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ACCESS TO HIGHER EDUCATION IN PORTUGAL: AN ANALYSIS
OF THE IMPACT OF THE ECONOMIC CRISIS IN THE PATTERNS
OF REGIONAL DISTRIBUTION OF CANDIDATES

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Abstract

Higher education has experienced important transformations, namely a rapid and significant expansion and a growing diversification in the types of institutions and programs. This was sustained by high individual and social expectations regarding the future benefits of higher education. Due to the massification of higher education and the significant increase in the number of graduates, questions emerged about the sustainability of those benefits and the potential differentiation among graduates. Thus, the choice of institution and the field of studies have been regarded as increasingly important, as they may be associated with future differences in the returns to higher education. It is therefore relevant to study the mobility patterns of candidates to the extent of which they concentrate in certain regions, institutions, and programs.

This dissertation analyses these issues by looking at the Portuguese experience. In particular, we aim to answer two main and related questions: (i) how can the student's geographical flows be characterized regarding regional, disciplinary, and programmatic distribution? (ii) to what extent has the economic and social crisis between 2010 and 2014 affected these patterns?

The methodology used to address these questions is mainly quantitative, using national and comprehensive data to study the origin and destination of students and their choices regarding institution, field of study, and degree. We will analyse it for the period of 2008 to 2018 in order to identify possible trends and the potential impact of the crisis on them.

Geographic flows show clear trends in regional preferences. Most students prefer to stay in their region or in another geographically close. Despite the significant decline in demand for higher education, between 2010 and 2014, the supply remained very stable. The financial crisis enhanced the trends already observed with regard to geographical proximity and the weight that this factor has in the decision taken by the student. Nevertheless, there are relevant differences across higher education sectors, institutions and fields of study.

JEL codes: I20; I21; I23; I26; J24

Keywords: Higher education; Students' choice; Returns; Geographical flows; Crisis

Resumo

O ensino superior tem passado por transformações importantes, nomeadamente uma expansão rápida e significativa e uma diversificação crescente nos tipos de instituições e programas. Isso foi amplamente sustentado por altas expectativas individuais e sociais em relação aos benefícios futuros do ensino superior. Devido à massificação do ensino superior e ao aumento significativo de diplomados, surgiram questões sobre a sustentabilidade desses benefícios e o potencial de diferenciação entre os diplomados. Assim, a escolha da instituição e do curso tem sido vista como cada vez mais importante, dado que aquelas podem estar associadas a diferenças futuras nos benefícios. É, por isso, relevante estudar os padrões de mobilidade dos candidatos para entender a distribuição por regiões, instituições e cursos.

Esta dissertação analisa estas questões a partir do contexto português. Em particular, pretende responder a duas questões relacionadas: (i) como podem ser caracterizados os fluxos geográficos dos estudantes em relação à sua distribuição regional, disciplinar e institucional? (ii) em que medida a crise entre 2010 e 2014 afetou esses padrões?

A metodologia utilizada para abordar essas questões é principalmente quantitativa, utilizando dados nacionais e abrangentes para verificar a origem e o destino dos estudantes e as suas escolhas quanto à instituição, área de estudo e região. Será analisado o período de 2008 a 2018 a fim de identificar tendências e o potencial impacto da crise nessas tendências.

Os fluxos geográficos mostram tendências claras em termos de proximidade, sendo que a maioria dos estudantes de uma região prefere permanecer na mesma ou noutra região geograficamente próxima. Apesar do acentuado declínio da procura pelo ensino superior, entre 2010 e 2014, a oferta permaneceu bastante estável. A crise evidenciou as tendências já observadas no que se refere à proximidade geográfica e o peso que este fator tem na decisão do aluno. Por outro lado, há diferenças claras quando analisamos o comportamento da procura por subsector do ensino superior, instituição e área científica.

Códigos JEL: I20; I21; I23; I26; J24

Palavras-chave: Educação Superior; Escolha do estudante; Retornos; Fluxos geográficos; Crise

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Chapter 1. Introduction

Access to higher education has become a very important issue from an economic perspective. The choice of the field of study and institution causes major geographical flows that translate into changes in the region's economy and its respective attractiveness. Many decades of research has stressed that education can be considered as an investment in human capital (Mincer, 1993; Becker, 1994). Just like any other investment, costs and future benefits need to be assessed, mainly because employers tend to associate an individual's productivity to his or her level of education (Psacharopoulos & Patrinos, 2010). A person with a higher educational level has a greater knowledge, thus making him or her more productive. The skills gained from it make an individual more valuable to an organization, resulting in better remuneration. Additionally, education shows significant impacts on accessibility to the labour market and in several other areas of the individual's personal life, namely in health and savings (Grossman, 2006).

The decision to enrol in higher education, including the choice of institution and field of study, seems to be shaped by a variety of factors. As higher education become a very important choice in individual life, it is important to analyse which factors may influence that decision and their relative importance. The decision is influenced by several factors. Among these, mention should be made to a so-called investment rationale, reflecting all factors that may be considered long-term costs and benefits or sacrificing immediate benefits for future returns, such as financial aid, employability, access to the labour market and lifetime income (Furukawa, 2011; Krezel & Krezel, 2017). On the other hand, from an economic perspective, there are also so-called consumption factors, that include everything that can be considered as immediate benefits and present decisions, such as quality of life and pleasure of studying (Blaug, 1970; Becker, 1994; Krezel & Krezel, 2017). Furthermore, there are also social factors, encompassing all social opinions and pressures, such as the influence from family, friends and socio-economic background (Moogan & Baron, 2003; Tavares, Tavares, Justino & Amaral, 2008). This decision has become increasingly complicated and demanding over time.

The choices and benefits associated to higher education in Portugal have been subject to significant attention in recent decades. Since 1995, there has been a smaller wage gap between young graduates and those who do not choose to pursue higher education (Centeno

& Novo, 2014). Even so, there is a difference in earnings resulting from the specialization of the graduates' skills. Machado & Mata (2001) also corroborate these findings because even though education is valued in any job, the returns are significantly higher when individuals have a college degree.

During the past few decades, the Portuguese system has suffered several changes, due to the impact of the Bologna process and the economic crisis, leading to a potential shift in the relative importance of the factors described above in the decision-making process. Studies have shown that employability is the most important factor in attending higher education, and education is seen as a better way of access to the labour market (Tavares & Cardoso, 2013). In addition, the opinion of family and friends is more important than the information provided by the institutions or the ministry (Tavares et al., 2008). The decision to study is not the only decision to be made. Due to the massification of higher education, the decision of where to apply becomes increasingly relevant.

In the Portuguese case, there is a great competition in the search for specific regions and institutions, which causes regional concentration of students. This leads us to believe that demand patterns might be directly influenced by the concentration of population, wealth and accessibility to better economic opportunities in the job market. There has been a great effort, by some institutions to specialize in some field of study, in order to attract students that might be interested, therefore being themselves more attractive (Guerreiro, Queiroz & Teixeira, 2019). This might be a good strategy to keep the institutions relevant and to keep attracting students in the future.

The recent recession period in Portugal (2010-2014) has had major social and economic impacts on resident households. Thus, it is important to analyse how this may have affected demand of higher education. One of the aspects that can be considered is how the recession may have affected the level of regional distribution of demand, either by making the choice to move to another city more attractive (due to reduced employment opportunities concentrated in a few larger cities) or less attractive (the costs of moving to another city may have become strong deterrent). Therefore, this dissertation aims to analyse the changes in the regional distribution of demand to higher education, by looking at the periods before, during, and after the economic crisis. Thus, we will analyse the flows of the candidates to understand if candidates were willing to stay in the same region or willing to move to a different one, and to analyse possible differences by region, field of study and type of institution. This will be carried out through a series of indicators.

In a first instance, it will be discussed the decision to study in higher education. With the expansion in access and in the number of graduates, aspects such as the choice of institution, field of study and program have become increasingly relevant differentiating factors and their relevance will be ascertained subsequently. Then, the analysis will focus on the Portuguese case, namely by presenting its higher education system, the main trends observed and possible explanations for those developments. This will be followed, in Chapter 3, by the presentation of the methodology, justifying its adequacy and relevance for the research questions being considered. Chapter 4 discusses the main results of our empirical analysis and in Chapter 5 it will be presented the main conclusions of this study and their relevance, as well as the limitations and possible future research aiming at developing the analysis.

Chapter 2. An economic analysis of the demand of Higher Education

In this chapter, we will analyse, in the first instance, the massification of higher education, trying to extrapolate what the literature points out as the main motivations for the growing demand for higher education. Subsequently, the analysis of the choice's complexity when entering a higher education program will become relevant. As the objective of this dissertation is to study the Portuguese case, we will pay special attention to its main characteristics, namely its organization, the main observable trends in the demand and supply and the growing competition between students and between institutions.

2.1 Growth and Mass Higher Education – economic factors and motivations

Cantwell, Marginson & Smolentseya (2018) point out that the higher education system has been changing worldwide, especially in the last twenty years. This is due to three major trends: growth and massification of the system, growing competition between institutions and globalization. Massification comes across as the most universal one and the main reason of this change.

Several studies pointed out that attending college, as an alternative to the other options, has a direct impact on an individual's position in the labour market, namely regarding employability and earnings (Mincer, 1993; Becker, 1994; Thomas, 2000; Thomas, 2003). Even though those aspects are the most quoted throughout the economics' literature, they are not the only significant impacts of attending higher education. Grossman (2006) pointed out that higher education impacts on consumption patterns, savings and health and even self-esteem. Lochner (2011) also concluded that a higher level of education directly affects the criminal index, mortality and political participation. Furthermore, college graduates are less likely to experience periods of unemployment when compared to high school graduates (Thomas, 2000). These factors affect the higher education system on a global scale. Peracchi (2006) shows that the tendency towards higher income resulting from higher levels of education is present in several countries, such as Spain, Italy, Germany, Portugal and many others, suggesting a global trend. Psacharopoulos & Patrinos (2010) have extensively documented this, updating several previous works that have shown, over the years, a significant return to those with higher levels of education.

The economic analysis of the demand for higher education assumes that the higher

education sector has some similarities with other economic sectors. However, this sector also presents specific features. Thus, we have to develop some efforts to understand multiple factors that could affect students when they are deciding whether to apply for a higher education degree and where to apply (Krezel & Krezel, 2017). Higher education institutions are seen as service providers, expecting students to be aware of what awaits them in terms of education and its return. However, they are not, in general, seeking to maximize profits like firms. Thus, their behaviour is different and more complex. On the other hand, some argue that students can be seen as consumers, within this context, since they try to maximize the benefits that they could get from higher education, behaving like rational consumers (Tavares & Cardoso, 2013). Nevertheless, their behaviour is also moulded by a variety of factors.

Regarding the choice of where and what to study, research shows there are multiple factors that can influence a student. We will discuss them as investment, consumption and social factors. As far as investment factors go, reflecting all that may be considered long-term costs and benefits or related to sacrificing immediate benefits for future returns, there is an idea that the availability of financial aid is one of the most important (Furukawa, 2011; Krezel & Krezel, 2017). Factors as family income and overall costs tend to have a big impact, as well (Krezel & Krezel, 2017). Career enhancements and employment opportunities are also quoted throughout the literature (Moogan & Baron, 2003; Briggs, 2006). Besides this, consumption factors, reflecting immediate benefits and present decisions, assume a significant weight, as several studies have been conducted to try to understand their impact on the application process. Students tend to take into account the distance between their residence and the institute they intend to apply (Moogan & Baron, 2003; Krezel & Krezel, 2017), as it is expected that this factor will have a direct impact on the overall costs and many students have a harder time being away from their family. Institution's reputation and their marketing strategies come as important factors within the literature, although the former has a higher relevance than the latter (Moogan & Baron, 2003; Furukawa, 2011). The program of study, entry requirements and academic support facilities are also quoted (Moogan & Baron, 2003; Briggs, 2006). Finally, there are also social factors, encompassing all social opinions and pressures, which influence the decision. The literature points to parental education background as one of the most important: it seems that a student, whose parents have a higher education degree, is ten times more likely to access the higher education system (Tavares et al., 2008). Vocation and the opinion of friends, family or teachers are other

relevant factors (Moogan & Baron, 2003; Tavares et al., 2008).

2.2. The growing complexities of choice in Higher Education

Increasingly, due to the development of higher education and the exponential increase of graduates, the question is not only the decision to study but also in which institution, field of study and degree. This new decision spectrum has been increasingly studied to understand the advantages associated with these variables. The possibility of job prospects varies substantially depending on the field of study and educational institution, as well as their income (Thomas, 2000; Thomas, 2003; Varga, 2006).

Recent research has also pointed out that there is significant evidence of diversity among graduates. Graduates prior to the massification of Higher Education obtain better returns than current graduates do. This trend started since higher education ceased to be an elitist system and became accessible to a wider range of students (Peracchi, 2006). Jobs for recent graduates that are easy to learn may be the cause of frustration at the choice of higher education, because it makes them easily replaceable and with lower returns (Figueiredo, Biscaia, Rocha & Teixeira, 2017).

Studies conducted in the USA, Canada, and in the U.K. show that there is a difference in return depending on the field of study, pointing to the fields of law, business and engineering as the most profitable (Livanos & Pouliakas, 2011). There is a significant tendency to choose institutions and fields of study considered prestigious in order to obtain an easier access to the labour market (Livanos & Pouliakas, 2011). Facing major obstacles, such as changing demand patterns and increasing competitiveness, the focus of institutions has become the attraction of good resources and students with high potential (Simões & Soares, 2010).

At the time of application, the student makes a choice of program, institution and region, resulting in a trade-off between demand and supply in higher education, becoming relevant the analysis of these variables within the education system.

2.3. Demand for Higher Education in Portugal

Over the years, a phenomenon of massification of higher education has occurred. In the 1980s and 1990s, it appeared to be too elitist, allowing only families with greater financial capacity to bear these costs (Figueiredo, Teixeira & Rubery, 2013). Over time, this

trend was reversed and allowed other social classes to access higher education.

Regarding the Portuguese case, the education system is still something that deserves special attention because even though it is merging with the European average, there is still a long way to go. For example, in 2017 research shows that 47.95% of the active population has attended only elementary school or less than that. In comparison, only 18.94% of the European Union, under the same conditions, had the same level of education. With regard to higher education, the difference is not that significant but it is still worrying. In 2007, 24.02% of the Portuguese active population had a higher education degree in contrast to 33.98% of the European Union (Guerreiro et al., 2019).

Access to higher education in Portugal is below the European average. This is due to a much more recent massification of the higher education system, as the country has had historically low levels of qualification (Neave & Amaral, 2012). There has been a major transformation on the Portuguese scene in the last ten years and despite considerable improvements, only Germany and Italy remain with a lower penetration rate, meaning that a smaller percentage of students in these countries pursue a higher education degree (Guerreiro et al., 2019). Due to the fact that Portugal has had historically lower levels of education, when compared to most of the other European countries, the expansion of higher education became a political goal. The Portuguese economic backwardness was partly explained by the delay of the Portuguese education, which led to believe that if there was a boost in it, there would be a great progress within the economy and it would result in social benefits, equality of opportunities and social mobility (Figueiredo et al., 2013).

Figueiredo et al. (2013) show that there has been an increasingly difference between graduates, since the expansion of the Portuguese higher education system. The graduates wage premium¹ has been decreasing for younger graduates. However, older graduates do not seem to be affected as much, due to the massification of the higher education system. This suggests that younger graduates cannot perfectly replace the older ones or that the younger are replacing older and less qualified workers. Centeno & Novo (2014) also corroborate these statements, as well as Machado & Mata (2011), who indicate that, since 1995, the wage gap between graduates and non-graduates has been narrowing. However, they demonstrate that it remains profitable for a student to obtain a higher education degree, achieving, in general, a higher income when they enter the labour market. This evidence is explained by the growing specialization of work that comes from higher levels of education.

¹ Difference between wages resulting of the difference between levels of qualification.

Even though income is higher for graduates, the market presents a high heterogeneity regarding the type of qualification. The field of study is indicated as a variable that conditions the employment opportunities obtained by the graduate and determines the degree of substitutability. Failure with regard to employment in the field of study can dictate dissatisfaction with the choices made in education. The reputation of the institution in which they graduated is also important in the analysis of satisfaction (Figueiredo et al., 2017).

2.3.1. Access to Higher Education in Portugal – recent trends

Higher education in Portugal is mainly composed of universities and polytechnics, both public and private. There is a network of institutions that offer several higher education degrees in each of the Portuguese regions. The greater concentration of the population in coastal and urban regions has forced policymakers to develop strategies to ensure the sustainability of institutions (Lourenço & Sá, 2019). However, the Portuguese system is based on a policy of limiting the number of students who can enter higher education to prevent students from being directed to the fields of greatest interest, leaving the others with lower occupancy rates (*numerus clausus*), implying an obvious restriction on the supply side (Sá, Dias & Tavares, 2013). This was introduced after the democratic revolution, due to significant social pressures for expansion, and it was never reversed, due to a variety of reasons. In recent years, it has been regarded as a factor to limit the expansion of most attractive regions, institutions, and programs.

The number of vacancies available in the public sector has increased considerably since the 1990s, especially in public polytechnic institutes, surpassing, in 2010, the number of vacancies provided by the private universities (Sá et al., 2013). In the 2017/2018 school year, public university education had around 28000 vacancies for new students, being the largest subsystem. In the same school year, to confirm the trend mentioned above, polytechnic public education had approximately 22000 new places available while private university education had only 14544 (DGEEC & DSEE, 2018). There is an effort by the government to diversify the program offerings in order to allow a better fitting between supply and demand. There are universities, which, due to their location, offer a more diverse range of higher education programs, mainly because there is no competition nearby and it is easier to capture local demand (Portela, Areal, Sá, Alexandre, Cerejeira, Carvalho & Rodrigues, 2008). When supply is compared between subsystems, it becomes obvious that

public education has gained share while the private sector has lost (Sá et al., 2013; DGEEC & DSEE, 2018). In 2018, there was an effort to decentralize higher education, reducing the vacancies available for the Lisboa and Porto regions by 5%.

To access these institutions, a student can do it through different ways. The first and more common one is through the National Access Contest, which is done annually and organized in three different phases, making it possible for a student to apply to his/her leading choices more than once. The special track for international students is another possibility, only applying to international students that do not belong to the European Union and that are holders of a recognized high school degree. This contest takes place once a year and it allows the student to apply to any private or public institute with the exception of military and police higher education institutes. There is also the Special Contest for students over 23 years old, allowing students over 23 to apply provided they are not holders of another college degree. Apart from these, there are several other ways to access, such as: Superior Professional Technicians (TeSP); Holders of Technological Specialization Diploma; Holders of Other University Degree and Special Contest for Access to Medicine by Graduates. Due to its representativeness (about 70% of the new students), the first one is the most common object of study and it is also our focus. Accordingly, a student can choose six pairs of programs/ institutions at the time of application, by order of preference, thus placed by the grade point average (average of the marks obtained during high school plus national examinations) (Portela et al., 2008; DGES, 2020).

2.3.2. Growing competition among graduates and institutions

The demand for higher education in Portugal has been changing over the past decades due to demographic changes and adjustments made to the entry conditions (Portela et al., 2008). Studies conducted in the Portuguese context a few years ago show that there were evident trends in the destination institutions that students choose first, namely those universities located in the main metropolitan regions of Lisboa and Porto. In addition, there is a strong trend towards the preference of universities over polytechnics (Sá & Tavares, 2018). In 2011, the University of Madeira and the University of Açores had a higher concentration of demand, possibly due to their geographical isolation (Sá et al., 2013). Several factors may explain this trend, but the importance of the institution's attractiveness and location is emphasized. We can also speculate that the fact that these institutions are in

the large metropolitan areas of the country is a relevant factor in the process of decision-making. This trend constitutes a pattern of consumption in the higher education sector, which may be influenced by the concentration of population and wealth and the expectation that access to the labour market will be easier and employability (easiness in finding employment in the field of study) will be enhanced in those areas. If the analysis is made by educational rather than geographical area, there are also some differences. These may be related as well to employability's concerns, but can also be influenced by other factors such as social visibility and prestige.

The economic recession had an impact on demand because it conditioned household income, namely, those that already had significant financial restrictions. That is why it is important to see the extent to which it affected demand behaviour and priorities in terms of institution, field of study and region. Hence, the main objective is to understand the geographic flows and their changes before, during and after this period. Geographic flows tend to be similar over the years and intensify in two major areas: Porto and Lisboa (Sá et al., 2013). It is important to analyse this trend, as this preference can be explained by factors such as city's attractiveness or institution's reputation.

To understand the impacts felt by the crisis, it is necessary to ascertain how the system behaved before and how it has evolved afterwards. The economic crisis, although developing earlier, began during the year of 2010. Prior to that, the higher education system in Portugal underwent a restructuration caused by the Bologna process. The Bologna process was a reform of higher education aimed at increasing students' mobility and employability of future graduates, redefining the structures of higher education degrees. According to the Ministry of Science, Technology and Higher Education instructions, the restructuring in question had a deadline in the 2008/2009 school year. Consequently, pre and post Bologna programs coexisted during the 2006/2007 and 2007/2008 school years (Portela, Sá, Alexandre & Cardoso, 2009). For this reason, we will only consider data from 2008 onwards for our analysis, so that this process does not influence them.

Therefore, it is relevant to analyse the impacts of the economic crisis in the patterns of regional distribution of candidates. Consequently, we will try to characterize students' geographic flows according to regions, institutions and fields of study so we can later infer the impacts of the crisis on them.

Chapter 3. Methodology

The methodology to be adopted throughout this dissertation will be quantitative. It allows for greater clarity and reliability of data, helping to make the observable trends clear over the years and drawing some inferences from that behaviour. For the analysis, we will do it over the suggested period (2008 – 2018) in order to be able to speculate trends, calculating several indicators assessing levels of dispersion/concentration and higher/lower demand. This will make possible to understand which regions, institutions or CNAEF areas have undergone the greatest variations in terms of demand over time, which have become more irrelevant and which have gained relevance. Additionally, we will be able to observe the concentration of CNAEF areas in the national territory and crosscheck the information with that previously mentioned. A region or an institution with low demand will have greater difficulty in retaining local students, speculatively. A field with high concentration of demand suggests that students privilege some institutions/programs instead of spreading among many options available. We will also analyse the capacity of regions, institutions, and programs to attract candidate from other regions, as well as the loss of candidates to other regions by each region. We will assess the extent of which there have been changes in those patterns over time, namely to understand how these trends were affected by the economic crisis and how the system subsequently adapted.

Alternatively, we could follow a strategy of questionnaires or interviews to try to understand, from the student's perspective, the geographical trends and the motivations underlying those choices. This method would be more viable if the issue was geographically focused on an institution or even a region, mainly because these methods are better for contextualizing and getting details about specific situations. Given that the objective is to carry out an analysis at national level and over a period of 10 years, it is unrealistic to follow this approach. We would need a large number of interviews to attain a representative picture and, moreover, it would be problematic to question individuals about their choices after several years they have taken place.

To obtain this data we decided to calculate several indicators: demand index, dispersion index, regional retention index and mobility matrix. The first one mentioned, the demand index, will allow us to obtain information on the attractiveness of the object in question. It is calculated by dividing the number of students who chose a given region as their first option by the total number of places available for that region during the year under

review. If the demand index is greater than one, we can conclude that the demand in that region is greater than the supply. Vice versa also occurs, if the demand index is less than one it means that the region is not attractive enough to cover all available places. We will also calculate this index by educational establishment and by CNAEF area (1, 2 and 3 digits). For the same reasons, we will be able to assess attractiveness according to the institutions and fields of study. The main advantage in using this index is that it is adaptable to different aspects (region, institution and field of study) and the results are very straightforward to be interpreted. Additionally, it is an index that, being adjusted to the size of each region, institution or field of study, allows easy comparison between them. This index was based on the national study carried out by Guerreiro et al. (2019), about access to higher education in Portugal.

Additionally, we will have the opportunity to calculate the dispersion index. This index will allow us to analyse the concentration of CNAEF areas (1, 2 and 3 digits) in the national panorama, indicating whether they are very dispersed across the country or not. In order to extrapolate this information, we will add, by CNAEF area, the number of vacancies allocated to a field of study in specific regions divided by the number of vacancies allocated to that field at the national level, squared. For three-digit CNAEF areas, if the demand index is less than 0.2, we will assume that there is a high dispersion of the field. Higher than 0.8 will be considered a high concentration and in the range between 0.2 and 0.8, we will consider an average concentration. The main advantage in using this index is to allow comparison between the different fields of study and easy interpretation. This index was also inspired by the work developed by Guerreiro et al. (2019).

Another index that will be used for our analysis will be the regional retention index. This indicator will allow us to understand the region's retention capacity at the expense of the rest. It will be divided into two parts to incorporate the effects of the *numerus clausus* system. The first part will reflect the potential regional retention index, encompassing the number of students from a certain region that places that same region as the first option, divided by the total number of students from the same region. This will allow us to extrapolate what the region's retention would be without the *numerus clausus* system. However, and since access is conditioned by this implemented system, we will also calculate the effective regional retention rate, which will allow us to obtain the same information but based on the candidates actually placed. The main advantage in using this index is to be adjusted to the size of each region, allowing great comparability between them. The obtainable results

are clear and not misleading. This index was also inspired by the work developed by Guerreiro et al. (2019).

In order to understand how geographic flows have changed over time, we will also calculate a mobility index by region. In the first instance, we will calculate in order to understand which regions students from each region travel to. This will be calculated by dividing the number of students in one region that is placed in another region by the number of students from the first one. Later, we will do the reverse analysis: where students placed in certain region come from. This will be calculated by dividing the number of students in a given region that is placed in another region and the total number of students placed in the second one. The main advantage in using this index is to be adjusted to the size of each region, allowing great comparability between them. The obtainable results are clear and not misleading. This index was also inspired by the work developed by Guerreiro et al. (2019).

The General Directorate of Higher Education (DGES - MCTES) has provided the data that will be used. The database used include major details characterizing the students' preferences and characteristics such as: the students' home region at the time of application and the region, institution, and degree chosen by them. These data are collected annually supported by the information provided during the national access contest. Only the first access phase will be used due to the representativeness it demonstrates. It would be interesting to carry out this analysis using other types of data such as the school of origin, the student's performance during secondary school or even the socio-economic origin. However, we do not hold this data in our possession, and cannot carry out the analysis considering it.

This methodology will allow a great observation of the general trends during the period, taking into account the veracity and reliability of the data. Despite this, it will not be possible to consider the remaining factors that are taken into account in the students' decision.

Chapter 4. Empirical analysis

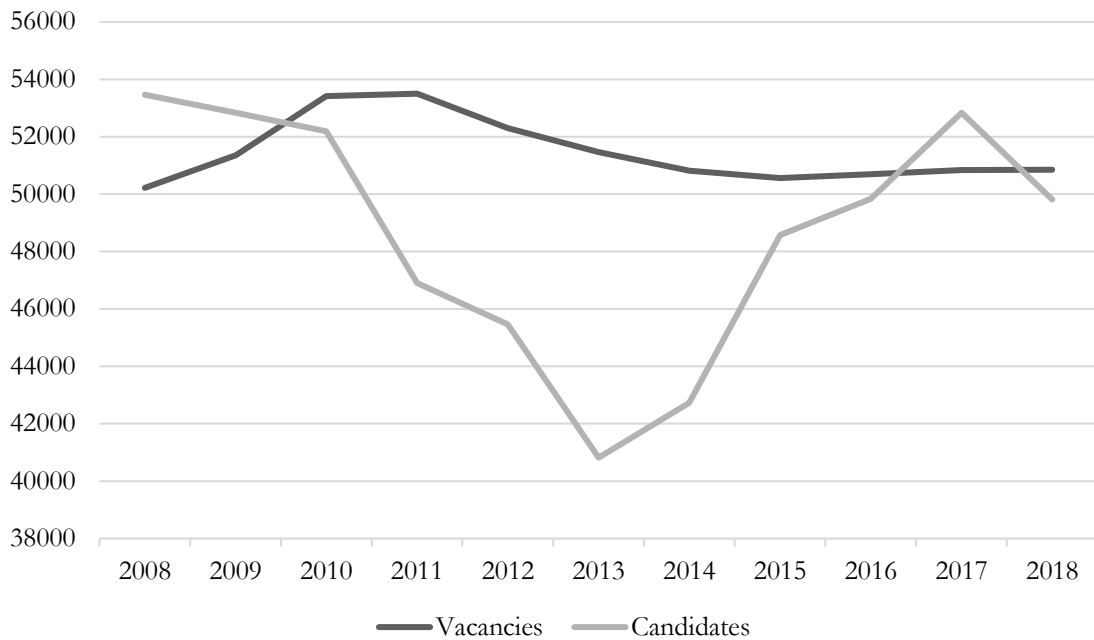
In this chapter, the different indicators mentioned above will be presented and analysed. We will start with a general presentation of the evolution of vacancies in higher education over time to demonstrate the rigidity of the offer versus the number of candidates. Subsequently, the demand index in relation to regions, institutions and areas will be addressed, in that order. The term regions will be used for convenience throughout this document to replace the more formal denomination of districts (*distritos*). Moreover, this will allow to include the autonomous regions of Açores and Madeira. An analysis of the dispersion index will be presented so that we can later justify the relevance of the demand index, crossing the two of them. Finally, the regional retention index and the mobility matrix will be presented to help us define trends in geographic flows.

