Crossing frontiers between tourism and demography. An empirical analysis based on European travellers' behaviour

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Abstract

This paper aims to establish possible tourism demand scenarios of European travellers to Portugal based on the relationship with changing population structures. A combination of the EUROBAROMETER report 370 ("Attitudes of Europeans towards Tourism in 2013") and the cohort-component method for population projections will allow the development of different possible tourism demand scenarios. Following the European report, individuals who travelled in 2013 were most likely to live in a household with two or more individuals. Thus, if elderly couples are together till later in their life and in better physiological shape, it is possible that the number of elderly individuals travelling for tourism purposes will increase in the near future. If we can expect tourists from developing countries to be younger due to their demographic dynamics than those from developed countries, where the ageing population is growing fast, we can expect that the percentage of the elderly among tourists will increase. Furthermore, the 2013 European report found that the combination of socio-demographic variables, such as, age, population, gender, household dimension, country of residence and trip purpose explained tourism demand scenarios for Portugal, confirming that seniors and families evidence a paramount sense of importance for the destination. In the literature there is a lack of discussion about the effects of demography in the future and the role of an ageing population in tourism demand choice patterns. We aim to contribute to filling this gap. Consequently, we strongly believe that this paper contributes to the literature by introducing a new field of discussion about the importance of demographic changes in shaping travel trends.

Keywords: Tourism, Demography, Tourism demand, Trends, Demographic projections, Portugal

Acknowledgement:
This research is funded with a grant from the FCT – National Funding Agency for Science, Research and Technology, COMPETE, FEDER, Portugal 2020 under the project UID/HIS/00057/2013 (POCI-01-0145-FEDER-007702) – CIDEHUS

1. Introduction

Literature about tourism and demography is "dominated by discussions on sustainability, but the demographic perspective is largely ignored" (Yeoman, Hsu, Smith and Watson, 2011). Population ageing is occurring across the entire world and consequent challenges and constraints have been discussed mainly due to their impacts at the political, social, cultural and economic level (Bernini and Cracolini, 2015). According to EUROSTAT's demographic projections for 2050 (United Nations, 2012), several EU countries will undergo a profound ageing effect on their populations.

The main goal for the development of the present research is to conduct a study relating the effect of ageing on European travel decisions to visit Portugal. Based on the data extracted from European Commission's survey of EU tourists' attitudes (2014), this research intends to explore new demand patterns concerning the future of tourism in Portugal from a demographic perspective.

In 2050 28.1% of the European population will be over the age of 65, but countries such as Portugal, Germany, Spain and Italy will present higher values than the average European ageing rate. The last demographic projections for 2060 evidence singular scenarios for Portugal. Concerning the results for the population below the age of 14 in Portugal, an average growth rate of less than 39.4% is expected between 2013 and 2060, due to a decline in fertility, and consequently we will face an extreme ageing scenario. On the other hand, the elderly population group in Portugal is expected to face an average growth rate of 38.1% in 2060. Nevertheless, the ageing problem is not only registered in Portugal. For instance one of the most relevant international tourism markets for Portugal, the United Kingdom, faces an average growth of 78.9% of its elderly population between 2013 and 2060 (European Commission, 2014). In the case of countries with a high propensity to receive international tourism demand, the industry must pay attention to other factors that go beyond the price competitiveness, as is the case of ageing effects that may reflect a change in travel decisions, and as a consequence a selection of alternative destinations. For these countries (Portugal included), where tourism has become an important sector for the growth of the national economy, these effects should be considered. In the case of Portugal an evident relationship exists between international tourism demand, unemployment, income (GDP), relative prices and final household consumption (Serra, Correia and Rodrigues, 2014). Therefore, population characteristics that influence travel decisions such as age, household size, travel companions, income, and behavioural intentions, among others, will be considered in this exploratory study. As part of this societal challenge, ageing promotes demographic changes in modern societies and creates new challenges, e.g., creating and/or managing new tourism products, such as Health and Wellness, Medical Tourism, and Cultural and Creative Tourism. Additionally, it is also necessary to improve and readapt all non-tourism services, such as public health and transport facilities for the development of tourism, mainly due to their implications in travel choice behaviour (Bernini and Cracolini, 2015; Nickerson, 2000; Reece, 2004). Furthermore, the increasing propensity of senior travellers to participate in tourism has increased over time (Bernini and Cracolini, 2015).

