Universal Accessibility on the Portuguese Coastal Way to Santiago in Porto Municipality

Fátima Matos de Silva
Universidade Portucalense, Porto, mfms@upt.pt

Isabel Borges
Universidade Portucalense, Porto, iborges@upt.pt

Marta Arreiol
University Portucalense Infante D. Henrique, m4rtaa@gmail.com

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Fátima Matos da Silva
University Portucalense Infante D. Henrique, Porto; REMIT - Portucalense University; CITCEM - Oporto University.
mfms@upt.pt

Isabel Borges
University Portucalense Infante D. Henrique, Porto; IEES-CIDI; REMIT - Portucalense University; CEGOT -University of Coimbra.
isabel.borges@iees.pt

Marta Arreiol
University Portucalense Infante D. Henrique; REMIT - Portucalense University.
m4rtaa@gmail.com

In this article, the authors seek to understand if improvement to the conditions of universal accessibility on the Portuguese Coastal Way to Santiago was one of the factors that contributed to the development of this Way and consequently the increase of pilgrims.

To this end, an evolutionary analysis of the number of pilgrims was carried out, which involved a study of the universal accessibility of the Portuguese Coastal Way to Santiago and its religious heritage in the municipality of Porto. An analysis was also undertaken of the guiding and explanatory signage and the elements of innovation introduced, as well as the information from websites and digital applications, resulting from technological innovation implemented by various institutions associated with this route. In methodological terms, a critical review of the existing literature and its contextualisation was carried out. 17 religious places were selected in the municipality of Porto, and intensive research was developed, filling in accessibility diagnostic forms that studied in detail the accessibility conditions of each of these spaces. a study of the virtual accessibility of a sample of websites of institutions related to the Portuguese Coastal Way was also conducted. Comparative studies from May 2019 and December 2021, proved to be quite interesting and a valuable aid in the evolutionary characterisation and benchmarking of possible improvements implemented.

Analysis of the results provided quantifiable data that prove the initial hypothesis, leading to the conclusion that, among other factors, universal accessibility solutions and the innovations implemented, regarding the Portuguese Coastal Way, have had a very positive impact, resulting in an exponential increase in pilgrims and tourists along the way, reinforcing the sustainability of the regions.

Key Words: Portuguese Coastal Way to Santiago, universal accessibility, religious heritage, religious tourism, Porto Municipality

Introduction

From Porto to Valença, from rural to urban, the Portuguese Costal Way to Santiago is marked by a coastal landscape, the Atlantic Ocean and its historical heritage. The constant demand for the Santiago Way even as a tourist itinerary has provided a great opportunity for development and growth of the Portuguese regions. However, the 149.5 km of this coastal Way can be a huge challenge, in terms of accessibility, both at a physical and architectural level, and in terms of communication and information in its most diverse typologies, including its virtual manifestation (Silva & Borges, 2018).

As a heritage of progressive national and international interest, this Jacobean route needs an in-depth study of its accessibility in order to enhance and dignify all of its intrinsic values, in particular its religious heritage. This

article aims to explore the problem of accessibility along the Portuguese Coastal Way, with special emphasis on the religious heritage related to the municipality of Porto. As part of the research project *Evaluation of Accessibility and Impacts of Tourism on the Heritage of the North Coast of Portugal,* the starting point is to understand if there were improvements in the conditions of universal accessibility that contributed to the development and increase of pilgrims on the Portuguese Coastal Way, with special focus on the departures from the city of Porto.

The main objectives are related to the evolutionary analysis of the number of pilgrims; the study of universal accessibility of the Portuguese Coastal Way and its religious built heritage in the municipality of Porto; the analysis of guiding and explanatory signage; and the innovation and information elements of websites and digital applications, resulting from technological innovation implemented by various institutions associated with this path.

This route naturally has a close connection with religious heritage, being one of the main motivations to follow this path. However, many of these elements do not yet have the conditions to be fully enjoyed by those who visit them.

In addition to the description of the research methodology used, the first section of this paper includes a brief historical framework, a review of the literature on the topics addressed, and an analysis of statistical data on the current accessibility of the Way. In a second phase, case studies are identified, and a statistical study is carried out on the data collected *in situ* through the use of *Accessibility Diagnostic Forms.* Finally, the virtual accessibility of sixteen websites is also studied.

This study aims to contribute to a better knowledge of accessibility in these places of worship, participating in facilitation of a more inclusive and accessible future for the community.

Research Methodology

The methodology was based on an analysis of several documentary sources on the Portuguese Coastal Way, a critical review of the existing literature and its contextualisation regarding the themes mentioned.

In order to contextualise the issues related to the number of pilgrims who travel the Portuguese Way to Santiago, the statistical data were derived from the information provided by the *Oficina del Peregrino* of Santiago's Cathedral. Afterwards, analysis of the universal accessibility challenges and focused exploration of several specific sites of religious worship in the municipality of Porto was carried out.

From the universe of 462 heritage monuments in the 10 municipalities included in the Portuguese Coastal Way, we have selected a sample of 51 places of religious worship that we have been studying in our overall project. For this paper, 17 religious spaces within the municipality of Porto were selected.

In order to analyse accessibility, *Accessibility Diagnostic Forms* were utilised. These forms have been adapted for use with Microsoft Excel, allowing a more detailed analysis and a faster view of the accessibility of each place studied. The information we already had from 2017 (the project starting date) was updated according to the reality of the current year, resulting from extensive fieldwork carried out in the municipality of Porto, studying in detail the accessibility conditions of each of the religious spaces of the sample. For a better visualisation of the results, tables and graphs were prepared with the statistical data.

The analysis of virtual accessibility was based on a sample of 32 websites directly related to this Way, carried out in May 2019 and again in December 2021, in order to determine whether there were improvements in terms of accessible and inclusive information. In this study we only present the analysis of 16 websites, 10 of which are related to the Portuguese Coastal Way and the municipality of Porto, and 6 webpages related to the churches in the sample which have been studied in the municipality of Porto and offer this type of virtual information.

After gathering the URLs, quantitative and qualitative summary analysis of the data obtained was performed. In the study conducted in 2019, to verify the degree of compliance with the recommendations of WCAG 2.0[1], whose Portuguese version was developed by the ACCESS Unit of the Foundation for Science and Technology, we used the automatic validator *AccessMonitor Plus*. In 2021, *AccessMonitor* version 2.1 was used.

This type of analysis allows us to know if websites meet the accessibility requirements of the Web Content Accessibility Guidelines (WCAG 2.0) of the World Wide Web Consortium (W3C) as established in European Parliament Directive (EU) 2016/2102 and European standard EN 17161: 2019.

Religious Tourism and Accessibility

The development of tourism and specifically cultural tourism and religious tourism around cultural heritage is very important, since it supports the necessary sustainability of communities and leads to an improvement in local image through various factors such as rehabilitation and conservation of heritage. Economic growth is also an impact of the marketing of local goods. In the increase of tourist resources, many of them benefit from rehabilitation and adaptation of the local architectural heritage, with a consequential social benefit for communities and their living conditions (Tuan & Navrud, 2008; Cano, Garzón & Sánchez-Soto, 2013). This type of tourism can also contribute to the reduction of seasonality and encourage openness to new markets.

Religious tourism is one of the oldest types of tourism in the world, being one of the first motives to travel since ancient times. However, the concept of religious tourism is progressively being transformed and updated. In fact, several studies point that religious tourism is a 'rapidly growing segment' of this sector (Griffin & Raj, 2017). According to the numerous definitions, religious tourism is related to 'all travels outside the usual environment for religious purposes', and includes pilgrimage tours (UNWTO, 1995; Di Giovine & Elsner, 2015; Rifai,

2015). So, religious tourism is a form of tourism, including people of faith that are travelling individually or in groups, for reasons related to religion or spirituality (Griffin, 2007; Griffin & Raj, 2017). The United Nations World Tourism Organization (UNWTO, 1995) suggests that religious tourism could be one of the most effective tools for providing wide and sustainable development.

Although the concepts of religious tourism and pilgrimage tourism are very similar, and some authors even consider them to be the same, there are, however, some differences. In the case of religious tourism, the focus is on places of worship. Regarding pilgrimage tourism, in addition to considering these places of worship, there is an emphasis on the connection between and with places, with a necessity of travel for the accomplishment of the visit, which causes the appearance of routes, itineraries or pilgrimage circuits (Gil de Arriba, 2006). Among global pilgrimage routes, the Way of Santiago is one of the most recognised.

According to Dias (2010), the most visible relationship between tourism and religion lies in the substantial number of sacred buildings which are of tourist interest and the intention of tourists to visit them.

Thus, religious tourism, which can be understood as an activity developed by citizens who travel for religious reasons or to participate in religious events, represents an interesting opportunity for the development of tourist activities (Silva & Borges, 2019). This type of traveller is more loyal to the visited tourist destination than the traditional tourist, repeating visits in a shorter period (Robles, 2001).

Improving accessibility to heritage sites, closely related to religion and religious tourism is a way to promote sustainable management of regions. The concept of accessibility is usually focused on physical and architectural aspects to do with space accessibility. However, accessibility goes much further, as it also concerns the accessibility of information, in addition to social, intellectual and emotional components (Silva, 2015; Silva & Borges, 2019a; 2019b). This means that all people, with or without additional needs, must be able to participate in all activities that include the use of products, services or information (Silva & Borges, 2019).