4.1 Data overview

Over the years, higher education in Portugal has undergone significant changes with regard to its structure. Consequently, the number of candidates and vacancies available became good indicators of the evolution of higher education between the years 2008 and 2018.

Figure 1 shows the variation in the number of candidates in this period in comparison with the rigidity of the offer provided by Higher Education in Portugal. According to it, the general trend points to an initial sharp drop in the number of candidates, during the crisis period. This number only begins to return to the levels prior to the crisis period from 2014, coinciding with the end of this period. The number of vacancies reflects, in some way, this sharp decline, despite not being able to follow the variations felt by the number of candidates in the most precise way. The impacts were felt in such a way that only in 2017 (3 years after what is estimated to have been the end of the crisis) we can verify values similar to 2009. In 2018, the number of candidates declines again.

Figure 1 - Evolution of the number of vacancies and candidates (2008 – 2018)



Source: DGES

4.2 Demand Index

The demand index allows us to know the most attractive regions, institutions or CNAEF areas for future students of higher education by creating a ratio between the number of candidates for that region and the number of places available. Therefore, we will analyse this index for the different regions of the country, institutions and CNAEF areas. For the latter, the CNAEF areas will be broken down to 1, 2 and 3 digits, subsequently.

It is important to understand the attractiveness of all these components over time because it will allow extrapolating trends and conclusions about the impact of the crisis on them. We will be able to define, based on these indicators, the most regular choices of students and those that have not yet been able to stand out as attractive. A demand index higher than 1 implies, in itself, a number of candidates higher than the number of available places and the opposite, a low attractiveness. This will be the first index to be presented because it will give us a general idea of the various components over time and will then allow us to combine it with the others in order to obtain evident trends.

4.2.1. Competition across regions

In this section, we will analyse the demand index by region, which will allow us to define which regions are most attractive and which were most impacted by the crisis experienced during the period from 2010 to 2014.

Table 1 - Demand index by region (2008 - 2018)

Region	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Aveiro	1.08	1.02	0.97	0.8	0.96	0.83	0.87	0.92	1.01	1.08	1.02
Beja	0.47	0.44	0.42	0.35	0.29	0.24	0.19	0.25	0.24	0.26	0.28
Braga	1.3	1.24	1.09	0.96	0.97	0.92	0.86	1.04	1.14	1.25	1.15
Bragança	0.27	0.25	0.26	0.2	0.13	0.11	0.1	0.13	0.12	0.15	0.18
Castelo Branco	0.62	0.72	0.64	0.63	0.57	0.47	0.43	0.55	0.51	0.61	0.55
Coimbra	1.22	1.03	1.07	0.89	0.86	0.8	0.78	0.92	0.9	0.93	0.92
Évora	0.77	0.92	0.73	0.69	0.71	0.56	0.67	0.74	0.76	0.83	0.75
Faro	0.73	0.79	0.69	0.53	0.52	0.41	0.51	0.68	0.64	0.71	0.66
Guarda	0.24	0.29	0.23	0.19	0.16	0.14	0.15	0.2	0.23	0.21	0.22
Leiria	0.7	0.8	0.77	0.59	0.46	0.41	0.49	0.61	0.62	0.76	0.69
Lisboa	1.31	1.28	1.17	1.09	1.11	1	1.06	1.24	1.28	1.33	1.24
Portalegre	0.33	0.29	0.26	0.2	0.17	0.18	0.19	0.23	0.26	0.19	0.22
Porto	1.58	1.5	1.52	1.43	1.41	1.3	1.47	1.52	1.55	1.6	1.53
Santarém	0.39	0.39	0.35	0.3	0.25	0.2	0.24	0.24	0.27	0.27	0.35
Setúbal	0.87	0.75	0.72	0.61	0.51	0.53	0.55	0.69	0.75	0.84	0.85
Viana do Castelo	0.76	0.75	0.63	0.51	0.43	0.37	0.33	0.38	0.36	0.42	0.4
Vila Real	0.83	0.94	0.92	0.78	0.79	0.7	0.74	0.78	0.74	0.8	0.83
Viseu	0.45	0.49	0.45	0.33	0.32	0.27	0.28	0.34	0.39	0.42	0.41
R. A. Açores	0.86	0.78	0.75	0.7	0.66	0.58	0.54	0.67	0.64	0.66	0.6
R. A. Madeira	1.74	1.47	1.33	1.19	1.06	0.93	0.95	1.14	0.98	1.06	0.99
Total	1.06	1.03	0.98	0.88	0.87	0.79	0.84	0.96	0.98	1.04	0.98

Source: DGES

According to Table 1, it is evident that the regions of Porto and Lisboa are the most sought after, therefore having higher demand indexes, constantly greater than or equal to one, demonstrating the polarization of the Portuguese educational system. The region of Madeira also presents high rates, mostly explained by its geographic component and the restrictions on mobility that result from this. The regions of Aveiro and Braga, that have a high demand, are of great importance, being higher, in several years, than the number of vacancies offered by the institutions present in them. We should also underline the region of Coimbra, which being the birthplace of Portuguese higher education, maintains a higher attractiveness compared to several other regions of the country. The regions of Bragança, Guarda and Portalegre have a stable low demand, explained by the diversity of programs offered without any of them standing out nationally for their prestige

We can also point out that the years in which this ratio was lower coincide with the years of the crisis period, corroborating what we had already pointed out in the previous section. When we analyse in more detail, several aspects should be underlined. The year of 2013 was the one in which the overall demand was lower, coinciding with the year in which the crisis was felt at a more intense level, followed by 2014 when there was an upward trend. 2010 is the first year of the crisis and the first year in which the number of candidates in the country is less than the number of vacancies available. If before the crisis there were several regions with an index higher than 1, at the height of the crisis, only two regions, Porto and Lisboa, managed to maintain demand higher than the supply. The regions that stand out most negatively over the period are Guarda, Bragança and Portalegre, which during the crisis period had an attractiveness lower than one fifth of the available places.

4.2.2. Attractiveness by institutions

In this section, we will analyse the demand index by institution, which will allow us to define which institutions are most attractive and which were most impacted by the crisis experienced during the period from 2010 to 2014. This analysis is done taking into account the demand and supply by institution. We will divide it into two different tables to differentiate universities from polytechnics, because historically the attractiveness is quite different.

As we can see from tables 2 and 3, in general, universities are more attractive than polytechnic institutes. The search for more general and less specialized fields is notorious, although there is an approximation when the *numerus clausus* system comes into action. Within the polytechnic sector, the Porto and Lisboa institutes stand out as the most attractive for students, alongside some specialized schools (Nursing Schools of Coimbra, Lisboa, and Porto, and Higher Institute for Tourism and Hospitality Studies of Estoril). On the contrary, some polytechnic institutions have a very low demand index, which is in line with the indicated regions with the lowest demand. With regard to universities, the universities of Porto, Lisboa, Madeira and ISCTE are the most attractive. In contrast, the universities of Beira Interior, Évora and Algarve are the least sought after by students.

Comparing the demand index by region and institution, we can see that the same conclusions are observable. Porto, Lisboa, Madeira, Coimbra, Aveiro e Braga are the most attractive regions and the same is true of the respective institutions in those regions. The same is true for the less attractive regions (Guarda, Bragança and Portalegre) whose institutions are less attractive, as well. This trend can also be explained by the fact that the most attractive regions have universities, in contrast to the less attractive regions with polytechnics, as mentioned above. However, the polytechnic institute of Tomar is also less attractive than the others are. This institute belongs to the Santarém region, which compensates for this lack of attractiveness as a region with the Santarém polytechnic institute.

According to tables 2 and 3, the theory that the economic crisis, felt between 2010 and 2014 in Portugal, had direct impacts on access to higher education is corroborated. In general, both universities and polytechnics declined in their attractiveness during this period. The only polytechnic institutes that managed to maintain demand above supply throughout the analysis period were Nursing Schools of Lisboa and Porto, and the Institute for Tourism and Hospitality Studies. When analysing the same for universities, we noticed that the only ones that sustained demand higher than supply were ISCTE, the University of Porto and Nova University of Lisboa. All of these are located in the regions of Porto and Lisboa.

Table 2 - Demand index by polytechnic institution (2008 - 2018)

Educational Institution	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
National Maritime College	0.51	0.57	0.4	0.45	0.45	0.49	0.54	0.67	0.61	0.68	0.53
Nursing School of Coimbra	2.38	1.17	1.1	0.9	0.83	0.84	0.85	0.95	0.86	0.76	0.79
Nursing School of Lisboa	1.28	1.75	1.64	1.91	1.49	1.34	1.66	1.57	1.35	1.44	1.49
Nursing School of Porto	1.68	1.31	1.45	1.53	1.37	1.31	1.81	1.67	1.48	1.45	1.48
ESHTE ²	1.73	1.82	1.47	1.36	1.43	1.28	1.09	1.51	1.37	1.48	1.25
Polytechnic of Guarda	0.24	0.29	0.23	0.19	0.16	0.14	0.15	0.2	0.23	0.21	0.22
Polytechnic of Beja	0.47	0.44	0.42	0.35	0.29	0.24	0.19	0.25	0.24	0.26	0.28
Polytechnic of Bragança	0.27	0.25	0.26	0.2	0.13	0.11	0.1	0.13	0.12	0.15	0.18
Polytechnic of Castelo Branco	0.51	0.51	0.45	0.42	0.39	0.27	0.25	0.33	0.29	0.32	0.34
Polytechnic of Coimbra	0.9	0.84	0.83	0.7	0.56	0.54	0.57	0.64	0.69	0.78	0.72
Polytechnic of Leiria	0.7	0.8	0.77	0.59	0.46	0.41	0.49	0.61	0.62	0.76	0.69
Polytechnic of Lisboa	1.2	1.08	0.96	0.85	0.81	0.68	0.77	0.86	0.9	1.08	1.01
Polytechnic of Portalegre	0.33	0.29	0.26	0.2	0.17	0.18	0.19	0.23	0.26	0.19	0.22
Polytechnic of Santarém	0.45	0.46	0.42	0.37	0.29	0.24	0.26	0.27	0.32	0.34	0.4
Polytechnic of Setúbal	0.66	0.59	0.56	0.47	0.34	0.32	0.33	0.38	0.41	0.54	0.58
Polytechnic of Tomar	0.31	0.29	0.25	0.18	0.17	0.14	0.18	0.19	0.18	0.15	0.25
Polytechnic of Viana do Castelo	0.76	0.75	0.63	0.51	0.43	0.37	0.33	0.38	0.36	0.42	0.4
Polytechnic of Viseu	0.45	0.49	0.45	0.33	0.32	0.27	0.28	0.34	0.39	0.42	0.41
Polytechnic of Cávado and Ave	0.77	0.85	0.8	0.44	0.66	0.5	0.61	0.69	0.73	1	0.96
Polytechnic of Porto	1.29	1.12	1.1	0.99	0.91	0.82	0.92	1.01	1.14	1.37	1.28
Total	0.79	0.74	0.7	0.6	0.54	0.48	0.53	0.6	0.62	0.72	0.68

Source: DGES

² Estoril Higher Institute for Tourism and Hotel Studies

Table 3 - Demand index by university (2008 - 2018)

Educational Institution	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ISCTE	1.59	1.52	1.47	1.31	1.31	1.3	1.5	1.71	1.73	1.73	1.52
University of Beira Interior	0.7	0.89	0.79	0.8	0.71	0.61	0.56	0.71	0.67	0.82	0.7
University of Madeira	1.74	1.47	1.33	1.19	1.06	0.93	0.95	1.14	0.98	1.06	0.99
University of Aveiro	1.08	1.02	0.97	0.8	0.96	0.83	0.87	0.92	1.01	1.08	1.02
University of Coimbra	1.28	1.13	1.23	1.01	1.04	0.95	0.91	1.08	1.04	1.04	1.07
University of Évora	0.77	0.92	0.73	0.69	0.71	0.56	0.67	0.74	0.76	0.83	0.75
University of Lisboa	1.11	1.14	1.03	0.97	1	0.85	0.95	1.14	1.19	1.22	1.19
University of Trás-os-Montes e Alto Douro	0.83	0.94	0.92	0.78	0.79	0.7	0.74	0.78	0.74	0.8	0.83
University of Algarve	0.73	0.79	0.69	0.53	0.52	0.41	0.51	0.68	0.64	0.71	0.66
University of Minho	1.43	1.36	1.17	1.12	1.04	1.02	0.92	1.13	1.24	1.31	1.19
University of Porto	1.77	1.79	1.82	1.75	1.79	1.66	1.83	1.88	1.86	1.78	1.72
University of Açores	0.86	0.78	0.75	0.7	0.66	0.58	0.54	0.67	0.64	0.66	0.6
Nova University of Lisboa	1.56	1.47	1.4	1.26	1.29	1.24	1.29	1.55	1.65	1.61	1.49
Technical University of Lisboa	1.27	1.18	1.09	1.05	1.09	0.98	n/a ³	n/a ³	n/a ³	n/a ³	n/a ³
Total	1.26	1.24	1.18	1.08	1.1	1	1.05	1.2	1.22	1.24	1.17

Source: DGES

³ Technical University of Lisboa merged with the University of Lisboa on July 25, 2013

4.2.3. Attractiveness by fields of study

In this section, we will analyse the demand index by CNAEF area, which will allow us to define which fields are most attractive and which were most impacted by the crisis experienced during the period from 2010 to 2014. We will analyse the attractiveness by unfolding the CNAEF areas to 1, 2 and 3 digits. The demand index in the 3-digit CNAEF areas will be shown only for those fields that have, on average, during the period under analysis, more than 500 vacancies per year (the remaining fields, even if mentioned in this chapter, should be consulted in Annex 1).

Table 4 - Demand index by 1-digit CNAEF⁴ (2008 - 2018)

CNAEF (1 digit)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1. Education	0.68	0.82	0.91	0.66	0.67	0.56	0.55	0.65	0.69	0.7	0.43
2. Arts and Humanities	0.78	0.89	0.94	0.87	0.85	0.79	0.86	0.89	0.96	1.01	0.98
3. Social Sciences, Commerce, Law	1.17	1.17	1.09	0.91	0.98	0.95	1.07	1.2	1.22	1.3	1.23
4. Sciences, Mathematic and Informatics	0.64	0.62	0.65	0.66	0.75	0.7	0.64	0.75	0.83	0.9	0.88
5. Engineering, Manufacturing, Construction	1.01	0.87	0.77	0.69	0.61	0.58	0.55	0.75	0.81	0.88	0.78
6. Agriculture	0.72	0.72	0.73	0.68	0.64	0.45	0.5	0.61	0.63	0.65	0.58
7. Health and Social Protection	1.55	1.49	1.37	1.34	1.21	0.96	1.05	1.12	1.05	1.03	1.03
8. Services	0.97	0.9	0.87	0.74	0.8	0.72	0.81	0.88	0.83	0.95	0.87
9. Unknown or Unspecified	n/a ⁵	n/a ⁵	n/a ⁵	1.73	0.76	0.87	0.62	1.25	1.42	1.42	1.28
Total	1.06	1.03	0.98	0.88	0.87	0.79	0.84	0.96	0.98	1.04	0.98

Source: DGES

⁴ National Classification of Education and Training Areas

⁵ There are no programs allocated to this area.

The demand index by 1-digit CNAEF allows us to know the fields most sought by students, taking into account its vacancies. “Health and Social Protection” is the most attractive field, in general, for students followed by “Social Sciences, Commerce and Law”. It is not surprising that health-related programs stand out as the most sought after, taking into account the general knowledge of Portuguese higher education. On the other hand, “Education” and “Agriculture” stand out as the least attractive.

There is also a decrease in demand in all fields, in general, during the period of crisis. However, it is important to point out that despite the crisis between 2010 and 2014, the field “Sciences, Mathematic and Informatics” shows a very constant demand, which suggests that more technological fields may have gained relevance due to market needs and advances in technology.

Besides this aggregated view of all the fields and their respective demand, it is important to understand in detail what kind of variations have occurred over time. In order to do so, the demand indexes were calculated, disaggregating in two and three digits CNAEF areas, when it was relevant. The tables covering all 3-digit CNAEF areas can be found in Annex 1.

Table 5 - Demand index by 2 and 3 digit CNAEF - Education (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
144. Basic Education Teacher Training (1st and 2nd cycles)	0.79	0.96	1.05	0.76	0.8	0.64	0.66	0.78	0.82	0.82	0.31
14. Training of Teachers/ Trainers and Educational Sciences	0.68	0.82	0.91	0.66	0.67	0.56	0.55	0.65	0.69	0.7	0.43

Source: DGES

With regard to the "Education" field, when we look at 3-digit CNAEFs, we can see that, before and during the crisis period, "Basic Education Teacher Training" was highly sought after by students, when compared to the rest. However, this trend changes in the

post-crisis period and "Training of Teachers and Technological Trainers" becomes much more attractive, mainly due to the low weight of vacancies in the national supply, which makes sense in view of the growing specialization of the active population and the need for suitable trainers. "Education Sciences" remains quite constant even during the crisis period, suffering only a slight decline, even though the supply is not significant.

Table 6 - Demand index by 2 and 3 digit CNAEF - Arts and Humanities (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
211. Fine Arts	0.71	0.8	0.91	0.94	0.89	0.76	0.87	0.81	0.84	0.98	0.94
213. Audio-Visuals and Media Production	1.26	1.35	1.34	1.14	1.15	0.97	1.11	1.11	1.12	1.27	1.17
214. Design	1.08	1.15	1.03	0.91	0.95	0.98	0.9	0.87	0.97	0.91	1.06
21. Arts	0.99	1.08	1.09	0.98	1	0.89	0.95	0.95	0.98	1.06	1.04
222. Foreign Languages and Literatures	0.63	0.74	0.92	0.93	0.78	0.8	0.86	0.99	1.18	1.16	1.06
225. History and Archaeology	0.53	0.65	0.84	0.72	0.73	0.68	0.72	0.8	0.72	0.87	0.8
22. Humanities	0.5	0.62	0.74	0.72	0.63	0.63	0.71	0.8	0.92	0.94	0.89

Source: DGES

Regarding the "Arts and Humanities" field, it is broken down into two sub-fields: "Arts" and "Humanities". It is clear that the first is more sought after than the second one. Although, once again, 2013 presents itself as the year in which the demand was less expressive, it is important to note that the "Humanities" field maintains, even in that year, values higher than 2008 and 2009 and presents a strong post-crisis growth. The field of "Audio-visual and media production" clearly stands out within "Arts" as the most sought after by students, even with high supply. This may be explained by the growing need to use technology in the most recent professions and the growing use of internet and social networks for

business development. The field of “Performing Arts” and “Crafts” show a much lower demand, despite the low supply in the Portuguese context.

The broad field of “Humanities” was shown before that it was least attractive to students. This can be partly explained by the low demand for “Native Language and Literature” and “Philosophy and Ethics”, despite the low supply of these fields. These two fields attract few students possibly due to the lack of jobs available to work on after graduation. Throughout this dissertation, it has been stressed out, several times, that one of the reasons for students to pursue higher education is the possibility of entering the job market. The fact is that jobs in philosophy or related to the Portuguese language are not that often and there is not a high demand for them, on the market. On the other hand, “Foreign Languages and Literatures” presents itself as the most on-demand field to study on, within “Humanities”, despite the high supply within the field. There has been a growing concern about learning and mastering foreign languages because it can boost the ability to work abroad.

Table 7 - Demand index by 2 and 3 digit CNAEF - Social Sciences, Commerce and Law (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
311. Psychology	1.34	1.72	2.15	1.62	1.87	1.93	2.23	2.27	2.09	2.13	2.02
312. Sociology	0.74	0.86	0.86	0.75	0.78	0.73	0.76	0.82	0.84	0.93	0.87
313. Political Science	1.14	1.26	1.42	1.21	1.31	1.35	1.39	1.5	1.54	1.58	1.64
314. Economics	1.38	1.12	1.14	1.07	1.02	1.04	1.05	1.33	1.14	1.04	0.9
31. Social Sciences	1.13	1.18	1.3	1.11	1.17	1.18	1.27	1.4	1.3	1.31	1.24
321. Journalism and Reporting	1.93	1.89	2.25	1.88	1.84	1.92	1.94	1.84	1.84	1.84	1.66
32. Information and Journalism	1.6	1.6	1.92	1.63	1.54	1.66	1.66	1.68	1.68	1.69	1.52
342. Marketing and Advertising	0.91	0.95	0.84	0.74	0.72	0.72	0.98	1	1.04	1.34	1.15
344. Accounting and Taxation	0.61	0.61	0.54	0.43	0.47	0.43	0.47	0.54	0.54	0.65	0.65
345. Management	1.31	1.18	1.04	0.86	0.95	0.91	0.96	1.23	1.24	1.32	1.2
34. Business Sciences	1.02	0.96	0.86	0.73	0.8	0.76	0.85	1.02	1.04	1.16	1.09
380. Law	1.65	1.82	1.22	0.96	1.05	0.96	1.27	1.34	1.57	1.65	1.68
38. Law	1.65	1.82	1.22	0.96	1.05	0.96	1.27	1.34	1.57	1.65	1.68

Source: DGES

With regard to the "Social Sciences, Commerce and Law" field, it is clear that the sub-field "Business Science" is the least sought after by future students, even with the low supply demonstrated, and the rest have a very expressive demand. Of particular relevance is the demand for the "Information and Journalism" sub-field, which remains constantly and significantly higher than the supply, even during the crisis period, making it one of the least affected. This can be explained by the low vacancies available for this field nationally. It is also important to note that all of these subfields are in high demand when compared to others.

When it comes to "Social sciences", "Psychology" and "Political Science" maintain a high demand, constantly exceeding the verified supply, highlighting the fact that there is a low supply for the first, which explains the high index. "Economics" is also very much in demand, also exceeding supply, with the exception of 2018. Regarding the field related to Sociology, there is less interest on the part of students, which can also be explained by the difficulty in entering the labour market and the high supply.

The field of "Information and Journalism" is very on demand and therefore it is normal for the subfields that are part of it to be equally attractive. However, we can see that "Librarianship and Archive" falls far short from the rest, possibly explained by the technological innovation that allows to partially replacing the need for professionals in this field, despite the low supply shown by it.

"Business Science" is composed of several strands, which in itself justifies the lower demand for the field, in its totality. When we analyse in more detail, we can see that "Administrative Work" is not as attractive as "Management" or "Framework in the Company", which maintain very positive levels, during the period under review. However, while "Management" demonstrates a high demand taking into account its high supply, the others show a very low supply. "Finance and Banking" and "Accounting and Taxation" continue to have a lower demand than the offer provided, although it is expected by the initial degree of specialization they present.

"Law" is also a field in high demand, showing only a decline during the years of crisis, just like the pattern observed so far, but usually maintaining demand in excess of supply, even with high supply.

Table 8 - Demand index by 2 and 3 digit CNAEF - Sciences, Mathematic and Informatics (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
421. Biology and Biochemistry	0.89	0.81	0.86	0.9	1.12	1.02	0.97	0.92	0.91	0.98	0.96
42. Life Sciences	0.88	0.79	0.84	0.88	1.1	1.02	0.96	0.91	0.91	0.97	0.95
443. Earth Sciences	0.47	0.45	0.53	0.49	0.55	0.51	0.45	0.46	0.53	0.48	0.65
44. Physical Sciences	0.43	0.49	0.56	0.54	0.54	0.5	0.46	0.61	0.73	0.76	0.92
46. Mathematics and Statistics	0.46	0.52	0.49	0.64	0.7	0.61	0.54	0.75	1.01	1.12	1.03
481. Informatics' Sciences	0.59	0.57	0.5	0.41	0.3	0.27	0.24	0.6	0.63	0.71	0.57
48. Informatics	0.54	0.53	0.49	0.4	0.3	0.26	0.22	0.56	0.64	0.79	0.62

Source: DGES

With regard to the field of "Sciences, Mathematics and Informatics", what stands out immediately is the fact that the demand during the crisis period is higher than the pre-crisis period. This is due to the fact that the sub-fields "Life Sciences", "Physical Sciences" and "Mathematics and Statistics" show a growth during the crisis period, which can be explained by the perception that more specialized and technological programs would be the best option. Oddly enough, the "Informatics" sub-field, which would be perceived as the most technological field among the rest, shows a sharp decline during this period, subsequently showing rapid growth in the post-crisis period. However, and perhaps due to their specificity, these sub-fields present a lower demand, in general, than the vacancies available.

With respect to "Sciences, Mathematics and Informatics", we already saw that overall, the demand during the crisis period is higher than the pre-crisis period. However, when we see in more detail we can realize that not every of its components behaved the same way.

About "Life Sciences", we can see that it happened just the way it was described above and it is the main factor for it to occur. It is evident that in the period of crisis there

was an increase in demand for these fields, highlighting a slight decline in the post-crisis period.

However, when we look to “Physical Sciences”, it becomes evident that "Physics" suffered from a decline in demand during the crisis period, being offset by the "Earth Sciences" field, which proved to be quite constant. The same happened with “Mathematics” and “Statistics”. With the exception of “Earth Sciences”, all of the above show a low supply. While the first one showed a slight increase in demand during the crisis period, the latter suffered from a decline, with the exception of 2012, when it became suddenly more attractive. “Informatics” shows a decline on demand during the crisis, but quickly recovering since 2015.

Table 9 - Demand index by 2 and 3 digit CNAEF - Engineering, Manufacturing and Construction (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
521. Metallurgy, Metalworking	1.07	0.99	0.98	0.96	0.81	0.71	0.61	0.85	0.89	0.92	0.9
522. Electricity and Energy	0.95	0.87	0.57	0.41	0.18	0.11	0.06	0.08	0.11	0.14	0.15
523. Electronics and Automation	1.12	0.9	0.73	0.67	0.65	0.64	0.58	0.95	0.97	1.04	0.85
524. Chemical Process Technology	0.86	0.73	0.79	0.78	0.82	0.89	0.77	0.76	0.84	0.92	0.92
529. Engineering and Techniques - PNC ⁶	1.17	0.9	0.87	0.85	0.88	0.68	0.91	1.08	1.39	1.56	1.19
52. Engineering and Techniques	1.07	0.9	0.79	0.74	0.69	0.65	0.61	0.87	0.93	1	0.86
54. Manufacturing Industries	0.53	0.38	0.33	0.3	0.24	0.21	0.12	0.23	0.33	0.37	0.35
581. Architecture and Urbanism	1.17	1.37	1.16	0.95	0.9	0.8	0.89	0.71	0.72	0.73	0.74
582. Civil Engineering	0.89	0.71	0.67	0.48	0.18	0.1	0.06	0.13	0.14	0.17	0.27
58. Architecture and Construction	0.98	0.91	0.83	0.64	0.45	0.4	0.45	0.42	0.44	0.45	0.5

Source: DGES

⁶ Programs not classified in other areas.

With regard to the "Engineering, Manufacturing and construction" field, it is easy to see that "Engineering and Related Techniques" stands out for its greater demand, when compared to the others, despite the low supply shown by it. "Manufacturing Industries" presents very low values, revealing that it is less and less attractive, for the average student, to embark on this path, even though there is greater post-crisis growth. The field of "Architecture and Construction" suffers a lot during the crisis period and never returns to pre-crisis values, revealing the growing lack of interest in this field.

About the "Engineering, Manufacturing and Construction" field, we have already seen that "Engineering and Related Techniques" stands out for the high demand, when compared to the others. It becomes apparent that within this field, there are several variations. For example, "Electricity and Energy" was, during the pre-crisis period, a very popular field for students, almost equalling the offer at national level, even with a high supply. However, this demand declined dramatically with the onset of the crisis, never managing to recover. On the other hand, we have "Motor Vehicle Construction and Repair" which has always kept demand above supply, even during the crisis period, mainly justified by its low supply. Even though the rest felt a drop in demand, managed to return to values similar to those found before the crisis.

When we look at the example of the "Manufacturing Industries" field, some particularities stand out. "Textile, Clothing, Footwear and Leather Industries" does not present a high demand before the crisis, even reaching zero demand during the crisis. It is curious that in the post-crisis period, this trend changes, reaching more than supply. The number of vacancies are low causing that any change in demand has a major impact on the index. "Food Industries" is also in very low demand during this period and never reaches the values that we can see before. "Materials" suffers a negative impact but recovers in the post-crisis period. Both of this show few places allocated to them.

"Architecture and Construction" is marked by a greater demand for "Architecture and Urbanism" than "Civil engineering", both of which suffered a decline during the crisis.