Therefore, in this context, we aim to:

- Identify the ageing characteristics of international tourism demand in Portugal;
- Depict the socio-demographic and typographic characteristics of international tourism demand in Portugal;
- Relate the population pyramid structure and international tourism demand in Portugal;
- Suggest tourism demand scenarios supported by demographic projections.

This study is organized as follows: The next section presents a brief contextual setting of international tourism demand flows between 2013-2015. Section 3 discusses and summarizes the theoretical arguments in order to show the relation between demographic characteristics and tourism choice patterns. In addition this section also addresses the growing importance of the ageing phenomenon on future travel decisions. A fourth section presents the methodology and the data set considered in the present research. The results and the discussion of the findings are provided in the fifth section. The sixth section summarizes and presents the conclusions, implications, limitations and perspectives for future research.

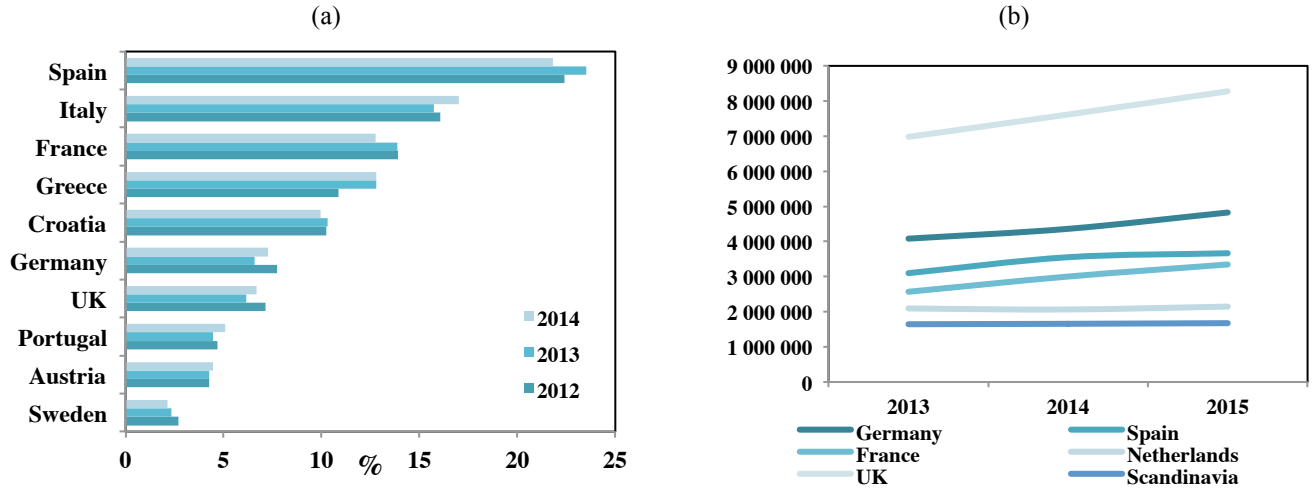
2. Contextual settings: international tourism demand in Portugal (2013-2015)

Between 2012 and 2014, the top 10 European destinations were: Spain, Italy, France, Greece, Croatia, Germany, United Kingdom, Portugal, Austria and Sweden (Figure 1a). Revising the EU tourists' attitudes in 2013, 2014 and 2015, we observe that within the 10 countries, four are southern, characterized by the lowest-low fertility rates (below 1.3 children per woman) observed in Europe since 1990s. Furthermore and beside the lower fertility level, Portugal was also acknowledged in 2011 as the 6th most aged country in the world (Mendes and Tomé, 2014).

Additionally, Portugal is part of the west coast region of Europe, recognized as an international destination for tourists. As a result of its climate, beautiful Atlantic coast and the richness of its culture, wine and gastronomy, in 2015 it reached 34.425 million international overnight stays (Turismo de Portugal, 2016). At the end of 2015, there were 48.938 million overnight stays in Portugal, of which 70% were foreign and 30% were Portuguese tourists. Concerning foreign tourists' overnight stays, 70% are concentrated in six European markets (the United Kingdom; Germany; Spain; France; the Netherlands and Scandinavia), as can be observed in Figure 1b. Following the same Figure (1b), representing international overnight stays registered at the national level between 2013 and 2015 from the main international markets travelling to Portugal, an increasing pattern is evident for four main markets (United Kingdom, Germany, France and Spain). These

countries represent an average growth rate of 14.1% for the French; 8.9% for the British; 8.8% for the Spanish and 8.8 % for German visitors between 2013 and 2015.

