PARTICIPATION IN LIFELONG LEARNING IN PORTUGAL & THE UK

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JEL Classification: J08, J24, I20, M53.

Keywords: Lifelong learning, formal and informal learning, EU, Portugal, UK

Abstract

Lifelong learning (LLL) has now been on the agenda of the European Union and other major international organizations for some considerable time, with the European institutions stressing the need that such learning should be available to all, especially hard to reach groups. This paper seeks to explore LLL participation in Portugal and the UK, two countries at opposite ends of the adult learning spectrum and having very different labour market and educational contexts. Using Labour Force Survey data, the results reveal that universal penetration remains a challenge to be overcome, regardless of the setting. The barriers to its achievement, however, appear to be very different. In Portugal, there is an evident need for the learning culture to diffuse more widely throughout the population whereas, in the UK, the problem has its roots in the concentration of LLL amongst the better educated and those in the upper echelons of the occupational hierarchy.

1. Introduction

Lifelong Learning (LLL) has been on the EU agenda for some considerable time, as well as that of other international bodies such as the ILO, the OECD and the UN. Its centrality in successive European initiatives targeted on the creation of greater, more productive employment (e.g. CEC, 1993; EC, 2000; CEC, 2010) serves as testimony to the fact that labour market training is an important component of its definition, but the whole is evidently more comprehensive. Thus, LLL is defined by the European Commission as:

> all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective. (CEC, 2001: 9).[1]

Further, it "should comprise all phases and forms of learning from pre-school to post-retirement" and is taken to encompass formal, non-formal and informal learning activity (*ibid*.).[2]

Not only does this make clear that analyses of workplace training, of which Bassanini *et al*. (2007) provide a review, do not go far enough, inasmuch as they ignore the unemployed and those seeking to enter the labour market; it is also apparent that LLL encompasses learning with no overt economic ambition. It is, of course, true that while the latter activity can, in principle at least, be quantified, no known, large-scale data sources are capable of measuring its direct effectiveness. In particular, the possibility that LLL for personal, civic or social purposes might generate familial or community externalities should not be ignored and remains a fruitful avenue for further research. This paper, however, is concerned principally with a Portugal-UK comparison of LLL participation.

Beyond promoting LLL as a means of enabling individuals to effect transitions throughout their life-course (CEC, 2000), the European institutions have expressed the wish that not only should it be available to all without prejudice, the need for positive discrimination is foreseen. Thus, LLL strategies must target specific groups:

> in order to ensure lifelong learning opportunities are genuinely available to all, especially those at particular risk of exclusion such as people on low income, disabled people, ethnic minorities and immigrants, early school leavers, lone parents, unemployed people, parents returning to the labour market, workers with low levels of education and training, people outside the labour market, senior citizens (including older workers), and ex-offenders (CEC, 2001: 13).

Furthermore, the EU ambition is that, on average, at least 15% of persons aged 25-64 should participate in LLL by the year 2020, as measured by the Labour Force Survey, which asks respondents about learning undertaken in the four weeks preceding interview (EC, 2009).[3] This, of course, pertains to only a limited age-range, although it might be argued that younger individuals are covered by other targets (*ibid*.), while older ones are the subjects of the drive for active ageing (CEC, 2006). Equally problematic, there are large differences in LLL participation rates across Member States and, in order both to provide a wider context and to indicate why the Portugal-UK comparison on which the rest of the paper focuses is of interest, these are illustrated in the next section. This makes it apparent that the two countries on which attention centres lie at opposite ends of the EU LLL spectrum and have very different labour market and educational contexts.

Attention then turns to the micro-level data sets from the LFS exercises conducted in the countries of interest that underpin subsequent analyses. The empirical work in this section employs annual survey data for the year 2010, the latest for which the two countries applied strictly comparable definitions of LLL, as discussed below.[4] In Section 3, the issues of sample selection and the specification of a model of LLL participation are addressed, with the results of the ensuing analysis being presented in Section 4. The latter show, not unexpectedly, that the ambition of LLL being available to all and, of course, availed by all is some way from being satisfied, with certain groups being less likely than others to embrace it. However, tests of parameter equality revealed that these are far from overlapping in Portugal and the UK, although the unemployed were, all else equal, more likely to participate in LLL than others in both. Workers on temporary contracts and those employed part-time are found to be more active than those in permanent, full-time positions, while those employed in smaller enterprises undertake less LLL; findings that were also common for the two countries. Likewise, there is evidence of an occupational hierarchy in learning likelihoods, although this is much stronger in the case of the UK. On the other hand, while the results for the latter country show that the young, women and the single exhibit higher learning propensities, such is not the case in Portugal. Similarly, there is no empirical support for there being more LLL in the public sector, contrary to the finding from the UK data. Also, whereas the UK findings provide strong support for the widely held belief that the better educated are more likely to engage in further pedagogy, this is not nearly as evident in Portugal.

Following the discussion of the regression results, a number of simulations are performed, based on individuals with a variety of characteristic bundles. Again, these highlight major differences between the two countries, although for the lowly educated working in elementary occupations, the disparities are small. However, for professionals educated to degree level, some of the LLL propensities observed in the UK are more than twice the comparable figures for Portugal. Similar differences pertain to the unemployed and those individuals who are economically inactive due to domestic responsibilities. In the UK, learning propensities for the former group were as high as 37 per cent whereas, in Portugal, the probability of an unemployed individual undertaking LLL never exceeded 11 per cent. For the inactive, the UK participation rates were at least five times the figures observed in Portugal. The final section of the work summarises and presents its most important conclusions for policy.

2. EU CONTEXT

While certain insights can be gained from elsewhere, the most comprehensive, albeit still limited, measures of LLL activity within the Member States are to be obtained from three Eurostat data sources.[5] The first is the Labour Force Survey (LFS), the second is the Continuing Vocational Training Survey (CVTS) and the third is the Adult Education Survey (AES). As the EU institutions rely on the former for their target setting and progress appraisal, attention here and throughout the paper is largely restricted to its findings. While individual Member States can, of course, embellish their surveys to suit their purposes, its central question asks respondents whether they have undertaken any LLL activity in the four weeks prior to interview.[6]

As noted above, the definition of LLL adopted by the Commission is broad and by no means confined to activities with relevance to the labour market. The critical additional criterion for an activity to be considered to be LLL is the existence of intent on the part of either the learner or the

party organising it. In principle, this gives rise to the recognition of three types of qualifying actions. Formal education is that provided by the institutions that represent the learning environment for what is normally an audience of children and young people. Non-formal education is represented by organised and sustained educational activities not corresponding exactly to the definition of formal education. Informal learning is taken to be less organised and structured than the two preceding categories, but is nevertheless characterised by the intention to learn. Typically, the latter equates to self-learning activity. None of these classifications rely on the content being work related. Random learning that is the unintentional by-product of a non-learning pursuit is excluded from the definition of LLL.[7] However, from 2004 onwards, the LFS has excluded informal learning activity.