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1 WCAG (Web Content Accessibility Guidelines) are a series of web accessibility guidelines published by the Web Accessibility Initiative of the World Wide Web Consortium, the main international standards organisation for the Internet.

Map 1: Coastal Portuguese Way

Source: Iberismos
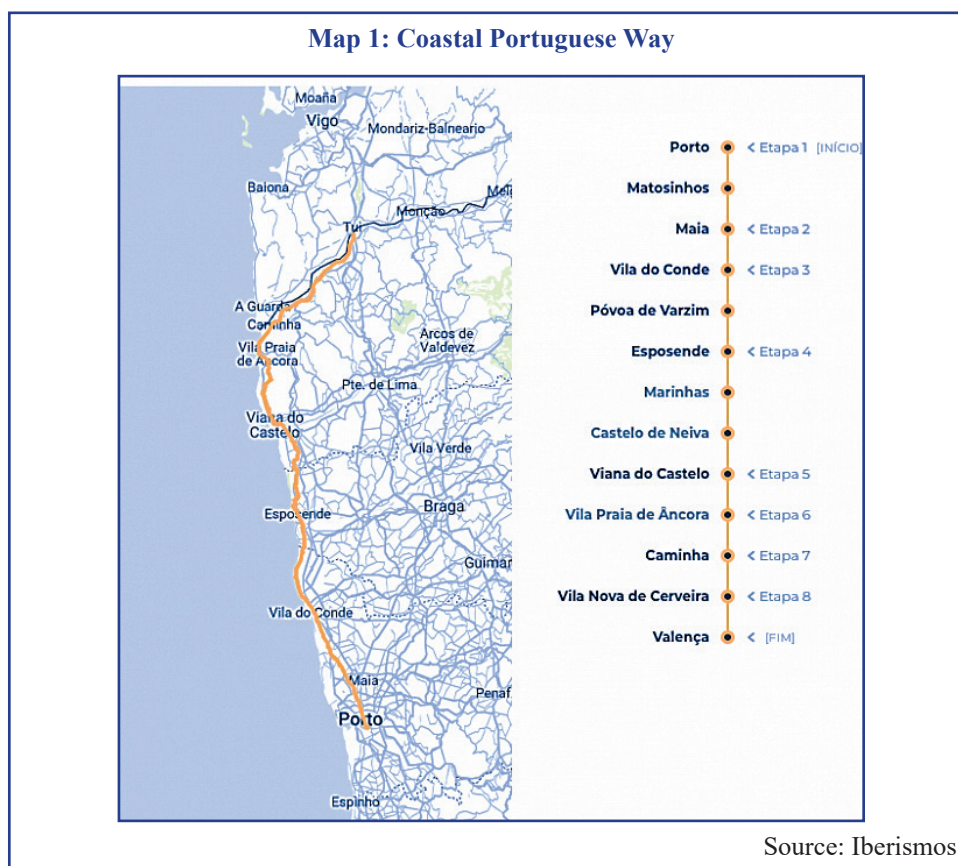
Accessible, Universal, Inclusive or Barrier-Free Tourism can be defined as tourism and travel accessible to all people, disabled or not, who may present temporary or permanent limitations - mobility, hearing, sight, cognitive, intellectual, or psychosocial limitations (Takayama, 2009; Darcy & Dickson, 2009). Accessibility is associated with a way of thinking, planning and managing a specific destination, region or place. An accessible destination should allow all visitors, without exception, to enjoy and use equipment and services, without restrictions or constraints, in an equitable way (Silva & Borges, 2019c). According to Darcy, Cameron, Dwyer, *et al.* (2008), a truly accessible environment is one in which everyone can freely express their independence, and in which any impediment to integration is removed.

Virtual accessibility is based on making information available to all users, regardless of their limitations, technology or platform used. It must allow access to all users in a perspective of learning, understanding, navigation and interaction with the Web, regardless of their uniqueness (additional needs of any kind - visual, hearing, physical, speech, cognitive, neurological) or age.

The universal demand for the Santiago Way, as a pilgrimage or tourist route, has provided a great opportunity for development and growth for the regions through which the route passes, but for full inclusion, it requires a firm commitment to the concept of accessibility. This would facilitate the route to meet not only the needs of the local population, but also the growing demand from the tourist markets (Pereiro, 2019).

The Portuguese Coastal Way

Historical Contextualisation

In Portugal, the pilgrimage to Santiago de Compostela began in the mid-12th century. The first major Portuguese itinerary started in Olissipo (Lisbon), went through Porto, then *Bracara Augusta* (Braga) and headed towards Galicia. This route used not only the ancient Roman route, but also its bridges, later becoming known as the Portuguese Central Way (Almeida, 2017). For many centuries, the population actively participated in this Jacobean experience giving rise to several new itineraries, not only in order to overcome the physical difficulties of the terrain, but also to ensure their safety (Bastos, 2012). This Way was part of the overall route

Table 1: Evolution of Pilgrims Numbers,
Pilgrims from the Portuguese Coastal and Central Ways and their nationalities (Portuguese and others).

Years	Pilgrims (All Ways)	Coastal Way	Central Way	Portuguese Ways (Totals)	Portuguese Nationality	Other Nationalities in Portuguese Ways
2004 Holy Year	179944	-	15839	15.839	3252	12587
2005	93924	-	5507	5.507	2574	2933
2006	100377	-	6467	6.467	3365	3102
2007	114026	-	8110	8.110	4001	4109
2008	125141	-	9770	9.770	4341	5429
2009	145877	-	11956	11.956	4854	7102
2010 Holy Year	272135	-	34147	34.147	7786	26361
2011	183 366	41*	22062	22.062	8 649	13 413
2012	192 488	177*	25628	25.628	10 329	15 299
2013	216 880	274*	29550	29.550	10 698	18 852
2014	237 983	268*	35501	35.501	11 663	23 838
2015	262 516	399*	43151	43.151	12 481	30 670
2016	277 854	2 600	49538	52.138	13 245	38 893
2017	301 036	7 329	59233	66.562	12 940	53 622
2018	327 374	13 839	67820	81.659	14 415	67 244
2019	347 578	22 292	72357	94.649	17 450	77 199
2020 / 2021 Holy Year	54134	2 736	10.252	12915	2971	10017
	169 319	7813	32315	40128	9298	30830

(1) For the years 2020 and 2021 the *Oficina del Peregrino* did not present statistics but only a comparison between months. Thus, we had to calculate numbers. We don't account for the those who undertake the sailing Way.

Source of data: Authors' own elaboration from Pilgrim's Office statistics.

that was declared as the first European Cultural Itinerary in 1987 by the Council of Europe and, in 1993, UNESCO declared it a World Heritage Site.

The Portuguese Coastal Way, a coastal itinerary, is of later origin and was established in the 16th century as a result of the successful expeditions to the Orient and America that promoted significant development in coastal villages, limited until then to fishing activity (Hindria, 2017). The pilgrimage to Compostela was already well established in the Christian community, and the coastal paths offered a safer alternative to the inland itineraries (Marques, 2017). The Portuguese Coastal Way is a variant of the Central Way, starting in Porto, heading north to Valença and Tui where it joins the Central Way to Santiago de Compostela. This 149.5 km long Jacobean route passes through 10 municipalities and it is possible to visit 462 monuments along this trail.

From Porto to Valença, from rural to urban, this itinerary is marked by its coastal landscape and its historical heritage, bordered by the Atlantic Ocean. Along this coastline it is possible to find many references to the apostle Santiago, who is the patron saint of several churches. Since the Middle Ages the Santiago Way has played a key role in the development of the various cultures emerging in Europe, and its cultural importance is no different in Portugal[2].

Evolution

Statistical data regarding the pilgrims who travel the different roads to Santiago have only become available from the *Oficina del Peregrino* of Santiago Cathedral since 2004, the first Holy Year of the modern Era, at which time *Plan Xacobeo* was implemented and great investment was made.

Every Holy Year[3] there is a considerable increase in the number of pilgrims, with the year 2000 being one of

2 https://www.caminodesantiago.gal/pt/descubra/origens-e-evolucao/de-fenomeno-religioso-a-experiencia-cultural Accessed 06/27/2021

3 A Jacobean Year or Ano Xacobeo is a Jubilee or Holy Year. A year is considered a Jacobean or Holy Year when Saint James Day, 25th July, falls on a Sunday.