Table 10- Demand index by 2 and 3 digit CNAEF - Agriculture (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
621. Agricultural and Animal Production	0.32	0.28	0.33	0.35	0.24	0.23	0.2	0.31	0.27	0.26	0.22
62. Agriculture, Forestry and Fisheries	0.28	0.26	0.3	0.32	0.2	0.19	0.18	0.28	0.26	0.26	0.21
64. Veterinary Sciences	1.4	1.37	1.41	1.21	1.31	0.88	1.06	1.15	1.22	1.26	1.16

Source: DGES

With regard to the "Agriculture" field, there is a clear disparity between the two sub-fields. "Veterinary Sciences" proves to be a very popular field for students, while "Agriculture, Forestry and Fisheries" falls far short from the supply. Both experienced a decline during the crisis period, especially in 2013. A curious situation in this field is the fact that there is a constant change on the vacancies for "Floriculture and Gardening". In some years, vacancies were available without any demand and in other years, there were no vacancies available. "Agricultural and Animal Production", with high supply, and "Forestry and Hunting", with low supply, showed declines during the crisis but recovered in the later period.

**Table 11 - Demand index by 2 and 3 digit CNAEF - Health and Social Protection
(2008 - 2018)**

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
721. Medicine	2.25	2.21	1.88	2.1	1.98	1.39	1.32	1.78	1.78	1.63	1.38
723. Nursing	1.27	1.23	1.21	1.27	1.02	0.9	1.05	1.02	0.96	0.98	0.98
725. Diagnostic and Therapeutic Technologies	1.38	0.92	1.03	0.87	0.81	0.7	0.65	0.82	0.68	0.65	0.73
726. Therapy and Rehabilitation	2.56	2.21	1.93	1.73	1.44	1.23	1.45	1.4	1.23	1.18	1.18
727. Pharmaceutical Sciences	1.7	1.62	1.59	1.46	1.23	0.76	0.9	0.78	0.74	0.77	0.84
72. Health	1.69	1.58	1.49	1.5	1.34	1.03	1.12	1.2	1.12	1.08	1.06
762. Social Work and Guidance	0.85	1.02	0.81	0.52	0.56	0.52	0.62	0.65	0.62	0.72	0.83
76. Social Services	0.85	1.02	0.81	0.52	0.56	0.52	0.62	0.65	0.62	0.72	0.83

Source: DGES

As expected by tradition in the search for health-related fields, "Health" proves to be, in every year, more sought after than the supply. In contrast, the demand for "Social Services" almost never manages to match the supply. The "Health" field is one of the most sought after when it comes to accessing higher education. In Portugal, there is the idea that this field will always have available, well-paid jobs and reputation. Overall, any related field has high demand rates, with the exception of "Diagnostic and Therapeutic Technologies", which is slightly different from the others.

Table 12 - Demand index by 2 and 3 digit CNAEF - Services (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
812. Tourism and Leisure	0.89	0.91	0.86	0.69	0.8	0.79	1.02	1.11	1.05	1.18	1.02
813. Sports	1.39	1.28	1.25	1.17	1.1	0.92	1.03	0.99	0.91	1.07	1
81. Personal Services	1.09	1.06	1.01	0.89	0.92	0.83	0.97	1	0.95	1.09	0.98
84. Transportation Services	1.08	1.13	0.77	0.81	0.93	0.96	1.07	1.31	1.23	1.31	0.99
851. Environmental Protection Technology	0.82	0.65	0.58	0.39	0.4	0.3	0.22	0.41	0.27	0.31	0.31
85. Environmental Protection	0.73	0.6	0.53	0.38	0.44	0.32	0.22	0.38	0.28	0.3	0.31
86. Security Services	0.49	0.34	0.54	0.31	0.22	0.26	0.13	0.3	0.37	0.29	0.63

Source: DGES

Regarding the "Services" field, the disparity in demand for the respective sub-fields is notable. While "Personal Services" and "Transport Services" have relatively high demand, "Environmental Protection" and "Security Services" prove to be less sought after by students. Overall, they all suffered a decline during the time of crisis. It is curious that the demand in the post-crisis period has never matched the values before the crisis period with regard to "Environmental Protection". A decreasing attractiveness of this field is evident even though environmental issues have gained prominence in the current society, over the past few years.

About the "Services" field, the disparity in demand for the respective sub-fields is notable. While "Personal Services" and "Transportation Services" have relatively high demand, "Environmental Protection" and "Security Services" prove to be less sought after by students. Overall, they all suffered a decline during the time of crisis. "Sports" stands out as attractive to students, even with high supply, while "Hospitality and Food" comes across as less relevant, with few places allocated to it. "Tourism and Leisure" stands out in the last years of analysis as more attractive than during the crisis, especially due to the development of tourism at the national level. This happens even with a high supply in this field. When it

comes to "Environmental Protection", none stands out for its attractiveness, even though environmental issues become increasingly relevant in daily life. Regarding "Security Services", "Protection of People and Property" is negatively evidenced, having had a zero demand during some years of the crisis and in the subsequent years, no vacancies were available for this.

4.3 Dispersion index

The dispersion index allows us to know the most dispersed CNAEF areas, in Portuguese territory. It is important to understand the dispersion of all these fields over time because it will allow highlighting the rigidity of supply, complementing the demand index. This index is very relevant because it is very different to obtain a high demand for a field of studies that exists in a few regions and a high demand for a field of studies that exists in several regions. Obviously, when calculating this index for the 1 and 2 digit CNAEF areas, the dispersion will be larger because it encompasses several sub-fields, which is where we should focus our attention.

Therefore, table 24 serves only as a mere indicator of comparison between 1-digit CNAEF areas, and too much relevance should not be attributed. As would be expected and because only the available vacancies are used and not the number of candidates for this calculation, the variations are never significant. Even so, we can see that the fields of "Social Sciences, Commerce and Law" and "Arts and Humanities" have a higher concentration, but it is merely indicative for the reasons mentioned above. With regard to the "Education" field, the index shows that "Training of Teachers and Technological Trainers" is conditioned to only one region over time because it has a maximum concentration, equal to one. On the other hand, "Basic Education Teacher Training (1st and 2nd cycles)" is an overly dispersed field of studies. Within "Arts", "Audio-Visuals and Media Production" is the field with greater dispersion and "Crafts" presents a relatively high concentration, indicating that it is available in few geographies. "Humanities" is far less volatile, with all fields falling within a moderate concentration range. "Native Language and Literature" and "Philosophy and Ethics" tend to be more concentrated, on average.

Table 27, presented in the Annexes, shows the dispersion index for the "Social Sciences, Commerce and Law" field. We can see that within "Social Sciences", "Psychology" is the most dispersed. In contrast, "Sociology" and "Political Science" are the least dispersed, with an average degree of concentration. Within the field of "Information and Journalism", it is quite evident that unclassified programs have a higher concentration, possibly because there are not many to be considered in such a way. Then "Librarianship and Archive" stands out as moderately concentrated, being less and less dispersed over the years, possibly due to the lack of interest on the part of the students in this field of studies and the consequent reduction of vacancies or closing of the underlying programs in certain regions. "Journalism and Reporting" remains quite dispersed over the years under review. "Business Sciences"

encompasses different sub-fields, explaining its reduced dispersion index as a 2-digit CNAEF area. Within it, we can find fields such as "Marketing and Advertising" and "Management" that present themselves as quite dispersed. On the other hand, "Finance and Banking", "Administrative Work" and "Framework in the Company" follow a trend of concentration, which may be due to the lack of interest in the underlying programs, causing geographic regions to restrict their teaching or abandon it completely. "Law" is a moderately concentrated field despite presenting values very close to a field of studies considered dispersed. The index for this field has been quite stagnant over the years.

In table 28, we can find the analysis made for the "Sciences, Mathematic and Informatics" field. Within this, we observe mostly scattered fields such as "Biology and Biochemistry", "Physics" and "Informatics' Sciences". However, some have a higher concentration such as "Environmental Sciences", "Statistics" and the not classified programs.

A detailed analysis by sub-fields was also made for "Engineering, Manufacturing and Construction". It should be noted that some maintain an average concentration such as "Motor Vehicle Construction and Repair", "Materials" and "Extractive Industries". The field of "Textile, Clothing, Footwear and Leather Industries" ceases to be taught in more than one region and reaches the index equal to one as of 2009. The rest have very low indexes, indicating a great dispersion, except for "Architecture and Urbanism" in which its concentration increases during the period under analysis.

Within the field of "Agriculture", "Agricultural and Animal Production" and "Veterinary Sciences" are undoubtedly the most dispersed fields. "Floriculture and Gardening" and "Forestry and Hunting" are more concentrated, especially the first one that does not even have vacancies available in several years, and in those that do, it presents an index equal to one, meaning that it is only taught in a single region of the country.

Health fields are generally much dispersed. Still, "Medicine", "Dental Sciences" and "Pharmaceutical Sciences" are slightly more concentrated than the rest, with the exception of the general field of "Health" and the unclassified programs that are quite concentrated.

Within "Services", most fields have a concentration between medium and high. "Transportation Services", "Natural Environments and Wildlife" and "Protection of People and Property" are very concentrated with the latter having no vacancies in 2014 and 2015. "Hospitality and Food", "Public Health Services" and "Safety and Hygiene at Work" are slightly concentrated, being present in few regions. The rest have a high dispersion.

4.4 Attractiveness vs dispersion

As mentioned earlier, the dispersion index is useful as a complement to the demand index because it is relevant to know whether a high demand occurs when there is a high or low dispersion. A high concentration means that the field of study is available in a few areas, thus creating greater geographic flows. However, a field of study that has a high dispersion exists in several regions, and the student can remain in a region close to the origin. The reputation of the institution becomes more relevant here, which can attract more students to some regions and less to others. Therefore, in this section we will crosscheck the information obtained by the two indicators.

When we compare the demand index with the dispersion index (table 13), we can observe that the rule is that lower the dispersion index, the lower the attractiveness. This is because, being more dispersed, the field of study will have, at the outset, a larger number of vacancies allocated and the more difficult it will be to obtain great attractiveness. However, fields with a high dispersion index, that is, a high concentration, tend to demonstrate greater attractiveness. There are some exceptions to this trend, namely in fields that, despite having a low dispersion index (high dispersion), maintain a high attractiveness: “Audio-Visuals and Media Production”, “Psychology”, “Journalism and Reporting”, “Management”, “Engineering and Techniques – PNC”, “Veterinary Sciences”, “Nursing”, “Therapy and Rehabilitation” and “Sports”. This can be explained by the attractiveness of the field of study as a whole, attracting several students from various regions and by the potential capacities to enter the job market after the conclusion of the cycle of studies.

Some fields of studies have an average dispersion index and low attractiveness. This include the following educational fields: “Native Language and Literature”, “Philosophy and Ethics”, “Librarianship and Archive”, “Business Sciences”, “Commerce”, “Finance and Banking”, “Environmental Sciences”, “Earth Sciences”, “Statistics”, “Informatics – PNC”, “Materials”, “Extractive Industries”, “Forestry and Hunting”, “Hospitality and Food”, “Public Health Services” and “Safety and Hygiene at Work”. This can be explained by the high degree of specialization shown by these fields of study or by the difficulty in accessing the labour market.

Table 13 – Comparison between demand and dispersion index by 3-digit CNAEF

		Dispersion Index		
		Low (<20%)	Medium (>20% and <80%)	High (>80%)
Demand index	Low (<0.7)	Education Sciences; Accounting and Taxation; Administrative Work; Chemistry; Informatics' sciences; Electricity and Energy; Food Industries; Civil Engineering; Agriculture and Animal Production; Environmental Protection Technology	Native Language and Literature; Philosophy and Ethics; Librarianship and Archive; Business Sciences; Commerce; Finance and Banking; Environmental Sciences; Earth Sciences; Statistics; Informatics – PNC; Materials; Extractive Industries; Forestry and Hunting; Hospitality and Food; Public Health Services; Safety and Hygiene at Work	Training of Teachers and Technological Trainers; Arts; Arts – PNC; Social Sciences; Information and Journalism – PNC; Engineering and Techniques; Textile, Clothing, Footwear and Leather Industries; Floriculture and Gardening; Health; Health – PNC; Natural Environments and Wildlife; Protection of People and Property
	Medium (>0.7 and <1)	Basic Education Teacher Training (1st and 2nd cycles); Performing Arts; Design; Foreign Languages and Literatures; Marketing and Advertising; Biology and Biochemistry; Metallurgy, Metalworking; Electronics and Automation; Chemical Process Technology; Diagnostic and Therapeutic Technologies; Social Work and Guidance; Tourism and Leisure	Fine Arts; Crafts; History and Archaeology; Sociology; Physics; Mathematics; Architecture and Urbanism	Humanities - PNC
	High (>1)	Audio-Visuals and Media Production; Psychology; Journalism and Reporting; Management; Engineering and Techniques – PNC; Veterinary Sciences; Nursing; Therapy and Rehabilitation; Sports	Political Sciences; Economics; Framework in the Company; Law; Motor Vehicle Construction and Repair; Medicine; Dental Sciences; Pharmaceutical Sciences	Information and Journalism; Business Sciences– PNC; Life Sciences; Informatics; Transportation Services; Unknown or Unspecified

Source: DGES

4.5 Regional Retention index

The regional retention index allows us to know the region's ability to retain students who are originally from there. It is important to understand this because it will allow highlighting the trends of mobility, complementing the demand index. We decided to separate what would be the potential regional retention index, taking into account the applications (table 14), and the effective regional retention index, which considers only the placements (table 15). This index is relevant to the analysis because it allows us to understand which regions prevent a greater geographic flow due to its attractiveness for local students and the tendency to remain in the region for several reasons, such as the costs arising from not doing so. In the first option, we will have visible the attractiveness of a region without taking into account the implemented *numerus clausus* system. In the second option, we will be able to observe the changes after and the extent to which regions gain or lose students.

Within the index of potential regional retention, and as expected, the regions of Lisboa, Porto and Coimbra stand out. Coimbra, as already mentioned, has a reputation in its favour with regard to higher education, which justifies the values observed. Porto and Lisboa, being considered the main economic and social poles of the country, demonstrate an attractiveness well above the average. Braga also stands out with a region capable of retaining students with a potential average retention of around 57%. On the other hand, several regions are unable to attract a large number of students from the same region, such as Guarda, Portalegre and Santarém, with an average potential retention rate below 20%.

Variations over the years occur and it would be expected that the retention rate would increase, during the years corresponding to the economic crisis, due to the geographical proximity that implies lower costs for students and their respective households. However, this is not the case for all regions. In fact, it only applies to regions whose retention capacity was already large, such as Lisboa, Porto, Braga, Coimbra, Aveiro, Évora and Vila Real. Interestingly, these regions have university, which shows that universities remained more attractive during the crisis period when compared to polytechnic institutes.

When we analyse the effective regional retention index, we notice the normalization of the values, that is, the regions that would potentially have a greater retention end up seeing their retention decreased by the *numerus clausus* system and the regions with a lesser retention obtain higher values. In the case of Porto, Lisboa and Coimbra this happens on a large scale, decreasing at least 10% on average.

Table 14 - Potential regional retention index (2008 - 2018)

Region	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	AVG
Aveiro	29.59	35.35	33.49	35.61	41.68	42.01	42.14	41.34	41.06	39.26	41.43	38.45
Beja	29.73	26.99	27.91	24.90	24.19	18.73	16.07	16.73	17.40	15.26	19.35	21.57
Braga	53.38	55.47	54.78	55.89	53.91	57.08	53.90	56.94	58.34	60.47	62.18	56.58
Bragança	30.85	30.31	28.25	24.13	22.12	19.20	21.66	22.04	17.32	24.54	27.66	24.37
Castelo Branco	50.63	50.78	49.07	52.80	53.86	50.29	43.57	49.69	44.75	47.93	47.17	49.14
Coimbra	81.83	81.72	82.14	82.53	82.38	83.08	83.39	82.36	81.13	79.33	81.82	81.97
Évora	41.32	42.95	43.79	45.79	47.81	43.63	48.28	46.42	45.50	44.61	49.44	45.41
Faro	49.76	52.22	47.91	45.66	43.22	36.83	42.09	44.13	43.62	43.18	42.32	44.63
Guarda	13.18	13.75	12.26	10.87	11.19	8.42	8.97	9.54	10.90	9.68	9.42	10.74
Leiria	30.45	34.49	33.55	32.28	29.49	28.86	30.17	30.83	31.01	33.22	34.10	31.68
Lisboa	86.97	87.57	87.57	89.02	90.14	89.05	89.05	88.29	87.63	87.05	86.73	88.10
Portalegre	26.99	21.96	20.22	17.88	14.48	17.77	16.43	16.83	15.60	11.27	16.45	17.81
Porto	77.75	78.15	78.54	80.73	79.90	80.90	83.16	80.24	80.08	80.40	80.02	79.99
Santarém	16.58	17.44	17.20	17.31	15.26	11.75	12.16	12.54	12.74	11.41	14.77	14.47
Setúbal	31.60	30.36	29.85	27.07	24.95	26.71	24.80	28.01	30.32	32.41	37.29	29.40
Viana do Castelo	23.81	27.77	25.06	23.24	20.20	18.57	16.22	19.44	14.54	18.05	19.15	20.55
Vila Real	32.38	36.34	36.27	37.91	41.46	36.48	39.55	37.14	35.33	37.29	37.67	37.07
Viseu	25.34	27.88	25.46	22.68	20.81	18.69	18.46	19.60	21.09	21.74	20.01	21.98
R. A. Açores	46.57	50.05	47.29	50.78	45.63	44.54	41.82	40.06	40.00	37.91	39.96	44.05
R. A. Madeira	59.26	53.81	52.39	50.76	50.40	49.24	45.88	47.04	42.33	41.41	43.90	48.77
AVG	41.90	42.77	41.65	41.39	40.65	39.09	38.89	39.46	38.53	38.82	40.54	40.34
AVG⁷	37.40	38.31	37.05	36.56	35.72	33.99	33.64	34.48	33.50	33.83	35.78	35.48
AVG⁸	33.90	34.47	33.10	32.27	31.00	28.65	28.41	29.34	28.16	28.66	30.58	30.78

Source: DGES

⁷ Excluding Lisboa and Porto.

⁸ Excluding Lisboa, Porto, Braga, Coimbra and Aveiro.

Table 15 - Effective regional retention index (2008 - 2018)

Region	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	AVG
Aveiro	23.89	29.83	28.10	32.48	33.04	36.53	34.25	34.87	32.11	29.87	33.71	31.70
Beja	30.93	27.77	26.32	23.68	25.81	20.05	18.62	18.95	19.71	18.98	19.14	22.72
Braga	38.34	40.53	43.29	46.48	45.40	47.24	46.03	45.69	46.01	43.59	48.37	44.64
Bragança	37.02	36.06	33.51	27.26	25.00	22.67	27.96	27.38	24.61	29.30	31.49	29.30
Castelo Branco	54.01	49.42	47.31	49.64	50.31	50.73	45.63	49.31	46.08	45.40	46.27	48.56
Coimbra	64.49	70.30	69.64	75.09	74.13	74.93	73.65	70.77	71.23	67.42	71.55	71.20
Évora	37.50	37.52	41.12	41.66	43.56	44.48	45.99	42.97	40.05	39.34	43.09	41.57
Faro	49.54	47.28	47.48	44.17	43.85	38.11	43.00	43.45	44.00	41.26	43.65	44.16
Guarda	17.12	16.15	13.23	11.71	13.60	9.05	11.11	11.48	12.15	12.32	11.93	12.71
Leiria	31.70	32.58	31.20	31.56	31.87	31.25	32.85	31.61	33.10	31.90	33.52	32.10
Lisboa	61.00	63.06	68.09	72.47	71.87	75.41	70.90	65.73	65.36	63.29	67.28	67.68
Portalegre	30.29	25.37	22.44	19.40	17.43	19.48	19.26	20.60	16.74	15.83	18.28	20.47
Porto	50.23	53.02	53.08	57.63	54.75	58.50	53.56	52.93	52.13	51.17	53.82	53.71
Santarém	19.96	21.01	19.29	18.78	17.19	13.36	14.42	15.78	15.06	14.99	16.54	16.94
Setúbal	32.61	31.96	30.44	29.99	27.83	29.83	28.26	31.13	32.49	32.36	34.79	31.06
Viana do Castelo	22.70	25.35	24.61	24.28	19.74	20.08	19.10	21.80	17.97	19.15	20.19	21.36
Vila Real	27.74	29.34	31.11	35.41	34.06	32.09	31.45	31.81	31.37	31.45	33.28	31.74
Viseu	29.06	29.98	28.43	24.75	23.02	20.77	20.68	22.66	22.56	23.19	23.60	24.43
R. A. Açores	41.96	44.48	44.78	46.80	44.04	43.81	41.70	38.22	39.09	35.84	40.84	41.96
R. A. Madeira	32.18	34.92	34.21	35.76	35.59	38.83	35.51	34.33	32.08	30.20	33.64	34.30
AVG	36.61	37.30	36.88	37.45	36.60	36.36	35.70	35.57	34.70	33.84	36.25	36.12
AVG⁹	34.50	34.99	34.25	34.38	33.64	32.96	32.75	32.93	32.02	31.24	33.55	33.38
AVG¹⁰	32.95	32.61	31.70	30.99	30.19	28.97	29.04	29.43	28.47	28.10	30.02	30.23

Source: DGES

⁹ Excluding Lisboa and Porto.

¹⁰ Excluding Lisboa, Porto, Braga, Coimbra and Aveiro.

4.6 Mobility index

Regarding the mobility indexes, we present two different types of indexes, as previously mentioned.¹¹ The first is presented taking into account the regional flows from a given region to the rest. The second reflects the percentage of students, in a given region, coming from the other regions. This index is relevant to the analysis because it allows to understand the geographic flows and the proximity of the regions, in the case of not applying to an institution belonging to the region of origin. Additionally, it is possible to verify the origin of the students based on each region and to extrapolate the weight of the other regions in the region under analysis.

If we analyse in detail, we notice that the effective regional retention indicator, previously detailed in table 15, is included in the first mobility index. Since this analysis has already been carried out, we will only focus on the remaining results obtained. Students move according to a number of factors that may be of more or less importance to them. Geographic proximity is one of them because it allows students to stay close to their family and in many cases to reduce accommodation costs and other inherent expenses. The trend of the first mobility index goes exactly according to this factor. As the years progressed, in our time spectrum, there is an increasing tendency to remain in the regions of origin or nearby. In the case of Aveiro, the trend has been, since the beginning of the period, to remain in the region or nearby regions (Coimbra and Porto). In 2008, the students who were placed in these regions represented about 60% of the total students from Aveiro. However, in 2013, when Portugal felt the financial crisis at its peak, the percentage of students who preferred to stay in a nearby region is around 68% of students from Aveiro. During our analysis period, we can also observe that these values returned to normal in the post-crisis years, and in 2017 this same percentage was only 62%, approximately. In the case of Évora, the same is true. In 2008, Évora and Lisboa were the main choices of students, representing around 61% of students from Évora. In 2013, this trend worsened to around 75%, returning to more normalized values in 2017 with around 65%.

Even in the case of the country's two main centres, the same happens. In the case of Lisboa, in 2008, 66% preferred to stay in Lisboa or Setúbal. In 2013, this percentage increased to around 82%, returning to lower values in 2017 with only approximately 70%. In the case of Porto, students mostly prefer the region of origin but also nearby regions (Aveiro,

¹¹ Due to space limitations, the detailed results are presented in Annex 3.

Braga, Coimbra and Vila Real). In 2008, these regions represented around 66% of students from Porto. In 2013, this trend was exacerbated to around 78%. In 2017, the values returned to normal to just 70%, approximately.

However, in some cases this trend of preferring the region of origin is not observed. For students from the Guarda region, the most attractive regions are Castelo Branco, Coimbra and Lisboa. Although these trends have been observed over the years, the percentage of students remaining in the region of origin is lower during the crisis years than in previous years. This can be explained by the fact that the crisis was felt so intensely in more rural environments, as is the case. It should be noted that for students coming from Guarda, there are several regions that are more attractive than their own, which can be explained by the fact that students want to experience another lifestyle, an urban one, moving to metropolitan regions. This trend is also true for the regions of Azores and Madeira, which have a clear preference for the regions themselves and for Lisboa. Although the attractiveness for these regions increases during the crisis period, it tends to return to normal values in 2017.

The second mobility index, which allows us to understand where the placed students come from, according to each region, complements this analysis to the extent that it allows us to understand what are the trends in the origin of the students placed in the different regions. It is also verified that students come mostly from regions that are relatively close, emphasizing the proximity factor as a weight factor in the student's choice. Despite the tendency to choose a region close to the origin that remains valid for all regions, there are some aspects to be highlighted. The Bragança region admits more students from Braga than from the region itself until 2009, reversing this situation from 2010 and returning to the pre-crisis format only in 2018. The Vila Real region, which admitted more students from the Porto region before the crisis, started to admit more students from the region as of 2010. However, this is not valid for the entire period of the crisis, since as of 2013, students from the Porto region become again the majority of students joining institutions in the Vila Real region. Only in 2018, the trend is reversed. However, it is noteworthy that, even with these exceptions, students continue to seek, for the most part, regions close to where they came from.

Chapter 5. Conclusion

According to many studies, among the many factors that motivate a student to choose to continue studying, the expectation of future higher labour market returns is usually presented as the main motivation for pursuing a higher education degree. However, over the years, this decision has become more complex due to the growing diversity of graduates and has become increasingly relevant, due to the different returns obtained, the choice of region, institution and field of study.

This dissertation was focused on the analysis of the geographical preferences of students when applying to higher education in Portugal and how these were affected by the crisis that the country went through during the period 2010-2014. In principle, the impacts of the financial crisis could have caused a change in student mobility patterns and the number of students applying for higher education. Therefore, the objective was to analyse, through several indicators, how access to higher education behaved during the period under analysis. It was expected, in some way, that the geographical distribution of demand could have changed over the period of crisis and the students would mostly prefer geographical proximity. The analysis used data from DGES on access to higher education at national level during the period from 2008 to 2018. Only data related to the first access phase were used due to their representativeness. Several indicators trying to map the behaviour of demand and supply were used, such as index of demand, dispersion, regional retention and mobility.

Accordingly, we could observe in the period of the recession a significant decline in the demand for higher education, though the supply remained fairly stable. Analysing in more detail, we observed a generalized decrease from 2010 on in the demand index for every region, establishment and field of study. The dispersion index allowed us to understand the stability of the supply and, consequently, the vacancies available for higher education. By comparing the two aforementioned indicators, we were able to assess the attractiveness of the fields and, in several examples, there is a high demand even though the dispersion is also high. In this way, it was possible to extrapolate some trends with regard to fields of study, in the Portuguese context. In addition, the regional retention index showed that, in general, the percentage of students who prefer to remain in the region of origin is high, and that there is an increasing trend during the crisis period. This led us to believe that the reduction of costs due to the geographical proximity to the area of residence gained relevance as a factor in the decision. The mobility indexes corroborated the results of other indicators, namely in

the contraction of geographic flows and in the weight of the geographical proximity factor as one of the most important in the decision. The importance of geographical proximity is emphasised when we realize that the regions geographically close to the students' original region increase their attractiveness.

The economic crisis seems to have caused significant changes in the behaviour of students, when deciding where and what to study in addition to the severe decline in demand during these years. This trend was reversed in the years after the crisis, reaching almost similar values to previous years. Nonetheless, there are some nuances in this general trends. The regions of Porto and Lisboa remained highly attractive, maintaining demand higher than supply, justified by the reputation of the institutions contained therein. Institutions in the regions of Porto and Lisboa were the most attractive, with universities being, in general, more attractive than polytechnics in any given year. However, the schools specialized in Nursing also remained quite attractive during the crisis period. With regard to fields of study, we concluded that areas related to health, economics, law and journalism stand out as the most attractive over the period. Regarding geographic flows, proximity becomes a more important factor during the crisis' period and those regions with universities attracted more students than regions with only polytechnics.

The results indicate a contraction of geographical flows in the years of crisis, which may be due to a contraction in the purchasing power of many families. On the other hand, with the end of the crisis, we have seen that demand and geographic flows increase, suggesting an improvement in purchasing power and an increase in confidence about the future. This indicates that current economic conditions seem to affect the decisions of some candidates to apply to institutions located in a different region.

Like any study, this one also faces some limitations. This analysis was conducted only for public higher education, and there may be changes if we include private higher education because it could influence the geographic flows. In addition, the access contest consists of three distinct application phases, with only the first one being studied due to its relevance. The remaining two are much smaller in size and therefore we do not expect to significantly change the results. The general trends presented would not be significantly altered if this were included, it would only serve as a complement.