Figure 1. Top ten ranking of European tourist distribution by main holiday destination in 2012, 2013 and 2014 (a) and International overnights stays registered in Portugal between 2013 and 2015 (b)



Source: Attitudes of Europeans Towards Tourism (2013/2014/2015) and Turismo de Portugal (2015). Authors' computation.

3. Theoretical background

Following the flash EUROBAROMETER report 370 ("Attitudes of Europeans towards Tourism") for 2013-14, the individuals that travelled in that year are most likely to live in a household with two or more individuals. Thus, if elderly couples are together till later in their life and in better physiological shape, it is possible that the number of elderly individuals travelling for tourism purposes will increase in the near future. If we can expect tourists from developing countries to be younger due to their demographic dynamics than those from developed countries, where the ageing population is growing fast, we can expect that the percentage of the elderly among tourists will increase. The increasing migration flows recently registered in Europe may also strongly influence tourism dynamics. Young individuals are now more likely to visit a friend living abroad and parents visit their offspring. As stated in the Demographic Change and Tourism (DCT) report, demographic changes in modern societies have created a considerable amount of challenges for the development of tourism, mainly due to their implications for tourism participation behaviour (World Tourism Organization and European Travel Commission, 2010). Furthermore, an ageing population, increasing life expectancy, household composition, family structures and travel companions, population location and migration are key demographic issues to analyse in terms of the impact of such characteristics on tourism demand and travel behaviours. As stated in the literature, "the relationship between tourism and demographic changes, in modern societies, has not received much attention from tourism scholars" (Bernini and Cracolini, 2015). Furthermore, the literature shows that only few recent studies present an analysis of the relationship between these two dimensions (Yeoman, Shanzel and Smith, 2013), which gives a relevant, original and innovative feature to the study.

3.1 From an increasing life expectancy to new patterns of international tourism demand

Increasing life expectancy together with low levels of fertility, characteristic of developed countries, results in an ageing population. The continuous ageing process has an impact not only on country sustainability, due to the economic dependence of elderly population, but also on society dynamics. This extraordinary evolution of lifespan results from "an intricate interplay of advances in income, salubrity, nutrition, education, sanitation, and medicine", or to sum up, the result of large improvements in human health, "with the mix of varying over age, period, cohort, place, and disease" (Riley, 2001). Recently, it has been the improvements in survival rates after the age of 65 that contribute the most to lifespan extension (Oeppen and Vaupel, 2002). Additionally, individuals are not simply attaining older ages, but they are also healthier at older ages. These demographic changes will also consequently affect household structures and even lower levels of fertility will certainly affect their dimension. Thus, we can expect that the core household (the couple) is increasing their chances of staying together longer and healthier after retirement. Among other society dimensions, demographic changes will also influence households' travel and tourism choices. Concerning these effects, studies related with senior tourism have increased in the last years. A recent paper published by Tiago *et al* (2016), examines the niche of "grey" tourism (elderly tourists), through a market-segmented perspective and suggested a group of different types of grey tourists in Europe.

3.2 Travel decisions and demographic factors

The literature recognises that tourism is a complex economic and social phenomenon. Hence, the study of aspects of tourist behaviour has a wide dimension for understanding their needs, motives, motivations and attitudes during the decision stages before they travel. Factors such as cultural background, values, market communication, experience and consumer self-perception are described as important antecedents for the individual motivation to travel (Bandura, 1986). Thus, the tourists decision process undergoes a complex and inevitable impact of individual intrinsic and extrinsic factors. People travel more and more because they do not feel comfortable where they are, where they work and where they live (Krippendorf, 1986). According to this idea, one of the implicit motives for travelling is based on compensation behaviour or pursuing a status of happiness to take back home. This previous "escape behaviour" conducted by each individual during the initial decision process leads to what Krippendorf (1986) calls the "toward element", which is a positive motivation to find something, based on a conscious mental process. Tourist consumer behaviour reflects two distinct dimensions (Medlik and Burkart, 1981): determinants and motivations. In this way, the determinants of tourist demand emerge from the economic, social and political factors that limit tourist demand, regardless of individual motivations. Nevertheless, the decision to practise tourism is also made in accordance with the free/available family time, of all or most family members. Considering that the decision to practise tourism is made within the family, two key decision factors can be depicted: the availability of money to spend on holidays and time available for most family members. Determinants of tourism demand explain why the population of some countries has a high propensity to participate in tourism whereas that of other countries is low (Vanhove, 2005). Middleton, Fyall, Morgan (2009) grouped the determinants in three main groups: socio-economic factors, personal factors and tourism supply factors. Based on a behavioural approach, it is possible to analyse the decision process using non-price factors, concerning their motives, intentions, and expectations. Furthermore, socio-economic and demographic factors are incorporated such as population, income in country of origin, leisure time, education, occupation, immigration stock and qualitative factors including consumer tastes, tourist appeal, destination image, quality of tourist services, tourist preferences, special events, destination marketing and promotion, cultural ties, weather conditions and so on (Dwyer, Forsyth and Dwyer, 2010). Despite a considerable amount of tourism demand studies, the literature evidences a lack of discussion about the effects of demography on the future of tourism demand choice patterns (Tiago, Couto, Tiago, Faria, 2016; Yeoman, Hsu, Smith and Watson, 2011; Yeoman, Shanzel and Smith, 2013).