Figure 1: Evolution of Pilgrims on the Portuguese Ways
(Coastal and Central, and the nationalities (Portuguese and others) between 2004 and 2021)
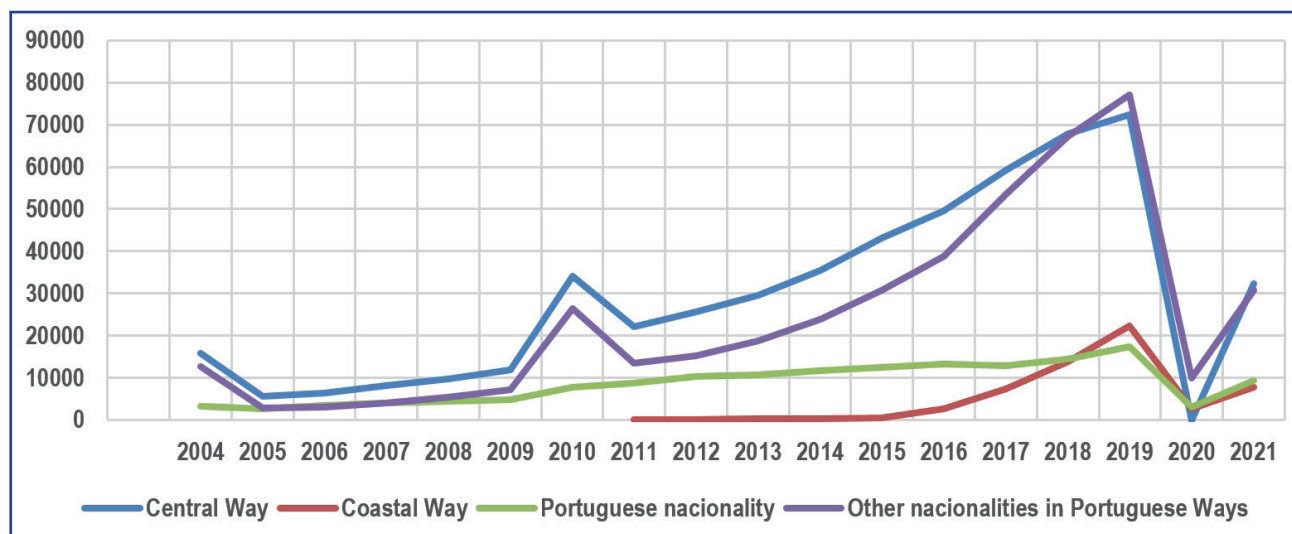
Source of data: Authors' own elaboration from Pilgrim's Office statistics

the most significant. From that year on there has been a considerable increase in pilgrims / tourists. The year 2016, although it was not a Holy Year, is also a milestone, as the total number of pilgrims that year exceeded those of the previous holy year of 2010, with a constant increase in numbers every year.

2016 also marks the modern reappearance of the Portuguese Coastal Way and the publication of official statistics by *Oficina del Peregrino*. In Table 1 and Figure 1 we show this evolution which also illustrates data on the Central Way. Both the number of Portuguese pilgrims as well as the number of pilgrims from other nationalities

Table 2 - Evolution of Pilgrim Numbers According to Means of Transport.				
Year	**On Foot**	**Bicycle**	**Horse**	**Wheelchair**
Holy Year 2004	156952	21260	1672	60
2005	76674	16985	242	23
2006	81783	18289	294	11
2007	93953	19702	364	7
2008	103669	21143	290	39
2009	120605	24892	341	39
Holy Year 2010	237852	32926	1315	42
2011	153065	29949	341	11
2012	164778	27407	281	22
2013	188191	26646	977	66
2014	211033	25332	1520	98
2015	236773	25346	326	71
2016	254025	23347	342	125
2017	278490	21933	417	43
2018	305655	20774	589	209
2019	327281	19563	406	85
2020	49557	4493	59	12
Holy Year 2021	158833	10285	167	34
We don't account for those who undertook the sailing Way. Source of data: Authors' own elaboration from Pilgrim's Office statistics.				

Figure 2: Means of Travel for Pilgrims on all Routes Between 2004 and 2021
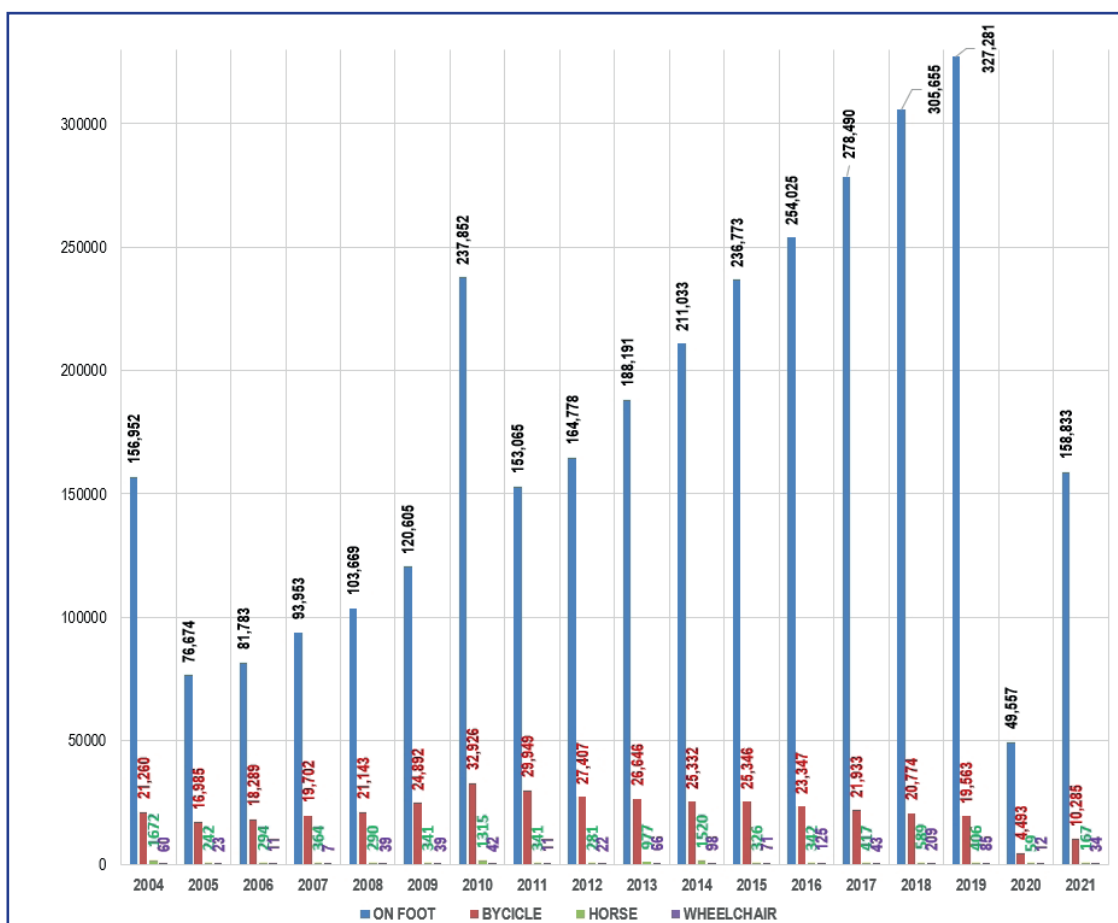
Source of data: Authors' own elaboration from Pilgrim's Office statistics

who travel this Way walk has increased (Silva & Borges, 2018). Since there is no statistical data from Oficina *del Peregrino* prior to 2016, the totals, marked with an asterisk, correspond to visitors accounted for by the research of the authors, particularly data from the Portuguese Coastal Way. The year 2019 corresponds to the apogee of all the Santiago Ways. The pandemic situation and the resultant constraints that were implemented resulted in a sharp fall in the visitor numbers. However, there was already a significant rebound in numbers by 2021, especially after June. 2021 was a new Holy Year which, exceptionally, continued to 2022.

Despite the emergence of new ways of travelling the way to Santiago, most pilgrims decide to do it on foot, so most of their time is spent walking the route and visiting the main heritage points (Silva & Borges, 2018). According to 2019 statistical reports, 94.16% of all pilgrims travelled on foot (Table 2), with similar patterns evident on the Portuguese Coastal and Central Ways. While numbers

of wheelchair travellers is relatively low, this cohort has been increasing progressively over the years. There have been some declines in numbers in recent times and this group reached their maximum in 2018.

The totals presented here only refer to pilgrims who go to *Oficina del Peregrino* to receive their *compostela,* so they do not correspond to the total values of the extensive population that travel the route. The numbers miss a large number of pilgrims who do not reach Santiago, in addition to any and cultural and religious tourists who use other means of transport, or do not self-identify as a pilgrim.

Signposting and Explanatory / Informative Signage

The 149.5km of the Portuguese Coastal Way can be a huge challenge in terms of accessibility, whether physical, architectural, or even informative. Therefore, it is vital to find solutions that makes accessibility universal, so that everyone can access the route and its heritage equally.

Figure 3: Image Capture from the Portuguese Coastal Way Website

According to the 2017 Portuguese Coastal Way Report (Caminho Português da Costa, 2017), there were still gaps to be addressed regarding accessibility, namely:

- Multiplicity of concepts about the definition of the Santiago Ways, generating confusion in the Ways;

- Inadequate and incoherent signposting;

- Lack of information and support infrastructure;

- Diversity of communication engines causing noise;

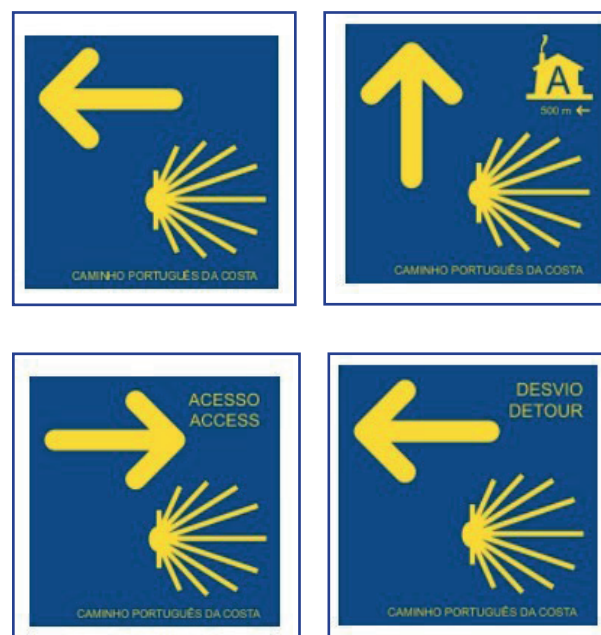- Lack of intervention and protection of heritage on the Way.