On the face of it, Eurostat provides a LLL data sequence covering education and training undertaken in the four weeks prior to the date of the Survey that commences in 1992. However, information going back that far in time is only available for eleven Member States. Also, a major break in the series occurred in 1998. Prior to that year, the Survey only covered work related learning, whereas later data encompasses all activity, whatever its purpose, provided it is intentional. In addition, the aforementioned exclusion of informal learning from 2004 should be borne in mind when attempting to interpret the data that follows, particularly as there are both arguments and a certain amount of evidence to suggest that this can assume some importance in certain countries and contexts.

Geographically, CEDEFOP (2008: 79), for example, suggested that such employee training is more than twice as prevalent in Denmark, Germany, Luxembourg, Austria, Sweden and the UK as it is in Bulgaria and Spain. Likewise, informal training, including instruction by colleagues and learning through experience, may be an important source of workplace training, particularly in small firms (Pischke, 2007). Indeed, it seems possible that the mix of training within enterprises may have cyclical properties, although there would not appear to be any evidence bearing directly on this issue. Taking a wider perspective, informal learning may be a way to re-connect excluded individuals to both civic society in general and the world of education in particular (Feinstein *et al*., 2003: 76-77). Furthermore, such pedagogy appears to be particularly important for older people, which may be because, at least in part, formal learning is often associated with work, while many in this group are retired (Jenkins and Mostafa, 2012).The caveat is, of course, that informal learning is extremely difficult to quantify and the precise definition adopted can vary greatly across particular studies, if indeed it is taken into account at all.

Table 1 provides summary statistics for the years 1998-2011 of the percentage of the population aged 25-64 participating in LFS LLL. Where the number of observations falls below the maximum of 14, it refers to the latest years in the period covered, except in the case of Sweden for which the information is missing for 2003 and 2004. Clearly, there is a very large variation across Member States in the incidence of such learning and only six states currently exceed, or have ever exceeded, the latest EU target, which is to have 15% of adults participating in such activity by 2020 (EC, 2009).[8] Most other countries fall woefully below this standard. Admittedly, the aspiration is only couched in terms of the average for the EU as a whole, but at 8.9% in 2011 and having risen by only 1.8 percentage points in a decade, the target looks ambitious. Nevertheless, with the exception of Bulgaria, Latvia, Hungary, Slovakia and the UK, which apart from the latter are small countries and therefore do not figure heavily in the aggregate statistic, the correlation of the data with a simple

linear time trend (*Corr(t)*) is everywhere positive and, in most cases, the association is significant. However, given the short span of observation, this outcome should be treated with due caution.

No simple taxonomy, such as new and old Member States or northern versus southern periphery countries, adequately encompasses the observed variation in participation, although Portugal and the UK are clearly at opposite ends of the spectrum. What is more, the labour markets of the two differ markedly in ways that could have some bearing, at least on the work related component of this outcome. Thus, stimulated by the relatively early work of Booth *et al*. (2002), it has become an almost stylized fact of the relevant literature that temporary staff undertake less training than their permanent counterparts.[9] Portugal has the third highest concentration of such workers in the EU while the UK has the fifth lowest and their relative importance in the former (22.2% of employees in 2011) is more than 3.5 times greater than in the latter. In similar vein, while the behaviour of the group is a relatively under-researched area, the weight of self-employment in the Portuguese labour force (19.2% in 2011) is 40% greater than in the UK and Cabrita *et al*. (2009) demonstrated that many of the former are dependent on service contracts and therefore that this segment of workers shares similarities with temporaries insofar as they form part of the flexible workforce (Eyraud and Vaughan-Whitehead, 2007).

What is more, the two countries differ in potentially relevant ways that extend beyond the labour market. One notable case in point lies with the educational attainment of their respective populations. As Table 2 amply demonstrates, Portugal lies at the lower end of the EU spectrum on this count, while the UK is much more favourably placed. Thus, notwithstanding the fact that it is notoriously difficult to make international comparisons in this area, almost two-thirds of the Portuguese population between the ages of 15 and 64 have no more than a lower secondary level of education, the second highest figure in the EU. Likewise, Portugal has one of the lowest proportions of tertiary level graduates in this age group, while, at one-third, the UK has the highest.

Of course, the foregoing are factors that might be adduced to contribute to the differences in aggregate LLL rates across the two countries. In the case of the education measure, this might simply be a reflection of the adage that 'learning begets learning' (Heckman, 2000), although sight should not be lost of the fact that Member States have been encouraged for some time to devote resources to 'second chance provision' (CEC, 2001: 20). Nevertheless, the dissimilarities also heighten interest in the question of whether the same forces are at work in the determination of individual propensities to engage in such activity. It is to this question that attention is turned in the next section. First, however, interest focuses briefly on the relative performance of Member States over time.

Notwithstanding the presence of any trends, there exists a fairly stable hierarchy of the Member States in terms of LLL participation rates. Figure 1 plots the country ranks for 2011 against those for 1999, where the latter year has been selected because it affords five more observations than 1998, for the 19 countries for which the data is available. The visual impression to be drawn from the plot, in which countries are ranked from the lowest participation rate upwards, finds confirmation in the Spearman rank correlation between the data from the two years, which is 0.86 and significant at the 1% level on a two-tailed test. Nonetheless, there are some notable movements in the orderings, with the Portuguese figures being amongst them. In that case, the underlying reason evidently rests in a change in the definition of LLL applied in its LFS questionnaire

in 2011. Prior to that year, the country had adhered to the Eurostat convention of excluding informal learning from its LLL classification, but included it thereafter. This witnessed the participation rate double between 2010 and 2011 from 5.8% to 11.6%. For this reason, the microeconomic work to follow has been conducted on data for 2010.

3. A MICRO ANALYSIS OF LLL PARTICIPATION IN PORTUGAL AND THE UK: SAMPLE SELECTION AND MODEL SPECIFICATION

Having reviewed the European context, this section of the paper provides a more formal analysis of LLL, whether it be in formal or non-formal learning and irrespective of its ultimate purpose in the four weeks prior to the subject's LFS interview, in Portugal and the UK. The work begins with an overview of the sample under investigation, before proceeding with a brief description of the estimator which is employed. Following this, the selection of covariates believed to be of relevance to the participation decision in relation to LLL is addressed.

Sample Selection

While the EU ambition is that LLL should permeate all members of society, or indeed be skewed towards those at greatest disadvantage, much of the copious empirical research regarding work-related training and a good deal of the more limited evidence relating to a wider definition of learning (e.g. Duckworth and Cara, 2012; Jenkins and Mostafa, 2012; Aldridge and Tuckett, 2009; OECD, 2005) suggests that this is far from being the case in practice. The EU participation rate target refers to the population aged 25-64 years, irrespective of labour market status, and this represents the group scrutinised here.[10] As such, the treatment is rather broader than is often found in the literature.