The insufficiency of studies exploring the relationship between tourism and demography is underlined and emphasized by Yeoman, Hsu, Smith and Watson (2011). However, in the literature, this analysis is supported by the increased focus on topics like age, family and household structures. Over the past five years, few authors have examined these topics from a tourism-based viewpoint, as indicated in Table 1.

Table 1. Evidence of demography and tourism studies

Authors (Year)	Demographic variables	Unit of analysis
Tiago et al. (2016)	age; household size	European senior tourists
Bernini and Cracolici (2015)	age; household size	Italian households
Chen and Shoemaker (2014)	age; gender	American senior leisure tourists
Alén et al. (2014)	age	Spanish senior tourists
Szromek, Januszewska and Romaniuk (2012)	age; probability of death; average life expectancy at birth; number of deaths and births per 1000 population.	Spa visitors - Poland

Source: Authors' compilation

In this paper, through an exploratory perspective, based on a cohort-component projection population, based on the age-group of each international tourism inbound country in Portugal, we identify the distribution of individuals who came on holiday to Portugal by age, average household size and country of residence.

4. Methodology

3.1. Data

Population data and death counts were taken from the Human Mortality Database (http://www.mortality.org). Our focus was on the five most representative countries concerning tourism demand for Portugal between 2013 and 2015: Germany, Spain, France, the Netherlands and United Kingdom. These five countries represent 65% of the entire overnight stays in Portugal. Scandinavia was excluded due to the different demographic characteristics among its group of countries.

To construct the proposed extrapolative population projection scenario, data for the selected countries corresponds to single age groups, and given that our main focus was the elderly population, the open-age group (last considered age) was 100 +.

Concerning the identification of sociodemographic characteristics of tourist demand, we also made use of EUROBAROMETER reports on "Attitudes of Europeans towards Tourism" drawn up in 2013, 2014 and 2015. Despite the year of implementation of the questionnaire, questions were made regarding the previous year. Consequently, our data refer to

the years 2012, 2013 and 2014, tourist choices and sociodemographic characteristics.

3.2. Methods

In demography, the cohort-component population projection approach is the most consensual method for population projections worldwide (Rowland, 2003; Preston *et al*. 2001), and thus it is our choice to produce population forecasts for countries under study. Furthermore, we also added a probabilistic component to the method with the inclusion of a coherent functional method. The coherent functional approach seeks to ensure that constructed forecasts for populations "maintain certain structural relationships based on extensive historic observation" Hyndman, Booth and Yasmeen (2013).

In order to employ functional data analysis it is essential to consider each element of the sample/population to be a function. Thus, we assume that there is a smooth function $f_{t,F}(x)$ applied to each demographic component separately. Let us see the female example:

$$y_{t,F}(x_i) = \log\left[f_{t,F}(x_i)\right] + \sigma_{t,F}(x_i)\varepsilon_{t,F,i} \quad (1)$$

where x_i is the centre of the age-group i, $\sigma_{t,F}(x_i)$ the amount of variation with age and $\varepsilon_{t,F,i}$ is an independent and identically distributed standard random variable. Similar notation is used not only for males, but also for fertility and migrations.