In order to respond to the demands that were felt at that time, according to the points mentioned, the various municipalities that were members of the Portuguese Coastal Way created the project *Valorisation of the Ways of St. James - Portuguese Coastal Way,* resulting from an application to the *Norte2020 Program*, with the aim of enriching the tourist and regional offer, resulting in a significant improvement in accessibility offered by the Portuguese Coastal Way, thereby, enhancing its intrinsic value.[4]

In addition to actions to recover and enhance infrastructure and heritage sites along the way, a strategic communication plan was designed allowing access to new ways of communicating, through a visual and written narrative, presence in social networks, a new website and the various guides made available online.[5] In addition to the usual guides and itineraries published on paper by the ten municipalities, the information is also available on the Internet on the route's own website (http://www.

Figure 4: Base Directional Signage Model and Variants

Source: Portuguese Coastal Way

caminhoportuguesdacosta.com/pt) with an interactive map that allows everyone to create their own route, connecting various sites of the municipalities. The website of the Portuguese Coastal Way (Figure 3) offers a variety of information, including testimonies from pilgrims and useful information. It is also possible to access a mobile app (http://www.caminhoportuguesdacosta.com/pt/a-iniciativa/aplicacao-mobile). In addition, several organised events, promoting research, maps and three edited publications, each with different functions that are provided free of charge to those who request them are to be found on the site.

At the beginning of the route, in Porto, the *Capela da Nossa Senhora das Verdades* was converted into the *Centro de Interpretação dos Peregrinos do Caminho Português da Costa*. The creation of this interpretation centre has contributed to rehabilitating and giving new use to a ruined architectural structure, which now has a new functionality and utility.

As an integral part of the 'valorisation' project, new signage was implemented along the way to make it more uniform and fluent in its branding[6]. It is divided into two distinct types of signage: directional and informative.

4   https://www.cm-matosinhos.pt/pages/242?news_id=4988 Accessed 06/22/2021

5   https://www.portugal2020.pt/content/valorizacao-dos-caminhos-de-santiago-caminho-portugues-da-costa Accessed 05/07/2021

6   https://www.cm-porto.pt/projectos-cofinanciados-pela-ue/valorizacao-dos-caminhos-de-santiago-caminho-portugues-da-costa Acedido em 22/06/2021

Directional signposting (Figure 4) with several variants, is introduced to replace the old arrows which were introduced by Jacobean associations, scattered along the Coastal Way. These are sometimes attached to heritage sites indicating hostels and inns, in additional to routes to follow and alternatives.

In the case of showing access, the signposting is positioned in places to help pilgrims access the start of their route, such as at train, bus or other stations. Another variant is related to possible impediments on the route: uncertainty about the original route; temporarily impassable or unsafe routes for pedestrian circulation.

The other type of signposting is informative or explanatory which appears in areas associated with pilgrim stopping points or in places where the route changes the characteristics of what it has been until then, such as when the route enters into an urban area.

To complement this signage, other informational signage were designed to be placed at the pilgrim stopping points. These information panels were to include varied information about the layout of the route and its profile, followed by text and useful emergency contacts such as pharmacies, first aid stations, accommodation, as well as

Figure 6: Rural Signage

Source: Portuguese Coastal Way
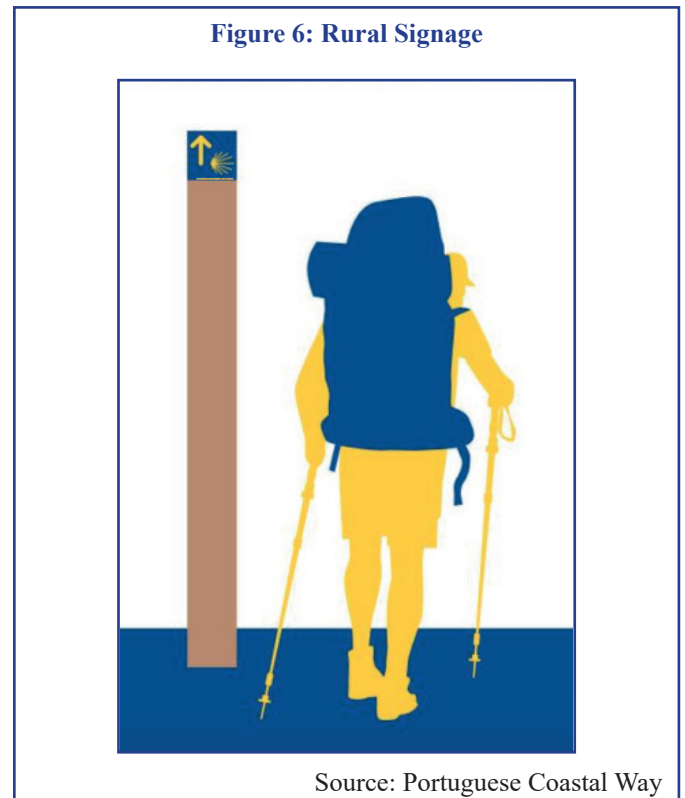
the cultural heritage associated with the Way. However, by the end of the funded project, there were no such signs. The various municipalities have been placing information panels, each one according to its own taste, resulting in several varied informational plaques.

The Way travels through rural and urban areas so two physical signage models were developed: one related to rural signage (the basic material is wood, on which directional signage is applied, as shown in Figure 6) and another for urban signage (Figure 5), designed for monuments and classified areas. These signs are manufactured using weather resistant corten steel. In both of these models, we find the two variants: the applicable directional signage on a pole, wall or pavement and the informative signage.

These improvements in the general conditions of information accessibility, in our view, have contributed substantially to the increase in the number of pilgrims. Numbers have risen from being practically non-existent in 2016 (about 2,600); they tripled in 2017 (7,329) and in 2018 reached 13,839. Importantly, this has not resulted in any reduction of users from the Central Way as had been feared.

Figure 5: Urban Signage

Source: Portuguese Coastal Way

The use of the Santiago shell and the continuous use of yellow arrows standardises the Way and extends its image, which is already very rooted in the awareness of pilgrims. However, according to the research undertaken, it is necessary to implement the information in Braille so that the visually impaired population (although a minority), who follow the Way or are simply passing through, can experience this journey in an equally satisfactory way.

The Places of Worship in The Municipality of Porto and Universal Accessibility

In the municipality of Porto we selected 17 religious spaces for intensive *in loco* research. After the development of *Accessibility Diagnostic Forms*, it was possible to obtain automatic results of the percentage of accessibility for each item, also obtaining an overall result for the analysed monument, allowing in detail the study of the accessibility conditions of each of these spaces.

The study undertaken in 2017 has been updated, since many of these spaces have improved in terms of accessibility conditions. Furthermore, places of worship were added to those previously studied according to the website *Caminho Português da Costa* to achieve a more in-depth and complete study.

The places of worship studied correspond to the two paths (Central and Coastal Ways). Ten of the churches are part of the Ways, to which we have added seven more from the city of Porto, which we feel are emblematic points of interesting heritage and, above all, of interest to religious tourists and pilgrims. The places of worship in our analysis which belong exclusively to the Portuguese Coastal Way are the following:

- Capela de Nossa Senhora das Verdades (Centre of Reception for Pilgrims of the Coastal Way),
- The Church and Convent of S. Francisco,
- Capela da Lada.

Places of worship which are connected with both the Central Way and the Coastal Way include the following:

- The Cathedral of Porto,
- The Church of Clérigos,
- The Church of Carmelitas Descalços,
- The Church of (Venerável Ordem Terceira do) Carmo,
- The (Romanesque) Church (of S. Martinho) of Cedofeita,
- The Church of Ramada Alta,
- The Church of Carvalhido.