For example, RWI (2010) used the LFS and, although covering all workers aged 17 and over, restricted their sample to the employed.[11] Bassanini *et al*. (2007) also looked only at the employed and, while their basic sample comprised those aged 25-64, they restricted their attention to those working at least 15 hours per week outside agriculture. In addition, they used the European Community Household Panel (ECHP), which focuses on 'vocational training' and is therefore arguably more ambiguous than the question posed in the LFS. Using German data, Fahr (2005) limited her concern to males working full-time who were either married or cohabiting and examined only informal learning. Brunello (2003), also using the ECHP, looked at those in paid employment who worked more than 15 and less than 60 hours per week. The restrictions imposed meant, more precisely, that he excluded those in paid apprenticeships, the self-employed, unpaid family workers, the unemployed and those out of the labour force. Finally, Jenkins *et al*. (2002) analysed the UK National Child Development Study to explore the determinants of participation in and effect of LLL leading to a qualification. However, while they did not restrict their sample to those in work, they looked only at those aged between 33 and 42 and excluded the self-employed.[12]

The more encompassing approach adopted here is clearly desirable and not simply because it conforms to the population covered by the EU participation target. Learning is central to various EU initiatives, not all of which have a unique focus on the labour market. For example, while the flexicurity agenda, which has LLL at its core, has a clear labour market orientation (CEC, 2007), it is addressed to all segments of the population, not simply those in employment.[13] Likewise, the active ageing programme (CEC, 2012) is about much more than merely enticing people to work until

they drop; indeed, it incorporates ambitions to smooth the transition from work to retirement (CEC, 2012a). Once again, LLL is a cornerstone of the whole project. Furthermore, LLL is central to the perceived need to assimilate adequately the third country immigrant workers who have the potential to, at least partially, overcome the pressures brought about by the EU's ageing population (CEC, 2006a).

In addition, there are groups in the labour market who figure strongly in several European dialogues, but are often omitted from empirical analyses of LLL. Amongst these might be noted the self-employed, who are frequently lauded as a dynamic force (CEC, 2012b).[14] Some, however, see them as atypical workers, notwithstanding the fact that they accounted for 15% of the workforce in the EU27 in 2011, and, as such, vulnerable (EMCO, 2009).[15] Similarly, temporary employment contracts are an integral element of the flexibility sought under the flexicurity agenda, but, at the same time, can be a potential cause of labour market segmentation (CEC, 2007). Such workers accounted for 14.1% of all EU employees in 2011, which subsumed figures of 22.2% in Portugal and 6.2% in the UK (Eurostat Statistical Database). In a similar vein, part-time working is regarded as a useful weapon in the active ageing armoury (CEC, 2012) and as a tool in the fight against the recession, albeit re-labelled as short-time working (CEC, 2012b). While Eurostat data indicates that 19.5% of all employment in the EU27 in 2011 was part-time (13.3% in Portugal and 26.8% in the UK), such work is still often regarded as atypical (EMCO, 2009) and, in some cases, precarious (Eyraud and Vaughan-Whitehead, 2007). Clearly, the imposition of sample restrictions can overlook important segments of the population.

The Estimator

In view of the binary outcome to be modelled, an appropriate estimator is the probit model given by:[16]

$$\Pr(LLL = 1|\mathbf{x}) = \mathrm{G}(\beta_o + \mathbf{x}\boldsymbol{\beta})$$

$$\text{where, } G(z) = \Phi(z) \equiv \int_{-\infty}^{z} \phi(v)dv,$$

and $\phi(z)$ is the standard normal density:

$$\phi(z) = (2\pi)^{-1/2}\exp(-z^2/2),$$

$\mathbf{x}$ is a vector of covariates and $\boldsymbol{\beta}$ is the parameter vector.

Model Specification

Four personal characteristics are included in the model; sex, age, marital status and nationality. The usual finding is that age and work-related training are negatively related (e.g. OECD, 2003), perhaps reflecting a diminishing pay-off as workers get older. However, long-term attachments between firm and worker are becoming less common and technical change more frequently demands re-skilling.[17] It is also of some interest to note that Maximiano and Oosterbeck (2007) found that the decline in training with age was not a reflection of a reduced willingness of workers to pursue such activity but of employers' reluctance to offer training to them. This is of relevance to any study embracing non-work-related education, particularly, perhaps, in view of the current active ageing agenda. At the same time, the evidence suggests that there are no grounds for assuming a simple

linear relationship. Thus, while the youngest sampled age group tends to exhibit the highest training propensity, other peaks in middle age have been found (e.g. RWI, *op cit*.; Wolbers, 2005). A quadratic specification is employed to take some account of this.

While it is possible to construct arguments centred on more limited payback periods to underpin a hypothesis that women will be *cet*. *par*. less likely to engage in workplace training than men (e.g. Wolbers, 2005), these are often found not to be corroborated by the data (e.g. Jenkins *et al*., *op. cit.*, RWI, 2010; Bassanini *et al*., 2007). Furthermore, such reasoning, along with arguments relating to the constraints imposed on female participation by domestic responsibilities, arguably lose a good deal of their force when LLL in general, including that which is less formally structured, is under consideration. In this vein, it might be noted that RWI (*op*. *cit*.), while looking only at employees, found that, having controlled for a large number of other potential influences, women were less likely to participate in formal training, but more likely to undergo non-formal learning, than men.[18]

Marital status is captured by a dummy variable used to distinguish those who are married or cohabiting from others, whether they be single, divorced or widowed. Past exercises incorporating such a distinction have obtained rather conflicting findings; for example, RWI (*op*. *cit*.) found that those who were married were less likely to train than those who were single or divorced, while Bassanini *et al*. (*op*. *cit*.) found the reverse, at least for employer sponsored training. For the nationality measure, a dummy variable is included to identify those individuals born outside their current country of residence. While no prior expectation is advanced for the coefficient estimate of this variable, the increased recognition of the need to make optimal use of the skills of third country immigrant labour in the face of the EU's ageing population might be recalled.

Level of attained education is usually found to be an important determinant of learning investments in later life. The justification is normally some variant of the idea that education not only teaches people how to learn, but also engenders an appetite for further knowledge (EP and EC, 2006).[19] Fahr (2005) represents an interesting attempt to distinguish between purely economic and taste effects in the seemingly greater demand for adult learning by the more highly educated and concludes, with additional support from a sample restricted to the retired, that the latter are more important. In attempting to explore the impact of prior learning on LLL participation, it might be noted that the Portuguese and UK LFSs structure their questions on highest completed level of education very differently. Nonetheless, the International Standard Classification of Education (ISCED) provides a means of rendering the two comparable and its use is adopted here, with four dichotomous variables representing educational levels beyond lower secondary included.

As argued above, one of the merits of the current work lies in its non-restricted sample in terms of labour market status. This approach does necessitate, however, the inclusion of various controls in order to account for individuals' particular situations. The basic categorisation adopted is to divide the sample exhaustively and mutually exclusively into those who are employed, self-employed (disaggregated into those with and without employees), unemployed, unpaid family workers and out of the labour force (OLF), with the latter group split into the disabled, the retired and those undertaking domestic activities. Certainly in terms of the disabled, but possibly also the retired, it might be argued that more time is available to engage in learning.[20] However, on the other hand, they may find access to LLL opportunities more difficult than others, although the

availability of online resources and the presence of non-/positive discrimination measures may serve to counteract this. The unemployed are defined as the base group. Given the broad definition of LLL adopted and the various EU – and indeed national – agendas that have emerged or been strengthened in recent years with learning at their core, there can be no presumption that the employed will train more than others.

