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FREE TO CODE

Project Number: 2018-1-RO01-KA204-049298

Portuguese Country Report

Project

Free to Code

June, Portugal 2019

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1. Introduction

Brief presentation of the country and its labour market– structure of the economy, trends, the evolution of the jobs, jobs on demand at the end of 2018, beginning of 2019. Special attention will be awarded to IT and IT related jobs

According to the latest data information, Portugal is a country with around 10.2 million inhabitants, of which 4.8 million are masculine and 5.4 are feminine (INE, 2017).

Regarding its economic structure and background, Portugal has predominantly agricultural past but due to all the development that the country registered, the economic structure is now based on the services and industry. In 2017 we had a GDP[1] *per capita* of around 18.8 thousand (more 2.7 percentage points than in 2016), where the biggest part of the GVA[2] goes to the Services sector with 75.3%, and then to the Industry, energy, water supply and sewerage sector with 21.6%. The Agriculture, Forestry and Fishing and the Construction sectors have a more residual percentage of 5.4% and 6.5% respectively (Anuário Estatístico de Portugal, INE 2017).

Economia

According to the Bank of Portugal[3], economic projections point to a slowdown in the growth of the Portuguese economy following the worldwide trend projected by the European Central Bank. In March 2018 the Portuguese central Bank predicted (between 2018 and 2020) that after the increase of 2.7% in 2017, the GDP is expected to grow 2.3% in 2018, 1.9% in 2019 and 1.7% in 2020 (Projeções para a Portuguesa: 2018-2020, Banco de Portugal 2018).

[1] Gross Domestic Product
[2] Gross Value Added
[3] The central bank of the Portuguese Republic

Regarding the Portuguese job market in 2018 we had around 5.2 million people in active population[4] with an activity rate of 59.0%. Focusing in employment, in 2017 the unemployment rate was 8.9% (462.8 thousand people), falling by 7.3 percentage points compared to 2013 (marked the highest value since 1998). The year of 2018 extended the sequence of descent (that began in 2014) of the unemployment rate, only lower in 2008 before the crisis (7.6%). Of the 4.8 million people employed in 2018, if divided by sectors of economic demand, we had on that year around 285 thousand people working on the primary sector, around 1.2 million working on the secondary sector and the remaining 3.4 million on the tertiary sector. The data can be seen in detail in the following table.

Table 1 - Structure of Portuguese Economy - nº of employees by sector of activity

Sector of Economy	2015	2016	2017	2018
Agriculture, Livestock, Hunting, Forestry and Fishing	323 700	307 300	280 400	274 900
Industry, Construction, Energy and Water	1 113 600	1 159 200	1 228 600	1 222 200
Services	3 124 200	3 177 100	3 296 000	3 385 900

Source: Portuguese National Institute of Statistics 2019

The World Bank Report also shows us some more relevant information on the topic (in 2017), for example:

- an entrepreneur in Portugal needed 7 days to start a business;
- Portugal had a mobile subscription (per 100 people) of 113.9;
- 73.8% of the Portuguese population uses internet
- 5% of all exports are high-technology exportations

Regarding the labour market in the ICT sector, a recruitment consulting company developed a data analysis study based on 4000 interviews applied in the end of 2017 and first months of 2018. They concluded that **ICT professionals are increasingly sought after which translates to a greater demand for a lower supply of professionals**: this is due not only to the digital era phenomenon but to a "leak of talent" that Portugal is facing – professionals are aware of their value and are not only looking for better salaries, but for project with quality, competitiveness of companies and career progression opportunities (aspects they find easily in other countries).

Anyhow, in terms of **recruitment/market trends for 2018 the most solicited work positions are**:

[4] More than 15 and less than 64 years old employed or unemployed

- java developer (30%),
- followed by php developer and software engineer (18% and 16% respectively),
- business intelligence (14%)
- data scientists (12%) ending with,
- cyber security (10%).