From the places of worship that we consider should be part of heritage and religious tourism routes, we have chosen the following:

Figure 7: Compliance with Accessibility Standards and Best Practice by Church Regarding Outdoor Access (percentage data)
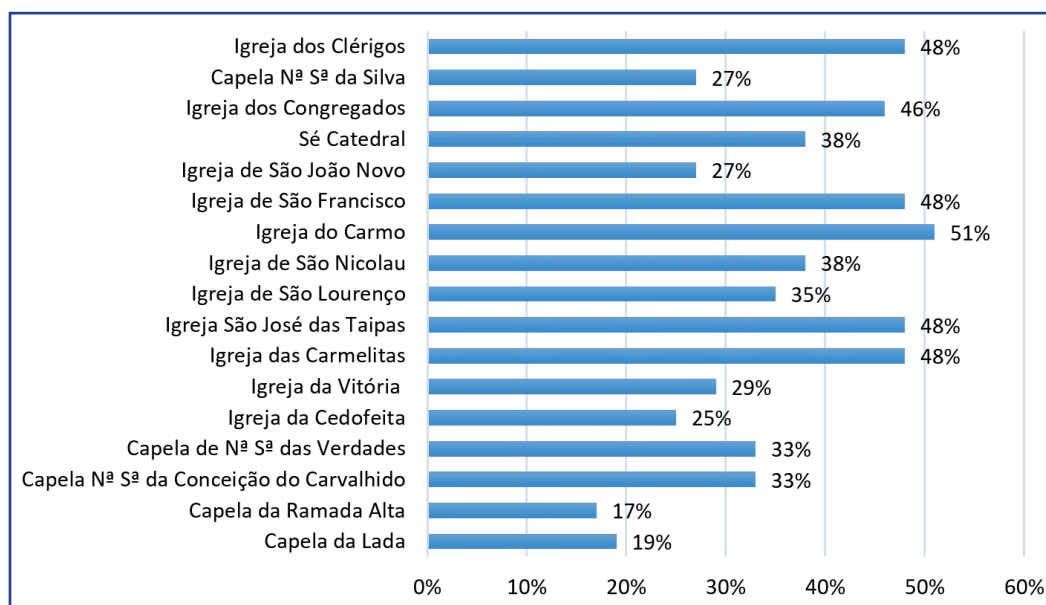
Source of data: Authors' own elaboration

Table 3 – Synthesis of Some Values of Exterior Accessibility, Inside and Outdoor Information and the Capacity of Sites to Solve Problems of Architectural Accessibility.			
Accessibility Standard being Evaluated		**Yes**	**No**
Outdoor Access	Access by public transport to places of worship	15	2
	Parking next to places of worship	8	9
	Places reserved for people with special needs	13	4
Ability for Churches to make Adaptations to Overcome Architectural Barriers		9	8
Information (inside and out)	Information on the name of the place of worship	15	2
	Time information	8	9
	Braille Information	0	17
	Sound Information	0	17
	Non-verbal graphic symbol	13	4
	QR Code	0	17
Source of data: Authors' own elaboration.			

- The Chapel of Nossa Senhora da Silva,
- The Church of S. João Novo,
- The Church of S. Nicolau,
- The Church of S. Lourenço,
- The Church of S. José das Taipas,
- The Church of Congregados,
- The Church of Vitória.

In some of these sites it was only possible to study their surroundings because they were closed for public visit, such as Capela da Lada, São Lourenço, Nossa Senhora da Silva, Cedofeita and Ramada Alta.

Data Processing and Comparative Analysis

The Accessibility Diagnostic Form (ADF) is divided into 7 categories: the first category was **Outdoor Access** which studied questions about access by public transport to places of worship, local parking, sidewalks and access roads and the surface quality of these places. In Figure 7 we can observe the percentages of compliance with the standards and good accessibility practices by place of worship in relation to the items mentioned, which are mostly below 50%, except for the Carmo Church (51%). The Chapel of Ramada Alta is the one that shows the greatest difficulties in this parameter.

Most of these spaces do have access via public transport, are accessible to wheelchair users and promote accessibility and inclusion of the population to their places of religious worship (Table 3). In terms of parking and reserved spaces for people with additional needs, the first parameter stands out positively, since only 4 of the 17

spaces studied have no parking space. It should be noted, however, that there are several public car parks in the Historic Centre of Porto, close to the places of worship. However, of the 17 sites, only 8 have spaces reserved for people with additional needs. Regarding the existence of outside information, 15 of the 17 spaces comply with this item. However, this is basic and in the main, information provision is incomplete, since information in Braille, in sound version and in QRCODE is non-existent. Likewise, concerning timetables, only about half of these places have information outside, which makes it very difficult for those who want to visit these spaces.

In the second category in the ADF, contained questions about **Churchyard Accessibility**, including the existence of uneven ground, location and characteristics of existing toilets, signage and available information.

Figure 8 presents the percentage of compliance with accessibility standards in this category for each place of worship under investigation. This is the category with the greatest accessibility deficiencies, with no site reaching 50%, and an average of only 15.6% compliance regarding accessibility standards. Through this study it was possible to detect the existence of several informative and physical barriers in the churchyards of these sites, such as the lack of ramps or availability of alternative accesses.

In Table 3 we can see that some religious spaces can improve accessibility with various solutions. The analysis of the physical and architectural space allows

Figure 8: Compliance with Accessibility Standards and Best Practice in Churchyard by Church
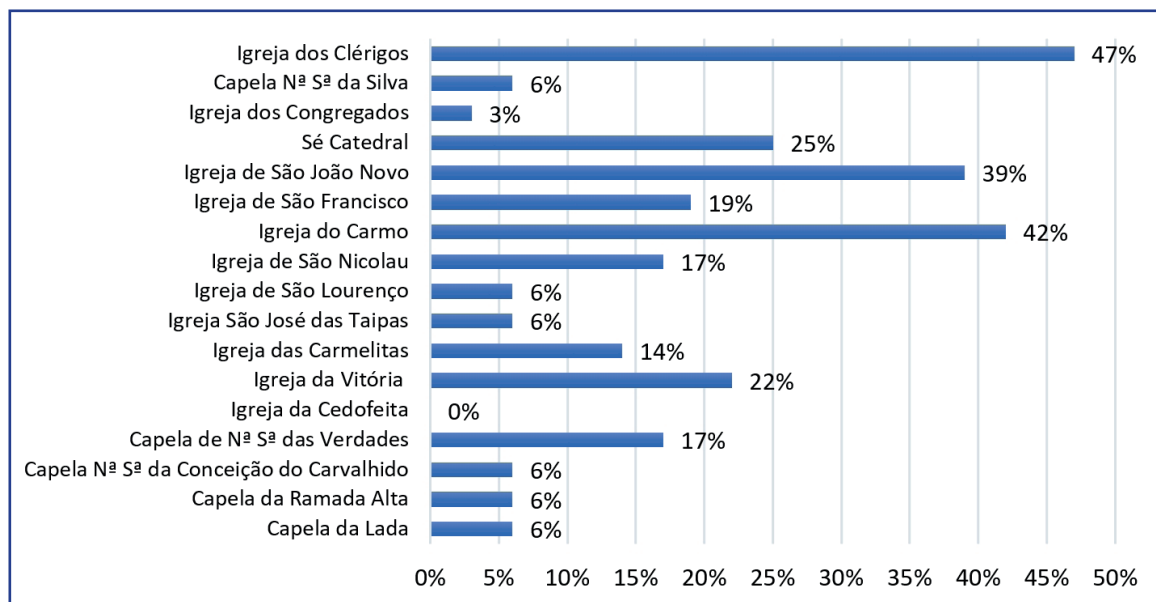
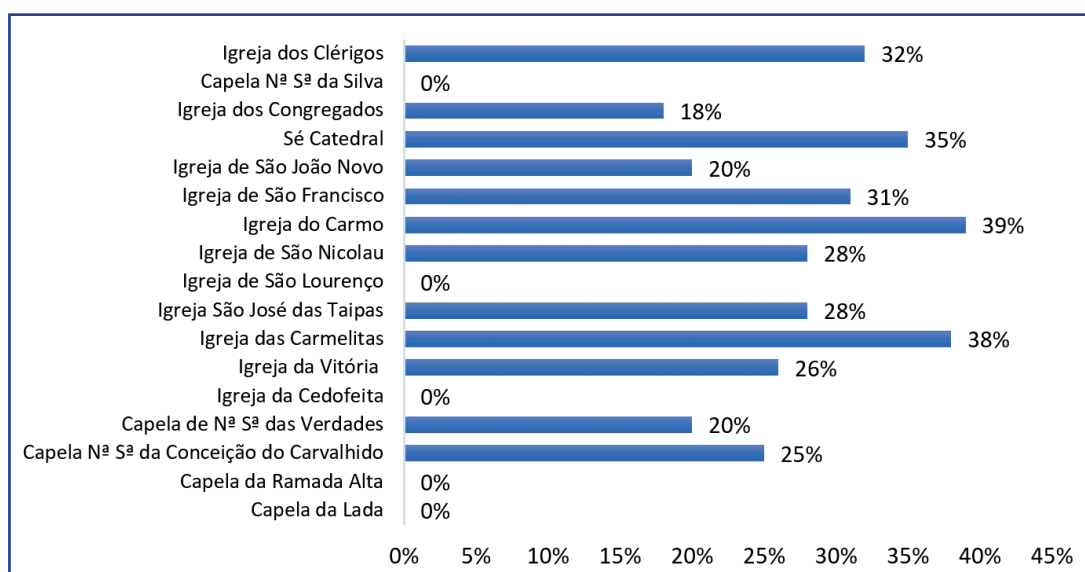Source of data: Authors' own elaboration

us to conclude that 9 religious spaces have the possibility of eliminating physical barriers if they want to make these improvements. Eight of these spaces would have serious difficulties in achieving such standards because the architectural structures hardly allow it.

The third Category on the ADF aims to analyse data concerning *Accessibility Inside Sites*, evaluating indicators on doors, corridors, ground surfaces, lighting conditions, presence of tactile and accessible routes, rest

areas and the information provision. Following the same trend as the previous category, the general averages of places of worship in terms of compliance with standards remain low, at only 18.8%. Figure 9 shows the average compliance with accessibility standards in this category for each place of worship.