It is, of course, usual in studies focusing on workplace training to disaggregate samples of employed individuals by various characteristics of the position held. In many cases, as suggested above, a primary focus of attention is on the nature of the employment contract. To capture this, dummy variables are introduced to identify those with temporary employment contracts and those working part-time.[21] There is also a tradition of exploring the impact of employer characteristics on training incidence (Bassanini *et al*., 2007). Here, the distinction is made between small and larger enterprises under the assumption that the latter might be expected to have more structured training systems. A similar argument can be made for public sector as opposed to private sector organizations and a dummy variable identifies those working for the former.[22] In addition, a series of controls based on the International Standard Classification of Occupations (ISCO) are introduced to isolate the position of respondents in the workforce hierarchy, with the standard assumption being that those in more skills intensive positions will be the more likely to train (*ibid*.).

Residence is captured by a series of regional indicators at the NUTS-2 level. The estimating equation is completed by the inclusion of quarterly dummies to control for any seasonal pattern in adult learning.

In view of the above, the empirical model is:

$$\Pr(LLL) = \alpha + \beta' X + \gamma' Q + \xi' Z + \varphi' C + \eta' W + \delta' O + \lambda' R + \emptyset' S + e$$

where X is a vector of personal characteristics comprising age (Age and $Agesq$), sex ($Female$), marital status ($Married$) and nationality ($Foreign$). The vector Q comprises indicators measuring the highest level of completed education ($ISCED3, ISCED4, ISCED5, ISCED6$).[23] Measures of the individual's labour market status are contained in the Z vector: employees ($Employee$), the self-employed – with and without employees – ($Selfwith$ and $Selfwout$), those engaged in unpaid family work (UFW) and individuals out of the labour force. The latter group comprise, those engaged in domestic activities ($Domestic$), the retired ($Retired$) and the disabled ($Disabled$). Two measures of contractual form are included in the C vector; part-time (PT) and temporary ($Temp$). The workplace measures - $Micro/Small$ and $Public$ - form the W vector. Here, a micro enterprise is defined as one employing less than ten workers and a small enterprise as one employing less than 25. Data limitations necessitated the use of $Micro$ in the Portuguese model and $Small$ in the case of the UK.[24] Eight occupational controls ($ISCO1, ISCO2, ISCO3, ISCO4, ISCO5\ ISCO6, ISCO7, ISCO8$) are in the O vector with $ISCO9$ (elementary occupations) being the omitted category. R is a vector of regional controls derived from the NUTS-2 country delineations, with the base region in Portugal being Lisbon and that in the UK being the South East, excluding London. S is a vector of seasonal indicators, with the first quarter being the omitted category. $\beta, \gamma, \xi, \psi, \eta, \delta, \lambda$ and $\emptyset$ are coefficient vectors and e is an error term satisfying the standard assumptions.[25] Summary statistics for the variables in both countries are presented in Appendix 1.

4. Results

In this section, two complementary sets of results are presented for the model described above. First, the findings from the probit estimation are discussed, along with their associated marginal effects. This is followed by a series of simulations showing learning probabilities for individuals with assumed characteristic sets and how these likelihoods change with age.

Probit estimates

The results from the binomial probit model, along with the marginal effects for each of the variables, are reported in Table 3.[26] In the case of personal characteristics, the findings indicate that, for the UK, it is the young who are more likely to undertake LLL with the Age and $Agesq$ parameter estimates indicating that the LLL propensity peaks at 26 years of age. While the Portuguese parameters carry the same signs, both fail to achieve statistical significance. In a country that has witnessed a good deal of economic and social change since its accession to the EU in 1986, this is perhaps a surprising finding; nevertheless, it is one that, on the face of it, bodes well as the challenge of an ageing population is confronted. The UK results suggest that women $(Female)$ are more likely to engage in learning than men, although the Portuguese data again do not replicate this finding. Married and co-habiting people $(Married)$ exhibit lower propensities to engage in LLL, but the coefficient is once more not significant for Portugal, although the estimated differential in both countries is very small. Individuals in the UK who were born outside of the country $(Foreign)$ participate more, although no significant difference emerged in the Portuguese data.

The results for education largely conform to type, with the majority of the parameter estimates being positive, but only those for $ISCED3$ and $ISCED5$ are significant for Portugal. Also, for that country, the marginal effects are small and provide limited evidence of an incremental hierarchy in the pursuit of LLL. These results could reflect the design of the country's *Iniciativa Novas Oportunidades* (New Opportunities - NOP) programme (Carneiro, 2011), which was launched in 2005 with the aim of increasing the number of people educated to upper secondary level $(ISCED3)$. While this initiative had two axes, the recognition of prior learning (RPL) and lifelong learning, RPL dominated.[27] However, the least well educated individuals needed to undertake LLL in order to be deemed to have an educational background equivalent to $ISCED3$. To the extent that they were incited to do so, this could explain why the propensity to engage in LLL differs little across the educational spectrum. For the UK, the marginal effects indicate that the better educated are between 6 and 23 per cent more likely to engage in further learning than those with, at best, lower secondary education. The highest propensity is found amongst those individuals educated to $ISCED4$, courses leading to access to higher education, although only 0.1% of the sample fall into this category. Nevertheless, the marginal effects for the two highest education levels, $ISCED5$ (first degree) and $ISCED6$ (higher degree) are also high at 12 and 10 per cent, respectively.

All of the parameter estimates on the labour market status variables are negative for both countries, indicating that the unemployed are the group most likely to engage in lifelong learning. This could reflect training obligations under the Job Seekers' Allowance (JSA) benefit scheme in the UK and the NOP in Portugal. In the former the marginal effects for those in employment, the self-employed with and without employees, unpaid family workers, the retired, the disabled and those undertaking domestic activities lie in the range of two to seven per cent in absolute magnitude.[28] Own account workers $(Selfwout)$ and the disabled $(Disabled)$ are the least likely to participate.

The retired have the lowest absolute marginal effect and, although this may simply be a reflection of their free time, it is nonetheless a reassuring finding in the light of the EU's emphasis on active ageing (CEC, 2012). For Portugal, the marginal effects are of somewhat lower for most of the groups and range from two to three per cent for those in employment and the self-employed with employees to almost five per cent for unpaid family workers. To the extent that the lower educated, on whom the programme was targeted, are more likely to be unemployed, these findings may, once again, be a reflection of the operation of NOP.

The results concerning contractual employment forms do not accord well with the received wisdom discussed above. Thus, those on temporary contracts ($Temp$) appear to engage more in LLL than those with permanent jobs. The difference is, however, small, being around two per cent in the UK and one per cent in Portugal. Also, the results for both countries indicate that holding a part-time position is positively associated with engagement in learning, a finding that may be due to the fact that individuals with a lower hourly commitment to employment have more opportunity to engage in LLL. Alternatively, it would be consistent with the hypothesis that individuals who are engaged in learning activities seek out such employment.

More in line with the workplace training literature, lifelong learning probabilities are lower for those in micro/small enterprises, although the absolute values of the marginal effects were as low as one per cent for both countries. For the UK, the public sector indicator ($PUBLIC$) is positive and significant and its associated marginal effect is almost five per cent. This finding is not, however, replicated with the Portuguese proxy for which neither the coefficient nor the marginal effect approaches conventional statistical significance.