Also, an article, launched in the end of April 2018, in Diário de Noticias (a national newspaper) confirms this information showing some future trends. “In areas such as information technology (IT) there is already a gap between demand and supply in professionals. Wage increases of 7% and 9% no longer hold the professionals. It is a sector that is very dynamic, needing to hire for various functions and the tendency is to last in the decade.” (Diário Notícias, 28 April 2018). Many international technology companies are settling in Portugal, and even non-tech companies are looking for programmers, software engineers, cybersecurity and big data specialists. Salary increase trends will be constant in an attempt to retain the talent within Portugal. However, employers are very focused on finding workers with soft skills: communication skills, creativity, and resilience, proactivity, interpersonal skills, flexibility and team spirit. And when there are doubts between two candidates the choice will almost always be based on soft skills and not on technical qualifications.

2. Overall situation of major criminal activities situation and trends in the country in 2018

2.1. The national prison system: policies, trends, and approaches

The Portuguese prison system is a subsystem of a wider system of sanctioning measures applied by the courts and is the responsibility of the Directorate General for Social Reinsertion and Prison Services (DGRSP). This Directorate resulted from the merging of the Directorate General for Social Reinsertion and the General Directorate of Prison Services in 2012 which mixes both goals of each former Directorate, the security measures and the offender’s reinsertion.

Portugal currently has 49 prison establishments throughout the country with a maximum capacity of 12934 inmates. At 15 December 2018 our prison population was of 11963 inmates, 1000 people bellow the maximum capacity. 94% were masculine and 6% were feminine, 84.7% were Portuguese and the remaining 15.3% were foreigners (DGRSP, 2018). It should be noted that 2018 was the first year, since 2012, that did

not experience overcrowding in Portuguese prisons. In 2012 the incarceration rate was of 130 inmates per 100000 inhabitants, in 2014 was 135 (the highest recorded rate), and in 2016 was 134.

In the end of 2017, the DGRSP published a report "Olhar o Futuro para Guiar a Ação Presente" (in English "Look at the Future to Guide the Present Action") with the trends and projections for 2017-2027. Regarding the prison population the projection is to, although maintaining a rate of imprisonment above the European average, at least achieve a reduction to 12000 inmates. This will also be possible due to a recent improvement regarding short-term prison sentences. Other proposals are also given for 2017-2027, including:

- Build 5 new prisons, and phase out 8 prisons while expanding, adapting and requalifying some of the existing ones;
- Plan re-qualification interventions of the prisons with collective lodgings, replacing them with more individual units reducing the prison's maximum capacity
- Invest in the modernization of the design of the prison establishments, requalify the safety equipment and replace the inoperative equipment, and also endow the prisons with VOIP technology;
- Define specific prisons to comply with pre-trial detention measures;
- Hire until 2070 up to 200 new prison guards, 125 new senior prison technicians, 238 senior non-prison medical technicians, and 41 new social reinsertion professional technicians for special electronic surveillance teams.

2.2. General information about the global social inclusion of inmates just (also in probation)

In the eighties, social reintegration services were created based on the logic of proximity of necessity and with a traditional conception that imprisonment is the most effective way to deal with the insecurity caused by criminals, devaluating any other alternative measures. It was a very centralized management system, without intermediate structures and with more or less actual prison management. For instance only in 2013 did the creation of a classification system (based on complexity and security management) helped to step forward in prison management and reinsertion measures as well. Today there is one dimension for juvenile delinquency and one for adult offenders.

In the juvenile dimension there is the System for the Execution of Educational Tutelary Measures with the objective of giving an opportunity to change attitudes, making them responsible for their conduct and promoting their active involvement in the internalization of the values and rules that govern life in society. We count on 6 Educational Centers (9 were closed since 2008, not related with

lower levels of juvenile delinquency) where 5 have problems with their infrastructure, none of them have an open regime and none are exclusively for women (only 4 have units for women, resulting in inmates being far away from home).

In the adult dimension there is the System of Execution of Penal Measures with the role of supervising the fulfilment of the sentences in both detention and non-custodial strands, presently with a higher focus on detention measures. According to the DGRSP, most of the prison buildings were built in 1936 and some are from the 19th century. Prisons are far from recidivism sites and concentrations of prisoners, and are insufficient for the number of prisoners therefore they ceased to offer conditions to acquire personal and professional skills for a future social inclusion. For example, with the adaptation of spaces to accommodate more prisoners, personnel dedicated to training/working/education tasks decreased (e.g. former masters).