Following the product-ratio method developed by Hyndman, Booth and Yasmeen (2013), the square roots of the products $p_t(x)$ and ratios $r_t(x)$ of the smoothed rates are given by:

$$p_t(x) = \sqrt{s_{t,F}(x)s_{t,M}(x)} \;\&\; r_t(x) = \sqrt{s_{t,F}(x)/s_{t,M}(x)} \quad (2)$$

Then, applying functional time series models for previously defined products and ratios, we have:

$$log[p_t(x)] = \mu_p(x) + \sum_{k=1}^{K} \beta_{t,k}\emptyset_k(x) + e_t(x) \quad (3)$$

$$log[r_t(x)] = \mu_r(x) + \sum_{l=1}^{L} \gamma_{t,l}\psi_l(x) + w_t(x) \quad (4)$$

where $\emptyset_k(x)$ and $\psi_l(x)$ are the principal components resulting from decomposing $p_t(x)$ and $r_t(x)$. $\beta_{t,k}$ and $\gamma_{t,l}$ are the respective principal component scores. Additionally, $\mu_p(x)$ is the $p_t(x)$ curves mean and $\mu_r(x)$ the mean of $p_r(x)$. The error is given by $e_t(x)$ and $w_t(x)$ and have zero mean and are serially uncorrelated. Coefficients $\beta_{t,k}$ and $\gamma_{t,l}$ are result of the employment of time series models (for detailed information on the approach, see Booth and Yasmeen 2013).

Once again, a similar approach is used for model mortality, fertility and migration rates.

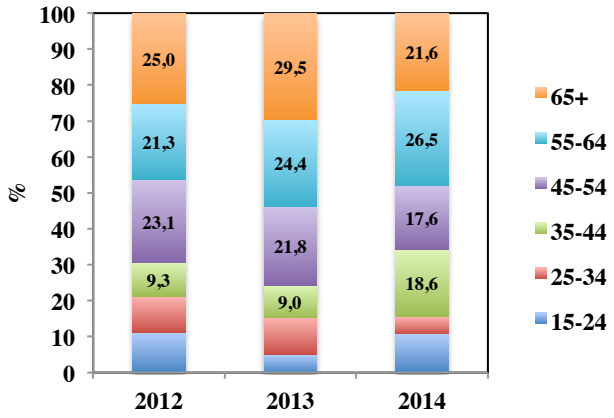
5. Results

Previously, in the *contextual settings* section (sec. 2) two main arguments were identified: *a)* firstly, Portugal was, over the past three years, the eighth holiday destination among Europeans; *b)* secondly, it was also identified that the principal nationalities of the international overnights stays registered in Portugal concern tourists from the United Kingdom, Germany, Spain, France, the Netherlands and Scandinavia. Excluding Scandinavia, these countries represent 65% of the tourist demand in Portugal.

As already explained previously in this study, to achieve our main goal, we focused our analysis on tourism demand for Portugal in the EUROBAROMETER report 370 - "Attitudes of Europeans towards Tourism in 2013", where the respondents identified their main holiday destination (for comparison purposes, 2014 and 2015 reports were also used). Based on this data, our *first* main goal was to identify their distribution by age group and household size considering the main identified nationalities and extend the analysis throughout the available years.

If we consider the Attitudes of Europeans towards Tourism samples from 2012, 2013 and 2014 represented in Figure 2 (see data section for any additional clarification), we identify an increasing proportion of those aged 55-64 and aged 65+. From our data, 2013 was the year with highest proportion of elderly foreigner tourists in Portugal (age 65+). Nevertheless, on average, individuals aged 55+ represented 50% of tourist demand across the 5 nationalities under analysis – German, Spanish, French, Dutch and British.

Figure 2. Distribution of individuals who came on holiday to Portugal by age groups in 2012, 2013 and 2014



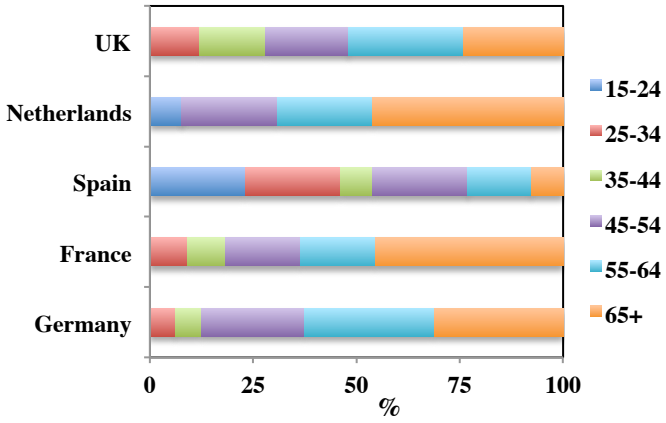
Source: Attitudes of Europeans Towards Tourism (2013/2014/2015). Authors' computation.