This study allowed us to understand better how supply and demand behaved during the period from 2008 to 2018, especially considering the impact of the economic crisis during that period. This analysis becomes especially relevant for the adjustment of supply, incentive

to demand and preparation by institutions in similar cases. It would be interesting to expand this analysis to include private education and the different application phases or even to increase the time horizon in order to obtain more evident trends. Taking into account this study, variations in demand as a result of the drop in value of tuition fees in public higher education from 2019 onwards could also be studied. Likewise, it would be relevant to study in the future the changes in regional mobility of candidates to higher education due to the COVID-19 pandemic. Overall, this shows that the topic of access to higher education is a very relevant topic and a source of interesting research questions for economics.

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Annexes

1. Demand index

The demand index will allow us to obtain information on the attractiveness of the object in question. In this Annex 1 there will only be the demand index calculated for the CNAEF areas. It is calculated by dividing the number of students who chose a CNAEF area as their first option by the total number of places available for that same field during the year under review. If the demand index is greater than one, we can conclude that the demand in that region is greater than the supply. Vice versa also occurs, if the demand index is less than one it means that the region is not attractive enough to cover all available places.

The detailed description of the results obtained by calculating this index can be found in chapter 4.

Table 16 - Demand index by 2 and 3 digit CNAEF - Education (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
142. Education Sciences	0.41	0.44	0.52	0.41	0.39	0.4	0.34	0.39	0.45	0.46	0.65
144. Basic Education Teacher Training (1st and 2nd cycles)	0.79	0.96	1.05	0.76	0.8	0.64	0.66	0.78	0.82	0.82	0.31
146. Training of Teachers and Technological Trainers	0.45	0.55	0.65	0.5	0.8	0.3	0.4	0.4	0.65	1.1	1
14. Training of Teachers/ Trainers and Educational Sciences	0.68	0.82	0.91	0.66	0.67	0.56	0.55	0.65	0.69	0.7	0.43

Source: DGES

Table 17 - Demand index by 2 and 3 digit CNAEF - Arts and Humanities (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
210. Arts	n/a ¹²	n/a ¹²	n/a ¹²	n/a ¹²	n/a ¹²	n/a ¹²	0.23	0.13	0.13	0.13	0.33
211. Fine Arts	0.71	0.8	0.91	0.94	0.89	0.76	0.87	0.81	0.84	0.98	0.94
212. Performing Arts	0.55	0.69	0.8	0.71	0.82	0.68	0.73	0.9	0.91	0.99	0.75
213. Audio-Visuals and Media Production	1.26	1.35	1.34	1.14	1.15	0.97	1.11	1.11	1.12	1.27	1.17
214. Design	1.08	1.15	1.03	0.91	0.95	0.98	0.9	0.87	0.97	0.91	1.06
215. Crafts	0.84	0.78	0.83	0.65	0.87	0.85	0.64	0.76	0.62	0.56	0.83
219. Arts – PNC ¹³	n/a ¹²	n/a ¹²	n/a ¹²	n/a ¹²	n/a ¹²	n/a ¹²	n/a ¹²	0.13	0.13	0.22	0.53
21. Arts	0.99	1.08	1.09	0.98	1	0.89	0.95	0.95	0.98	1.06	1.04
222. Foreign Languages and Literatures	0.63	0.74	0.92	0.93	0.78	0.8	0.86	0.99	1.18	1.16	1.06
223. Native Language and Literature	0.31	0.4	0.37	0.38	0.27	0.23	0.3	0.35	0.42	0.46	0.56
225. History and Archaeology	0.53	0.65	0.84	0.72	0.73	0.68	0.72	0.8	0.72	0.87	0.8
226. Philosophy and Ethics	0.2	0.36	0.29	0.36	0.26	0.33	0.41	0.34	0.59	0.63	0.63
229. Humanities – PNC ¹³	n/a ¹²	n/a ¹²	0.77	0.97	0.28	0.53	1.02	1.2	0.89	0.72	0.74
22. Humanities	0.5	0.62	0.74	0.72	0.63	0.63	0.71	0.8	0.92	0.94	0.89

Source: DGES

¹² There are no programs allocated to this area.

¹³ Programs not classified in other areas.

Table 18 - Demand index by 2 and 3 digit CNAEF - Social Sciences, Commerce and Law (2008 – 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
310. Social Sciences	n/a ¹⁴	n/a ¹⁴	n/a ¹⁴	n/a ¹⁴	n/a ¹⁴	n/a ¹⁴	n/a ¹⁴	n/a ¹⁴	0.32	0.44	0.61
311. Psychology	1.34	1.72	2.15	1.62	1.87	1.93	2.23	2.27	2.09	2.13	2.02
312. Sociology	0.74	0.86	0.86	0.75	0.78	0.73	0.76	0.82	0.84	0.93	0.87
313. Political Science	1.14	1.26	1.42	1.21	1.31	1.35	1.39	1.5	1.54	1.58	1.64
314. Economics	1.38	1.12	1.14	1.07	1.02	1.04	1.05	1.33	1.14	1.04	0.9
31. Social Sciences	1.13	1.18	1.3	1.11	1.17	1.18	1.27	1.4	1.3	1.31	1.24
320. Information and Journalism	n/a ¹⁴	n/a ¹⁴	n/a ¹⁴	n/a ¹⁴	n/a ¹⁴	n/a ¹⁴	n/a ¹⁴	1.18	1.03	1.08	0.78
321. Journalism and Reporting	1.93	1.89	2.25	1.88	1.84	1.92	1.94	1.84	1.84	1.84	1.66
322. Librarianship and Archive	0.48	0.46	0.53	0.45	0.32	0.53	0.41	0.63	0.68	0.77	0.72
329. Information and Journalism - PNC ¹⁵	0.77	0.64	0.61	0.71	0.48	0.64	0.52	n/a ¹⁴	n/a ¹⁴	n/a ¹⁴	n/a ¹⁴
32. Information and Journalism	1.6	1.6	1.92	1.63	1.54	1.66	1.66	1.68	1.68	1.69	1.52
340. Business Sciences	n/a ¹⁴	n/a ¹⁴	n/a ¹⁴	n/a ¹⁴	n/a ¹⁴	0.17	0.35	0.52	0.46	0.73	0.87
341. Commerce	0.36	0.58	0.41	0.46	0.71	0.91	0.68	0.67	0.69	0.86	0.71
342. Marketing and Advertising	0.91	0.95	0.84	0.74	0.72	0.72	0.98	1	1.04	1.34	1.15
343. Finance and Banking	0.94	0.77	0.67	0.48	0.64	0.36	0.51	0.68	0.77	0.87	0.76
344. Accounting and Taxation	0.61	0.61	0.54	0.43	0.47	0.43	0.47	0.54	0.54	0.65	0.65
345. Management	1.31	1.18	1.04	0.86	0.95	0.91	0.96	1.23	1.24	1.32	1.2
346. Administrative Work	0.32	0.33	0.39	0.3	0.31	0.38	0.46	0.56	0.76	0.73	1.01
347. Framework in the Company	1.13	1.48	1.44	1.41	1.38	1.43	1.62	1.63	1.82	1.74	2.27
349. Business Sciences – PNC ¹⁵	1.15	1	0.93	1.41	1.06	1.1	0.79	1.1	1.39	1.79	1.3
34. Business Sciences	1.02	0.96	0.86	0.73	0.8	0.76	0.85	1.02	1.04	1.16	1.09
380. Law	1.65	1.82	1.22	0.96	1.05	0.96	1.27	1.34	1.57	1.65	1.68
38. Law	1.65	1.82	1.22	0.96	1.05	0.96	1.27	1.34	1.57	1.65	1.68

Source: DGES

¹⁴ There are no programs allocated to this area.

¹⁵ Programs not classified in other areas.

Table 19 - Demand index by 2 and 3 digit CNAEF - Sciences, Mathematic and Informatics (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
420. Life Sciences	n/a ¹⁶	n/a ¹⁶	n/a ¹⁶	n/a ¹⁶	n/a ¹⁶	n/a ¹⁶	n/a ¹⁶	1.44	2.6	1.77	1.36
421. Biology and Biochemistry	0.89	0.81	0.86	0.9	1.12	1.02	0.97	0.92	0.91	0.98	0.96
422. Environmental Sciences	0.25	0.04	0.38	0.45	0.42	0.86	0.6	0.49	0.41	0.43	0.43
42. Life Sciences	0.88	0.79	0.84	0.88	1.1	1.02	0.96	0.91	0.91	0.97	0.95
441. Physics	0.58	0.87	0.65	0.73	0.86	0.69	0.68	1.06	1.24	1.22	1.42
442. Chemistry	0.19	0.23	0.52	0.44	0.21	0.26	0.2	0.37	0.49	0.71	0.7
443. Earth Sciences	0.47	0.45	0.53	0.49	0.55	0.51	0.45	0.46	0.53	0.48	0.65
44. Physical Sciences	0.43	0.49	0.56	0.54	0.54	0.5	0.46	0.61	0.73	0.76	0.92
461. Mathematics	0.49	0.55	0.53	0.71	0.75	0.65	0.58	0.79	1.06	1.17	1.07
462. Statistics	0.26	0.24	0.16	0.16	0.32	0.29	0.25	0.4	0.64	0.69	0.57
46. Mathematics and Statistics	0.46	0.52	0.49	0.64	0.7	0.61	0.54	0.75	1.01	1.12	1.03
480. Informatics	n/a ¹⁶	n/a ¹⁶	n/a ¹⁶	n/a ¹⁶	n/a ¹⁶	n/a ¹⁶	n/a ¹⁶	n/a ¹⁶	1	1.44	1.14
481. Informatics' Sciences	0.59	0.57	0.5	0.41	0.3	0.27	0.24	0.6	0.63	0.71	0.57
489. Informatics - PNC ¹⁷	0.26	0.21	0.29	0.33	0.24	0.2	0.01	0.05	0.35	0.4	0.15
48. Informatics	0.54	0.53	0.49	0.4	0.3	0.26	0.22	0.56	0.64	0.79	0.62

Source: DGES

¹⁶ There are no programs allocated to this area.

¹⁷ Programs not classified in other areas.

Table 20 - Demand index by 2 and 3 digit CNAEF - Engineering, Manufacturing and Construction (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
520. Engineering and Techniques	n/a ¹⁸	n/a ¹⁸	n/a ¹⁸	n/a ¹⁸	0.61	0.4	0.49	n/a ¹⁸	0.11	0.09	0.24
521. Metallurgy, Metalworking	1.07	0.99	0.98	0.96	0.81	0.71	0.61	0.85	0.89	0.92	0.9
522. Electricity and Energy	0.95	0.87	0.57	0.41	0.18	0.11	0.06	0.08	0.11	0.14	0.15
523. Electronics and Automation	1.12	0.9	0.73	0.67	0.65	0.64	0.58	0.95	0.97	1.04	0.85
524. Chemical Process Technology	0.86	0.73	0.79	0.78	0.82	0.89	0.77	0.76	0.84	0.92	0.92
525. Motor Vehicle Construction and Repair	1.68	1.49	1.4	1.32	1.2	1.15	1.23	1.59	1.63	1.86	1.46
529. Engineering and Techniques - PNC ¹⁹	1.17	0.9	0.87	0.85	0.88	0.68	0.91	1.08	1.39	1.56	1.19
52. Engineering and Techniques	1.07	0.9	0.79	0.74	0.69	0.65	0.61	0.87	0.93	1	0.86
541. Food Industries	0.53	0.35	0.31	0.22	0.22	0.2	0.11	0.19	0.24	0.15	0.14
542. Textile, Clothing, Footwear and Leather Industries	0.06	0.03	0.07	0	0	0	0	0.15	1.5	1.5	0.4
543. Materials	0.53	0.49	0.33	0.44	0.33	0.22	0.15	0.32	0.46	0.8	0.85
544. Extractive Industries	1.06	0.48	0.57	0.66	0.29	0.37	0.15	0.3	0.27	0.28	0.37
54. Manufacturing Industries	0.53	0.38	0.33	0.3	0.24	0.21	0.12	0.23	0.33	0.37	0.35
581. Architecture and Urbanism	1.17	1.37	1.16	0.95	0.9	0.8	0.89	0.71	0.72	0.73	0.74
582. Civil Engineering	0.89	0.71	0.67	0.48	0.18	0.1	0.06	0.13	0.14	0.17	0.27
58. Architecture and Construction	0.98	0.91	0.83	0.64	0.45	0.4	0.45	0.42	0.44	0.45	0.5

Source: DGES

¹⁸ There are no programs allocated to this area.

¹⁹ Programs not classified in other areas.

Table 21- Demand index by 2 and 3 digit CNAEF - Agriculture (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
621. Agricultural and Animal Production	0.32	0.28	0.33	0.35	0.24	0.23	0.2	0.31	0.27	0.26	0.22
622. Floriculture and Gardening	n/a ²⁰	n/a ²⁰	0	n/a ²⁰	n/a ²⁰	0	0	n/a ²⁰	n/a ²⁰	n/a ²⁰	n/a ²⁰
623. Forestry and Hunting	0.13	0.12	0.21	0.16	0	0.03	0.04	0.09	0.2	0.33	0.17
62. Agriculture, Forestry and Fisheries	0.28	0.26	0.3	0.32	0.2	0.19	0.18	0.28	0.26	0.26	0.21
640. Veterinary Sciences	1.4	1.37	1.41	1.21	1.31	0.88	1.06	1.15	1.22	1.26	1.16
64. Veterinary Sciences	1.4	1.37	1.41	1.21	1.31	0.88	1.06	1.15	1.22	1.26	1.16

Source: DGES

²⁰ There are no programs allocated to this area.

**Table 22 - Demand index by 2 and 3 digit CNAEF - Health and Social Protection
(2008 - 2018)**

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
720. Health	n/a ²¹	n/a ²¹	n/a ²¹	n/a ²¹	n/a ²¹	n/a ²¹	n/a ²¹	0.12	0.25	0.05	n/a ²¹
721. Medicine	2.25	2.21	1.88	2.1	1.98	1.39	1.32	1.78	1.78	1.63	1.38
723. Nursing	1.27	1.23	1.21	1.27	1.02	0.9	1.05	1.02	0.96	0.98	0.98
724. Dental sciences	1.34	1.53	1.7	1.81	2.28	1.7	2.01	1.61	1.22	1.21	1.36
725. Diagnostic and Therapeutic Technologies	1.38	0.92	1.03	0.87	0.81	0.7	0.65	0.82	0.68	0.65	0.73
726. Therapy and Rehabilitation	2.56	2.21	1.93	1.73	1.44	1.23	1.45	1.4	1.23	1.18	1.18
727. Pharmaceutical Sciences	1.7	1.62	1.59	1.46	1.23	0.76	0.9	0.78	0.74	0.77	0.84
729. Health - PNC ²²	0.51	0.41	0.69	0.75	0.65	0.45	0.33	0.3	0.66	0.63	0.6
72. Health	1.69	1.58	1.49	1.5	1.34	1.03	1.12	1.2	1.12	1.08	1.06
762. Social Work and Guidance	0.85	1.02	0.81	0.52	0.56	0.52	0.62	0.65	0.62	0.72	0.83
76. Social Services	0.85	1.02	0.81	0.52	0.56	0.52	0.62	0.65	0.62	0.72	0.83

Source: DGES

²¹ There are no programs allocated to this area.

²² Programs not classified in other areas.

Table 23 - Demand index by 2 and 3 digit CNAEF - Services (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
811. Hospitality and Food	0.68	0.75	0.65	0.58	0.6	0.57	0.44	0.54	0.84	0.95	0.83
812. Tourism and Leisure	0.89	0.91	0.86	0.69	0.8	0.79	1.02	1.11	1.05	1.18	1.02
813. Sports	1.39	1.28	1.25	1.17	1.1	0.92	1.03	0.99	0.91	1.07	1
81. Personal Services	1.09	1.06	1.01	0.89	0.92	0.83	0.97	1	0.95	1.09	0.98
840. Transportation Services	1.08	1.13	0.77	0.81	0.93	0.96	1.07	1.31	1.23	1.31	0.99
84. Transportation Services	1.08	1.13	0.77	0.81	0.93	0.96	1.07	1.31	1.23	1.31	0.99
851. Environmental Protection Technology	0.82	0.65	0.58	0.39	0.4	0.3	0.22	0.41	0.27	0.31	0.31
852. Natural Environments and Wildlife	0.6	0.65	0.35	0.27	0.25	0.35	0.2	0.65	0.32	0.28	0.16
853. Public Health Services	0.33	0.32	0.3	0.36	0.68	0.42	0.22	0.22	0.28	0.24	0.36
85. Environmental Protection	0.73	0.6	0.53	0.38	0.44	0.32	0.22	0.38	0.28	0.3	0.31
861. Protection of People and Property	0.33	0.31	0.24	0.04	0	0	n/a ²³	n/a ²³	n/a ²³	0.05	n/a ²³
862. Safety and Hygiene at Work	0.69	0.37	0.61	0.36	0.31	0.4	0.13	0.3	0.37	0.38	0.63
86. Security Services	0.49	0.34	0.54	0.31	0.22	0.26	0.13	0.3	0.37	0.29	0.63

Source: DGES

²³ There are no programs allocated to this area.

2. Dispersion index

The dispersion index is calculated based on the vacancies related to each field of studies according to its geographical dispersion. In this way, a high dispersion index, higher than 0.8 implies a field that is restricted to a few geographies, forcing students to move there to be able to study them. On the other hand, a low dispersion index, that is, less than 0.2, implies a field that is found in several regions and in general is more accessible to any student due to its geographical proximity. It is logical that more aggregated fields (1 and 2 digit CNAEF) will have lower dispersion rates because they contain several subfields that are present in several regions. Therefore, it is important to give greater relevance to the index, when calculated for 3-digit CNAEF.

For most of the aggregate fields, an attempt was made to perform the disaggregation in 3-digit CNAEFs, which can be observed in the following tables, to allow a better analysis, when this was considered relevant. It is also important to mention that it is a very constant index because the vacancies have also remained quite unchanged, over the years.

The detailed description of the results obtained by calculating this index can be found in chapter 4.

Table 24 - Dispersion index by 1-digit CNAEF (2008 - 2018)

CNAEF (1 digit)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1. Education	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
2. Arts and Humanities	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
3. Social Sciences, Commerce, Law	0.13	0.14	0.14	0.14	0.15	0.15	0.16	0.16	0.16	0.16	0.15
4. Sciences, Mathematic and Informatics	0.12	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.13	0.13	0.12
5. Engineering, Manufacturing and Construction	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.12	0.12	0.12
6. Agriculture	0.1	0.09	0.09	0.1	0.1	0.09	0.09	0.09	0.1	0.1	0.09
7. Health and Social Protection	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13
8. Services	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.1	0.1	0.09
9. Unknown or Unspecified	n/a ²⁴	n/a ²⁴	n/a ²⁴	1	1	1	1	1	1	1	1

Source: DGES

²⁴ There are no programs allocated to this area.

Table 25 - Dispersion index by 2 and 3 digit CNAEF – Education (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
142. Education Sciences	0.12	0.12	0.13	0.13	0.13	0.14	0.14	0.15	0.14	0.14	0.14
144. Basic Education Teacher Training (1st and 2nd cycles)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
146. Training of Teachers and Technological Trainers	1	1	1	1	1	1	1	1	1	1	1
14. Training of Teachers/ Trainers and Educational Sciences	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07

Source: DGES

Table 26 - Dispersion index by 2 and 3 digit CNAEF - Arts and Humanities (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
210. Arts	n/a ²⁵	n/a ²⁵	n/a ²⁵	n/a ²⁵	n/a ²⁵	n/a ²⁵	1	1	1	1	1
211. Fine Arts	0.18	0.17	0.18	0.19	0.19	0.19	0.22	0.22	0.23	0.25	0.2
212. Performing Arts	0.15	0.18	0.15	0.16	0.16	0.18	0.18	0.16	0.16	0.16	0.18
213. Audio-Visuals and Media Production	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.1	0.1	0.1	0.1
214. Design	0.13	0.13	0.14	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12
215. Crafts	0.54	0.53	0.51	0.51	0.5	0.5	0.5	0.5	0.5	0.5	0.51
219. Arts – PNC ²⁶	n/a ²⁵	n/a ²⁵	n/a ²⁵	n/a ²⁵	n/a ²⁵	n/a ²⁵	n/a ²⁵	1	1	1	1
21. Arts	0.09	0.09	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
222. Foreign Languages and Literatures	0.21	0.2	0.2	0.19	0.18	0.2	0.2	0.19	0.19	0.18	0.17
223. Native Language and Literature	0.3	0.3	0.31	0.32	0.3	0.26	0.24	0.23	0.24	0.23	0.2
225. History and Archaeology	0.21	0.24	0.22	0.21	0.23	0.25	0.25	0.25	0.25	0.23	0.23
226. Philosophy and Ethics	0.26	0.26	0.21	0.23	0.21	0.24	0.29	0.25	0.29	0.29	0.29
229. Humanities – PNC ²⁶	n/a ²⁵	n/a ²⁵	1	1	1	1	1	1	0.6	0.62	0.62
22. Humanities	0.22	0.22	0.22	0.22	0.21	0.22	0.23	0.21	0.21	0.2	0.19

Source: DGES

²⁵ There are no programs allocated to this area.

²⁶ Programs not classified in other areas.

Table 27 – Dispersion index by 2 and 3 digit CNAEF - Social Sciences, Commerce and Law (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
310. Social Sciences	n/a ²⁷	n/a ²⁷	n/a ²⁷	n/a ²⁷	n/a ²⁷	n/a ²⁷	n/a ²⁷	n/a ²⁷	1	1	1
311. Psychology	0.14	0.14	0.14	0.14	0.13	0.13	0.14	0.14	0.14	0.14	0.13
312. Sociology	0.38	0.37	0.33	0.33	0.33	0.32	0.32	0.31	0.31	0.31	0.3
313. Political Science	0.33	0.38	0.36	0.33	0.35	0.35	0.36	0.36	0.36	0.37	0.35
314. Economics	0.2	0.2	0.2	0.2	0.2	0.21	0.21	0.2	0.2	0.2	0.19
31. Social Sciences	0.24	0.24	0.23	0.22	0.22	0.23	0.23	0.22	0.23	0.23	0.22
320. Information and Journalism	n/a ²⁷	n/a ²⁷	n/a ²⁷	n/a ²⁷	n/a ²⁷	n/a ²⁷	n/a ²⁷	1	1	1	1
321. Journalism and Reporting	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.12
322. Librarianship and Archive	0.25	0.32	0.43	0.43	0.33	0.43	0.43	0.59	0.59	0.59	0.58
329. Information and Journalism – PNC ²⁸	1	1	1	1	1	1	1	n/a ²⁷	n/a ²⁷	n/a ²⁷	n/a ²⁷
32. Information and Journalism	0.1	0.11	0.11	0.12	0.11	0.12	0.12	0.13	0.13	0.13	0.12
340. Business Sciences	n/a ²⁷	n/a ²⁷	n/a ²⁷	n/a ²⁷	n/a ²⁷	1	1	1	0.63	0.55	0.51
341. Commerce	0.52	0.52	0.54	0.56	0.56	0.57	0.57	0.38	0.38	0.38	0.38
342. Marketing and Advertising	0.1	0.09	0.09	0.09	0.09	0.09	0.1	0.1	0.1	0.09	0.09
343. Finance and Banking	0.34	0.35	0.35	0.36	0.37	0.39	0.4	0.48	0.48	0.62	0.61
344. Accounting and Taxation	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.12	0.12	0.12
345. Management	0.13	0.12	0.14	0.13	0.14	0.15	0.16	0.16	0.14	0.14	0.12
346. Administrative Work	0.16	0.17	0.17	0.16	0.15	0.17	0.22	0.25	0.25	0.25	0.24
347. Framework in the Company	0.21	0.23	0.22	0.21	0.22	0.18	0.18	0.34	0.34	0.34	0.34
349. Business Sciences– PNC ²⁸	1	1	1	1	1	0.58	0.58	0.62	0.66	0.79	0.78
34. Business Sciences	0.1	0.1	0.11	0.11	0.12	0.12	0.13	0.13	0.12	0.12	0.11
380. Law	0.23	0.23	0.23	0.24	0.26	0.26	0.26	0.27	0.26	0.26	0.24
38. Law	0.23	0.23	0.23	0.24	0.26	0.26	0.26	0.27	0.26	0.26	0.24

Source: DGES

²⁷ There are no programs allocated to this area.

²⁸ Programs not classified in other areas.

Table 28- Dispersion index by 2 and 3 digit CNAEF - Sciences, Mathematic and Informatics (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
420. Life Sciences	n/a ²⁹	n/a ²⁹	n/a ²⁹	n/a ²⁹	n/a ²⁹	n/a ²⁹	n/a ²⁹	1	1	1	0.52
421. Biology and Biochemistry	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
422. Environmental Sciences	1	0.5	0.34	0.34	0.52	1	1	0.54	0.36	0.43	0.29
42. Life Sciences	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.09
441. Physics	0.21	0.2	0.18	0.18	0.22	0.21	0.21	0.21	0.23	0.21	0.21
442. Chemistry	0.2	0.21	0.21	0.18	0.16	0.15	0.15	0.16	0.2	0.21	0.2
443. Earth Sciences	0.22	0.26	0.24	0.22	0.22	0.22	0.2	0.2	0.21	0.21	0.19
44. Physical Sciences	0.2	0.22	0.21	0.19	0.19	0.19	0.18	0.19	0.2	0.2	0.19
461. Mathematics	0.29	0.3	0.32	0.28	0.3	0.25	0.27	0.26	0.29	0.28	0.25
462. Statistics	0.52	0.52	0.52	0.5	0.52	0.51	0.54	0.54	0.54	0.54	0.52
46. Mathematics e Statistics	0.29	0.3	0.31	0.29	0.31	0.26	0.29	0.27	0.3	0.29	0.26
480. Informatics	n/a ²⁹	n/a ²⁹	n/a ²⁹	n/a ²⁹	n/a ²⁹	n/a ²⁹	n/a ²⁹	n/a ²⁹	1	1	1
481. Informatics' Sciences	0.13	0.14	0.13	0.14	0.11	0.12	0.13	0.14	0.14	0.13	0.13
489. Informatics - PNC ³⁰	0.37	0.36	0.5	0.5	0.52	1	0.36	0.54	1	1	1
48. Informatics	0.13	0.14	0.13	0.14	0.11	0.11	0.13	0.14	0.14	0.15	0.15

Source: DGES

²⁹ There are no programs allocated to this area.

³⁰ Programs not classified in other areas.

Table 29 - Dispersion index by 2 and 3 digit CNAEF - Engineering, Manufacturing and Construction (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
520. Engineering and Techniques	n/a ³¹	n/a ³¹	n/a ³¹	n/a ³¹	1	0.58	1	n/a ³¹	1	1	0.52
521. Metallurgy, Metalworking	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.13
522. Electricity and Energy	0.13	0.11	0.11	0.1	0.11	0.1	0.1	0.11	0.11	0.12	0.12
523. Electronics and Automation	0.16	0.16	0.15	0.15	0.14	0.14	0.14	0.13	0.13	0.12	0.11
524. Chemical Process Technology	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.12	0.12	0.12	0.12
525. Motor Vehicle Construction and Repair	0.46	0.38	0.42	0.41	0.43	0.42	0.42	0.42	0.39	0.4	0.39
529. Engineering and Techniques - PNC ³²	0.12	0.11	0.12	0.12	0.12	0.12	0.13	0.12	0.12	0.13	0.12
52. Engineering and Techniques	0.13	0.13	0.13	0.13	0.13	0.12	0.13	0.12	0.12	0.12	0.11
541. Food Industries	0.1	0.1	0.1	0.1	0.1	0.1	0.11	0.12	0.12	0.1	0.1
542. Textile, Clothing, Footwear and Leather Industries	0.52	1	1	1	1	1	1	1	1	1	1
543. Materials	0.21	0.21	0.21	0.22	0.33	0.24	0.23	0.23	0.24	0.24	0.3
544. Extractive Industries	0.52	0.57	0.59	0.59	0.59	0.58	0.57	0.56	0.56	0.56	0.56
54. Manufacturing Industries	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09
581. Architecture and Urbanism	0.21	0.25	0.26	0.25	0.27	0.28	0.29	0.31	0.31	0.32	0.3
582. Civil Engineering	0.1	0.1	0.1	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.11
58. Architecture and Construction	0.12	0.13	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.19	0.18

Source: DGES

³¹ There are no programs allocated to this area.

³² Programs not classified in other areas.

Table 30 - Dispersion index by 2 and 3 digit CNAEF - Agriculture (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
621. Agricultural and Animal production	0.09	0.09	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
622. Floriculture and Gardening	n/a ³³	n/a ³³	1	n/a ³³	n/a ³³	1	1	n/a ³³	n/a ³³	n/a ³³	n/a ³³
623. Forestry and Hunting	0.2	0.26	0.26	0.21	0.21	0.21	0.26	0.25	0.33	0.35	0.33
62. Agriculture, Forestry and Fisheries	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.09	0.1	0.1	0.1
640. Veterinary Sciences	0.13	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.12
64. Veterinary Sciences	0.13	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.12

Source: DGES

³³ There are no programs allocated to this area.