In Figure 10 we can identify that the biggest gaps are the absence of well-marked emergency exits, the lack of multimedia equipment and, also, the absence of

Figure 9: Compliance with Accessibility Standards and Best Practice within places of worship (percentage data)

Source of data: Authors' own elaboration

Figure 10: Accessibility Parameters Inside Places of Worship
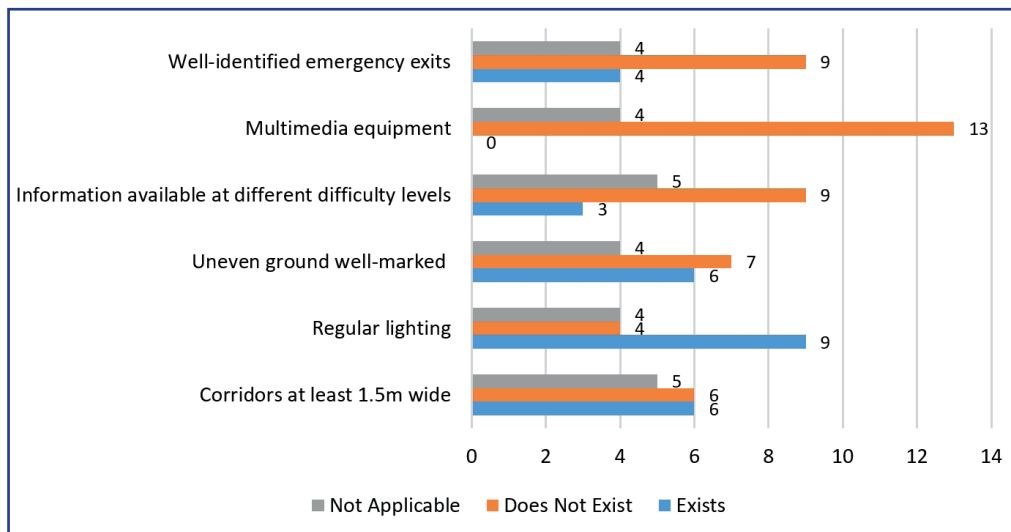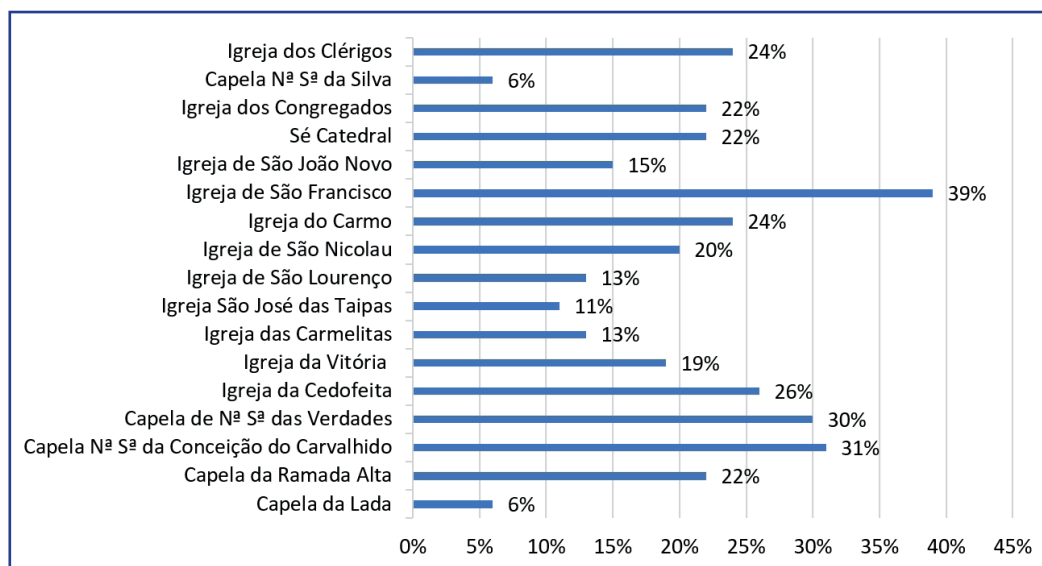

Source of data: Authors' own elaboration

information with different levels of difficulty - different languages, font sizes and inclusion of Braille information. It was also verified that there is incorrect identification of uneven surfaces inside many of the places of worship, and only in 50% of the sites comply with the appropriate regulatory dimensions. The most positive aspect is in lighting which is present in a regular way in most religious spaces.

In the 4th category in the ADF studied questions about the parameters related to *Accessibility in the Surrounding Area* of the places of worship. The existence of ramps,

signage in the place and the condition of surfaces are some of the data analysed. Figure 11 shows that the percentage of compliance with accessibility standards is below 40%. The Church of S. Francisco, currently a museum church, without worship, achieves the highest result in relation to this surroundings category, but this is only 39%. Only one of the studied worship places, the Church of Carvalhido, has ramps to facilitate access.

In Categories 5 and 6 of the form, relating to the *Exhibition Area* and the *Sales Shop*, data were only processed where these features exist. For the exhibition

**Figure 11: Compliance with Church Accessibility Standards and Best Practice in the Surrounding Area**

Source of data: Authors' own elaboration

Figure 12: Percentage of Compliance of Standards and Best Accessibility Practice per Church in the Exhibition Area

Church	%
Sé Catedral	31%
Igreja de São Francisco	41%
Igreja dos Clérigos	41%
Igreja do Carmo	34%
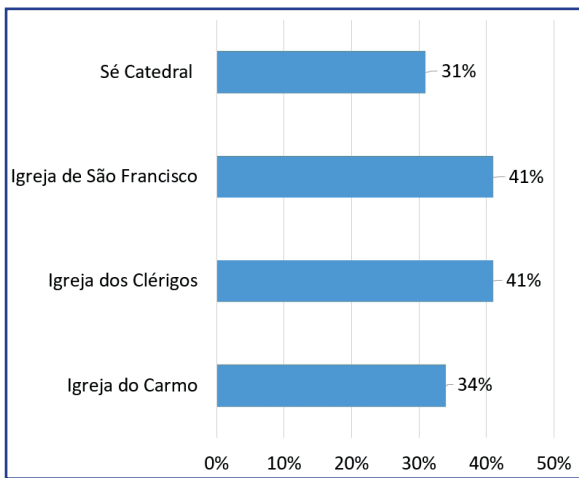
Source of data: Authors' own elaboration

Figures 13: Percentage of Compliance of Standards and Best Accessibility Practices per Church in the Sales Shop

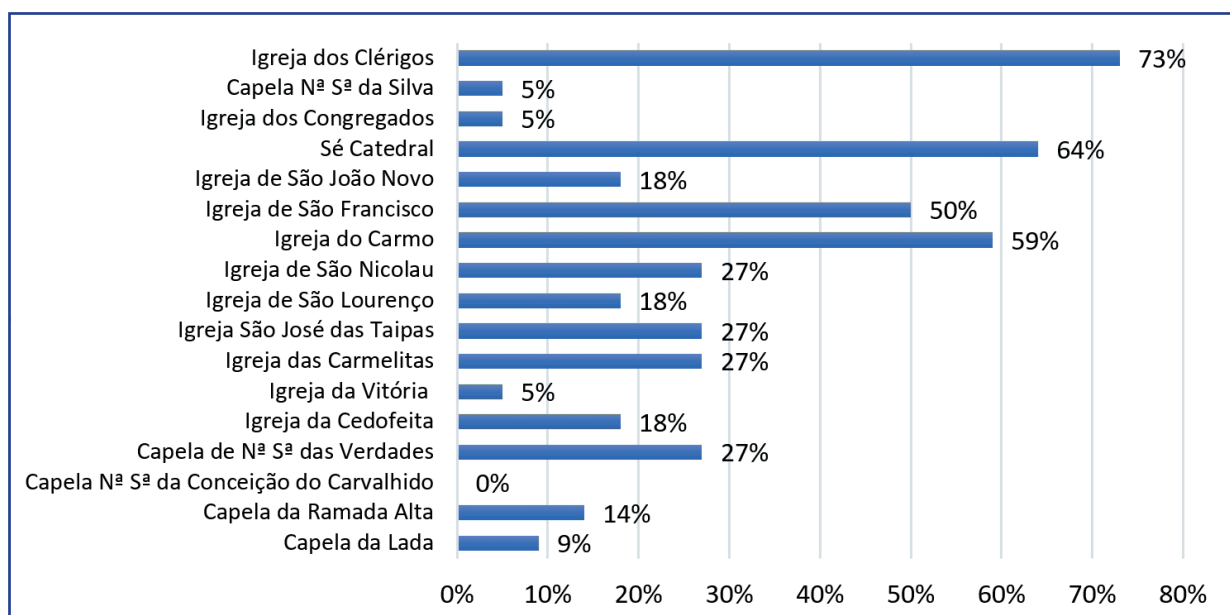| Church	%
Sé Catedral	48%
Igreja de São Francisco	55%
Igreja dos Clérigos	48%
Igreja do Carmo	61%
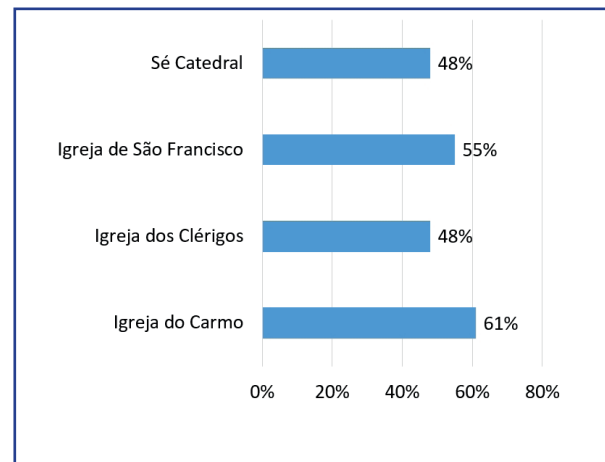
Source of data: Authors' own elaboration

areas, we assessed information regarding the existence of stairs, ramps and elevators, and in the sales shops, we analyse the surfaces, the exhibitions and their layout. In Figures 12 and 13 we see the percentage of compliance with accessibility standards for these two categories, which only exist in the Carmo Church, the Clérigos Church, the S. Francisco Church and in the Cathedral of Porto.