Accordingly to their nationality, and taking 2013 (Figure 3) as an example, we can identify Spain as the country from which younger tourists are choosing Portugal as their main choice for holidays. The distribution of individuals by age group and origin country in 2013, presented in Figure 3, also allows us to identify that Dutch and French tourists are the oldest ones.

More specifically, we believe that the Spanish, due to their geographical proximity to Portugal, present a cross-sectional representation in all age groups, with a similar proportion to those aged 15-24, 25-34 and 45-54. Thus, Spanish tourists in Portugal are generally younger than from other nationalities as we can observe in the figure. On the other hand, 52.0% of British tourists in Portugal are aged 55+, while in Germany the value rises to 62.6%, in France to 63.7 % and in the Netherlands to 69.3%.

From Figure 3, we also can conclude that for tourist demand in Portugal it will be very difficult to find young tourists with ages lower than 24.

Figure 3. Distribution of individuals who came on holiday to Portugal by age groups and by country of origin in 2013



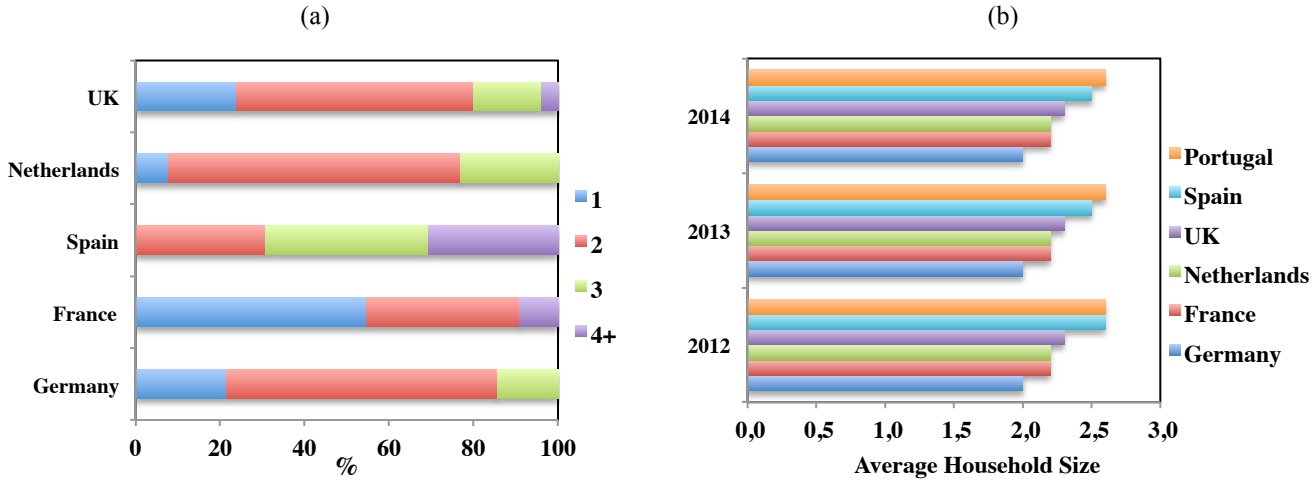
Source: Attitudes of Europeans Towards Tourism 2014. Authors' computation.

Figure 4 not only presents the household size of tourists that choose Portugal as their main destination (2013), but also the average size of households according to the country of origin. Figure 4a reveals that the most common household size of 2013 respondents is 2, corresponding to 69.2% among the Dutch, 64.3% among Germans and 56.0% among British tourists.

Additionally, it can also be seen that the French are revealed to have the lowest family size (54.5% lived alone at the time of the questionnaire).

Figure 4b, on the other hand, shows that the average household size by country of origin goes along with the results obtained for the 2013 sample: an average household size varies between 2.0 and 2.6 individuals among the analysed countries. Portugal and Spain are the ones with "highest" average household dimension here, while Germany presents the lowest value.