**Table 31 - Dispersion index by 2 and 3 digit CNAEF - Health and Social Protection
(2008 - 2018)**

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
720. Health	n/a ³⁴	n/a ³⁴	n/a ³⁴	n/a ³⁴	n/a ³⁴	n/a ³⁴	n/a ³⁴	1	1	1	n/a ³⁴
721. Medicine	0.24	0.24	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
723. Nursing	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
724. Dental Sciences	0.4	0.4	0.35	0.36	0.36	0.36	0.36	0.37	0.37	0.37	0.36
725. Diagnostic and Therapeutic Technologies	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.17	0.18	0.18	0.17
726. Therapy and Rehabilitation	0.16	0.13	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13
727. Pharmaceutical Sciences	0.22	0.22	0.22	0.21	0.21	0.21	0.21	0.21	0.22	0.21	0.21
729. Health - PNC ³⁵	1	1	1	1	1	1	1	1	0.63	0.44	0.5
72. Health	0.15	0.15	0.14	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.14
762. Social Work and Guidance	0.07	0.07	0.08	0.08	0.09	0.09	0.08	0.09	0.08	0.09	0.09
76. Social Services	0.07	0.07	0.08	0.08	0.09	0.09	0.08	0.09	0.08	0.09	0.09

Source: DGES

³⁴ There are no programs allocated to this area.

³⁵ Programs not classified in other areas.

Table 32 - Dispersion index by 2 and 3 digit CNAEF - Services (2008 - 2018)

CNAEF (3 digits)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
811. Hospitality and Food	0.23	0.24	0.24	0.23	0.24	0.23	0.24	0.24	0.31	0.31	0.25
812. Tourism and Leisure	0.11	0.1	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
813. Sports	0.09	0.09	0.09	0.09	0.09	0.1	0.1	0.1	0.1	0.1	0.1
81. Personal Services	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.08
840. Transportation Services	1	1	1	1	1	1	1	1	1	1	1
84. Transportation Services	1	1	1	1	1	1	1	1	1	1	1
851. Environmental Protection Technology	0.09	0.09	0.09	0.09	0.1	0.1	0.1	0.13	0.11	0.11	0.12
852. Natural Environments and Wildlife	1	1	1	0.51	1	1	1	1	0.52	0.5	0.5
853. Public Health Services	0.26	0.26	0.26	0.26	0.26	0.34	0.34	0.36	0.34	0.34	0.34
85. Environmental Protection	0.1	0.09	0.09	0.09	0.1	0.11	0.11	0.13	0.12	0.13	0.13
861. Protection of People and Property	0.34	0.34	1	1	1	1	n/a ³⁶	n/a ³⁶	1	1	1
862. Safety and hygiene at work	0.59	0.38	0.4	0.3	0.57	0.5	0.5	0.33	0.33	0.36	0.5
86. Security Services	0.22	0.19	0.3	0.24	0.38	0.33	0.5	0.33	0.25	0.27	0.33

Source: DGES

³⁶ There are no programs allocated to this area.

3. Mobility index

The mobility index is a great indicator to understand the geographical flows that occur between regions. Through it, we can extrapolate several detailed information about the stratification of students in each region.

The mobility index from region x to region y allows us to understand where students from a given region prefer to go and the tendency is that the preference is usually the region from which they come or geographically close regions. The mobility index of region y coming from region x allows us to understand which regions most students come from for the region under analysis, creating differences from the previous index since the values are presented as a percentage of the region under analysis. As part of this analysis, information is also presented on students who are emigrants who do not have a region of origin and are therefore considered as a distinct region.

Bearing in mind that these indicators are based on placements and not on preferences, it is also considered as a "Not placed" region for students who were unable to access any of the options listed in the application form, having possibly re-applied in the following access phases that are not covered in this study.

It is also presented the total that indicates, in some way, the preference of students at national level, for the region in question, being relevant to the analysis and corroborating the information from the remaining indicators previously calculated.

The detailed analysis of these indicators was presented earlier in chapter 4.

Table 33 – Mobility index from region x to region y 2008 (%)

2008	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed
Aveiro	23.9	0.1	1.2	1.7	3.3	18.3	0.6	0.9	0.9	2.3	3.7	0.4	18.0	1.2	0.4	0.4	1.7	4.8	0.2	0.0	0.6	15.5
Beja	0.8	30.9	0.2	0.2	1.1	2.1	8.6	15.0	0.3	0.6	23.7	1.7	0.9	0.6	5.3	0.0	0.5	0.0	0.6	0.2	0.5	6.6
Braga	2.0	0.1	38.3	4.5	2.2	6.0	0.4	0.6	0.6	1.2	2.1	0.3	13.9	0.4	0.3	5.0	4.1	1.2	0.2	0.0	0.3	16.4
Bragança	4.0	0.0	2.5	37.0	4.4	8.7	0.4	0.5	0.2	0.0	4.5	0.0	15.4	0.0	0.5	0.4	10.2	0.9	0.0	0.0	0.4	10.0
Castelo Branco	2.1	0.1	0.2	0.1	54.0	9.8	1.8	0.9	1.3	1.6	13.3	2.2	0.9	2.0	1.2	0.0	0.5	0.6	0.0	0.0	0.2	7.1
Coimbra	3.1	0.0	0.2	0.2	2.2	64.5	0.6	0.3	0.7	2.9	4.2	0.2	1.7	1.1	0.2	0.0	0.2	0.9	0.4	0.0	0.5	15.9
Évora	0.4	4.9	0.0	0.3	1.6	2.8	37.5	4.3	0.1	0.3	23.4	6.4	0.3	2.0	7.1	0.0	0.1	0.0	0.1	0.1	0.3	8.0
Faro	0.7	2.6	0.1	0.1	1.7	3.3	3.0	49.5	0.2	0.8	20.2	1.1	0.7	1.2	3.0	0.1	0.1	0.2	0.2	0.0	0.8	10.7
Guarda	3.3	0.0	0.5	2.2	21.1	20.0	1.0	0.9	17.1	0.7	12.1	0.7	3.4	1.1	2.0	0.0	2.1	4.8	0.1	0.0	0.2	6.7
Leiria	3.7	0.3	0.4	0.5	3.1	16.3	2.0	1.2	0.2	31.7	21.0	1.0	1.7	3.9	2.1	0.0	0.2	0.6	0.2	0.0	0.6	9.4
Lisboa	0.2	0.3	0.1	0.1	0.8	0.9	0.8	0.9	0.1	2.5	61.0	0.5	0.3	2.3	5.0	0.0	0.2	0.2	0.2	0.0	1.0	22.4
Portalegre	1.0	1.2	0.0	0.2	7.6	5.0	11.5	3.1	0.4	1.6	22.9	30.3	0.8	1.9	2.7	0.0	0.2	0.4	0.4	0.0	0.2	8.7
Porto	3.3	0.1	4.3	2.7	1.8	3.9	0.2	0.5	0.5	0.8	2.2	0.2	50.2	0.2	0.2	1.5	4.1	1.1	0.2	0.0	0.7	21.6
Santarém	2.2	0.5	0.3	0.3	5.5	10.1	3.8	1.4	0.3	8.4	28.5	1.3	1.2	20.0	4.0	0.2	0.7	0.4	0.2	0.1	0.4	10.4
Setúbal	0.3	1.4	0.1	0.1	1.0	0.8	2.5	1.7	0.1	1.2	38.4	0.8	0.3	1.3	32.6	0.0	0.3	0.1	0.1	0.1	0.9	15.9
Viana do Castelo	2.6	0.0	15.1	2.7	2.5	6.2	0.4	0.7	0.3	1.6	3.0	0.3	20.0	0.7	0.4	22.7	4.2	0.9	0.2	0.1	0.7	14.6
Vila Real	2.9	0.1	4.6	11.4	4.5	8.9	0.4	0.6	0.7	0.9	2.7	0.2	16.5	0.3	0.4	0.5	27.7	3.8	0.3	0.2	0.2	12.1
Viseu	7.4	0.1	0.7	2.5	4.8	19.0	0.3	0.8	2.1	1.2	7.7	0.3	8.0	0.9	0.6	0.2	4.2	29.1	0.2	0.1	0.3	9.8
R. A. Açores	3.2	0.3	1.5	0.6	3.5	6.1	1.3	1.2	0.3	1.7	18.7	0.7	6.6	1.4	1.7	0.2	0.9	0.0	42.0	0.2	0.2	7.8
R. A. Madeira	1.8	0.7	1.9	0.5	2.6	6.6	1.5	2.5	0.6	1.6	17.1	0.5	7.5	0.7	2.1	0.4	1.6	0.3	1.6	32.2	0.2	15.4
Emigrants	6.3	0.0	7.2	0.5	3.4	13.0	0.5	1.0	0.0	2.4	34.8	0.0	13.5	0.0	1.4	0.0	0.5	1.9	0.0	2.4	11.1	0.0
Total	3.6	0.8	5.3	2.0	3.4	9.3	1.7	2.8	0.7	3.2	21.8	0.9	13.3	2.1	4.1	1.4	2.4	2.0	1.1	1.0	0.7	16.3

Source: DGES

Table 34 - Mobility index from region x to region y 2009 (%)

2009	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed
Aveiro	29.8	0.1	1.4	1.6	4.2	19.2	0.7	0.8	1.5	2.7	4.0	0.5	13.4	1.0	0.4	0.5	1.7	5.4	0.2	0.0	0.2	10.7
Beja	0.6	27.8	0.0	0.2	0.8	3.1	8.4	15.6	0.0	0.0	24.5	1.2	0.3	0.9	7.2	0.0	0.3	0.0	0.0	0.0	0.5	8.6
Braga	2.2	0.0	40.5	4.6	2.3	5.9	0.5	0.5	0.7	1.1	2.3	0.2	13.9	0.3	0.2	5.8	4.8	0.7	0.3	0.1	0.4	13.1
Bragança	3.7	0.0	4.4	36.1	5.6	9.8	0.5	0.3	0.5	0.7	5.6	0.2	13.1	0.5	0.7	0.0	10.3	1.4	0.3	0.0	0.3	6.1
Castelo Branco	2.7	0.4	0.5	0.6	49.4	12.8	2.1	0.9	2.0	1.8	13.2	1.1	1.2	1.3	1.9	0.0	0.6	0.8	0.1	0.0	0.1	6.5
Coimbra	3.1	0.0	0.3	0.2	1.8	70.3	0.3	0.5	0.5	3.4	3.8	0.3	1.7	0.9	0.5	0.0	0.2	1.1	0.2	0.0	0.1	10.6
Évora	0.6	5.8	0.1	0.1	1.0	2.5	37.5	4.7	0.3	0.5	25.2	4.0	0.4	2.2	4.9	0.0	0.0	0.3	0.0	0.0	0.0	9.8
Faro	0.8	2.6	0.2	0.1	1.1	3.6	3.1	47.3	0.2	1.5	20.6	1.1	0.8	1.2	2.2	0.0	0.1	0.1	0.1	0.0	0.2	12.7
Guarda	4.5	0.1	0.4	0.8	21.4	18.0	1.1	0.9	16.2	1.2	12.4	1.7	3.3	1.5	1.9	0.4	2.3	5.6	0.5	0.0	0.5	5.2
Leiria	3.3	0.2	0.4	0.2	3.9	16.1	1.4	1.3	0.4	32.6	20.4	1.1	1.8	3.8	2.0	0.0	0.2	0.4	0.2	0.1	0.5	9.5
Lisboa	0.2	0.2	0.1	0.2	0.8	1.0	1.0	0.8	0.2	2.3	63.1	0.5	0.4	2.0	6.1	0.0	0.1	0.1	0.1	0.1	0.9	19.7
Portalegre	0.4	1.3	0.4	0.2	6.4	9.8	11.9	2.3	1.1	1.1	22.2	25.4	0.0	3.2	3.6	0.0	0.2	0.0	0.0	0.0	1.1	9.4
Porto	3.7	0.1	4.5	2.3	2.1	4.6	0.2	0.3	0.5	0.8	2.4	0.2	53.0	0.3	0.2	1.1	4.0	1.0	0.1	0.0	0.6	17.9
Santarém	1.9	0.5	0.0	0.3	5.3	10.0	3.7	1.7	0.4	6.7	31.4	2.2	1.3	21.0	3.2	0.1	0.3	0.6	0.4	0.0	0.2	8.8
Setúbal	0.3	1.0	0.1	0.2	1.0	1.2	3.3	2.1	0.2	1.4	40.1	0.8	0.3	1.4	32.0	0.1	0.2	0.2	0.2	0.0	0.5	13.4
Viana do Castelo	3.5	0.0	16.5	3.0	1.5	7.5	0.3	0.6	0.7	1.0	3.1	0.1	21.0	1.2	0.7	25.3	3.5	0.6	0.1	0.0	0.2	9.6
Vila Real	2.8	0.1	5.8	10.4	4.1	8.1	0.3	0.3	0.4	0.9	4.3	0.3	17.4	0.2	0.3	0.3	29.3	3.7	0.1	0.1	0.5	10.3
Viseu	7.1	0.0	0.9	2.1	6.3	18.7	0.3	0.5	2.6	2.2	7.4	0.3	8.5	0.5	0.8	0.1	3.5	30.0	0.2	0.0	0.3	7.9
R. A. Açores	1.6	0.2	1.2	0.7	2.7	5.8	1.1	1.1	0.4	1.9	22.2	0.4	6.8	1.2	1.7	0.2	1.1	0.3	44.5	0.0	0.2	4.8
R. A. Madeira	1.3	0.6	1.5	0.7	2.1	6.0	1.7	1.9	0.5	1.7	19.5	0.7	8.6	1.0	1.8	0.3	0.7	0.2	2.3	34.9	0.3	11.9
Emigrants	8.9	0.0	5.3	0.5	4.2	7.9	0.0	1.6	0.0	1.6	37.9	0.0	14.7	0.0	1.6	0.0	2.1	1.1	0.0	1.6	11.1	0.0
Total	3.7	0.7	5.6	1.9	3.5	9.7	1.8	2.8	0.8	3.4	23.1	0.8	13.7	2.0	4.1	1.5	2.4	2.0	1.0	1.0	0.5	13.7

Source: DGES

Table 35 - Mobility index from region x to region y 2010 (%)

2010	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed
Aveiro	28.1	0.3	1.2	1.6	4.6	22.7	0.6	0.7	1.6	2.6	3.0	0.4	14.0	0.6	0.5	0.3	1.7	4.9	0.3	0.0	0.3	10.2
Beja	0.5	26.3	0.0	0.0	1.0	3.2	9.4	12.3	0.3	1.1	29.8	1.9	0.3	1.0	4.8	0.0	0.0	0.2	0.3	0.0	0.3	7.3
Braga	2.2	0.1	43.3	4.4	2.4	5.6	0.2	0.5	0.7	0.9	2.6	0.3	12.4	0.4	0.3	4.9	5.0	1.1	0.1	0.0	0.5	12.0
Bragança	3.3	0.0	3.5	33.5	4.7	11.2	0.4	0.7	0.5	1.8	4.6	0.4	16.1	0.0	0.4	0.9	8.9	0.9	0.0	0.2	0.4	7.7
Castelo Branco	2.1	0.3	0.9	0.8	47.3	11.4	1.8	0.7	1.5	2.2	16.4	0.9	1.9	2.0	2.2	0.0	0.7	0.8	0.0	0.0	0.0	6.4
Coimbra	3.0	0.0	0.2	0.3	2.2	69.6	0.4	0.5	0.8	2.9	5.0	0.3	1.6	0.7	0.3	0.0	0.4	1.0	0.3	0.1	0.3	10.1
Évora	0.4	5.2	0.1	0.1	2.5	2.1	41.1	7.7	0.3	1.2	20.4	3.3	0.5	1.7	4.4	0.0	0.0	0.1	0.0	0.0	0.3	8.3
Faro	1.1	3.3	0.2	0.3	1.6	3.1	3.7	47.5	0.1	1.2	23.0	1.0	0.9	1.0	2.9	0.1	0.1	0.1	0.3	0.0	0.8	8.0
Guarda	4.7	0.3	0.7	1.7	23.4	23.4	0.7	1.3	13.2	1.7	10.4	0.7	2.9	0.8	1.5	0.1	1.7	3.9	0.3	0.0	0.1	6.4
Leiria	4.0	0.4	0.5	0.4	3.2	16.6	2.0	1.3	0.4	31.2	22.3	0.9	1.7	3.8	1.7	0.1	0.4	0.4	0.3	0.1	0.4	7.9
Lisboa	0.2	0.3	0.1	0.2	0.7	0.9	0.8	0.8	0.1	2.0	68.1	0.5	0.2	1.6	6.1	0.1	0.1	0.1	0.1	0.1	1.0	15.9
Portalegre	1.1	1.3	0.2	0.0	9.1	9.1	13.3	3.1	0.2	1.8	25.1	22.4	0.4	1.3	3.3	0.0	0.2	0.0	0.2	0.0	0.0	7.6
Porto	4.0	0.1	4.7	2.5	1.9	4.5	0.3	0.6	0.5	0.9	2.8	0.2	53.1	0.3	0.2	1.1	3.6	1.1	0.1	0.0	0.8	16.8
Santarém	2.1	0.4	0.3	0.2	5.1	11.0	3.3	1.3	0.3	7.5	32.7	2.0	1.5	19.3	4.3	0.0	0.1	0.2	0.2	0.0	0.4	7.6
Setúbal	0.2	2.0	0.1	0.1	0.7	0.9	3.4	2.3	0.1	0.8	42.6	1.3	0.5	1.5	30.4	0.0	0.1	0.1	0.2	0.0	0.8	12.0
Viana do Castelo	3.3	0.1	18.5	2.9	2.6	7.3	0.9	0.7	0.4	1.9	3.4	0.2	19.6	0.0	0.3	24.6	3.7	0.9	0.3	0.0	0.2	7.9
Vila Real	3.4	0.2	4.8	9.5	3.7	8.9	0.1	0.9	1.3	1.2	3.8	0.1	16.8	0.6	0.3	0.2	31.1	3.4	0.3	0.1	0.3	8.7
Viseu	7.3	0.1	1.0	2.2	6.5	19.1	0.7	0.3	2.5	1.2	9.3	0.1	9.9	0.8	0.8	0.2	2.9	28.4	0.4	0.1	0.2	6.2
R. A. Açores	2.4	0.2	1.4	0.6	2.1	6.4	1.0	1.1	0.2	2.1	21.0	0.2	7.0	1.1	2.2	0.3	1.0	0.4	44.8	0.3	0.5	3.5
R. A. Madeira	1.7	0.6	1.9	0.6	2.9	7.3	1.6	1.7	0.1	1.9	21.7	0.9	7.5	0.7	2.0	0.2	1.0	0.2	1.5	34.2	0.1	9.6
Emigrants	4.4	0.0	5.0	0.6	2.8	10.6	2.2	0.6	0.6	1.1	37.2	0.0	16.7	0.0	0.0	1.7	3.3	1.7	0.0	1.7	10.0	0.0
Total	3.7	0.8	6.2	1.9	3.4	10.0	1.8	2.8	0.7	3.3	24.5	0.8	14.1	1.8	3.8	1.4	2.4	1.9	1.0	1.0	0.6	12.0

Source: DGES

Table 36 - Mobility index from region x to region y 2011 (%)

2011	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed
Aveiro	32.5	0.3	1.4	1.2	5.4	21.9	0.5	0.5	1.4	1.6	5.0	0.4	13.6	0.8	0.5	0.3	1.8	2.9	0.2	0.0	0.2	7.5
Beja	0.6	23.7	0.0	0.4	1.2	3.6	9.5	11.5	0.0	0.6	33.4	2.0	0.6	1.2	5.5	0.0	0.0	0.0	0.0	0.0	0.2	5.9
Braga	2.2	0.1	46.5	3.0	2.3	5.8	0.3	0.5	0.6	0.9	3.1	0.2	13.1	0.3	0.3	5.8	5.1	0.8	0.1	0.1	0.4	8.5
Bragança	2.6	0.0	4.2	27.3	7.4	13.8	1.1	0.2	0.0	0.9	6.1	0.0	14.7	0.4	1.1	0.2	12.7	1.1	0.2	0.0	0.0	6.1
Castelo Branco	2.3	0.0	0.4	0.4	49.6	13.0	1.7	1.0	1.6	1.6	15.9	1.8	1.2	1.0	1.6	0.0	0.2	0.9	0.1	0.0	0.0	5.7
Coimbra	2.0	0.0	0.3	0.1	2.2	75.1	0.3	0.6	0.7	2.6	5.5	0.0	1.3	0.7	0.4	0.0	0.5	0.8	0.3	0.0	0.3	6.2
Évora	0.4	3.5	0.1	0.1	1.1	1.5	41.7	4.5	0.0	0.9	29.8	2.8	0.7	1.2	3.7	0.0	0.3	0.0	0.0	0.1	0.4	7.2
Faro	0.6	2.1	0.7	0.2	1.6	4.6	3.7	44.2	0.1	1.2	26.5	0.8	1.2	1.2	2.9	0.0	0.1	0.4	0.2	0.1	0.9	6.7
Guarda	5.6	0.5	0.2	1.0	20.5	21.4	1.5	0.7	11.7	1.5	16.5	0.5	3.7	0.7	1.2	0.2	2.2	4.9	0.3	0.0	0.2	4.9
Leiria	3.5	0.3	0.4	0.5	3.8	18.3	2.0	1.3	0.3	31.6	22.3	1.0	1.5	3.2	2.1	0.0	0.3	0.4	0.2	0.1	0.2	6.7
Lisboa	0.2	0.2	0.1	0.1	0.7	1.0	1.1	0.8	0.1	1.4	72.5	0.4	0.3	1.6	6.4	0.0	0.1	0.2	0.1	0.1	0.9	11.8
Portalegre	1.0	0.3	0.8	0.3	11.8	3.5	16.4	2.3	0.0	1.8	28.7	19.4	0.5	1.5	3.8	0.0	0.3	0.0	0.3	0.0	0.8	6.8
Porto	3.9	0.1	4.6	1.7	2.2	5.3	0.2	0.5	0.5	0.8	2.8	0.1	57.6	0.2	0.3	0.9	3.4	0.8	0.1	0.0	0.7	13.5
Santarém	2.8	0.3	0.5	0.1	5.3	10.6	4.2	1.6	0.3	7.3	34.5	0.7	0.8	18.8	3.9	0.0	0.4	0.2	0.5	0.0	0.3	7.0
Setúbal	0.4	0.9	0.1	0.1	0.9	1.1	3.5	2.3	0.1	1.5	45.3	1.2	0.3	1.3	30.0	0.0	0.3	0.1	0.1	0.0	0.7	9.5
Viana do Castelo	4.4	0.0	17.1	2.8	3.0	7.7	0.4	0.9	0.6	0.6	3.2	0.4	22.5	0.7	0.4	24.3	4.2	0.3	0.3	0.0	0.1	5.8
Vila Real	2.4	0.1	6.1	6.1	5.6	9.8	0.3	0.6	0.7	1.1	5.2	0.0	16.4	0.0	0.3	0.2	35.4	1.9	0.2	0.0	0.1	7.6
Viseu	7.4	0.1	1.1	1.7	8.0	23.4	0.3	0.6	2.0	1.3	9.5	0.1	10.4	0.1	0.8	0.3	2.9	24.7	0.1	0.0	0.3	4.9
R. A. Açores	1.3	0.2	1.9	0.5	2.3	6.5	0.8	1.0	0.1	1.6	20.3	0.4	7.4	1.3	2.4	0.4	0.4	0.2	46.8	0.4	0.4	3.5
R. A. Madeira	1.8	0.4	1.9	0.6	2.2	7.1	1.2	1.7	0.4	1.9	21.1	0.9	8.9	2.0	1.9	0.1	1.0	0.4	0.9	35.8	0.0	7.8
Emigrants	2.9	0.0	10.1	0.0	0.7	11.6	1.4	2.2	0.7	1.4	44.2	0.0	13.8	0.0	1.4	0.7	1.4	0.0	0.0	2.2	5.1	0.0
Total	3.8	0.6	6.5	1.4	3.6	10.6	1.9	2.5	0.6	3.0	26.5	0.6	15.6	1.6	3.8	1.4	2.6	1.5	1.0	1.1	0.6	9.4

Source: DGES

Table 37 - Mobility index from region x to region y 2012 (%)

2012	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed
Aveiro	33.0	0.1	1.1	0.7	5.3	20.8	1.0	0.8	1.1	2.0	4.4	0.3	12.3	0.6	0.3	0.2	1.2	3.6	0.0	0.0	0.4	10.8
Beja	0.2	25.8	0.0	0.0	0.7	2.3	8.6	15.6	0.5	0.5	33.0	1.6	0.9	0.9	4.0	0.0	0.0	0.0	0.0	0.2	0.5	4.7
Braga	2.2	0.1	45.4	2.3	2.6	5.8	0.3	0.7	0.5	1.0	2.8	0.3	14.6	0.2	0.3	4.9	5.1	0.7	0.2	0.0	1.3	8.8
Bragança	2.4	0.2	4.9	25.0	5.5	13.1	0.7	0.7	0.7	0.2	8.2	0.0	17.0	0.0	1.8	0.2	12.2	0.9	0.2	0.0	1.3	4.9
Castelo Branco	1.6	0.0	0.7	0.0	50.3	11.6	1.2	0.5	1.1	2.0	19.2	1.2	1.1	0.9	1.8	0.0	0.5	0.0	0.1	0.1	0.2	5.8
Coimbra	2.3	0.0	0.1	0.2	2.4	74.1	0.4	0.6	0.6	2.8	5.4	0.1	1.1	0.6	0.2	0.0	0.3	0.8	0.2	0.0	0.6	7.2
Évora	0.4	3.8	0.1	0.0	2.3	1.8	43.6	4.1	0.0	0.6	27.4	1.4	0.3	1.3	5.2	0.0	0.0	0.0	0.0	0.0	0.1	7.5
Faro	1.0	2.2	0.1	0.3	1.9	5.4	4.4	43.8	0.1	0.6	26.0	0.6	1.6	1.0	4.0	0.0	0.2	0.3	0.2	0.0	0.8	5.6
Guarda	6.4	0.0	0.9	0.5	20.0	24.3	0.7	0.7	13.6	0.9	12.2	0.0	6.0	0.7	0.7	0.0	1.7	5.3	0.0	0.2	0.3	5.0
Leiria	3.5	0.1	0.3	0.3	3.9	14.4	1.9	1.3	0.7	31.9	25.8	0.6	1.7	2.9	2.3	0.0	0.2	0.5	0.5	0.0	0.6	6.6
Lisboa	0.2	0.2	0.1	0.1	0.6	0.8	0.9	0.9	0.0	1.6	71.9	0.2	0.2	1.4	6.3	0.0	0.1	0.1	0.1	0.1	1.1	13.0
Portalegre	1.3	0.8	0.0	0.0	9.1	5.1	14.2	3.5	0.5	1.9	31.1	17.4	0.5	2.4	5.9	0.0	0.5	0.3	0.0	0.0	0.3	5.1
Porto	3.9	0.0	5.0	1.9	2.1	5.5	0.3	0.6	0.6	0.7	2.9	0.1	54.7	0.2	0.2	1.1	3.6	0.9	0.1	0.0	0.8	14.5
Santarém	3.2	0.2	0.1	0.3	4.6	10.5	4.6	1.4	0.4	7.0	36.1	1.1	1.2	17.2	4.0	0.1	0.2	0.1	0.4	0.0	0.2	7.2
Setúbal	0.1	1.0	0.1	0.0	1.2	0.4	3.8	2.7	0.2	1.3	47.3	0.5	0.5	1.0	27.8	0.0	0.2	0.1	0.3	0.1	0.9	10.7
Viana do Castelo	5.0	0.1	20.4	1.7	2.8	8.6	0.8	0.6	0.6	0.8	4.5	0.1	21.5	0.4	0.7	19.7	3.6	0.3	0.2	0.0	0.5	7.1
Vila Real	3.2	0.0	5.3	7.5	3.1	10.1	0.3	0.6	0.6	1.3	3.7	0.2	16.4	0.2	0.3	0.5	34.1	3.9	0.1	0.1	0.5	8.2
Viseu	8.3	0.0	1.1	1.1	7.1	23.7	0.4	0.4	1.9	1.3	8.9	0.1	11.0	0.4	0.9	0.0	3.3	23.0	0.3	0.1	0.6	5.9
R. A. Açores	2.7	0.2	1.8	0.3	2.0	5.6	1.5	1.1	0.5	1.7	21.8	0.0	8.2	1.0	2.3	0.2	0.9	0.5	44.0	0.2	0.5	3.0
R. A. Madeira	2.0	0.0	2.2	0.6	2.3	7.7	1.0	1.4	0.2	1.3	23.3	0.4	7.9	0.8	1.6	0.2	1.2	0.3	1.0	35.6	0.2	8.8
Emigrants	3.6	0.0	8.0	0.0	2.9	8.7	0.7	0.7	0.7	0.0	47.8	0.0	16.7	0.0	1.4	1.4	1.4	0.0	0.0	0.0	5.8	0.0
Total	4.0	0.5	6.5	1.2	3.5	10.3	2.0	2.5	0.6	2.9	27.1	0.4	15.3	1.4	3.5	1.2	2.5	1.5	1.1	1.0	0.8	10.3

