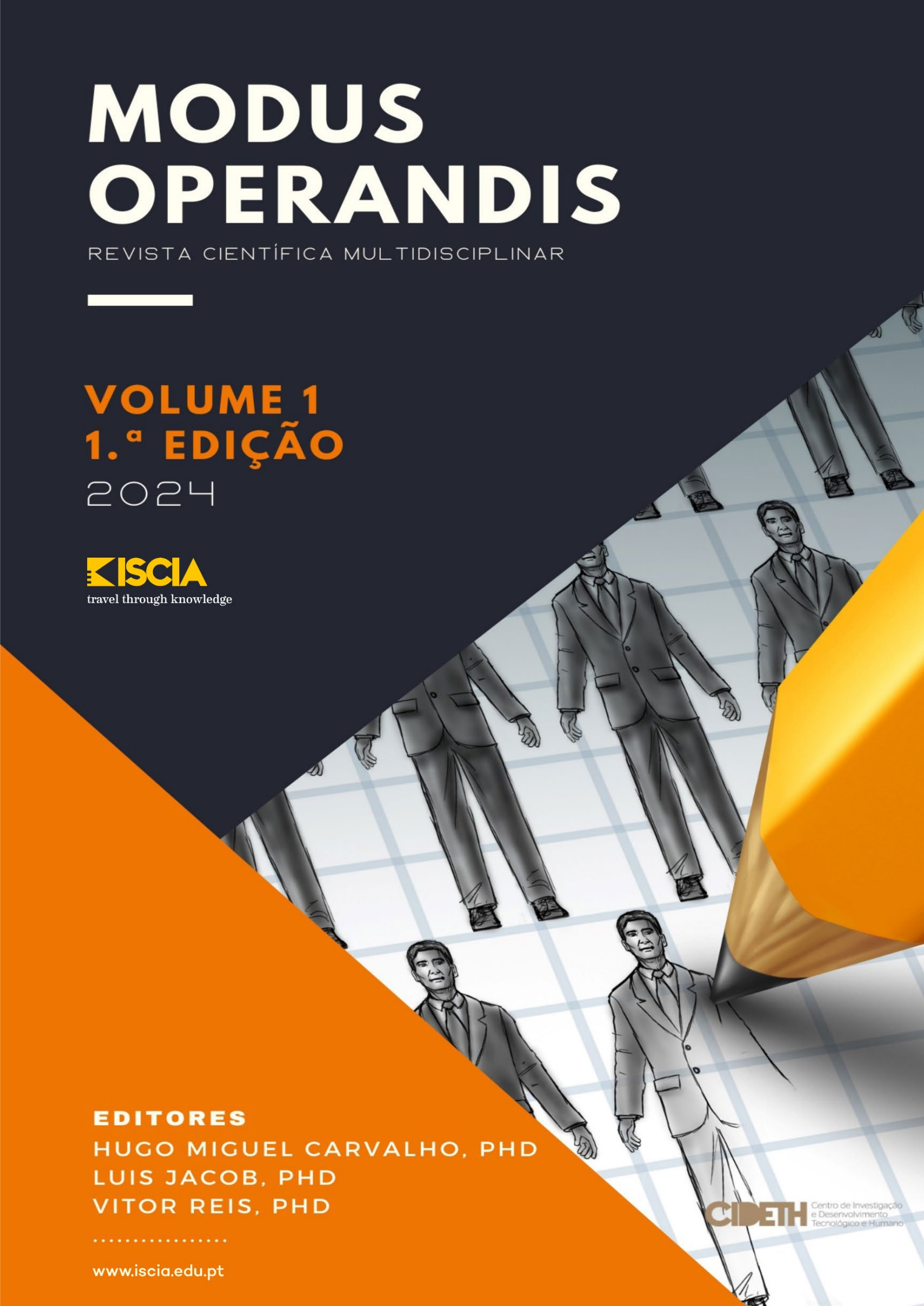
MODUS OPERANDIS

REVISTA CIENTÍFICA MULTIDISCIPLINAR

VOLUME 1
1.ª EDIÇÃO
2024

ISCIA
travel through knowledge



EDITORES
HUGO MIGUEL CARVALHO, PHD
LUIS JACOB, PHD
VITOR REIS, PHD

www.iscia.edu.pt

CIDETH Centro de Investigação e Desenvolvimento Tecnológico e Humano

11 - The Influence of Waiting Time on Customer Satisfaction: An Empirical Study

ISCIA / AVEIRO
Nº1, Vol I, Dez/2024 – Pp. 206-237
ISBN: 2975-9773

Carolina Cunha
Instituto Europeu de Estudos Superiores|IEES
Carolina.cunha.cidi@iees.pt
Margarida Rodrigues 1
Instituto Europeu de Estudos Superiores|IEES
CEFAGE-University of Beira Interior, Portugal.
margarida.rodrigues@iees.pt| ORCID: 0000-0002-0997-9716
Cidália Oliveira 2
Instituto Europeu de Estudos Superiores|IEES
University of Minho, Braga, Portugal.
REMIT – University Portucalense, Porto, Portugal.
cidalia.oliveira@hotmail.com| ORCID: 0000-0002-3512-6151
Nayra Martins 3