Occupation appears as an important determinant of the likelihood that an individual will engage in LLL. For the UK, all of the $ISCO$ indicators are positive and significant, meaning that the base group, those in elementary occupations, are the least likely to participate in learning activities. The differences are relatively large for certain groups, with the marginal effects for professionals and technicians exceeding 13 per cent. A total of four of the eight occupational controls are significant in the case of Portugal, with the largest marginal effects mirroring the UK findings, albeit much smaller. Also notable, given the relative importance of the sector in its total employment, is the finding that, in that country, the $ISCO6$ indicator (skilled agricultural and fishery workers) attracts a significant negative sign and has a marginal effect of almost four per cent.[29]

There is some evidence of regional differentiation in training propensities in the findings. In the UK, none of the marginal effects suggest that residence outside of the south-East, excluding London, increases an individual's chance of participating in learning and just over half of the effects are significantly negative. However, of the latter, only that for Northern Ireland exceeds five per cent. These spatial effects are slightly more pronounced in Portugal, with the highest LLL propensity observed in the North region of the country and the lowest in the island territory of Madeira. Finally, the seasonal variables indicate that participation in lifelong learning is at its lowest in Portugal during the first quarter of the year, whereas LLL activity falls during the summer months in the UK.

To formalise the analysis of the differences observed in the results for the two countries, a series of chi-square tests were undertaken, as reported in Table 4. The first was for the joint equality of all of the parameter estimates, excluding the regional dummies. This returned a calculated value

of 347.67, thereby rejecting the null of parameter equality at the 1% level. The second comprised tests for the equality of individual coefficient estimates. These reveal that, of the personal characteristics, $Female$ and $Foreign$ are significantly different, whereas no such variation was found for $Married, Age, Agesq$ and $Disabled$. The results also show a disparity between the $Selfwout$ and the $Domestic$ parameter estimates for the UK and Portugal, but this is only at the 10% level. There is, however, a highly significant difference in the results for the $Retired$ variable. While the findings do not support there being any significant difference between the countries in respect of the $Temp$ indicator, they do show that the parameter estimates on PT, $Small/Micro$ and $Public$ vary across the countries.

The most marked disparities are found for the educational attainment measures, with the chi-square statistics being significant at the 1% level for all of the included ISCED dummy variables. Differences are also apparent between the parameter estimates for the ISCO measures, with only the statistic for $ISCO4$ (clerks) failing to achieve statistical significance at the 10% level or better. Finally, the results for the quarterly controls reveal different seasonal patterns of LLL across the two countries.

Simulations

To illustrate further the estimated model's implications, three sets of simulations are provided, each focusing on the likelihood of various selected individuals engaging in LLL as the person highlighted ages in ten year bands. In all cases, the initial reference point is a person aged 30. Portuguese-UK comparisons are provided throughout, although it should be recalled that the age parameters are insignificant in the basic regression in the former case. In Portugal, the individual is taken to live in Lisbon and, in the UK, their region of residence is assumed to be London. The quarterly control was set at April to June.

Table 5 presents the results for two sets of employed individual, with the first five rows pertaining to a worker in a professional occupation $(ISCO2)$ and the second five to someone in an elementary position $(ISCO9)$. In both cases, the reference person is assumed to be male, married, working in a medium/large enterprise in the private sector and engaged on a full-time permanent contract. Moving down the rows within each set sees the individual's attained level of education increase through the ISCED hierarchy of qualifications. For all cases shown in the Table, learning rates are higher in the UK than they are in Portugal and the differences are very pronounced for certain individuals. For example, a professional person holding a first degree $(ISCED5)$ has a 13 per cent chance of undergoing LLL in Portugal, whereas the corresponding figure for the UK exceeds 32 per cent. Even for a similar individual educated to only upper secondary $(ISCED3)$ level, the gulf between the two countries is apparent, with the probability of undertaking LLL in Portugal being only slightly above one-half of the UK figure of 25 per cent. At the same time, the data identify substantial differences across occupational groups within both countries. For example, if the preceding individual now works in an elementary occupation, his learning chances in Portugal and the UK fall to seven and 11 per cent, respectively. Thus, using different data, this reaffirms the Matthew effect observed by Schuller and Watson (2009) that those with the greatest need for training in adult life are the least likely to receive it.

The Table also illustrates how LLL propensities fall with age, although the rate of this decline is, in fact, relatively modest in both countries, albeit greater in the UK. At one extreme, for

professional workers with a first degree, the probability of undertaking adult learning falls by about ten per cent from the age of thirty to sixty in Portugal and by 18 per cent in the UK. The decreases for the poorly educated in an elementary occupation are much smaller still; typically around one per cent per decade in both countries. However, such individuals have only a relatively small chance of participating in learning even at a young age, particularly in Portugal.

In Table 6 attention turns to the unemployed. There, the reference individual is again taken to be a married male and, in successive rows, possessing progressively higher levels of education. Notwithstanding the basic finding that the unemployed are more likely to undertake LLL than other labour market status group in both countries, their probabilities of doing so differ markedly. For example, a UK male educated to no more than lower secondary level has a chance of 13 per cent, while for an equivalent individual in Portugal it is less than eight per cent. However, in the UK, the rate of decline in learning as the individual ages is higher than that for Portugal. Such inter-country differences are also apparent for the unemployed holding a degree; for the UK, the LLL propensity is 27 per cent at age 30, whereas the corresponding figure in Portugal is only 11 per cent. These findings could reflect the relative success of the active policies in place for the unemployed in the UK, notably the JSA scheme, discussed above. Over time, the differential between the two countries for the graduate unemployed again becomes smaller but, even at the age of 60, the odds in Portugal are still lower than in the UK.

The contrast between the two countries is also evident in the case of those out of the labour market due to domestic responsibilities. Thus, Table 7, which follows the format of the previous two tabulations, portrays the position for a female in that situation. In the UK, eight per cent of such women aged 30 with no more than lower secondary education reported that they were undertaking LLL while, in Portugal, the figure was as low as two per cent. This rises to 17 per cent in the UK if she has a degree, but remains at two per cent in Portugal. These findings might be taken to portray a positive situation in the UK, suggesting that people with domestic commitments, such as those with young children, may be acquiring skills to facilitate re-entry into work in the future. The same is not evident for Portugal and the lack of learning amongst economically inactive women may hamper their future labour market prospects.

5. **Conclusion**

The pursuit of an increase in rates of lifelong learning has been on the agenda of the EU for some considerable time and the need for it to be embraced by all sections of the population has been enshrined as an official policy goal since the Feira European Council in 2000. While fully aware of the differences in the performance of individual Member States, increasingly ambitious targets for the overall participation rate of adults aged 25 to 64 within the Union have been set. This paper chose to focus attention on Portugal and the UK, countries at opposite ends of the European LLL spectrum and with very different educational attainment and labour market profiles, in order to gain comparative insights on the extent to which, aggregate national performance aside, equality of coverage is being achieved. Such disparate settings also provided a useful test-bed of whether similar forces are at work in the determination of learning patterns. In line with the practice of the European Commission and UNESCO, which usually leads international thinking in this field, LLL was defined broadly to include both formal and non-formal learning. Furthermore, attention was not restricted to workplace training or to particular strata of the target population.