Source: DGES

Table 38 - Mobility index from region x to region y 2013 (%)

2013	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed
Aveiro	36.5	0.1	1.3	0.7	4.5	18.7	0.5	0.5	1.4	2.1	6.0	0.0	12.5	0.7	0.6	0.3	1.8	3.4	0.1	0.0	0.6	7.7
Beja	1.3	20.1	0.3	0.0	0.8	4.5	9.8	12.1	0.3	0.8	38.5	0.5	1.1	0.0	4.5	0.3	0.0	0.0	0.3	0.0	1.3	3.7
Braga	2.7	0.0	47.2	1.8	2.5	7.2	0.2	0.3	0.4	1.0	3.3	0.1	14.8	0.3	0.3	5.1	4.6	0.6	0.0	0.0	0.8	7.0
Bragança	2.4	0.0	7.2	22.7	5.3	15.7	0.5	0.5	0.3	0.3	7.2	0.0	21.1	0.0	1.9	0.0	8.8	0.0	0.3	0.0	1.6	4.3
Castelo Branco	1.9	0.3	0.9	0.1	50.7	11.0	1.0	0.3	0.9	1.6	22.1	0.6	1.9	0.9	0.9	0.1	0.1	0.0	0.3	0.0	0.3	4.0
Coimbra	2.5	0.0	0.1	0.3	2.2	74.9	0.5	0.3	0.4	2.3	5.7	0.0	1.7	0.4	0.4	0.0	0.5	0.5	0.2	0.0	0.7	6.6
Évora	0.2	2.4	0.3	0.0	1.4	2.7	44.5	3.4	0.0	0.3	30.2	1.7	0.0	0.8	5.9	0.0	0.2	0.0	0.0	0.0	1.9	4.1
Faro	0.9	2.6	0.7	0.2	2.3	4.3	4.7	38.1	0.1	0.8	31.9	1.2	2.4	0.5	3.9	0.0	0.2	0.3	0.3	0.0	0.6	3.8
Guarda	6.3	0.0	0.6	0.6	20.0	20.6	1.3	0.8	9.1	0.8	20.0	0.0	5.5	0.2	1.7	0.2	1.9	5.9	0.2	0.0	1.1	3.2
Leiria	3.1	0.0	0.6	0.3	4.2	16.7	2.5	0.6	0.1	31.2	27.4	0.5	2.1	2.4	2.1	0.0	0.3	0.3	0.3	0.1	1.2	4.0
Lisboa	0.2	0.1	0.1	0.2	0.6	0.7	0.9	0.8	0.1	1.7	75.4	0.2	0.2	1.4	6.1	0.0	0.1	0.1	0.1	0.1	1.2	9.8
Portalegre	0.6	0.0	0.0	0.0	7.4	4.6	14.0	4.0	0.3	1.4	35.5	19.5	1.1	1.7	4.9	0.0	0.9	0.3	0.0	0.0	0.3	3.4
Porto	4.2	0.0	5.1	1.5	2.1	6.1	0.3	0.5	0.3	0.6	3.0	0.1	58.5	0.2	0.2	1.0	4.2	0.6	0.0	0.1	1.1	10.2
Santarém	2.9	0.1	0.2	0.2	4.8	10.7	4.7	1.3	0.3	6.9	42.4	0.6	1.6	13.4	3.7	0.1	0.6	0.2	0.1	0.0	1.0	4.1
Setúbal	0.4	0.7	0.0	0.1	1.2	1.2	4.8	1.8	0.1	0.9	48.9	0.7	0.6	0.9	29.8	0.0	0.1	0.1	0.2	0.1	1.2	6.3
Viana do Castelo	3.7	0.0	19.8	0.9	2.9	9.1	0.4	0.6	0.2	1.1	4.9	0.1	25.0	0.2	0.7	20.1	4.2	0.8	0.1	0.1	0.5	4.4
Vila Real	4.6	0.0	5.4	6.0	5.6	12.4	0.3	0.5	0.7	0.5	4.0	0.1	19.9	0.2	0.3	0.0	32.1	2.0	0.1	0.0	0.4	4.7
Viseu	7.8	0.1	0.7	1.2	6.8	24.5	0.7	0.4	1.9	1.7	12.8	0.1	11.8	0.4	0.9	0.0	3.2	20.8	0.1	0.1	0.5	3.7
R. A. Açores	3.6	0.2	1.3	0.4	1.5	6.1	0.7	1.2	0.0	2.2	23.5	0.2	7.6	1.0	1.8	0.1	1.2	0.5	43.8	0.1	0.4	2.4
R. A. Madeira	1.7	0.1	2.3	0.3	2.2	7.5	0.9	2.0	0.2	0.9	23.3	0.1	8.3	1.1	1.7	0.2	1.4	0.2	0.7	38.8	0.4	5.6
Emigrants	2.9	0.0	5.8	0.0	1.9	9.7	1.0	1.0	0.0	1.0	37.9	0.0	26.2	0.0	4.9	0.0	1.0	0.0	0.0	1.9	3.9	1.0
Total	4.2	0.4	6.7	1.0	3.4	10.9	1.9	2.0	0.4	2.8	28.9	0.4	16.6	1.2	3.5	1.2	2.6	1.3	1.0	1.1	1.0	7.4

Source: DGES

Table 39 - Mobility index from region x to region y 2014 (%)

2014	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed
Aveiro	34.2	0.0	1.5	0.7	3.5	17.4	0.8	0.8	1.6	2.7	5.6	0.2	12.4	0.6	0.4	0.3	2.3	2.7	0.2	0.0	0.5	11.5
Beja	0.0	18.6	0.0	0.3	1.5	3.8	7.4	9.7	0.0	1.0	43.1	0.5	0.0	1.0	7.1	0.0	0.0	0.0	0.0	0.3	0.0	5.6
Braga	2.8	0.0	46.0	2.0	2.8	6.9	0.1	0.5	0.6	0.8	3.2	0.1	14.2	0.1	0.1	4.7	4.3	0.7	0.0	0.0	1.0	9.0
Bragança	3.8	0.0	5.5	28.0	5.5	14.9	0.8	0.0	0.3	0.3	9.8	0.3	15.4	0.0	1.0	0.0	8.6	0.8	0.0	0.0	0.0	5.3
Castelo Branco	1.4	0.1	0.3	0.1	45.6	9.9	1.2	1.2	1.4	1.4	24.6	1.0	1.7	0.9	1.8	0.1	0.4	0.5	0.3	0.0	0.1	6.0
Coimbra	2.5	0.0	0.1	0.1	2.1	73.6	0.5	0.5	0.4	2.3	6.5	0.1	1.4	0.4	0.2	0.0	0.1	0.6	0.1	0.0	0.6	7.7
Évora	0.3	3.7	0.3	0.0	1.7	2.4	46.0	3.4	0.1	1.0	25.9	1.6	0.6	1.1	5.2	0.0	0.0	0.3	0.1	0.0	0.4	5.7
Faro	0.7	2.0	0.5	0.0	2.0	3.7	3.9	43.0	0.1	0.8	28.2	0.8	1.5	0.8	3.8	0.0	0.2	0.1	0.0	0.0	0.8	7.4
Guarda	6.0	0.0	0.4	1.2	16.2	25.5	1.2	0.6	11.1	2.3	17.5	0.2	6.8	0.8	1.9	0.2	1.0	2.1	0.0	0.0	0.0	4.9
Leiria	3.2	0.1	0.4	0.2	2.1	13.9	2.1	1.4	0.2	32.9	28.1	0.4	1.3	3.5	2.3	0.3	0.3	0.3	0.1	0.1	0.6	6.4
Lisboa	0.2	0.2	0.1	0.2	0.8	0.5	1.1	0.9	0.1	1.8	70.9	0.3	0.2	1.4	6.3	0.0	0.1	0.1	0.1	0.1	1.1	13.6
Portalegre	0.3	0.8	0.3	0.0	6.8	5.4	12.2	2.8	0.3	2.8	35.7	19.3	0.8	3.7	2.8	0.0	0.3	0.0	0.0	0.0	0.0	5.7
Porto	4.4	0.0	5.2	1.4	2.2	6.4	0.2	0.4	0.7	0.5	3.1	0.1	53.6	0.2	0.1	1.1	3.5	0.7	0.0	0.0	0.7	15.6
Santarém	2.6	0.0	0.2	0.3	4.7	9.5	4.6	1.6	0.4	7.0	41.1	0.8	1.7	14.4	3.5	0.0	0.4	0.0	0.2	0.1	0.5	6.4
Setúbal	0.2	0.7	0.1	0.2	1.2	1.0	4.1	1.6	0.1	1.2	47.6	0.7	0.3	1.2	28.3	0.1	0.1	0.1	0.2	0.1	0.7	10.4
Viana do Castelo	4.3	0.0	17.3	1.5	3.7	8.9	0.5	0.8	0.2	1.3	5.0	0.0	25.0	0.2	0.6	19.1	3.5	0.5	0.0	0.0	0.2	7.5
Vila Real	2.6	0.0	4.8	6.7	3.7	10.2	0.3	0.5	1.0	1.0	7.8	0.1	15.2	0.3	0.5	0.4	31.4	2.1	0.3	0.0	0.3	10.6
Viseu	8.2	0.2	1.0	0.3	7.2	21.8	0.8	0.3	2.6	1.5	13.6	0.2	10.6	0.6	1.0	0.0	1.9	20.7	0.3	0.0	0.1	6.9
R. A. Açores	2.8	0.0	1.8	0.7	2.1	6.2	1.2	0.7	0.0	2.3	23.6	0.2	9.1	0.5	2.2	0.0	0.8	0.2	41.7	0.1	0.5	3.2
R. A. Madeira	1.6	0.1	2.1	0.2	2.1	7.1	1.1	0.9	0.2	1.7	25.6	0.3	9.9	1.3	1.6	0.0	1.0	0.2	0.7	35.5	0.1	6.8
Emigrants	1.6	0.8	7.1	0.8	1.6	3.1	2.4	1.6	0.0	1.6	43.3	0.0	24.4	0.0	0.8	0.8	1.6	0.0	0.0	0.8	7.9	0.0
Total	4.1	0.4	6.5	1.1	3.3	10.2	2.0	2.2	0.7	3.0	27.7	0.4	15.6	1.3	3.4	1.2	2.3	1.2	0.9	1.1	0.7	10.8

Source: DGES

Table 40 - Mobility index from region x to region y 2015 (%)

2015	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed
Aveiro	34.9	0.2	1.2	0.7	3.9	19.5	0.4	0.6	1.8	2.3	5.4	0.2	10.7	0.4	0.2	0.2	1.9	3.8	0.1	0.0	0.3	11.2
Beja	0.2	19.0	0.0	0.4	0.4	1.8	11.5	11.7	0.2	0.4	38.9	0.2	0.0	1.4	5.6	0.0	0.2	0.0	0.2	0.0	1.0	6.9
Braga	2.5	0.1	45.7	2.4	2.0	6.9	0.4	0.4	0.6	0.7	2.6	0.2	13.8	0.3	0.2	4.5	4.7	0.6	0.1	0.0	0.5	10.9
Bragança	2.1	0.0	5.6	27.4	5.3	14.4	0.9	0.2	0.5	0.7	6.5	0.2	18.1	0.5	0.0	0.2	7.7	0.9	0.2	0.0	0.7	7.9
Castelo Branco	2.0	0.0	0.4	0.3	49.3	9.1	1.0	1.5	1.5	2.3	18.1	1.1	1.1	0.5	1.4	0.0	0.5	0.1	0.3	0.0	0.5	9.0
Coimbra	2.0	0.0	0.2	0.2	2.2	70.8	0.6	0.4	0.6	2.6	6.3	0.2	1.6	0.3	0.4	0.1	0.3	0.6	0.4	0.0	0.3	10.0
Évora	0.4	2.9	0.5	0.1	1.3	1.2	43.0	2.7	0.4	0.8	27.0	2.9	0.6	0.8	6.0	0.0	0.6	0.1	0.1	0.0	0.1	8.4
Faro	0.6	2.1	0.2	0.2	1.6	3.5	3.7	43.5	0.1	1.4	24.6	0.7	1.7	1.6	3.0	0.1	0.1	0.2	0.1	0.1	1.2	9.8
Guarda	5.1	0.0	0.4	0.5	17.0	20.1	1.6	1.2	11.5	1.1	19.6	0.7	3.5	0.4	1.6	0.2	1.9	5.3	0.2	0.0	0.7	7.4
Leiria	4.0	0.3	0.5	0.1	3.4	14.8	1.9	0.9	0.2	31.6	26.2	0.9	2.0	2.7	2.2	0.1	0.3	0.4	0.0	0.0	0.7	6.6
Lisboa	0.2	0.1	0.1	0.1	0.9	0.8	1.1	0.9	0.1	1.8	65.7	0.3	0.4	1.4	6.4	0.0	0.1	0.1	0.2	0.0	1.0	18.4
Portalegre	1.0	0.5	0.0	0.0	6.0	6.8	14.6	0.3	1.3	1.3	33.4	20.6	0.3	3.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	6.5
Porto	4.5	0.1	5.6	2.0	2.5	5.2	0.3	0.4	0.6	0.8	2.9	0.1	52.9	0.2	0.2	0.7	3.9	0.9	0.1	0.0	0.7	15.5
Santarém	2.3	0.1	0.4	0.1	4.8	9.0	4.6	1.8	0.5	6.7	38.0	0.8	1.1	15.8	4.7	0.0	0.7	0.2	0.1	0.2	0.2	8.0
Setúbal	0.4	0.9	0.1	0.1	0.5	1.1	3.8	2.1	0.2	1.2	40.9	1.3	0.2	1.4	31.1	0.0	0.0	0.4	0.2	0.1	0.7	13.3
Viana do Castelo	4.1	0.0	16.7	2.1	3.0	8.3	0.7	0.5	0.5	1.5	6.1	0.0	21.9	0.1	0.4	21.8	2.8	0.5	0.2	0.1	0.2	8.7
Vila Real	2.5	0.0	5.1	5.8	4.5	10.7	0.3	0.4	1.1	0.9	5.9	0.1	17.4	0.1	0.8	0.5	31.8	2.2	0.1	0.0	0.1	9.8
Viseu	6.8	0.2	0.8	1.2	7.0	22.8	0.2	0.4	2.7	1.2	10.9	0.1	10.4	0.5	1.1	0.0	2.7	22.7	0.0	0.1	0.4	7.7
R. A. Açores	2.7	0.1	2.0	0.4	1.5	7.4	1.3	0.6	0.2	2.6	23.9	0.3	9.5	0.9	2.7	0.1	1.1	0.5	38.2	0.1	0.4	3.4
R. A. Madeira	1.5	0.4	2.1	0.6	1.9	6.1	1.2	1.2	0.2	1.7	25.7	0.4	9.1	1.3	2.2	0.2	0.9	0.2	0.4	34.3	0.0	8.4
Emigrants	1.1	0.0	5.5	0.0	1.1	9.3	0.0	0.0	0.5	1.1	49.5	0.0	23.1	0.0	1.1	0.5	0.0	0.0	0.0	0.5	6.6	0.0
Total	4.0	0.4	6.4	1.2	3.2	10.0	2.0	2.3	0.7	3.0	26.3	0.5	14.8	1.3	3.6	1.1	2.4	1.4	0.9	1.0	0.6	12.8

Source: DGES

Table 41 - Mobility index from region x to region y 2016 (%)

2016	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed
Aveiro	32.1	0.0	1.5	0.7	3.8	19.4	0.7	0.4	2.0	2.3	5.9	0.2	12.1	0.6	0.4	0.4	1.8	4.2	0.0	0.0	0.4	10.9
Beja	0.2	19.7	0.0	0.0	1.5	2.9	9.6	11.9	0.2	1.9	36.3	1.5	0.6	1.7	4.2	0.0	0.0	0.2	0.2	0.2	0.6	6.5
Braga	2.4	0.0	46.0	2.1	2.2	6.5	0.3	0.4	0.4	0.7	2.9	0.1	12.8	0.2	0.3	4.9	4.4	0.6	0.0	0.0	0.7	12.2
Bragança	3.7	0.0	5.3	24.6	7.3	16.5	0.2	0.2	0.8	0.2	6.1	0.0	19.9	0.2	0.2	0.0	7.3	1.4	0.0	0.0	1.0	5.1
Castelo Branco	1.8	0.1	0.1	0.2	46.1	9.5	1.7	0.6	1.0	1.9	21.7	0.7	1.1	1.0	2.2	0.1	1.0	0.6	0.1	0.1	0.6	7.7
Coimbra	2.0	0.0	0.2	0.4	1.9	71.2	0.1	0.4	0.5	2.4	7.0	0.2	1.6	0.6	0.3	0.0	0.6	0.6	0.2	0.0	0.4	9.4
Évora	0.5	2.3	0.1	0.1	0.9	2.8	40.1	3.7	0.1	0.6	28.3	1.8	0.8	1.0	5.4	0.0	0.3	0.0	0.3	0.3	0.3	10.5
Faro	0.8	2.3	0.3	0.1	1.3	3.9	5.0	44.0	0.2	0.9	24.7	0.8	1.2	1.0	3.4	0.0	0.1	0.1	0.3	0.1	1.0	8.8
Guarda	5.5	0.0	0.8	0.9	18.4	21.7	0.6	0.3	12.1	1.9	19.3	0.8	2.2	0.5	1.7	0.0	2.6	3.9	0.2	0.0	0.2	6.5
Leiria	5.0	0.1	0.3	0.2	3.9	12.6	1.8	1.1	0.2	33.1	26.3	0.5	1.6	2.7	2.1	0.0	0.2	0.7	0.1	0.1	0.7	6.6
Lisboa	0.3	0.1	0.1	0.1	0.7	0.8	1.1	0.8	0.1	1.8	65.4	0.4	0.3	1.5	6.5	0.1	0.1	0.1	0.1	0.1	1.1	18.6
Portalegre	2.1	1.1	0.0	0.0	6.0	5.7	10.8	2.3	1.1	2.3	36.9	16.7	0.7	1.4	5.5	0.0	0.0	0.5	0.2	0.0	0.2	6.4
Porto	4.5	0.0	5.5	1.5	2.1	5.6	0.2	0.4	0.4	0.7	2.7	0.1	52.1	0.2	0.2	1.4	3.9	0.8	0.1	0.0	0.6	17.0
Santarém	2.7	0.1	0.2	0.1	4.9	8.9	4.2	1.2	0.2	6.7	38.6	0.6	1.6	15.1	3.4	0.0	0.2	0.2	0.2	0.2	0.6	9.9
Setúbal	0.2	0.8	0.2	0.1	0.9	1.0	5.0	1.9	0.2	1.5	38.8	0.6	0.5	1.6	32.5	0.1	0.2	0.2	0.2	0.1	0.4	13.1
Viana do Castelo	4.4	0.1	20.0	1.2	3.0	11.0	0.2	0.2	0.6	1.0	5.9	0.3	21.3	0.4	0.6	18.0	4.7	0.4	0.1	0.0	0.7	6.1
Vila Real	2.9	0.1	4.6	6.1	3.4	11.9	0.2	0.2	0.6	0.6	5.8	0.4	17.6	0.2	0.8	0.4	31.4	1.9	0.0	0.1	0.4	10.6
Viseu	8.4	0.1	0.9	1.1	6.3	23.2	0.1	0.3	2.3	1.8	13.1	0.2	9.5	0.5	1.2	0.1	1.8	22.6	0.1	0.0	0.5	6.0
R. A. Açores	2.8	0.1	2.0	0.1	1.1	7.6	1.6	1.0	0.3	2.3	22.7	0.3	9.6	1.0	3.1	0.0	0.8	0.2	39.1	0.0	0.1	4.0
R. A. Madeira	1.5	0.6	2.4	0.4	1.3	6.1	1.8	1.4	0.3	1.9	27.0	0.1	9.7	1.0	2.6	0.1	1.2	0.4	0.3	32.1	0.1	7.7
Emigrants	3.9	0.0	5.2	0.9	0.4	4.8	0.4	0.4	0.0	1.7	43.2	0.0	26.6	0.4	1.7	0.0	1.3	0.4	0.0	1.3	7.0	0.0
Total	4.0	0.4	6.5	1.1	3.1	10.1	1.9	2.2	0.6	3.0	26.4	0.5	14.6	1.4	3.6	1.2	2.4	1.5	0.9	0.9	0.7	13.1

Source: DGES

Table 42 - Mobility index from region x to region y 2017 (%)

2017	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed
Aveiro	29.9	0.1	1.4	0.9	3.5	20.7	0.6	0.7	1.6	2.2	5.9	0.1	11.2	0.7	0.4	0.2	2.0	4.6	0.1	0.0	0.4	12.6
Beja	1.2	19.0	0.0	0.2	1.0	2.5	7.8	14.3	0.4	1.2	35.4	1.0	0.8	1.0	5.3	0.0	0.0	0.0	0.2	0.0	0.6	8.2
Braga	2.9	0.1	43.6	2.2	2.3	6.5	0.1	0.2	0.6	0.5	2.6	0.1	11.9	0.2	0.3	5.6	4.5	0.5	0.1	0.0	0.6	14.8
Bragança	4.2	0.0	4.2	29.3	4.2	13.9	0.9	0.5	1.1	0.9	5.5	0.4	16.7	0.0	0.5	0.4	7.5	1.3	0.2	0.0	0.7	7.5
Castelo Branco	2.3	0.0	0.1	0.3	45.4	10.0	1.3	0.7	1.0	2.4	20.1	0.7	1.7	1.5	2.6	0.0	0.5	0.5	0.0	0.0	0.8	8.0
Coimbra	2.0	0.0	0.4	0.3	2.4	67.4	0.4	0.3	0.4	2.6	6.5	0.0	1.9	0.4	0.2	0.1	0.3	0.8	0.2	0.0	0.5	12.5
Évora	0.5	2.9	0.1	0.0	1.9	2.2	39.3	4.8	0.2	1.3	25.6	2.2	0.5	1.6	5.0	0.0	0.0	0.0	0.0	0.0	0.6	11.1
Faro	1.1	3.0	0.2	0.2	1.2	3.7	4.3	41.3	0.1	1.3	27.3	0.9	0.9	0.9	2.3	0.1	0.3	0.2	0.1	0.2	0.5	10.0
Guarda	6.9	0.0	1.3	1.6	18.0	17.6	1.3	0.4	12.3	1.5	17.2	0.7	5.4	1.0	1.6	0.1	1.3	4.1	0.0	0.0	0.6	6.9
Leiria	3.3	0.2	0.5	0.2	3.7	12.8	1.8	1.2	0.4	31.9	24.6	0.8	2.5	4.0	1.6	0.0	0.3	0.7	0.0	0.0	0.5	8.9
Lisboa	0.2	0.2	0.1	0.1	0.8	0.9	1.1	0.8	0.1	1.7	63.3	0.4	0.3	1.6	6.6	0.0	0.1	0.1	0.2	0.1	1.1	20.2
Portalegre	1.0	0.2	0.0	0.0	11.0	6.5	13.2	2.2	1.0	2.6	33.6	15.8	0.0	2.4	4.3	0.0	0.0	0.2	0.0	0.0	0.2	5.8
Porto	4.3	0.0	5.4	2.2	1.9	6.0	0.2	0.3	0.6	0.6	3.0	0.1	51.2	0.1	0.2	1.1	3.5	1.0	0.2	0.0	0.6	17.6
Santarém	3.2	0.3	0.1	0.1	5.4	10.7	4.9	1.9	0.5	7.6	36.0	1.0	1.4	15.0	3.6	0.0	0.3	0.1	0.1	0.0	0.4	7.5
Setúbal	0.4	0.9	0.2	0.1	1.5	1.0	4.1	2.2	0.1	0.8	38.3	0.3	0.3	1.3	32.4	0.0	0.3	0.2	0.1	0.1	0.9	14.2
Viana do Castelo	5.0	0.0	20.0	2.4	3.4	8.9	0.2	0.3	0.4	1.2	4.3	0.1	21.4	0.3	0.7	19.2	3.1	0.7	0.1	0.0	0.7	7.9
Vila Real	4.1	0.0	5.0	7.2	3.0	10.6	0.4	0.1	1.1	0.8	5.5	0.1	16.6	0.1	1.0	0.1	31.4	2.2	0.2	0.1	0.5	9.8
Viseu	8.6	0.0	1.2	0.9	6.8	20.7	0.3	0.1	3.6	2.2	11.3	0.1	9.3	0.6	0.9	0.1	2.8	23.2	0.3	0.0	0.3	6.5
R. A. Açores	3.5	0.3	2.9	0.4	1.2	7.1	1.0	1.0	0.3	2.8	22.1	0.3	8.7	2.1	3.3	0.0	1.0	0.4	35.8	0.3	0.5	5.0
R. A. Madeira	1.9	0.2	2.6	0.2	2.1	7.2	1.3	1.6	0.5	1.8	24.7	0.2	10.7	1.5	2.2	0.1	1.1	0.5	0.7	30.2	0.4	8.1
Emigrants	1.0	0.0	5.2	0.0	0.7	4.1	0.0	0.7	0.0	0.7	50.3	0.0	26.2	0.3	1.4	1.0	1.4	0.3	0.0	1.0	5.2	0.3
Total	3.9	0.5	6.3	1.3	3.2	9.9	1.9	2.2	0.7	3.1	25.5	0.4	14.1	1.5	3.7	1.2	2.3	1.6	0.9	0.9	0.7	14.2

Source: DGES

Table 43 - Mobility index from region x to region y 2018 (%)

2018	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed
Aveiro	33.7	0.0	1.2	0.8	5.4	20.7	0.6	0.4	1.8	2.4	4.9	0.2	10.4	1.0	0.1	0.3	1.9	4.7	0.2	0.0	0.8	8.7
Beja	0.2	19.1	0.0	0.0	1.2	4.5	7.7	17.3	0.2	1.2	34.2	0.6	0.0	1.8	5.1	0.2	0.4	0.0	0.4	0.4	1.0	4.3
Braga	2.6	0.1	48.4	3.2	2.8	5.5	0.3	0.3	0.3	0.7	2.5	0.0	10.8	0.1	0.3	5.1	4.8	0.8	0.1	0.0	0.6	10.7
Bragança	5.3	0.2	3.6	31.5	6.2	11.9	0.2	1.1	1.9	0.6	5.1	0.0	17.9	0.2	0.2	0.2	8.9	0.4	0.2	0.0	0.6	3.6
Castelo Branco	2.2	0.1	0.5	0.4	46.3	11.2	1.8	0.4	1.0	3.3	19.0	0.5	1.9	1.0	2.6	0.0	0.9	0.6	0.0	0.1	0.6	5.4
Coimbra	2.4	0.1	0.2	0.2	2.1	71.5	0.8	0.7	0.6	2.6	5.3	0.1	1.4	0.7	0.4	0.1	0.6	0.5	0.3	0.1	0.4	9.1
Évora	0.6	3.2	0.4	0.0	1.7	3.1	43.1	3.4	0.5	1.4	24.3	3.4	0.6	2.5	3.7	0.0	0.1	0.0	0.2	0.0	0.1	7.6
Faro	1.5	1.7	0.3	0.5	1.6	5.6	4.5	43.7	0.3	1.0	24.3	0.9	1.2	1.2	3.1	0.1	0.2	0.2	0.2	0.0	1.4	6.6
Guarda	6.8	0.0	1.3	2.5	14.8	24.2	1.1	0.3	11.9	2.2	14.0	0.2	5.0	1.7	0.2	0.3	1.9	6.4	0.2	0.0	0.0	5.2
Leiria	4.6	0.2	0.4	0.4	5.1	14.7	2.1	1.1	0.6	33.5	22.3	0.8	1.5	3.0	1.9	0.0	0.5	0.6	0.1	0.0	0.8	5.8
Lisboa	0.3	0.1	0.1	0.1	1.0	1.1	1.0	1.0	0.1	1.7	67.3	0.4	0.3	1.6	6.7	0.0	0.0	0.1	0.1	0.1	1.3	15.5
Portalegre	2.6	1.6	0.0	0.3	9.7	5.2	16.7	1.8	1.0	1.0	32.1	18.3	1.0	1.6	4.2	0.0	0.5	0.3	0.0	0.0	0.0	2.1
Porto	4.3	0.0	5.5	2.6	1.8	6.0	0.3	0.3	0.5	0.7	2.9	0.1	53.8	0.2	0.1	1.0	4.0	0.8	0.1	0.0	0.8	14.2
Santarém	3.0	0.1	0.3	0.2	6.4	11.0	4.1	1.3	0.1	9.0	34.7	1.1	1.1	16.5	3.5	0.1	0.4	0.2	0.1	0.0	0.8	6.0
Setúbal	0.3	0.9	0.1	0.1	1.2	1.4	4.5	2.7	0.2	0.6	37.3	0.5	0.7	1.8	34.8	0.1	0.1	0.2	0.0	0.1	0.8	11.8
Viana do Castelo	4.2	0.0	20.1	1.8	2.9	10.7	0.4	0.3	0.8	1.4	5.4	0.0	19.5	0.3	0.3	20.2	4.8	1.0	0.3	0.0	0.5	5.1
Vila Real	3.7	0.0	5.1	7.8	3.9	10.5	0.3	0.3	1.6	0.7	4.1	0.0	16.2	0.4	0.3	0.8	33.3	3.3	0.0	0.0	0.4	7.2
Viseu	10.1	0.0	0.9	0.9	5.3	22.8	0.7	0.5	2.2	2.1	10.5	0.1	10.2	0.6	0.9	0.0	3.1	23.6	0.1	0.1	0.5	4.8
R. A. Açores	3.3	0.1	2.4	0.2	1.7	6.7	1.6	0.7	0.4	1.7	21.6	0.3	9.9	1.3	2.0	0.1	0.7	0.2	40.8	0.1	0.3	3.8
R. A. Madeira	1.9	0.6	2.2	0.1	2.5	7.3	1.3	1.6	0.1	2.6	22.0	0.2	9.3	1.4	2.2	0.3	1.5	0.6	0.4	33.6	0.2	7.9
Emigrants	3.1	0.0	7.6	0.3	1.8	6.1	0.5	0.3	0.0	0.5	33.6	0.0	29.0	0.0	1.0	0.5	1.0	1.3	0.0	2.5	10.4	0.5
Total	4.2	0.4	6.9	1.6	3.3	10.5	2.0	2.4	0.7	3.1	25.8	0.5	14.3	1.6	3.7	1.2	2.6	1.6	0.9	1.0	0.9	10.8