Finally, the last group of questions is related to *Information Accessibility and Communication* i.e. accessibility of information through digital platforms. The forms of communication of these institutions were evaluated, not only through traditional media, but also social networks, written press, television and radio, and their dissemination through websites and virtual visits. The various sites possess these elements to varying levels. For example, virtual visits are only possible in two churches: Carmo and Clérigos.

Figure 14: Compliance with Standards and Best Practices of Information Accessibility and Communication by Church (percentage data)

Church	%
Igreja dos Clérigos	73%
Capela Nª Sª da Silva	5%
Igreja dos Congregados	5%
Sé Catedral	64%
Igreja de São João Novo	18%
Igreja de São Francisco	50%
Igreja do Carmo	59%
Igreja de São Nicolau	27%
Igreja de São Lourenço	18%
Igreja São José das Taipas	27%
Igreja das Carmelitas	27%
Igreja da Vitória	5%
Igreja da Cedofeita	18%
Capela de Nª Sª das Verdades	27%
Capela Nª Sª da Conceição do Carvalhido	0%
Capela da Ramada Alta	14%
Capela da Lada	9%

Source of data: Authors' own elaboration

Figure 15: Means of Communication and Values Obtained Related to Communication Accessibility
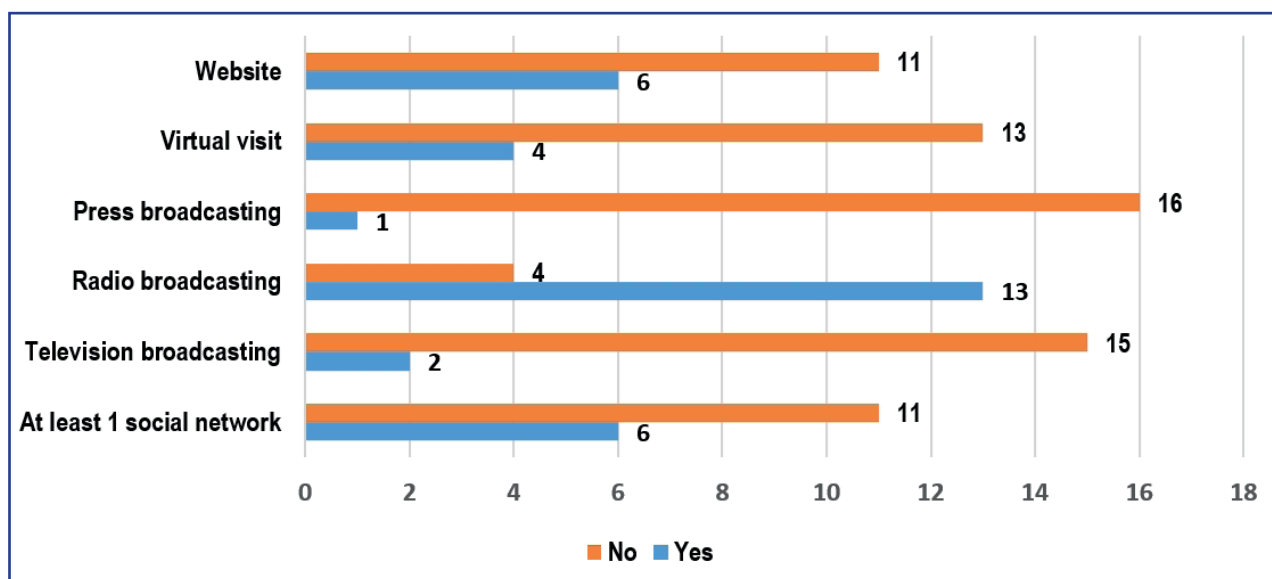
Source of data: Authors' own elaboration

Figure 14 shows the compliance with accessibility standards and good practices in this category, by place of worship. The overall average for this Communications category of investigation was 24.7%. The places of worship that stand out are Clérigos Church, followed by the Cathedral with 73% and 64% respectively, revealing a strong investment in its communication and dissemination activities. Conversely, the Chapel of Nossa Senhora da Conceição do Carvalhido has no information in the media.

The communication parameter is very weak, as the majority of sites do not present information either on websites, social networks or other means of communication (Figure 15). The analysis of the virtual accessibility and inclusive information was based on exploring a sample of websites directly related to the Coastal Way carried out in May 2019 and December 2021, to determine if there were any improvements. In this paper we only present the analysis of 16 websites, 10 related to the Portuguese Coastal Way and the municipality of Porto, and 6 web pages related to the churches of the sample studied in the municipality of Porto and which have this type of virtual information and reference to the Santiago Way.

This type of analysis quickly goes out of date. The data compiled and analysed in 2019 would not meet the

objectives of rigorous analysis that we set ourselves in more recent times. However, as a comparative element, it is a valuable aid in the evolutionary characterisation and measurement of the possible improvement implemented.

The degree of compliance with accessibility requirements stipulated by the World Wide Web Consortium (W3C) in their Web Content Accessibility Guidelines (WCAG 2. 1) of Directive (EU) 2016/2102 of the European Parliament and European standard EN 17161: 2019, is very low, as can be seen from the in Figures 16 and 17).

The Clérigos Church, the ex-libris of the city of Porto, with a big interest and investment in religious tourism, has the highest value of 5.6. This is followed by the Cathedral of Porto, also with numerous visitors and a focal point for pilgrims departing from the city of Porto, with 5.4. The other three churches and chapel have a score lower than 5. Carmo Church, which would be the sixth place of worship to be analysed, does not have its own website, and the link which is used redirects to Facebook and other pages in the tourism area.

The summary qualitative analysis was carried out in relation to six selected parameters, related to the display of accessibility:

Figure 16 - Degree of Compliance with Accessibility Requirements of the Virtual Content of Church Websites (December 2021)
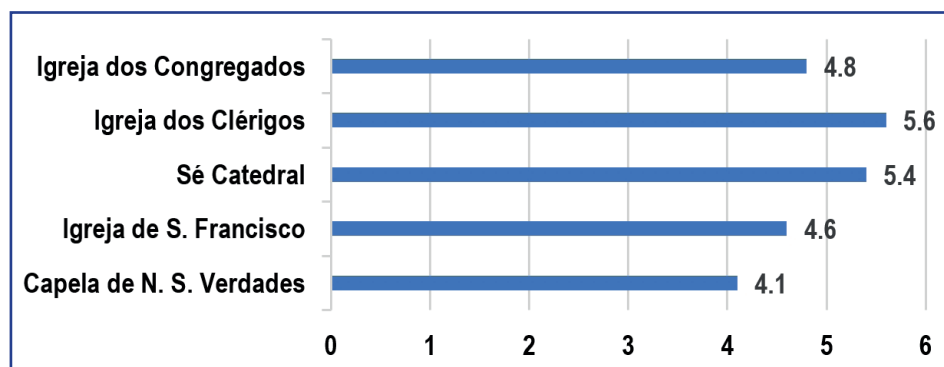
Source of data: Authors' own elaboration

- display of accessibility symbols;

- languages available;

- subtitling of photos;

- existence of search functionality;

- existence of references to the Portuguese Santiago Way

- themes of accessibility or accessible tourism.

This study revealed an almost total absence of these parameters. Display of the accessibility symbol, the subtitling of photos and references to accessibility or accessible tourism are non-existent. The entire provision of languages in addition to Portuguese is English only on the website of the Church of S. Francisco and four more languages (Spanish, German, Italian and French) on the website of the Church of Clérigos. The content search functionality only exists on the website of the Cathedral of Porto and reference related to the Portuguese Way is offered on the website Capela da Nossa Senhora das Verdades which has been restored and transformed into a Pilgrim Reception Centre since March 2018.

This website of the Pilgrims Welcome Centre is hosted by Porto City Hall, and, although in terms of quantitative analysis it presents the lowest value of all, 4.1, it has the particularity of allowing viewers to increase the size of the font, to be able to hear what is written on the site, and it is also possible to download the existing content to mp3, among other features. In terms of usability by pilgrims and other tourists, this is the most accessible page, although the provision of pilgrim information is limited.

All websites present very little information except for those related to religious themes or to their own church, with very little attention to accessibility. Unfortunately, in terms of virtual accessibility, the study carried out on the ten tourist promotion websites or webpages related to the Santiago Way, namely the Coastal Way, did not provide better results.

In quantitative terms the website that performs the best is the *Santiago Portuguese Way*, with 5.4 points in 2019 and 7.3 in 2021. Although it has improved, it does not reach the required value of 10. It is followed by the website of *the Caminho Português da Costa*, respectively with 4.5 (2019) and 6.2 (2021). All other sites have lower values, even the websites of *Turismo de Portugal* and *Visitportugal - Caminhos de Santiago* have worse results in 2021 than in 2019.