While perhaps not an unexpected outcome, the empirical model estimated, the statistical tests applied to its results and the simulations based upon the findings lead to the conclusion that adult learning continues to be centred on certain segments of the population. Although prior reasoning and the scrutiny of relevant governmental policies renders the delineation of participants and non-participants reasonably predictable, the screening of the findings, in particular the tests for coefficient equality, made it clear that the forces identified often do not operate with the same intensity in both countries studied. However, among the notable commonalities was the finding that *ceteris paribus* the unemployed are the labour market status group most likely to engage in LLL, an outcome that seemingly represents some success in the operation of at least one arm of the activation strategies that members of the EU and OECD are extolled to adopt. Nevertheless, the differences between groups in this regard are not great and, once other factors are allowed to vary, the learning proclivities of the unemployed remain relatively low, as the simulations demonstrated.

One very striking difference was the evidence the analysis produced on the impact of prior educational attainment on the likelihood of engaging in LLL. In the case of the UK, a distinct hierarchy emerged, albeit non-monotonic, in the probability of later learning along this dimension. For example, a male holding an ISCED4 qualification was normally found to be at least twice as likely as one with only basic education to participate in such activity, irrespective of labour market status. Such stark contrasts were not nearly so evident in Portugal. In a similar vein, a worker in a professional occupation has at least a 25 per cent chance of undertaking LLL in the UK, regardless of educational attainment, and the figure is always more than twice as large as that for a comparable individual employed in an elementary job. While the ratios between the two types of work are similar in Portugal, the probability of a professional undertaking further learning never exceeds 13 per cent.

With the notable exceptions of educational attainment and professional status in the UK, most of the controls included in the model described above have, even when significantly different from zero, relatively small effects on the probability of an individual engaging in LLL; typically less than five per cent. Nevertheless, even in Portugal, the simulations demonstrated that, taken collectively, these can produce an outcome in which one person can be more than six times more likely to engage in learning than another member of the population. In that country, however, the overall message conveyed by the analysis is that there is ample scope for a broad-brush approach to improving LLL participation throughout the population. In the case of the UK, it would appear that there remains a considerable dividend to be reaped from targeting a learning campaign on the still considerable numbers possessing only low levels of education or modest positions in the occupational hierarchy.

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Table 1: LLL Participation 1998-2011 Aged 25-64 (% of Population)

	Mean	Minimin	Maximum	Corr(t)	N
EU27	8.68	7.10	9.60	0.737**	12
EU15	9.81	8.00	11.10	0.765**	13
Belgium	6.89	4.40	8.60	0.490	14
Bulgaria	1.30	1.20	1.40	-0.195	11
Czech Rep.	6.69	5.10	11.40	0.786**	10
Denmark	25.48	18.00	32.50	0.945**	14
Germany	6.78	5.20	7.90	0.906**	14
Estonia	7.56	5.40	12.00	0.813**	14
Ireland	6.67	5.50	7.60	0.463	10
Greece	1.96	1.00	3.30	0.849**	14
Spain	7.54	4.20	10.80	0.881**	14
France	4.78	2.60	6.80	0.708**	14
Italy	5.51	4.40	6.30	0.694**	14
Cyprus	6.41	3.00	9.30	0.752**	13
Latvia	6.75	5.00	8.40	-0.872**	10
Lithuania	4.49	2.80	6.00	0.581*	13
Luxembourg	8.36	4.80	13.60	0.878**	14
Hungary	3.27	2.70	4.50	-0.103	14
Malta	5.33	4.20	6.60	0.918**	12
Netherlands	15.85	12.90	17.00	0.795**	14
Austria	11.25	7.50	13.80	0.885**	13
Poland	4.71	4.20	5.30	0.516	11
Portugal	4.68	2.90	11.60	0.768**	14
Romania	1.24	0.80	1.60	0.819**	14
Slovenia	13.72	7.30	16.20	0.722**	11
Slovakia	4.19	2.80	8.50	-0.669*	10
Finland	20.85	16.10	23.80	0.865**	14
Sweden	21.05	17.40	25.80	0.245	11
UK	22.12	15.80	29.00	-0.263	13

Note: ** denotes significance at 1%, * denotes significance at 5%.

Table 2: % Population Aged 15-64 with Highest Completed Level of Education (2011)

	EU27	EU15	Portugal	UK
Lower Secondary	30.0	32.5	63.8	23.8
Upper Secondary	46.4	42.5	20.6	42.9
Tertiary	23.6	25.0	15.6	33.3

Source: Eurostat.

Table 3: Probit Results for Lifelong Learning in Portugal and the UK

	Portugal		**UK**	
	Coefficient (t-stat)	*Marginal Effect (t-stat)*	*Coefficient (t-stat)*	*Marginal Effect (t-stat)*
Personal				
Age	*0.0003*	0.0000	0.0104***	0.0026***
	(0.02)	(0.02)	(2.51)	(2.51)
Agesq	-0.0002	-0.0000	-0.0002***	-0.0001***
	(1.59)	(1.59)	(4.71)	(4.72)
Female	-0.0007	-0.0009	0.1706***	0.0348***
	(0.28)	(0.28)	(14.69)	(13.38)
Married	-0.0082	-0.0041	-0.0646***	-0.0114***
	(0.27)	(1.46)	(5.95)	(6.20)
Foreign	-0.0733	-0.0073	0.1059***	0.0211***
	(1.46)	(1.55)	(7.06)	(6.65)
Education				
ISCED3	0.1796***	0.0219***	0.2921***	0.0637***
	(4.47)	(3.94)	(16.80)	(14.58)
ISCED4	0.0633	0.0071	0.8143***	0.2261***
	(0.36)	(0.34)	(4.96)	(3.81)
ISCED5	0.1891***	0.0232***	0.5115***	0.1248***
	(3.64)	(3.18)	(26.97)	(21.88)
ISCED6	-0.1443	-0.0137	0.4376***	0.1030***
	(0.66)	(0.75)	(9.51)	(7.81)
Labour market status				
Employee	-0.2620***	-0.0226***	-0.3582***	-0.0523***
	(4.24)	(5.36)	(12.33)	(16.22)
Selfwith	-0.2841***	-0.0241***	-0.4055***	-0.0574***
	(2.62)	(3.39)	(8.83)	(12.14)
Selfwout	-0.3376***	-0.0274***	-0.5015***	-0.0665***
	(3.63)	(4.96)	(14.82)	(22.37)
Ufw	-0.8484**	-0.0463	-0.2241*	-0.0357**
	(2.15)	(5.83)	(1.89)	(2.22)
Domestic	-0.5492***	-0.0377***	-0.4082***	-0.0576***
	(6.80)	(11.98)	(14.02)	(19.30)
Retired	-0.5378***	-0.0373***	-0.1179***	-0.0201***
	(6.02)	(10.45)	(3.35)	(3.63)
Disabled	-0.5464***	-0.0376***	-0.5604***	-0.0714***
	(3.28)	(5.74)	(16.95)	(27.48)
Contractual form				
PT	0.2019**	0.0250**	0.0471***	0.0089***
	(2.80)	(2.43)	(3.29)	(3.20)
Temp	0.1098***	0.0127***	0.1095***	0.0216***
	(2.59)	(2.39)	(3.89)	(3.65)