3. Vocational training

3.1. Professional training course for inmates and after the release - an overview

The Protocol Center for Vocational Training for the Justice Sector is a state institution that promotes training activities for young people and adults with a view to their integration into society. It has 3 axes of training courses and one of them, called “Training for inclusion” is intended for specific target groups: long-term unemployed, immigrants, disabled people, prisoners and ex-prisoners. Students will receive certification in the modules (which they successfully complete) provided in the training plan. According to the 2017 Activity Report of DGRSP, there are 24 educational/vocational activities where 4 828 inmates concluded educational of vocational training in 2017 (3 782 and 1 046, respectively) and 5 623 inmates (3 870 in educational and 1 753 in vocational training) were enrolled in training courses in 31.12.2017.

3.2. Training for digital literacy

- who is the main target? (e.g. female, children, youth, those with university degree etc.)
- what are the pre-conditions? (e.g. previous courses, age, time to release etc.)
- what are the objectives or learning objectives?
- what are the main activities?
- where is available? (e.g. open source, cloud, hosted, by who etc.)
- how is the link with the labour market developed?

- Certification
- costs (if available?)

In 2014 as a result of the encouragement of the Ministry of Justice for innovative projects, DGRSP together with a third sector and private sector entity developed a pilot project (between 2015 and 2016) called EPRIS with the aim of study the possibility of e-learning as a pedagogical tool to promote digital inclusion. The main target group was the inmates of a Portuguese female prison and considers not only the gender equality issues of women in detention, but also their future social reintegration, in anticipation of future difficulties associated with this process. This project developed a training course which lasted 216 hours, in a period of 12 months, the trainees were chosen by the social solidarity institution technicians who developed their work directly with the inmates, and the inmates had some pre-conditions: availability and interest in participating; minimum computer skills (from the user's perspective); sixth year (minimum schooling); higher detention time than the necessary for the implementation of the first phase of the project. Two questionnaires were used to assess the competences seized, one in the initial phase and the other in the final phase of the training. The analysis of the data showed that the inmate trainees considered the training experience in e-learning has given them the confidence that they still have the capacity to undertake new learning, with an impact on perspectives related to a future insertion in the labour market.

4. Case studies

Presentation and description of relevant and successful case studies, if any, in the field of job market inclusion of offenders just released (IT profiles are highly suggested)

There are no case studies of labour market inclusion of offenders in the ICT area in Portugal. However, at the time of the presentation of FreetoCode project to the DGRSP it was possible to know that there are 3 projects being under evaluation within the scope of labour market inclusion in the ICT area for offenders and ex-offenders.

5. Background Survey

5.1. Demographics

Age

Table 2 - Age

18-24 years old	1
25-34 years old	8
34-44 years old	9
45-54 years old	8

(two people did not answer this question)

Gender

All participants were male – n=28

5.2. Current digital literacy level

Last class graduated

Table 3 - Last class graduated

Left school early	3
Completed elementary school	15
High school diploma	9
Bachelor degree	1

Level of digital literacy

Most of the Portuguese participants stated that their level of digital literacy according to the given categories, is of – independent user- with 12 answers. In this level, the users are able to use different search engines to find information and services (public services, e-banking, online shopping) as well as produce complex digital content (text and tables). 4 participants evaluated their skills as being in the "complete beginner" category, thus meaning they never used a computer before. On the other hand 9 participants said that they were basic users (able to look for information and talk with others online and share files using simple tools) and 1 was a proficient user (able to actively use a wide range of communication tools for online communication and produce or modify multimedia content in different formats, using a variety of digital platforms, tools and environments) - two participants did not answer this question.

Table 4 - Level of digital literacy

complete beginner	4
basic users	9
independent user	12
proficient user	1

When asked if they had previous contact or experience with coding 16 answered "No" and 12 answered "Yes". The ones with previous knowledge referred having had contact with:

- MS-DOS
- COBOL
- Excel
- Electronics and programming
- IOSI – installation and operation of computer systems
- ICT Courses
- Electronics, automation and computers
- Technician of computer equipment installation

5.3. Expectation on learning to code

When asked about the interest in participating in code training, the vast majority stated their approval (24 answers) but with different levels of expectations and goal achievement.