Source: DGES

Table 44 - Mobility index of region y coming from region x 2008 (%)

2008	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed	Total
Aveiro	45.2	1.2	1.5	6.0	6.5	13.3	2.3	2.1	8.4	4.8	1.1	2.7	9.1	3.9	0.6	1.7	4.8	15.8	1.1	0.2	6.3	6.4	6.8
Beja	0.3	47.7	0.0	0.1	0.4	0.3	6.1	6.6	0.5	0.2	1.4	2.3	0.1	0.4	1.6	0.0	0.2	0.0	0.7	0.2	0.9	0.5	1.2
Braga	5.5	0.7	71.1	22.7	6.4	6.3	2.0	2.0	8.9	3.6	1.0	3.3	10.3	1.8	0.6	35.3	16.9	5.8	1.6	0.0	4.9	9.9	9.9
Bragança	1.2	0.0	0.5	19.5	1.3	1.0	0.2	0.2	0.3	0.0	0.2	0.0	1.2	0.0	0.1	0.3	4.4	0.5	0.0	0.0	0.6	0.6	1.0
Castelo Branco	1.0	0.2	0.1	0.1	27.8	1.9	1.8	0.6	3.1	0.9	1.1	4.4	0.1	1.7	0.5	0.0	0.4	0.5	0.0	0.0	0.6	0.8	1.8
Coimbra	4.2	0.2	0.2	0.6	3.1	34.2	1.6	0.6	4.7	4.4	0.9	1.2	0.6	2.6	0.3	0.0	0.3	2.3	1.8	0.2	3.4	4.8	5.0
Évora	0.2	8.6	0.0	0.2	0.7	0.4	30.7	2.2	0.3	0.1	1.5	10.2	0.0	1.4	2.5	0.0	0.1	0.0	0.2	0.2	0.6	0.7	1.4
Faro	0.6	11.1	0.1	0.2	1.7	1.2	5.9	60.6	0.8	0.8	3.2	4.2	0.2	2.0	2.5	0.1	0.1	0.4	0.5	0.0	4.0	2.3	3.5
Guarda	1.4	0.0	0.1	1.7	9.3	3.3	0.9	0.5	36.5	0.3	0.8	1.2	0.4	0.8	0.7	0.0	1.3	3.6	0.2	0.0	0.6	0.6	1.5
Leiria	4.8	1.9	0.3	1.1	4.2	8.1	5.3	1.9	1.0	45.4	4.5	5.0	0.6	8.9	2.3	0.1	0.5	1.3	0.7	0.2	4.0	2.7	4.7
Lisboa	1.3	7.4	0.4	1.1	4.8	2.1	9.9	6.8	3.4	15.6	57.7	11.6	0.4	23.3	25.5	0.1	1.6	2.4	3.4	0.5	31.7	28.4	20.6
Portalegre	0.3	1.4	0.0	0.1	2.1	0.5	6.4	1.1	0.5	0.5	1.0	32.4	0.1	0.9	0.6	0.0	0.1	0.2	0.4	0.0	0.3	0.5	1.0
Porto	15.8	1.6	13.8	23.5	9.0	7.1	1.9	2.8	11.3	4.2	1.7	3.5	64.7	1.9	0.9	18.3	29.2	9.0	3.0	0.5	17.1	22.7	17.2
Santarém	2.6	2.8	0.2	0.7	6.7	4.6	9.3	2.1	1.8	10.8	5.5	6.2	0.4	40.9	4.1	0.5	1.2	0.7	0.7	0.4	2.6	2.7	4.2
Setúbal	0.6	11.6	0.1	0.5	1.8	0.6	9.7	4.1	1.3	2.4	11.8	5.8	0.1	4.3	53.5	0.0	0.8	0.3	0.7	0.4	9.4	6.5	6.7
Viana do Castelo	1.8	0.0	7.2	3.4	1.8	1.7	0.5	0.7	1.0	1.2	0.4	0.8	3.8	0.9	0.3	41.1	4.4	1.1	0.5	0.4	2.9	2.3	2.5
Vila Real	1.7	0.2	1.8	12.2	2.7	2.0	0.5	0.5	2.1	0.6	0.3	0.4	2.6	0.3	0.2	0.8	24.4	3.9	0.5	0.4	0.6	1.6	2.1
Viseu	7.5	0.2	0.5	4.7	5.0	7.4	0.5	1.0	10.5	1.4	1.3	1.2	2.2	1.5	0.5	0.4	6.4	51.5	0.5	0.2	1.4	2.2	3.6
R. A. Açores	1.8	0.7	0.6	0.6	2.0	1.3	1.5	0.9	0.8	1.0	1.7	1.5	1.0	1.4	0.8	0.3	0.8	0.0	78.8	0.4	0.6	1.0	2.0
R. A. Madeira	1.5	2.5	1.1	0.9	2.3	2.2	2.6	2.7	2.6	1.6	2.4	1.9	1.7	1.1	1.6	0.8	2.1	0.5	4.8	95.2	1.1	2.9	3.1
Emigrants	0.7	0.0	0.5	0.1	0.4	0.5	0.1	0.1	0.0	0.3	0.6	0.0	0.4	0.0	0.1	0.0	0.1	0.4	0.0	0.9	6.6	0.0	0.4

Source: DGES

Table 45 - Mobility index of region y coming from region x 2009 (%)

2009	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed	Total
Aveiro	45.6	0.8	1.4	4.7	6.9	11.3	2.3	1.6	10.7	4.6	1.0	3.2	5.6	2.7	0.6	1.9	3.9	15.6	1.1	0.2	2.1	4.4	5.7
Beja	0.2	46.5	0.0	0.1	0.3	0.4	5.6	6.7	0.0	0.0	1.3	1.8	0.0	0.6	2.1	0.0	0.2	0.0	0.0	0.0	1.1	0.8	1.2
Braga	5.7	0.5	70.4	24.0	6.4	5.9	2.5	1.7	8.3	3.1	1.0	1.8	9.9	1.4	0.4	38.2	19.4	3.3	2.6	0.7	7.4	9.3	9.8
Bragança	1.1	0.0	0.8	20.9	1.7	1.1	0.3	0.1	0.7	0.2	0.3	0.2	1.0	0.3	0.2	0.0	4.6	0.8	0.4	0.0	0.7	0.5	1.1
Castelo Branco	1.4	1.0	0.2	0.6	27.5	2.6	2.3	0.6	5.0	1.0	1.1	2.5	0.2	1.2	0.9	0.0	0.5	0.8	0.2	0.0	0.4	0.9	1.9
Coimbra	4.1	0.3	0.2	0.6	2.6	35.7	0.9	0.9	2.9	5.0	0.8	2.0	0.6	2.2	0.6	0.0	0.4	2.8	0.9	0.2	0.7	3.8	4.9
Évora	0.3	11.7	0.0	0.1	0.4	0.4	30.0	2.4	0.5	0.2	1.6	7.0	0.0	1.6	1.8	0.0	0.0	0.2	0.0	0.0	0.0	1.0	1.5
Faro	0.8	13.8	0.1	0.3	1.2	1.4	6.4	63.1	1.0	1.7	3.4	5.2	0.2	2.2	2.1	0.0	0.2	0.2	0.6	0.0	1.4	3.5	3.8
Guarda	1.7	0.3	0.1	0.6	8.6	2.6	0.8	0.5	28.8	0.5	0.8	3.0	0.3	1.0	0.6	0.4	1.3	4.0	0.7	0.0	1.4	0.5	1.4
Leiria	4.4	1.6	0.3	0.6	5.6	8.3	3.9	2.3	2.6	47.6	4.4	6.4	0.7	9.3	2.5	0.1	0.5	1.0	0.7	0.4	4.2	3.4	5.0
Lisboa	1.1	5.2	0.3	2.5	5.1	2.2	12.4	6.2	6.2	14.9	59.1	12.7	0.7	20.9	32.5	0.6	0.8	1.6	2.6	1.8	35.9	31.1	21.7
Portalegre	0.1	1.6	0.1	0.1	1.6	0.9	5.8	0.7	1.2	0.3	0.9	27.0	0.0	1.4	0.8	0.0	0.1	0.0	0.0	0.0	1.8	0.6	0.9
Porto	17.4	2.1	13.9	21.2	10.4	8.3	2.3	2.1	11.2	4.1	1.8	4.8	68.1	2.7	1.0	12.9	29.1	9.0	2.0	0.5	21.1	22.9	17.6
Santarém	2.2	2.9	0.0	0.7	6.3	4.3	8.5	2.5	2.1	8.2	5.7	10.9	0.4	43.2	3.2	0.3	0.5	1.3	1.5	0.2	1.4	2.7	4.2
Setúbal	0.5	8.6	0.1	0.5	1.7	0.8	10.8	4.5	1.2	2.6	10.4	5.9	0.1	4.2	47.2	0.4	0.5	0.6	0.9	0.2	6.0	5.9	6.0
Viana do Castelo	2.4	0.0	7.5	4.1	1.1	2.0	0.4	0.5	2.1	0.7	0.3	0.5	4.0	1.5	0.4	43.9	3.8	0.8	0.4	0.0	1.1	1.8	2.6
Vila Real	1.7	0.3	2.3	12.4	2.6	1.9	0.4	0.3	1.2	0.6	0.4	0.7	2.9	0.2	0.2	0.4	27.3	4.2	0.2	0.2	2.1	1.7	2.2
Viseu	6.7	0.0	0.5	3.9	6.3	6.8	0.6	0.6	11.4	2.2	1.1	1.1	2.2	0.9	0.7	0.1	5.1	53.1	0.6	0.0	1.8	2.0	3.5
R. A. Açores	0.8	0.5	0.4	0.7	1.4	1.1	1.0	0.7	1.0	1.0	1.7	0.9	0.9	1.0	0.7	0.3	0.8	0.3	78.3	0.0	0.7	0.6	1.8
R. A. Madeira	1.0	2.3	0.7	1.0	1.7	1.8	2.7	1.9	1.9	1.4	2.4	2.3	1.8	1.4	1.3	0.5	0.9	0.3	6.3	95.1	1.4	2.5	2.9
Emigrants	0.9	0.0	0.3	0.1	0.4	0.3	0.0	0.2	0.0	0.2	0.6	0.0	0.4	0.0	0.1	0.0	0.3	0.2	0.0	0.5	7.4	0.0	0.4

Source: DGES

Table 46 - Mobility index of region y coming from region x 2010 (%)

2010	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed	Total
Aveiro	40.9	1.9	1.0	4.6	7.2	12.3	1.7	1.3	12.1	4.2	0.7	2.7	5.4	1.8	0.7	1.2	3.7	14.0	1.5	0.0	2.4	4.6	5.4
Beja	0.2	39.7	0.0	0.0	0.3	0.4	6.1	5.3	0.5	0.4	1.5	2.9	0.0	0.6	1.5	0.0	0.0	0.1	0.4	0.0	0.6	0.7	1.2
Braga	6.1	1.7	70.9	23.3	7.2	5.7	1.3	1.9	9.2	2.8	1.1	3.9	8.9	2.1	0.7	35.3	20.8	5.9	0.9	0.0	8.0	10.1	10.1
Bragança	1.0	0.0	0.6	19.2	1.5	1.2	0.2	0.3	0.8	0.6	0.2	0.5	1.3	0.0	0.1	0.7	4.0	0.5	0.0	0.2	0.6	0.7	1.1
Castelo Branco	1.0	0.7	0.2	0.7	24.1	2.0	1.7	0.4	3.7	1.2	1.2	2.0	0.2	1.9	1.0	0.0	0.5	0.7	0.0	0.0	0.0	0.9	1.7
Coimbra	4.0	0.0	0.2	0.8	3.2	34.5	1.1	0.8	5.3	4.3	1.0	2.0	0.5	2.0	0.4	0.1	0.8	2.6	1.3	0.4	2.7	4.1	4.9
Évora	0.2	9.4	0.0	0.1	1.1	0.3	32.0	4.0	0.5	0.5	1.2	6.1	0.1	1.4	1.7	0.0	0.0	0.1	0.0	0.0	0.6	1.0	1.4
Faro	1.1	14.7	0.1	0.5	1.6	1.1	7.2	61.1	0.3	1.3	3.4	4.7	0.2	2.0	2.8	0.1	0.1	0.2	0.9	0.0	4.2	2.4	3.6
Guarda	1.8	0.5	0.2	1.2	9.4	3.2	0.5	0.6	25.0	0.7	0.6	1.2	0.3	0.6	0.6	0.1	0.9	2.8	0.4	0.0	0.3	0.7	1.4
Leiria	5.6	2.4	0.4	1.2	4.9	8.7	5.6	2.3	3.2	49.0	4.7	6.1	0.6	10.8	2.4	0.4	0.8	1.2	1.3	0.4	3.3	3.5	5.2
Lisboa	1.1	7.0	0.4	2.5	4.6	1.9	9.6	6.0	4.2	12.7	59.7	13.5	0.3	19.3	34.1	1.0	0.6	1.5	3.0	1.4	34.7	28.5	21.5
Portalegre	0.3	1.4	0.0	0.0	2.3	0.8	6.2	1.0	0.3	0.5	0.9	24.8	0.0	0.6	0.8	0.0	0.1	0.0	0.2	0.0	0.0	0.5	0.9
Porto	20.0	1.2	14.1	24.3	10.5	8.3	2.7	3.9	12.9	4.8	2.1	4.2	69.9	3.3	1.0	13.9	27.2	10.4	1.7	0.8	23.4	25.9	18.5
Santarém	2.4	1.9	0.2	0.5	6.1	4.6	7.4	2.0	1.6	9.3	5.5	10.8	0.4	44.2	4.6	0.1	0.2	0.4	0.7	0.2	2.7	2.6	4.1
Setúbal	0.3	13.7	0.1	0.2	1.2	0.5	10.2	4.6	1.1	1.3	9.7	9.6	0.2	4.7	44.2	0.0	0.2	0.2	1.1	0.0	6.5	5.6	5.6
Viana do Castelo	2.3	0.5	7.7	3.9	2.0	1.9	1.2	0.7	1.6	1.5	0.4	0.7	3.6	0.0	0.2	44.9	3.9	1.2	0.7	0.0	0.9	1.7	2.6
Vila Real	2.1	0.7	1.8	11.4	2.5	2.1	0.1	0.8	4.2	0.9	0.4	0.2	2.8	0.7	0.2	0.4	29.5	4.1	0.7	0.2	1.2	1.7	2.3
Viseu	7.0	0.2	0.6	4.1	6.7	6.8	1.3	0.4	12.4	1.3	1.4	0.2	2.5	1.5	0.7	0.4	4.3	53.0	1.3	0.2	0.9	1.8	3.6
R. A. Açores	1.2	0.5	0.4	0.6	1.1	1.2	1.0	0.8	0.5	1.2	1.6	0.5	0.9	1.2	1.1	0.4	0.8	0.4	79.7	0.6	1.5	0.5	1.8
R. A. Madeira	1.2	1.9	0.9	0.8	2.3	2.0	2.4	1.7	0.5	1.6	2.4	3.2	1.5	1.1	1.5	0.4	1.2	0.3	4.1	95.2	0.3	2.2	2.8
Emigrants	0.4	0.0	0.3	0.1	0.3	0.4	0.4	0.1	0.3	0.1	0.5	0.0	0.4	0.0	0.0	0.4	0.5	0.3	0.0	0.6	5.3	0.0	0.3

Source: DGES

Table 47 - Mobility index of region y coming from region x 2011 (%)

2011	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed	Total
Aveiro	44.3	2.7	1.2	4.3	7.8	10.7	1.2	1.0	12.0	2.7	1.0	3.1	4.5	2.6	0.7	1.1	3.6	9.9	1.1	0.2	2.3	4.1	5.2
Beja	0.2	44.8	0.0	0.3	0.4	0.4	5.2	4.9	0.0	0.2	1.3	3.5	0.0	0.8	1.5	0.0	0.0	0.0	0.0	0.0	0.4	0.7	1.1
Braga	5.7	2.3	71.1	21.5	6.3	5.4	1.8	1.8	10.3	2.9	1.2	2.8	8.3	1.7	0.7	41.1	19.8	5.4	1.1	0.6	7.6	9.0	9.9
Bragança	0.8	0.0	0.8	22.7	2.4	1.5	0.7	0.1	0.0	0.4	0.3	0.0	1.1	0.3	0.3	0.2	5.7	0.9	0.2	0.0	0.0	0.8	1.2
Castelo Branco	1.1	0.0	0.1	0.5	24.2	2.2	1.5	0.7	4.5	0.9	1.1	5.2	0.1	1.0	0.7	0.0	0.2	1.0	0.2	0.0	0.0	1.1	1.8
Coimbra	2.6	0.4	0.2	0.5	3.1	35.9	0.7	1.2	5.8	4.5	1.0	0.3	0.4	2.1	0.6	0.2	1.0	2.7	1.5	0.0	3.1	3.4	5.1
Évora	0.2	10.0	0.0	0.2	0.5	0.2	34.4	2.9	0.0	0.5	1.8	7.3	0.1	1.2	1.6	0.0	0.2	0.0	0.0	0.2	1.1	1.2	1.6
Faro	0.6	12.6	0.4	0.6	1.5	1.5	6.5	60.6	0.3	1.4	3.4	4.5	0.3	2.5	2.7	0.0	0.1	0.9	0.6	0.4	5.3	2.5	3.4
Guarda	1.9	1.1	0.0	0.9	7.2	2.5	1.0	0.3	23.7	0.6	0.8	1.0	0.3	0.5	0.4	0.2	1.1	4.1	0.4	0.0	0.4	0.7	1.3
Leiria	4.7	2.7	0.3	1.7	5.2	8.6	5.3	2.7	2.1	52.4	4.2	8.0	0.5	10.0	2.8	0.0	0.6	1.3	1.1	0.4	1.9	3.6	5.0
Lisboa	1.2	6.5	0.4	1.5	4.3	2.2	12.2	7.5	5.2	10.6	61.6	13.5	0.5	21.5	38.3	0.6	0.7	2.4	2.3	1.7	37.8	28.3	22.5
Portalegre	0.2	0.4	0.1	0.2	2.8	0.3	7.2	0.8	0.0	0.5	0.9	26.6	0.0	0.8	0.9	0.0	0.1	0.0	0.2	0.0	1.1	0.6	0.8
Porto	20.3	2.3	14.0	23.6	11.8	9.8	1.5	3.6	15.1	5.5	2.0	3.1	72.5	2.5	1.4	12.2	25.9	9.9	2.7	0.4	24.4	28.2	19.6
Santarém	2.6	1.9	0.3	0.3	5.4	3.6	7.8	2.3	1.7	8.8	4.7	4.2	0.2	42.0	3.8	0.0	0.5	0.6	1.7	0.0	1.9	2.7	3.6
Setúbal	0.5	8.0	0.1	0.5	1.2	0.5	8.9	4.6	1.0	2.5	8.5	9.3	0.1	4.1	39.7	0.2	0.5	0.4	0.6	0.0	6.5	5.1	5.0
Viana do Castelo	2.9	0.0	6.5	4.9	2.1	1.8	0.6	0.9	2.4	0.5	0.3	1.7	3.5	1.0	0.3	42.6	4.0	0.6	0.6	0.0	0.4	1.5	2.4
Vila Real	1.4	0.4	2.1	9.8	3.4	2.1	0.3	0.5	2.4	0.8	0.4	0.0	2.3	0.0	0.2	0.3	30.7	2.8	0.4	0.0	0.4	1.8	2.2
Viseu	6.6	0.8	0.6	4.1	7.6	7.5	0.4	0.8	11.0	1.4	1.2	0.7	2.3	0.3	0.7	0.6	3.8	56.0	0.4	0.0	1.5	1.8	3.4
R. A. Açores	0.6	0.8	0.5	0.6	1.1	1.1	0.8	0.7	0.3	0.9	1.4	1.0	0.8	1.4	1.1	0.5	0.2	0.3	82.0	0.6	1.1	0.7	1.8
R. A. Madeira	1.4	2.3	0.9	1.4	1.8	2.0	1.8	2.0	1.7	1.8	2.4	4.2	1.7	3.7	1.5	0.3	1.2	0.9	2.7	95.0	0.0	2.5	3.0
Emigrants	0.2	0.0	0.5	0.0	0.1	0.3	0.2	0.3	0.3	0.1	0.5	0.0	0.3	0.0	0.1	0.2	0.2	0.0	0.0	0.6	2.7	0.0	0.3

Source: DGES

Table 48 - Mobility index of region y coming from region x 2012 (%)

2012	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed	Total
Aveiro	44.3	1.3	0.9	3.1	8.0	10.7	2.7	1.7	9.0	3.7	0.9	3.9	4.3	2.2	0.4	0.7	2.5	12.8	0.2	0.0	2.7	5.6	5.3
Beja	0.1	48.7	0.0	0.0	0.2	0.2	4.2	6.0	0.7	0.2	1.2	3.4	0.1	0.6	1.1	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.9
Braga	5.6	1.3	70.0	18.9	7.5	5.6	1.7	2.8	8.0	3.4	1.0	5.9	9.5	1.4	0.8	39.9	20.2	4.9	1.9	0.4	15.5	8.6	10.0
Bragança	0.6	0.4	0.7	20.4	1.6	1.3	0.3	0.3	1.0	0.1	0.3	0.0	1.1	0.0	0.5	0.2	4.8	0.6	0.2	0.0	1.6	0.5	1.0
Castelo Branco	0.7	0.0	0.2	0.0	25.9	2.0	1.1	0.4	3.1	1.2	1.3	4.9	0.1	1.1	0.9	0.0	0.3	0.0	0.2	0.2	0.5	1.0	1.8
Coimbra	3.0	0.0	0.1	0.7	3.6	37.2	1.1	1.3	4.8	5.0	1.0	1.0	0.4	2.3	0.3	0.0	0.6	2.7	0.8	0.2	3.5	3.6	5.2
Évora	0.2	11.8	0.0	0.0	1.0	0.3	34.7	2.6	0.0	0.3	1.6	4.9	0.0	1.4	2.3	0.0	0.0	0.0	0.0	0.0	0.3	1.1	1.6
Faro	0.8	13.6	0.1	0.7	1.8	1.6	7.2	56.6	0.3	0.6	3.0	3.9	0.3	2.3	3.6	0.0	0.3	0.6	0.6	0.0	3.3	1.7	3.2
Guarda	2.1	0.0	0.2	0.5	7.3	3.0	0.5	0.4	27.3	0.4	0.6	0.0	0.5	0.6	0.3	0.0	0.9	4.6	0.0	0.2	0.5	0.6	1.3
Leiria	4.0	0.9	0.2	1.1	5.1	6.3	4.5	2.3	4.8	50.0	4.3	5.9	0.5	9.2	3.0	0.0	0.4	1.6	2.1	0.0	3.5	2.9	4.5
Lisboa	1.3	7.9	0.3	1.1	4.2	1.9	11.6	8.7	1.0	13.6	63.6	11.8	0.4	23.6	43.3	0.2	0.8	1.5	3.3	3.0	31.9	30.3	23.9
Portalegre	0.3	1.3	0.0	0.0	2.1	0.4	6.0	1.2	0.7	0.5	0.9	31.9	0.0	1.4	1.4	0.0	0.2	0.1	0.0	0.0	0.3	0.4	0.8
Porto	19.5	1.8	15.5	30.8	12.0	10.7	2.9	5.2	19.4	5.2	2.1	4.9	71.5	3.0	1.1	18.3	28.3	11.6	2.7	0.6	20.7	28.3	20.0
Santarém	2.8	1.8	0.0	0.9	4.7	3.6	8.3	2.0	2.1	8.5	4.7	8.3	0.3	43.1	4.1	0.2	0.3	0.1	1.5	0.0	1.1	2.5	3.5
Setúbal	0.1	7.9	0.1	0.0	1.4	0.2	8.1	4.5	1.0	1.8	7.2	4.4	0.1	3.0	32.8	0.0	0.3	0.1	1.0	0.2	4.6	4.3	4.1
Viana do Castelo	3.0	0.4	7.5	3.2	1.9	2.0	1.0	0.6	2.4	0.7	0.4	0.5	3.4	0.6	0.5	38.4	3.4	0.4	0.4	0.0	1.4	1.7	2.4
Vila Real	1.8	0.0	1.8	13.7	2.0	2.2	0.3	0.5	2.1	1.0	0.3	1.0	2.4	0.3	0.2	0.9	30.2	5.9	0.2	0.2	1.4	1.8	2.2
Viseu	7.0	0.0	0.6	3.1	6.7	7.6	0.7	0.5	9.7	1.5	1.1	1.0	2.4	0.9	0.9	0.0	4.3	51.2	1.0	0.2	2.5	1.9	3.3
R. A. Açores	1.3	0.9	0.5	0.5	1.1	1.0	1.5	0.9	1.4	1.1	1.6	0.0	1.0	1.4	1.3	0.4	0.7	0.6	81.0	0.4	1.1	0.6	1.9
R. A. Madeira	1.4	0.0	0.9	1.3	1.8	2.0	1.4	1.5	0.7	1.2	2.3	2.5	1.4	1.6	1.3	0.5	1.3	0.6	2.7	94.0	0.8	2.3	2.7
Emigrants	0.3	0.0	0.4	0.0	0.3	0.3	0.1	0.1	0.3	0.0	0.5	0.0	0.3	0.0	0.1	0.4	0.2	0.0	0.0	0.0	2.2	0.0	0.3

Source: DGES

Table 49 - Mobility index of region y coming from region x 2013 (%)