Table 3 (cont'd): Probit Results for Lifelong Learning in Portugal and the UK

	Portugal		**UK**	
	Coefficient (t-stat)	*Marginal Effect (t-stat)*	*Coefficient (t-stat)*	*Marginal Effect (t-stat)*
Workplace				
Micro/Small	-0.1733***	-0.0139***	-0.0279**	-0.0050**
	(4.68)	(5.41)	(2.26)	(2.30)
Public	-0.0573	-0.0046	0.2218***	0.0465***
	(0.76)	(0.80)	(16.40)	(14.56)
Occupational controls				
Legislators	0.1551*	0.0186	0.3734***	0.0851***
	(1.70)	(1.52)	(14.23)	(11.94)
Professionals	0.3806***	0.0538***	0.5373***	0.1328***
	(4.97)	(3.91)	(19.99)	(16.00)
Technicians	0.3783***	0.0534***	0.5407***	0.1338***
	(5.62)	(4.44)	(20.81)	(16.65)
Clerks	0.0993	0.0114	0.0680***	0.0129***
	(1.42)	(1.32)	(9.97)	(9.97)
Sales & service	0.0787	0.0090	0.2004***	0.0415***
	(1.26)	(1.19)	(6.68)	(5.99)
Skilled ag. & fish.	-0.5832***	-0.0390***	0.4936***	0.1194***
	(3.96)	(7.46)	(17.68)	(14.31)
Craft & related	-0.0247	-0.0026	0.2216***	0.0465***
	(0.38)	(0.39)	(6.71)	(5.97)
Machine op.	-0.0345	-0.0036	0.1117***	0.0220***
	(0.44)	(0.45)	(3.36)	(3.15)
Regional controls				
North	0.0931***	0.0106**		
	(2.54)	(2.37)		
Central	0.2752***	0.0360***		
	(6.55)	(5.47)		
Alentejo	-0.1079**	-0.0105**		
	(2.17)	(2.37)		
Azores	-0.1988***	-0.0180***		
	(3.41)	(4.06)		
Madeira	-0.5112***	-0.0362***		
	(5.16)	(2.17)		

Table 3 (cont'd): Probit Results for Lifelong Learning in Portugal and the UK

	Portugal		**UK**	
	Coefficient (t-stat)	*Marginal effect (t-stat)*	*Coefficient (t-stat)*	*Marginal effect (t-stat)*
Tyne & Wear			-0.0415	-0.0074
			(1.12)	(1.15)
Rest of North			-0.0505*	-0.0090*
			(1.72)	(1.78)
South Yorkshire			0.0151	0.0027
			(0.44)	(0.44)
West Yorkshire			-0.0826***	-0.0144***
			(2.97)	(3.14)
Rest of Yk & H'side			0.0067	0.0012
			(0.22)	(0.22)
East Midlands			0.0121	0.0022
			(0.57)	(0.57)
East Anglia			-0.0470*	-0.0081*
			(1.73)	(1.79)
Inner London			0.0448*	0.0085
			(1.64)	(1.60)
Outer London			-0.0058	-0.0011
			(0.26)	(0.26)
South West			-0.0631***	-0.0112***
			(3.05)	(3.17)
Met. W. Midlands			-0.1200***	-0.0204***
			(4.18)	(4.52)
Rest of W. Mids			-0.0950***	-0.0165***
			(3.65)	(3.89)
Gt. Manchester			0.0317	0.0057
			(1.20)	(1.22)
Merseyside			-0.1276***	-0.0217***
			(3.47)	(3.78)
Rest of North West			-0.1032***	-0.0178***
			(3.85)	(4.12)
Wales			-0.0614**	-0.0109***
			(2.36)	(2.45)
Strathclyde			0.0160	0.0030
			(0.59)	(0.58)
Rest Scotland			-0.0491**	-0.0089**
			(2.03)	(2.10)
Northern Ireland			-0.3758***	-0.0566***
			(11.80)	(27.23)
Seasonal controls				
Q2	0.2091***	0.0199***	-0.0161	-0.0029
	(5.16)	(4.17)	(1.07)	(1.09)
Q3	0.1521***	0.0141***	-0.1053***	-0.0181***
	(3.52)	(3.16)	(6.75)	(7.23)
Q4	0.2452***	0.0240***	0.0003	0.0000
	(5.81)	(4.92)	(0.02)	(0.02)

Table 3 (cont'd): Probit Results for Lifelong Learning in Portugal and the UK

	Portugal		**UK**	
<u>Regional controls</u>				
Northern Ireland			-0.3758*** (11.80)	-0.0566*** (27.23)
Constant	-1.1826*** (4.77)		-1.2404*** (13.84)	
N	30,072		94,096	
% Correct predictions	95.6%		81.4%	
McKelvey's & Zavoina R^2	0.193		0.166	

Notes:

1. For the small firm dummy variables, data limitations necessitated the use of *Micro* (up to 10) in Portugal and *Small* (< 25) for the UK.
2. Absolute values of *t*-statistics are in parentheses, ***, ** and * represent 1%, 5% and 10% significance levels respectively.
3. The averages of the marginal effects are reported.

Table 4: χ^2 test statistics for equality of common coefficients

Age + Agesq	0.70
Female	30.81***
Married	0.54
Temp	0.00
Employee	1.94
Selfwith	1.02
Selfwout	2.72*
Ufw	2.42
PT	4.65**
Domestic	2.73*
Retired	21.10***
Disabled	0.01
Micro/Small	13.49***
Public	12.55***
Foreign	11.13***
ISCED3	6.46***
ISCED4	9.39***
ISCED5	30.36***
ISCED6	7.33***
Legislators	4.95**
Professionals	3.46*
Technicians	4.99**
Clerks	0.19
Sales & service	3.04*
Skilled ag. & fish.	50.23***
Craft & related	11.46***
Machine op.	2.93*
Q2	27.44***
Q3	31.68***
Q4	29.43***
Joint equality test for all common coefficients	χ^2_{31}=347.67***

1. *Note :* ***, ** and * represent 1%, 5% and 10% significance levels respectively.

Table 5: LLL Simulations - Employed

	Portugal				UK			
	Pr(LLL) Age=30	ΔPr(LLL) Age=30→40	ΔPr(LLL) Age=40→50	ΔPr(LLL) Age=50→60	Pr(LLL) Age=30	ΔPr(LLL) Age=30→40	ΔPr(LLL) Age=40→50	ΔPr(LLL) Age=50→60
Professional, ISCED0-ISCED2	0.0959	-0.0238	-0.0237	-0.0201	0.1695	-0.0130	-0.0222	-0.0859
Professional, ISCED3	0.1301	-0.0300	-0.0308	-0.0272	0.2533	-0.0166	-0.0290	-0.1119
Professional, ISCED4	0.1071	-0.0259	-0.0261	-0.0224	0.4436	-0.0207	-0.0377	-0.1453
Professional, ISCED5	0.1322	-0.0303	-0.0312	-0.0276	0.3283	-0.0188	-0.0335	-0.1290
Professional, ISCED6	0.0736	-0.0193	-0.0187	-0.0154	0.3021	-0.0181	-0.0321	-0.1236
Elementary, ISCED0-ISCED2	0.0459	-0.0131	-0.0122	-0.0095	0.0677	-0.0066	-0.0109	-0.0425
Elementary, ISCED3	0.0660	-0.0177	-0.0170	-0.0138	0.1149	-0.0099	-0.0166	-0.0645
Elementary, ISCED4	0.0523	-0.0146	-0.0138	-0.0109	0.2485	-0.0164	-0.0287	-0.1106
Elementary, ISCED5	0.0672	-0.0179	-0.0173	-0.0140	0.1631	-0.0126	-0.0216	-0.0836
Elementary, ISCED6	0.0336	-0.0100	-0.0091	-0.0069	0.1455	-0.0117	-0.0199	-0.0770