Figure 4. Distribution of individuals who came on holiday to Portugal aged 15 or over living in the same household, by country of origin in 2013 (a) and Average Household size by country of residence in 2012, 2013 and 2014 (b)

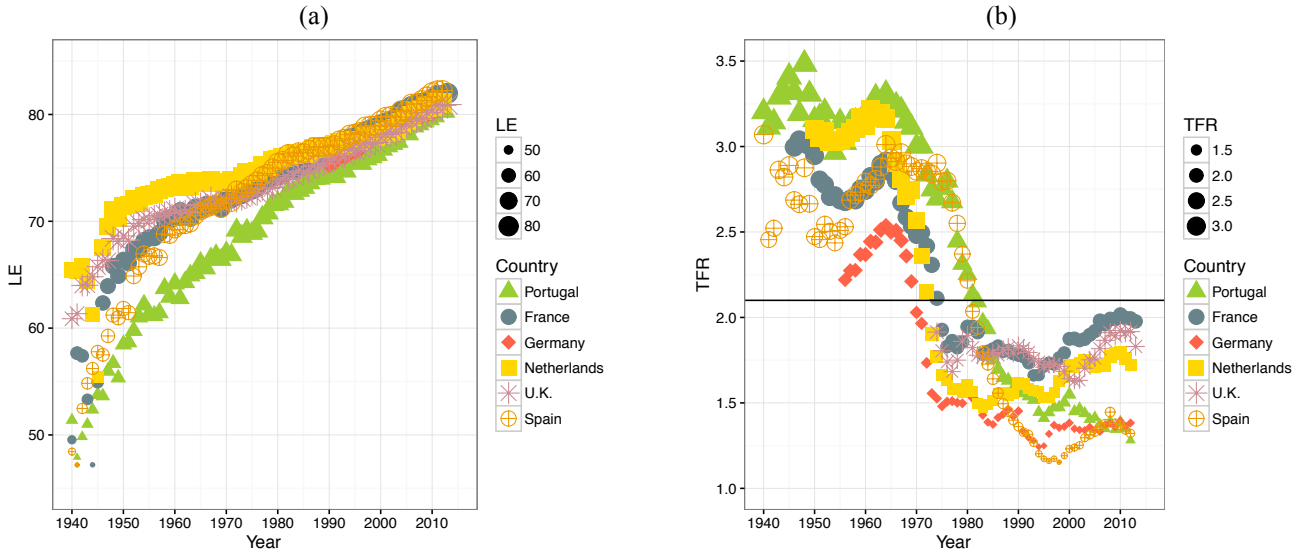


Source: Attitudes of Europeans Towards Tourism 2014 and EUROSTAT. Authors' computation.

Concerning the demographic development of the main countries under study, i.e., the analysis of mortality and fertility patterns over time, presented in Figure 5, we can realize that at the same time as life expectancy at birth (Figure 5a) increases with time due to continuous declines in mortality levels at different ages, the average number of children per woman (Total Fertility Rate - TFR: Figure 5b) was going in the opposite direction. Nowadays, all countries presented are under the minimum level necessary to replace generations (2.1 children per woman). Still, two main groups of countries can also be clearly distinguished among the 6 represented in the figure. If on one side we have Portugal, Spain and Germany, on the other side one can find France, the UK and the Netherlands. Portugal, Spain and Germany were even recognized often in the literature as the countries which, in the last decades, had the lowest fertility levels in Europe (Tomé, 2015; Goldstein *et al.*, 2009).

The observed evolutionary pattern in this Figure (5) not only reveals an ageing, but also a shrinking society. This has major implications on the sociodemographic structure of all countries under study without exception: *a)* with fewer newborns the average household size tends to diminish; and *b)* with extending lifespan households will also become older and older across time. Nevertheless, those that are nowadays considered elderly are achieving older ages with improving health.

Figure 5. Life Expectancy at Birth (a) and Total Fertility Rate (b) in Portugal, France, Germany, Netherlands, United Kingdom and Spain



Source: Human Fertility Database and Human Mortality Database. Authors' computation.