2013	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed	Total
Aveiro	44.9	1.3	1.0	3.6	6.9	8.9	1.4	1.2	16.4	3.8	1.1	0.6	3.9	2.8	0.9	1.2	3.6	13.6	0.7	0.0	3.1	5.4	5.2
Beja	0.3	47.8	0.0	0.0	0.2	0.4	4.7	5.6	0.5	0.3	1.2	1.2	0.1	0.0	1.2	0.2	0.0	0.0	0.2	0.0	1.3	0.5	0.9
Braga	6.3	0.0	69.9	17.3	7.3	6.6	0.9	1.6	8.2	3.6	1.1	1.8	8.8	2.4	0.8	41.2	17.8	4.4	0.5	0.0	8.0	9.4	9.9
Bragança	0.5	0.0	1.0	20.4	1.4	1.3	0.3	0.2	0.5	0.1	0.2	0.0	1.2	0.0	0.5	0.0	3.1	0.0	0.2	0.0	1.5	0.5	0.9
Castelo Branco	0.8	1.3	0.2	0.2	25.1	1.7	0.9	0.2	3.3	1.0	1.3	2.4	0.2	1.2	0.4	0.2	0.1	0.0	0.5	0.0	0.5	0.9	1.7
Coimbra	3.2	0.0	0.1	1.4	3.5	37.6	1.4	0.8	4.4	4.3	1.1	0.6	0.5	1.8	0.6	0.2	0.9	1.9	1.0	0.2	4.1	4.9	5.4
Évora	0.1	8.8	0.1	0.0	0.6	0.4	33.4	2.4	0.0	0.2	1.5	6.0	0.0	1.0	2.5	0.0	0.1	0.0	0.0	0.0	2.8	0.8	1.4
Faro	0.6	20.1	0.3	0.5	2.1	1.2	7.5	57.5	0.5	0.9	3.4	9.0	0.4	1.2	3.4	0.0	0.3	0.8	1.0	0.0	2.1	1.6	3.1
Guarda	1.7	0.0	0.1	0.7	6.9	2.2	0.8	0.5	23.5	0.3	0.8	0.0	0.4	0.2	0.6	0.2	0.9	5.3	0.2	0.0	1.3	0.5	1.2
Leiria	3.4	0.0	0.4	1.2	5.8	7.1	6.0	1.4	1.1	51.1	4.4	5.4	0.6	9.2	2.8	0.0	0.5	1.1	1.2	0.2	5.7	2.5	4.6
Lisboa	1.1	6.9	0.3	3.6	4.3	1.6	11.0	9.5	3.8	14.1	62.4	10.2	0.3	27.7	41.8	0.4	0.6	2.7	2.4	1.5	30.1	31.7	23.9
Portalegre	0.1	0.0	0.0	0.0	1.9	0.4	6.2	1.7	0.5	0.4	1.1	41.0	0.1	1.2	1.2	0.0	0.3	0.2	0.0	0.0	0.3	0.4	0.9
Porto	20.5	2.5	15.5	29.5	12.5	11.5	2.7	5.4	14.8	4.1	2.2	5.4	71.7	4.0	1.2	15.9	32.7	10.2	1.0	1.1	23.4	28.3	20.4
Santarém	2.4	1.3	0.1	0.7	5.0	3.5	8.5	2.2	2.7	8.6	5.1	5.4	0.3	38.3	3.7	0.2	0.9	0.6	0.5	0.0	3.9	1.9	3.5
Setúbal	0.3	7.5	0.0	0.2	1.4	0.4	10.1	3.6	0.5	1.3	6.8	7.2	0.1	3.0	34.2	0.0	0.1	0.2	1.0	0.2	4.9	3.4	4.0
Viana do Castelo	2.1	0.0	7.2	2.2	2.1	2.0	0.5	0.7	1.1	1.0	0.4	0.6	3.7	0.4	0.5	39.6	4.0	1.5	0.2	0.2	1.3	1.5	2.4
Vila Real	2.4	0.0	1.8	13.2	3.7	2.6	0.4	0.6	3.3	0.4	0.3	0.6	2.7	0.4	0.2	0.0	27.6	3.4	0.2	0.0	1.0	1.4	2.2
Viseu	6.1	0.6	0.3	3.8	6.6	7.4	1.3	0.7	13.7	2.0	1.5	0.6	2.3	1.2	0.8	0.0	4.1	53.0	0.2	0.2	1.8	1.7	3.3
R. A. Açores	1.7	1.3	0.4	0.7	0.9	1.1	0.8	1.2	0.0	1.6	1.6	1.2	0.9	1.6	1.1	0.2	0.9	0.8	87.0	0.2	0.8	0.7	2.0
R. A. Madeira	1.1	0.6	0.9	0.7	1.8	1.9	1.3	2.7	1.1	0.9	2.2	0.6	1.4	2.4	1.3	0.4	1.5	0.4	1.9	95.6	1.3	2.1	2.7
Emigrants	0.2	0.0	0.2	0.0	0.1	0.2	0.1	0.1	0.0	0.1	0.3	0.0	0.4	0.0	0.4	0.0	0.1	0.0	0.0	0.4	1.0	0.0	0.3

Source: DGES

Table 50 - Mobility index of region y coming from region x 2014 (%)

2014	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed	Total
Aveiro	43.9	0.6	1.2	3.2	5.7	9.0	2.0	1.9	12.9	4.8	1.1	2.1	4.2	2.4	0.6	1.4	5.2	11.7	1.0	0.2	3.5	5.6	5.3
Beja	0.0	43.7	0.0	0.2	0.4	0.3	3.4	4.0	0.0	0.3	1.4	1.0	0.0	0.7	1.9	0.0	0.0	0.0	0.0	0.2	0.0	0.5	0.9
Braga	6.5	0.0	69.6	18.1	8.2	6.6	0.7	2.1	9.7	2.6	1.1	1.6	8.9	0.9	0.3	38.4	18.2	5.5	0.5	0.2	12.8	8.2	9.8
Bragança	0.9	0.0	0.8	23.7	1.6	1.4	0.4	0.0	0.4	0.1	0.3	0.5	0.9	0.0	0.3	0.0	3.4	0.6	0.0	0.0	0.0	0.5	0.9
Castelo Branco	0.6	0.6	0.1	0.2	25.4	1.8	1.1	1.0	4.0	0.9	1.6	4.2	0.2	1.3	1.0	0.2	0.3	0.8	0.5	0.0	0.3	1.0	1.8
Coimbra	3.1	0.0	0.1	0.6	3.4	37.2	1.2	1.2	2.9	4.0	1.2	1.6	0.5	1.6	0.3	0.2	0.3	2.5	0.5	0.0	4.5	3.7	5.1
Évora	0.1	15.6	0.1	0.0	0.9	0.4	38.0	2.5	0.4	0.6	1.5	5.8	0.1	1.5	2.5	0.0	0.0	0.4	0.3	0.0	1.0	0.9	1.6
Faro	0.5	15.6	0.3	0.0	1.9	1.1	6.2	60.6	0.4	0.8	3.2	5.2	0.3	1.8	3.5	0.0	0.3	0.2	0.0	0.0	3.2	2.1	3.1
Guarda	1.8	0.0	0.1	1.3	5.9	3.0	0.7	0.3	20.5	0.9	0.8	0.5	0.5	0.7	0.7	0.2	0.5	2.1	0.0	0.0	0.0	0.5	1.2
Leiria	3.5	1.2	0.3	0.9	2.9	6.2	4.7	3.0	1.1	50.3	4.6	4.2	0.4	12.2	3.1	1.0	0.6	1.1	0.3	0.2	3.8	2.7	4.5
Lisboa	1.4	10.8	0.2	3.6	5.9	1.2	13.3	9.4	3.6	14.3	61.0	17.3	0.3	25.1	44.3	0.2	0.9	1.5	2.8	1.8	37.4	30.0	23.8
Portalegre	0.1	1.8	0.0	0.0	1.7	0.4	5.1	1.1	0.4	0.8	1.1	35.6	0.0	2.4	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.4	0.8
Porto	22.2	0.6	16.6	26.7	13.9	13.2	2.5	3.7	22.7	3.6	2.3	3.7	71.6	3.6	0.6	18.6	31.2	11.2	0.8	0.4	20.8	30.0	20.8
Santarém	2.0	0.0	0.1	0.9	4.7	3.0	7.5	2.3	2.2	7.6	4.8	5.8	0.3	36.0	3.3	0.0	0.5	0.0	0.8	0.2	2.2	1.9	3.2
Setúbal	0.2	6.6	0.1	0.6	1.4	0.4	8.0	2.9	0.7	1.5	6.6	5.8	0.1	3.6	32.4	0.4	0.2	0.4	0.8	0.2	3.5	3.7	3.9
Viana do Castelo	2.6	0.0	6.5	3.4	2.8	2.1	0.6	0.8	0.7	1.1	0.4	0.0	3.9	0.4	0.4	38.6	3.6	0.9	0.0	0.0	0.6	1.7	2.4
Vila Real	1.4	0.0	1.6	13.4	2.5	2.2	0.4	0.5	3.2	0.7	0.6	0.5	2.1	0.5	0.3	0.8	29.7	3.8	0.8	0.0	1.0	2.1	2.2
Viseu	6.8	1.8	0.5	1.1	7.4	7.2	1.3	0.5	13.7	1.7	1.7	1.6	2.3	1.6	1.0	0.0	2.7	56.6	1.0	0.0	0.6	2.2	3.4
R. A. Açores	1.3	0.0	0.5	1.3	1.2	1.2	1.2	0.6	0.0	1.5	1.6	1.0	1.1	0.7	1.3	0.0	0.7	0.4	88.0	0.2	1.3	0.6	1.9
R. A. Madeira	1.1	0.6	0.9	0.6	1.9	2.0	1.5	1.2	0.7	1.7	2.6	2.1	1.8	2.9	1.4	0.0	1.2	0.4	2.0	96.0	0.3	1.8	2.9
Emigrants	0.1	0.6	0.3	0.2	0.1	0.1	0.4	0.2	0.0	0.2	0.5	0.0	0.5	0.0	0.1	0.2	0.2	0.0	0.0	0.2	3.2	0.0	0.3

Source: DGES

Table 51 - Mobility index of region y coming from region x 2015 (%)

2015	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed	Total
Aveiro	44.7	1.9	0.9	2.9	6.1	10.0	0.9	1.3	13.7	3.8	1.0	2.3	3.7	1.7	0.3	1.1	4.1	13.4	0.5	0.2	2.2	4.5	5.1
Beja	0.1	43.7	0.0	0.3	0.1	0.2	5.9	5.2	0.3	0.1	1.5	0.4	0.0	1.1	1.6	0.0	0.1	0.0	0.2	0.0	1.6	0.5	1.0
Braga	6.0	1.4	69.1	18.8	6.0	6.7	2.0	1.7	8.2	2.1	1.0	3.1	9.0	2.4	0.6	38.0	18.7	4.0	0.9	0.2	8.0	8.2	9.6
Bragança	0.5	0.0	0.8	20.0	1.5	1.3	0.4	0.1	0.6	0.2	0.2	0.4	1.1	0.3	0.0	0.2	2.8	0.6	0.2	0.0	1.0	0.5	0.9
Castelo Branco	0.8	0.0	0.1	0.3	25.2	1.5	0.8	1.1	3.6	1.2	1.1	3.5	0.1	0.6	0.6	0.0	0.3	0.1	0.5	0.0	1.3	1.2	1.6
Coimbra	2.7	0.0	0.2	0.7	3.6	38.1	1.7	1.0	4.6	4.6	1.3	1.5	0.6	1.4	0.6	0.4	0.7	2.2	2.3	0.2	2.2	4.2	5.4
Évora	0.2	10.7	0.1	0.2	0.6	0.2	35.0	1.9	0.9	0.4	1.7	8.8	0.1	0.9	2.7	0.0	0.4	0.1	0.2	0.0	0.3	1.1	1.6
Faro	0.5	15.8	0.1	0.5	1.7	1.2	6.3	63.2	0.3	1.5	3.1	4.2	0.4	4.1	2.8	0.2	0.2	0.6	0.5	0.4	6.1	2.6	3.3
Guarda	1.5	0.0	0.1	0.5	6.1	2.4	0.9	0.6	19.8	0.4	0.9	1.5	0.3	0.3	0.5	0.2	0.9	4.3	0.2	0.0	1.3	0.7	1.2
Leiria	4.8	3.7	0.4	0.3	5.0	7.1	4.6	1.9	1.5	50.1	4.7	8.1	0.7	9.7	2.9	0.5	0.7	1.4	0.2	0.0	5.1	2.5	4.7
Lisboa	1.4	7.4	0.4	1.7	6.7	1.9	13.6	9.5	3.0	14.6	62.3	13.8	0.6	25.9	44.5	0.5	1.1	1.3	5.4	1.2	37.6	36.0	24.9
Portalegre	0.2	0.9	0.0	0.0	1.5	0.6	6.0	0.1	1.5	0.3	1.0	31.5	0.0	1.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.8
Porto	22.7	2.3	17.7	33.1	15.5	10.4	2.9	3.3	18.2	5.3	2.2	2.7	71.4	2.4	1.3	13.2	31.8	12.7	1.4	0.2	20.7	24.2	20.0
Santarém	1.8	0.5	0.2	0.3	4.7	2.8	7.3	2.4	2.1	7.0	4.5	4.6	0.2	37.5	4.1	0.0	0.9	0.4	0.5	0.6	1.0	2.0	3.1
Setúbal	0.4	7.4	0.0	0.2	0.6	0.4	7.0	3.3	1.2	1.5	5.7	8.8	0.1	3.9	31.4	0.0	0.0	1.0	0.9	0.2	3.8	3.8	3.6
Viana do Castelo	2.3	0.0	6.0	3.9	2.1	1.9	0.8	0.5	1.5	1.1	0.5	0.0	3.4	0.2	0.2	43.9	2.6	0.7	0.5	0.2	0.6	1.5	2.3
Vila Real	1.4	0.0	1.7	10.5	3.1	2.4	0.3	0.4	3.6	0.7	0.5	0.4	2.6	0.2	0.5	0.9	28.9	3.3	0.2	0.0	0.3	1.7	2.2
Viseu	5.7	1.4	0.4	3.4	7.2	7.5	0.3	0.5	13.4	1.4	1.4	0.8	2.3	1.3	1.0	0.0	3.7	52.5	0.0	0.2	1.9	2.0	3.3
R. A. Açores	1.3	0.5	0.6	0.7	1.0	1.5	1.4	0.5	0.6	1.7	1.8	1.2	1.3	1.4	1.5	0.2	0.9	0.7	84.4	0.2	1.3	0.5	2.0
R. A. Madeira	1.1	2.3	0.9	1.5	1.7	1.8	1.8	1.5	0.9	1.6	2.8	2.3	1.8	2.8	1.8	0.5	1.0	0.4	1.1	96.0	0.0	1.9	2.9
Emigrants	0.1	0.0	0.3	0.0	0.1	0.4	0.0	0.0	0.3	0.1	0.7	0.0	0.6	0.0	0.1	0.2	0.0	0.0	0.0	0.2	3.8	0.0	0.4

Source: DGES

Table 52 - Mobility index of region y coming from region x 2016 (%)

2016	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed	Total
Aveiro	40.9	0.0	1.2	3.5	6.3	9.8	1.9	0.9	16.5	4.0	1.1	2.1	4.3	2.4	0.5	1.7	4.0	14.5	0.2	0.0	3.1	4.3	5.1
Beja	0.0	45.9	0.0	0.0	0.5	0.3	4.9	5.3	0.3	0.6	1.3	3.0	0.0	1.2	1.1	0.0	0.0	0.1	0.2	0.2	0.8	0.5	1.0
Braga	5.8	0.5	69.5	19.4	7.0	6.4	1.5	1.7	6.1	2.3	1.1	1.3	8.7	1.5	0.7	40.1	18.2	3.6	0.2	0.2	9.0	9.2	9.8
Bragança	0.9	0.0	0.8	23.1	2.4	1.7	0.1	0.1	1.3	0.1	0.2	0.0	1.4	0.1	0.1	0.0	3.1	0.9	0.0	0.0	1.4	0.4	1.0
Castelo Branco	0.7	0.5	0.0	0.4	24.9	1.6	1.5	0.5	2.6	1.1	1.4	2.6	0.1	1.2	1.0	0.2	0.7	0.7	0.2	0.2	1.4	1.0	1.7
Coimbra	2.6	0.0	0.1	1.9	3.3	37.2	0.3	1.0	4.5	4.1	1.4	2.6	0.6	2.5	0.4	0.2	1.3	2.1	0.9	0.2	2.8	3.8	5.3
Évora	0.2	8.8	0.0	0.2	0.5	0.4	33.7	2.7	0.3	0.3	1.7	6.0	0.1	1.2	2.4	0.0	0.2	0.0	0.5	0.4	0.6	1.3	1.6
Faro	0.6	17.6	0.1	0.2	1.4	1.2	8.3	63.8	1.0	0.9	2.9	5.2	0.2	2.2	2.9	0.0	0.1	0.1	0.9	0.2	4.2	2.1	3.1
Guarda	1.7	0.0	0.2	1.1	7.7	2.8	0.4	0.2	25.2	0.8	0.9	2.1	0.2	0.4	0.6	0.0	1.4	3.4	0.2	0.0	0.3	0.6	1.3
Leiria	5.7	1.5	0.2	0.7	5.8	5.8	4.5	2.3	1.3	50.2	4.6	5.2	0.5	9.1	2.7	0.0	0.4	2.1	0.5	0.6	4.8	2.3	4.6
Lisboa	1.6	7.8	0.4	2.2	5.5	2.0	14.5	8.7	5.5	14.5	62.2	20.2	0.6	28.1	45.2	1.3	0.9	2.1	2.7	1.7	38.0	35.7	25.1
Portalegre	0.4	2.4	0.0	0.0	1.7	0.5	5.0	0.9	1.6	0.7	1.2	31.3	0.0	0.9	1.3	0.0	0.0	0.3	0.2	0.0	0.3	0.4	0.9
Porto	22.2	1.0	16.7	27.2	13.3	11.0	1.7	3.3	12.0	4.8	2.1	3.4	71.0	2.8	0.9	23.6	32.4	10.9	1.8	0.9	17.7	25.8	19.8
Santarém	2.2	1.0	0.1	0.4	5.2	2.9	7.2	1.9	1.3	7.3	4.8	4.3	0.4	36.6	3.0	0.0	0.3	0.5	0.9	0.9	2.5	2.5	3.3
Setúbal	0.2	6.8	0.1	0.2	1.0	0.4	9.4	3.1	1.0	1.7	5.1	4.7	0.1	4.2	31.3	0.2	0.3	0.5	0.7	0.2	2.0	3.5	3.5
Viana do Castelo	2.3	0.5	6.5	2.4	2.1	2.3	0.2	0.2	1.9	0.7	0.5	1.3	3.1	0.6	0.3	31.6	4.2	0.5	0.2	0.0	2.0	1.0	2.1
Vila Real	1.5	0.5	1.5	11.7	2.3	2.4	0.2	0.2	1.9	0.4	0.5	1.7	2.5	0.3	0.4	0.7	27.6	2.7	0.0	0.2	1.1	1.7	2.1
Viseu	7.4	1.0	0.5	3.7	7.3	8.2	0.2	0.6	13.3	2.0	1.8	1.3	2.3	1.2	1.2	0.2	2.6	53.6	0.2	0.0	2.5	1.6	3.5
R. A. Açores	1.4	0.5	0.6	0.2	0.7	1.5	1.7	0.9	1.0	1.5	1.7	1.3	1.3	1.5	1.7	0.0	0.7	0.3	88.4	0.0	0.3	0.6	2.0
R. A. Madeira	1.0	3.9	1.0	1.1	1.2	1.6	2.6	1.8	1.3	1.7	2.8	0.4	1.8	1.9	1.9	0.3	1.4	0.8	0.9	93.3	0.6	1.6	2.7
Emigrants	0.4	0.0	0.4	0.4	0.1	0.2	0.1	0.1	0.0	0.3	0.8	0.0	0.8	0.1	0.2	0.0	0.3	0.1	0.0	0.6	4.5	0.0	0.5

Source: DGES

Table 53 - Mobility index of region y coming from region x 2017 (%)

2017	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed	Total
Aveiro	38.7	0.8	1.2	3.4	5.7	10.7	1.5	1.6	11.5	3.7	1.2	0.9	4.0	2.6	0.6	0.9	4.5	15.1	0.9	0.2	3.1	4.5	5.1
Beja	0.3	40.8	0.0	0.1	0.3	0.2	4.0	6.3	0.5	0.4	1.3	2.2	0.1	0.6	1.4	0.0	0.0	0.0	0.2	0.0	0.8	0.6	1.0
Braga	7.4	1.3	67.9	15.9	7.1	6.5	0.3	0.7	7.8	1.6	1.0	1.3	8.3	1.3	0.7	44.2	19.3	3.4	0.7	0.2	8.6	10.2	9.8
Bragança	1.1	0.0	0.7	22.5	1.4	1.5	0.5	0.3	1.6	0.3	0.2	0.9	1.2	0.0	0.2	0.3	3.4	0.9	0.2	0.0	1.0	0.5	1.0
Castelo Branco	1.0	0.0	0.0	0.4	23.6	1.7	1.1	0.5	2.3	1.3	1.3	2.6	0.2	1.7	1.2	0.0	0.3	0.5	0.0	0.0	1.8	0.9	1.6
Coimbra	2.6	0.4	0.4	1.3	3.9	35.4	1.2	0.8	2.9	4.4	1.3	0.0	0.7	1.4	0.3	0.6	0.7	2.6	1.1	0.0	3.9	4.6	5.2
Évora	0.2	10.5	0.0	0.0	1.0	0.4	34.0	3.5	0.5	0.7	1.6	8.2	0.1	1.8	2.2	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.6
Faro	0.9	21.8	0.1	0.4	1.3	1.2	7.5	60.8	0.3	1.4	3.5	6.9	0.2	2.0	2.1	0.2	0.4	0.5	0.2	0.6	2.3	2.3	3.2
Guarda	2.3	0.0	0.3	1.5	7.4	2.3	0.9	0.3	21.9	0.6	0.9	2.2	0.5	0.9	0.6	0.2	0.7	3.4	0.0	0.0	1.0	0.6	1.3
Leiria	4.0	1.7	0.4	0.8	5.7	6.3	4.7	2.6	2.6	50.5	4.7	8.6	0.9	13.2	2.1	0.0	0.7	2.3	0.2	0.0	3.4	3.1	4.9
Lisboa	1.2	9.2	0.4	2.4	6.2	2.3	14.9	9.1	4.7	13.9	61.3	19.8	0.6	26.9	44.3	0.5	1.1	1.7	4.4	1.7	37.0	35.1	24.7
Portalegre	0.2	0.4	0.0	0.0	2.7	0.5	5.6	0.8	1.0	0.7	1.0	28.4	0.0	1.3	0.9	0.0	0.0	0.1	0.0	0.0	0.3	0.3	0.8
Porto	21.1	0.8	16.5	32.0	11.8	11.8	2.3	2.6	15.4	3.8	2.3	3.9	70.4	1.5	1.0	17.4	29.2	12.9	3.5	0.6	16.9	24.0	19.4
Santarém	2.7	2.1	0.1	0.3	5.7	3.6	8.7	2.8	2.3	8.2	4.7	7.3	0.3	33.8	3.2	0.0	0.5	0.1	0.4	0.0	1.8	1.8	3.3
Setúbal	0.4	7.6	0.1	0.3	1.9	0.4	8.4	3.8	0.5	1.0	5.8	2.6	0.1	3.3	33.7	0.2	0.6	0.6	0.4	0.4	4.7	3.8	3.8
Viana do Castelo	2.8	0.0	7.1	3.9	2.4	2.0	0.2	0.3	1.3	0.9	0.4	0.4	3.4	0.4	0.4	34.5	3.0	1.0	0.2	0.0	2.1	1.2	2.2
Vila Real	2.2	0.0	1.7	11.3	2.0	2.3	0.5	0.1	3.1	0.6	0.5	0.4	2.5	0.1	0.6	0.2	28.7	3.0	0.4	0.2	1.6	1.4	2.1
Viseu	7.5	0.0	0.7	2.4	7.3	7.1	0.6	0.2	16.9	2.4	1.5	0.9	2.2	1.4	0.9	0.3	4.2	50.5	1.1	0.0	1.6	1.5	3.4
R. A. Açores	1.8	1.3	0.9	0.6	0.8	1.4	1.1	0.9	0.8	1.8	1.7	1.3	1.2	2.8	1.8	0.0	0.9	0.5	83.6	0.6	1.3	0.7	2.0
R. A. Madeira	1.4	1.3	1.2	0.4	1.9	2.1	1.9	2.1	2.1	1.7	2.7	1.3	2.1	2.8	1.7	0.3	1.4	0.9	2.4	94.7	1.6	1.6	2.8
Emigrants	0.1	0.0	0.4	0.0	0.1	0.2	0.0	0.2	0.0	0.1	1.1	0.0	1.0	0.1	0.2	0.5	0.3	0.1	0.0	0.6	3.9	0.0	0.5

Source: DGES

Table 54 - Mobility index of region y coming from region x 2018 (%)

2018	Aveiro	Beja	Braga	Bragança	Castelo Branco	Coimbra	Évora	Faro	Guarda	Leiria	Lisboa	Portalegre	Porto	Santarém	Setúbal	Viana do Castelo	Vila Real	Viseu	R. A. Açores	R. A. Madeira	Excluded	Not placed	Total
Aveiro	40.4	0.0	0.9	2.5	8.1	9.9	1.4	0.9	13.3	3.9	1.0	1.7	3.7	3.1	0.2	1.3	3.6	14.9	0.9	0.0	4.7	4.1	5.0
Beja	0.0	44.1	0.0	0.0	0.4	0.4	3.8	7.0	0.3	0.4	1.3	1.2	0.0	1.2	1.4	0.2	0.2	0.0	0.5	0.4	1.1	0.4	1.0
Braga	6.1	1.4	70.5	20.8	8.2	5.2	1.7	1.1	5.1	2.2	1.0	0.4	7.5	0.8	0.8	41.3	18.5	5.1	0.9	0.2	6.7	9.9	10.0
Bragança	1.2	0.5	0.5	19.1	1.7	1.1	0.1	0.4	2.7	0.2	0.2	0.0	1.2	0.1	0.1	0.2	3.2	0.2	0.2	0.0	0.7	0.3	0.9
Castelo Branco	0.8	0.5	0.1	0.4	21.6	1.7	1.4	0.2	2.4	1.7	1.2	1.7	0.2	1.0	1.1	0.0	0.5	0.6	0.0	0.2	1.1	0.8	1.6
Coimbra	3.0	0.9	0.1	0.6	3.3	36.4	2.1	1.6	4.5	4.3	1.1	1.2	0.5	2.3	0.5	0.5	1.3	1.6	1.6	0.4	2.2	4.5	5.3
Évora	0.2	12.2	0.1	0.0	0.8	0.5	34.2	2.2	1.2	0.7	1.5	11.2	0.1	2.6	1.6	0.0	0.1	0.0	0.5	0.0	0.2	1.1	1.6
Faro	1.2	13.6	0.1	1.0	1.7	1.8	7.7	62.1	1.5	1.1	3.3	6.2	0.3	2.6	2.9	0.2	0.3	0.4	0.9	0.0	5.4	2.1	3.5
Guarda	2.1	0.0	0.2	2.1	5.6	2.9	0.7	0.2	23.0	0.9	0.7	0.4	0.4	1.4	0.1	0.3	0.9	5.1	0.2	0.0	0.0	0.6	1.3
Leiria	5.0	1.9	0.3	1.3	7.0	6.4	4.6	2.0	3.9	48.5	3.9	7.5	0.5	8.6	2.4	0.0	0.8	1.6	0.5	0.2	4.3	2.4	4.6
Lisboa	1.6	7.5	0.4	1.9	7.3	2.5	12.5	9.7	4.2	13.6	64.5	20.7	0.5	25.8	44.9	0.2	0.4	1.6	3.7	2.4	34.5	35.6	24.7
Portalegre	0.5	2.8	0.0	0.1	2.2	0.4	6.3	0.6	1.2	0.3	1.0	29.0	0.1	0.8	0.9	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.8
Porto	19.3	1.4	15.2	32.3	10.3	10.9	2.8	2.3	13.6	4.1	2.1	3.7	71.7	2.3	0.6	15.4	28.9	9.5	2.1	0.6	17.9	25.0	19.0
Santarém	2.5	0.9	0.1	0.5	6.7	3.7	7.0	1.8	0.6	10.1	4.7	7.9	0.3	37.1	3.4	0.2	0.5	0.5	0.2	0.0	3.1	1.9	3.5
Setúbal	0.2	7.5	0.0	0.1	1.4	0.5	8.4	4.1	0.9	0.8	5.5	4.1	0.2	4.2	35.3	0.2	0.2	0.4	0.0	0.2	3.4	4.1	3.8
Viana do Castelo	2.3	0.0	6.8	2.7	2.0	2.4	0.5	0.2	2.7	1.0	0.5	0.0	3.2	0.4	0.2	37.7	4.2	1.5	0.7	0.0	1.3	1.1	2.3
Vila Real	2.1	0.0	1.7	11.8	2.7	2.3	0.4	0.2	5.7	0.5	0.4	0.0	2.6	0.6	0.2	1.5	29.7	4.7	0.0	0.0	1.1	1.6	2.3
Viseu	8.2	0.0	0.5	2.1	5.4	7.4	1.2	0.7	11.2	2.3	1.4	0.4	2.4	1.3	0.9	0.0	4.1	50.1	0.2	0.2	1.8	1.5	3.4
R. A. Açores	1.4	0.5	0.6	0.3	0.9	1.1	1.4	0.5	1.2	1.0	1.5	1.2	1.2	1.5	1.0	0.2	0.5	0.2	85.4	0.2	0.7	0.6	1.8
R. A. Madeira	1.2	4.2	0.9	0.3	2.1	2.0	1.8	1.9	0.6	2.3	2.4	1.2	1.8	2.4	1.7	0.6	1.6	1.1	1.4	93.1	0.7	2.0	2.8
Emigrants	0.6	0.0	0.9	0.1	0.4	0.5	0.2	0.1	0.0	0.1	1.0	0.0	1.6	0.0	0.2	0.3	0.3	0.6	0.0	2.0	9.2	0.0	0.8

Source: DGES