The *Turismo do Porto e Norte de Portugal* website went from 4.8 to 5.4. The *Porto City Hall Tourism* website and the *Turismo do Porto - Visit - Caminhos de Santiago no Porto* website, with 5.6 and 4.1 in 2019, ceased to exist and a new page was created, hosted in the Porto City Hall website, called *Caminhos de Santiago e Fátima|Comércio e Turismo* which presents a poor performance in terms of accessibility of 4.2.

After 2019, two more pages were created on the *VisitPorto* website, one related to the *Portuguese Coastal Way*, which scored 5.0, and another related to the *Central or Main Portuguese Way*, which only scored 4.9. Despite being very recent their degree of accessibility is very low.

Figure 17 - Degree of Compliance with Accessibility Requirements of the Virtual Content of Websites Related to the Coastal Way (2019 and 2021)
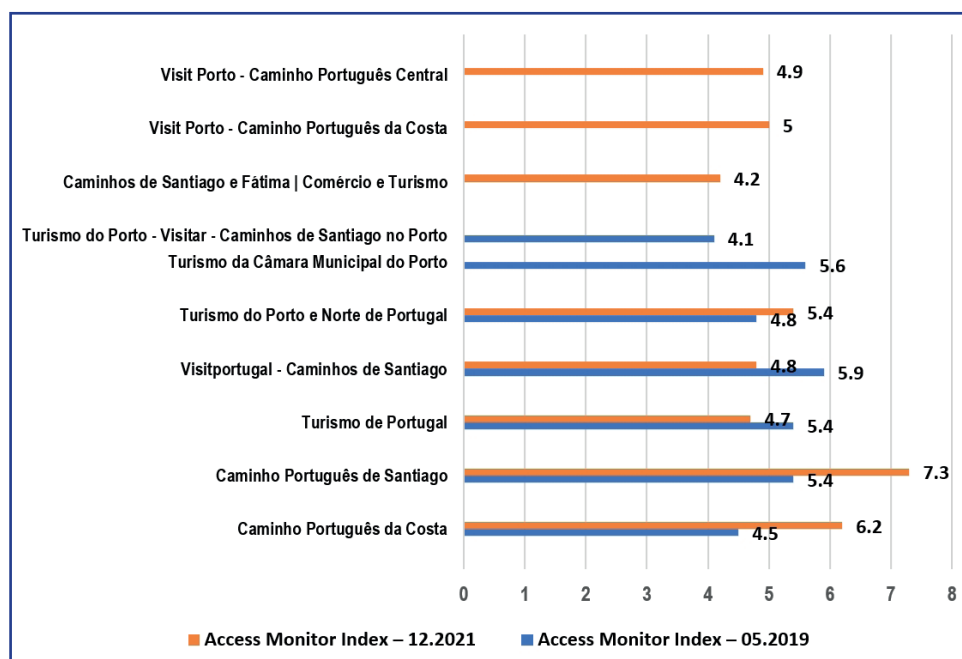
Source of data: Authors' own elaboration

The comparative study between the 2019 and 2021 data (Figure 17) reveals a poor focus on improving the virtual accessibility of these websites.

Summary qualitative analysis was performed in relation to the same six parameters mentioned above. Regarding the display of the accessibility symbol (Figure 18), no website has it, even if its use, in most of the sites analysed is mandatory, in terms of Portuguese and European Community legislation. The languages available are mainly Portuguese and English. The *Visitportugal* website offers ten languages. The subtitling

of the website photos only takes place in the pages of *Visitportugal* and the tourism website of the *Municipality of Porto*. A search functionality does not occur on three of the sample websites and a reference to accessibility or accessible tourism topics only exists on the Turismo de Portugal website. Of course, there are references to the Portuguese Santiago Way on all websites or pages analysed, since this is the reason why these sites were chosen for exploration in the current study.

Discussion and Final Remarks

Although religious spaces were not built with a consideration of accessibility issues, they can and should be adapted to promote the inclusion and integration of society. With the information collected in this paper, referring to the survey on the conditions of accessibility to places of worship, we verified the existence of several gaps in the level of physical, architectural and informative accessibility.

Outside the places of worship, access conditions are deficient and barriers must be eliminated. Various information materials relating, for example, to the name of the place of worship, its historical contextualisation and visiting times, should be offered. Also notable

Figure 18: Web Access Symbol

https://www.acessibilidade.gov.pt/

outside these places of worship, the lack of parking spaces reserved for people with additional needs, as well as a lack of space dedicated to the loading / unloading of wheelchairs.

Inside, although in several places it is difficult to eliminate uneven surfaces, typically, they are not properly marked. Likewise, many of these sites do not have a route which adheres to the regulated measures, and this makes it difficult to move a wheelchair.

There is no adapted bathroom in the cases except for the Church of S. João Novo, which presents an access route without any obstacle. However, given the pandemic situation, many of the churches were closed to the public, so we were unable to ascertain with accuracy the existence of exactly which toilets are actually adapted and in what way.

The average percentages of compliance with universal accessibility standards and good practices compiled in Table 4 are quite clear regarding the existing deficiencies. However, it can be seen that the places of worship most dedicated to religious tourism and the basis of

pilgrimages to Santiago and Fátima have initiated several recent solutions to improve their accessibility, improving the results, as we observed in the Churches of Clérigos, Carmo, S. Francisco and the Cathedral.

These accessibility conditions have also been improved on the Coastal Way, mainly due to the project *Valorisation of the Ways of St. James - Portuguese Coastal Way* (2017 and 2018) and there is now a coherent signage, easy to identify by pilgrims, as well as an entire strategically designed communication plan. However, we highlight the absence of texts at different levels of difficulty, texts in *Braille* and sound version alternatives. The findings also reinforce the need for an improvement of the *Portuguese Coastal Way* website so that it complies with the accessibility regulations established by WCAG 2.1.

The comparative study between 2019 and 2021 data reveals a weak commitment to improving the virtual accessibility of these websites, so that information for pilgrims, religious tourists and the community in general even if not meeting the WCAG 2.1 requirements, allows access to information, especially through the websites and pages related to the Coastal Way.

Table 4: Average Compliance and Good Accessibility Practices per Site.	
Place of worship	**Percentage**
Capela de Nossa Senhora das Verdades	18.10%
Igreja de São Francisco	40.40%
Capela da Lada	5.70%
Sé Catedral do Porto	37.50%
Igreja dos Congregados	10.20%
Igreja dos Clérigos	44.70%
Igreja das Carmelitas	20.00%
Igreja do Carmo	44.20%
Igreja da Cedofeita	9.80%
Capela da Ramada Alta	8.40%
Capela Nossa Senhora da Conceição do Carvalhido	13.50%
Capela Nossa Senhora da Silva	6.20%
Igreja de São João Novo	17.00%
Igreja de São Nicolau	15.00%
Igreja de São Lourenço (Convento dos Grilos)	10.20%
Igreja São José das Taipas	17.10%
Igreja da Vitória	14.40%
Source of data: Authors' own elaboration.	

These factors in addition to others, such as the creation of the Reception Centre of Pilgrims of the Portuguese Coastal Way, the publications of guidebooks and maps, the hosting of congresses and other events of dissemination, creation and improvement of official hostels, have all allowed the growth of pilgrims on this Way, thus, increasing the numbers of pilgrims on the entire Portuguese Way to Santiago. The analysis of the results provide quantifiable data that prove the initial hypothesis, concluding that, among other factors, universal accessibility solutions and improvements of information and communication implemented, in relation to the Portuguese Coastal Way, have all had very positive impacts, resulting in large increases in pilgrims and tourists along this Way, enhancing the sustainability of the regions through which they pass.

The Coronavirus Pandemic slowed this growth, especially in 2020, but the trend has already recovered somewhat in 2021, as we can see from the data collected and certainly the demand is expected to continue to grow in the coming years.

The difficulties of this study are largely related to the limitations imposed by the pandemic and some difficulties posed by the entities that manage the spaces.

Turismo de Portugal has focused its attention on the areas of virtual accessibility by creating the *All for All – Portuguese* tourism program, a platform and mobile application (Android and iOS) for dissemination of accessible tourism information based on another already existing and continually improving platform - *Tur4All Spain*.

Tourism as an economic, social and cultural factor is becoming increasingly relevant, so it requires us to provide more and better accessibility in order to achieve tourism with all and for all, even if we consider that total accessibility is utopian and unattainable. The developments that have been followed, up to the present time, has allowed people with additional needs to see their rights defended and recognised in society in general. This allows the integration of those who, at a certain point in their lives or throughout their lives, need additional types of support. In order to respond to the motivations and needs of a visitor with additional needs, any destination must take into account the specificities of the decision-making process regarding the conditions of the places to visit or travel through, before and during their stay, so that their decision is effective and the experience is full. In this context, religious tourism has enormous economic potential for the tourism industry. However, places of worship and their websites are still characterised by being poorly accessible.

To adapt to the needs of the market, the promotion of tourist destinations has evolved over time towards a more digital aspect. Distances have been shortened using digital platforms, such as websites, which become the 'face' of the online tourist destination. Such platforms must have the tourist offer of the destination updated and clearly presented, so that it is easily perceived by the tourist and fulfils their needs. Because of this it is crucial to understand how users will access websites and what they want when they access websites (Ryan, 2014). Within this new paradigm, it is vital that the policies adopted by each entity are always be based on accessible tourism being a reality for all.

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