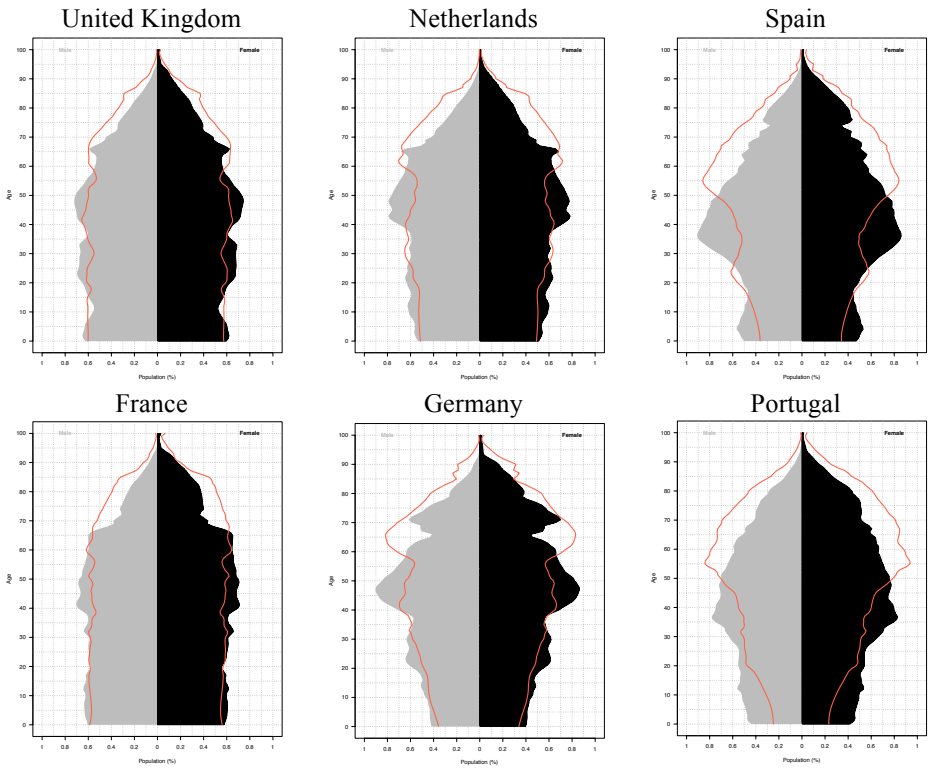
With the methodological framework presented in section 3.2 and based on data from section 3.1, we developed coherent population projections for 2031, by extrapolating past tendencies across all countries under study. Portugal was also considered here to evaluate the ageing tendency of the host country. Results are presented in Figure 6. Population pyramids are constructed in percentages, in order to allow cross-country comparisons, and as usual, males are represented on the left (grey) and females on the right (black). On the corresponding sides, the red lines represent the population projections for 2031.

The starting year represented in black and white varies according to the country's data availability: the UK and France - 2013; the Netherlands, Spain and Portugal - 2012; and Germany - 2011.

Despite different population pyramid shapes across countries, the result of its historical evolutions across time, and the associated ageing level, it can be seen that the tendency is to have larger tops and tiny bottoms, i.e., an extreme increase in the aged population, especially aged 65+, and a lower and lower population below the age of 20. Even in countries like the UK, the Netherlands and France, where younger individuals tend to diminish at a slower pace, the ageing process seems to be installed.

Thus, with the observed demographic characteristics of respondents and aged societies, it is expected that Portugal will become a destination of older and older tourists.

Figure 6. Coherent population forecasts for 2031.



Source: Human Fertility Database and Human Mortality Database. Authors' computation.

6. Conclusions

Together with the demographic changes that are resulting in extreme ageing in all developed countries without exception, tourism demand will certainly need a urgent re-adaptation of tourism offers in order to be able to keep its competitiveness.

On the other hand, since the household size is mainly composed by two individuals and they live longer and are healthier, spending a longer time in retirement and with more free time to enjoy life, it is expected that more older couples will be seen travelling for leisure purposes.

In fact, as was very recently examined by Tiago *et al* (2016), the niche of "grey" tourism (elderly tourists) may be the future of tourism all over the world.

Nevertheless, younger tourists should not be forgotten and in order to keep being attractive to this kind of demand, like Spanish or even Dutch tourists, tourism offers should not set aside any point of view.

From these results, some considerations emerge, mainly: the traditional mature international markets of Portugal seem to evidencing socio-demographic patterns that challenge all national tourism strategies for the next 20 years; the demographic projections combined with the tendency of repeat-buying behaviour and the a long steady relation with Portugal revealed by mature and emerging markets with Portugal (Correia, Serra and Andres, 2016) seems to gain paramount importance

considering trends in tourists motivations and preferences; as a consequence of this being highly involved with Portugal, it is suggested that tourists' information should meets the interest of more elderly markets, suggesting an update of marketing programmes targeted at senior citizens, as suggested by Chen and Shoemaker (2014) .

This research has some limitations that open paths for further research. Methodologically this research is based on secondary data, regarding answers for different purposes. For future research, our results suggest a possible inclusion of other variables to relate demographic trends to destination attributes and household characteristics, among others.

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