In order to understand this, two multiple answer questions were developed, one regarding the learning aspects and the other regarding the goal achievement. About the learning aspects the most rated answers were the **wish to learn basic computer programming**, **learning the code behind the computer programmes used in everyday life** and the **improvement of basic digital skills**, with **12, 11** and **10** answers. Regarding the goal expectation in coding learning the most answered option was the **possibility to interact and stay connected with the new job market opportunities** (**18**) followed by the curiosity and wish to **learn about what the technology can do** and the wish to **learn a programming language**, both with **10** answers.
Other options were also chosen in both questions, such as:

Table 5 - Expectation in learning coding

Expectation in learning coding:	
I would like to improve basic digital skills	10
I would like to learn the code behind the computer programmes we use in everyday life	11
I would like to learn basic computer programming	12
I would like to learn how to write a simple programme	6
I would like to learn computational thinking & related transversal skills	7
I don´t know	1
Other:	
Improve and learn new languages	
Know more about computers and informatics	

Table 6 - Goals expectation in coding learning

Goals expectation in coding learning	
I am curious and want to learn about what the technology can do.	10
I would learn a programming language.	10
I would solve a particular problem I have.	7
I would be able to interact and stay connected with new job market opportunities	18
I would develop creativity, maintain cognitive abilities, widen my interests.	5

I would be able to communicate with the local community and worldwide.	0
Coding would make my life more exciting.	1
My self-confidence and self-esteem would increase.	3
The skills I will acquire will help me make a difference in the world.	6

5.4. Plans for the future

In the future 6 of the participants don't see themselves using coding after release, 1 doesn't know and 17 see themselves using coding after release.

When it comes to the field they would like to work in after release, the most rated field was Tourism (with 6 answers) followed by Transports (with 5 answers) and Arts and Entertainment (with 4 answers) – some participants answered to more than 1 field interest. All the fields chosen, can be seen below:

Table 7 - Work field interest

Work field interest	
Architecture	0
Art and entertainment	4
Civil organisation	0
Construction	3
Education	1
Finances	1
Health sector	0
Office and administrative support	0
Public sector	1
Sales	3
Software development and IT	2
Tourism	6
Transport	5
Other	
Mechanics	
Everything related with cars	
Sports	
Hospitality sector	
Technology	
Bakery	
Safety guard for container ships	
Jiu Jitsu Teacher	

A low but important number of participants 6 mentioned that they did not see themselves using digital skills after being released. Nevertheless the majority (17) could picture themselves using digital skills after release in different work fields, as:

- At trade level
- Computer programmer and technicians
- Connected with tourism
- Linked to typography of books and book coordination
- Electronics
- Related with cars

- Related with technology
- Computing and management
- Digital animator (technologies)
- Hotels and restaurants
- Telecommunications
- Musical producer
- Mechanics
- Construction

5.5. How should the training be provided?

Not all the participants showed interest in attending a training in the digital literacy – 4 participants did not answer the question, 2 answered "No" and 22 answered "Yes". Most of the participants would prefer self-assessment tools (11) followed by games stimulating programming (5) competitions (4) and quizzes (1).
Regarding the most suitable learning methods the majority of them would like to learn with a mentor (17), learning with a partner (pairwork) (3), a combination of methods and places (2) learning on their own, at home, using tutorials (1).
Unquestionably small group or one-to-one training with self-assessment tools are the preferred method of training of the participants.

To conclude this exploratory assessment, in here two types of digital training should be discussed: one for the basic level and one for the more advanced level, or one combining basic code learning and one more challenging with more in depth content of coding - since in the Portuguese sample we have two main distinct groups, basic users (9) and independent users (12). However, an initial "coding assessment" could be carried out in order to understand the "veracity" of the participants' perceptions regarding their digital skills in order to better prepare the training to the participants needs. In any case the training should be very practical, interactive and linked to the job plans of the participants.

6. Sources

(1) https://cse.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_indicadores&contecto=pi&indOcorrCod=0008273&selTab=tab0
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