Polytechnic Institute of Coimbra, Technology and Management
School of Oliveira do Hospital, Portugal.
NECE-Research Center in Business Sciences
University of Beira Interior.
nayralmartins@hotmail.com | ORCID: 0000-0001-7177-3375

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

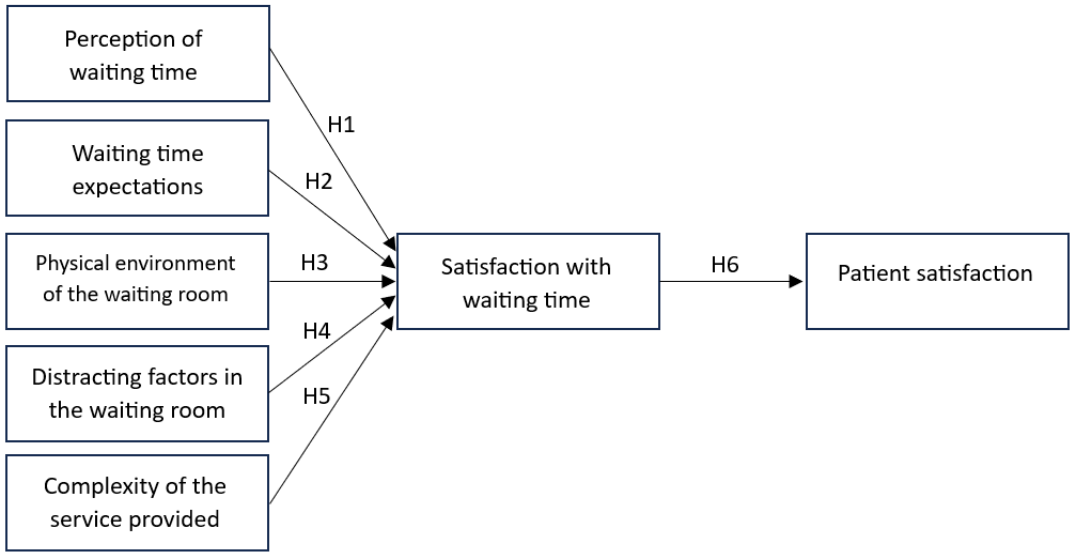
In the field of Management, several studies have been published using quantitative methodology (Groenland & Dana, 2020). In order to carry out this research, we chose quantitative methodology, which, according to the same authors, is ideal for summarizing large amounts of data and formulating generalizations 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.

Acknowledgements: The authors gratefully acknowledge funding received from NECE – Research Centre for Business Sciences and FCT - Fundação para a Ciência e a Tecnologia, Grant: UIDB/04630/2020, DOI: 10.54499/UIDP/04630/2020.

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/