Notes:

1. In all simulations the individuals are Portuguese/UK nationals, male (unless otherwise stated), married and working on full-time permanent contracts in a medium/large enterprise in the private sector. For Portugal, the individuals are assumed to live in Lisbon while, for the UK, individuals are assumed to live in London.
2. *Elementary*=Elementary Occupations (*ISCO9*) and *Professional*=Professional Occupations (*ISCO1*).

Table 6: LLL Simulations - Unemployed

	Portugal				**UK**			
	Pr(LLL) Age=30	ΔPr(LLL) Age=30→40	ΔPr(LLL) Age=40→50	ΔPr(LLL) Age=50→60	Pr(LLL) Age=30	ΔPr(LLL) Age=30→40	ΔPr(LLL) Age=40→50	ΔPr(LLL) Age=50→60
ISCED0-ISCED2	0.0772	-0.0201	-0.0196	-0.0161	0.1282	-0.0107	-0.0181	-0.0701
ISCED3	0.1067	-0.0258	-0.0260	-0.0223	0.1996	-0.0144	-0.0249	-0.0961
ISCED4	0.0868	-0.0220	-0.0217	-0.0182	0.3742	-0.0198	-0.0356	-0.1369
ISCED5	0.1085	-0.0262	-0.0264	-0.0227	0.2664	-0.0170	-0.0299	-0.1153
ISCED6	0.0584	-0.0160	-0.0152	-0.0122	0.2427	-0.0162	-0.0283	-0.1090

Notes:

1. In all simulations the individuals are Portuguese/UK nationals, male (unless otherwise stated) and married. For Portugal, the individuals are assumed to live in Lisbon while, for the UK, individuals are assumed to live in London.

Table 7: LLL Simulations - Domestic

	Portugal				**UK**			
	Pr(LLL) Age=30	ΔPr(LLL) Age=30→40	ΔPr(LLL) Age=40→50	ΔPr(LLL) Age=50→60	Pr(LLL) Age=30	ΔPr(LLL) Age=30→40	ΔPr(LLL) Age=40→50	ΔPr(LLL) Age=50→60
ISCED0-ISCED2	0.0238	-0.0106	-0.0097	-0.0074	0.1399	-0.0114	-0.0193	-0.0369
ISCED3	0.0358	-0.0085	-0.0076	-0.0056	0.2883	-0.0177	-0.0313	-0.0624
IECED4	0.0276	-0.0108	-0.0099	-0.0075	0.1946	-0.0142	-0.0245	-0.0475
ISCED5	0.0365	-0.0055	-0.0047	-0.0033	0.1749	-0.0132	-0.0227	-0.0439
ISCED6	0.0168	-0.0238	-0.0237	-0.0201	0.2626	-0.0190	-0.0316	-0.1128

Notes:

1. In all simulations the individuals are Portuguese/UK nationals, female and married. For Portugal, the individuals are assumed to live in Lisbon while, for the UK, individuals are assumed to live in London.

Figure 1: Participation in LLL 1999 & 2011: Ranks

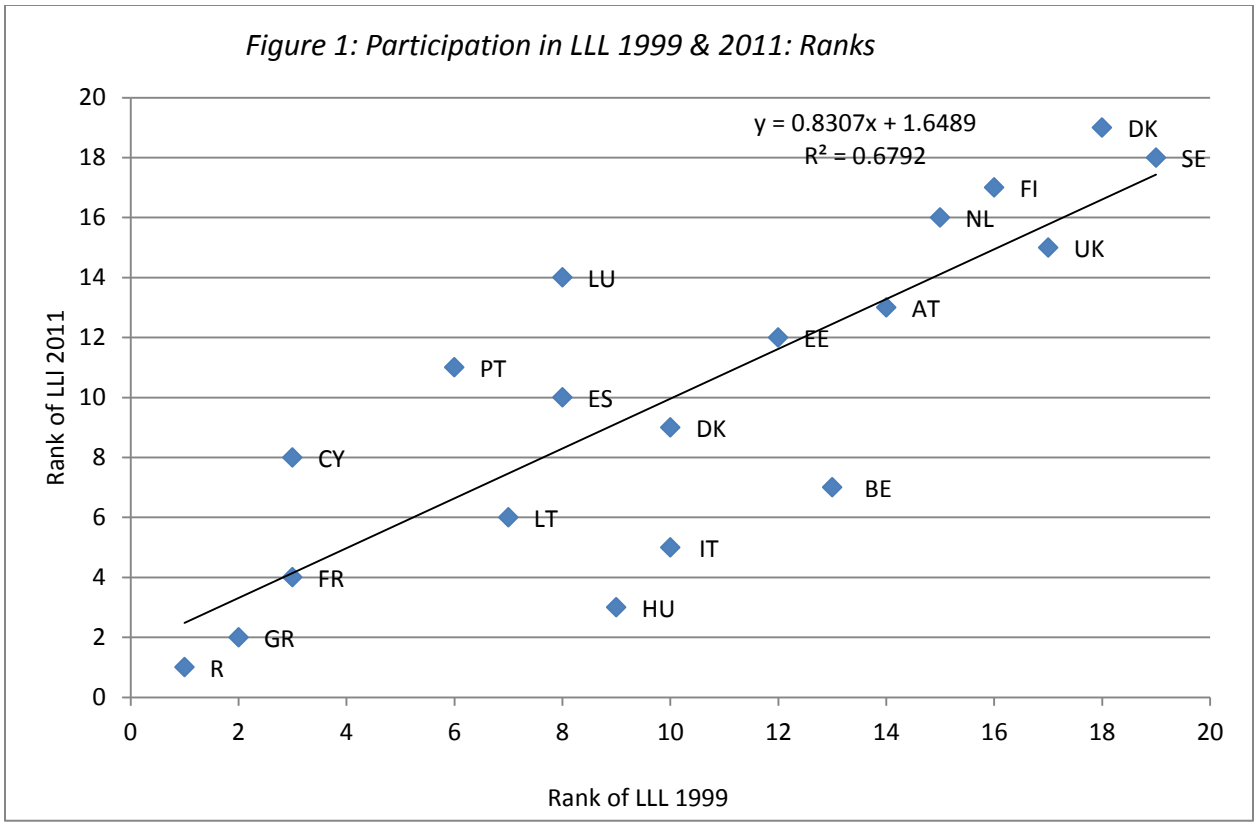

Table A1: Summary Statistics

	Portugal		**UK**	
	Mean	*Standard deviation*	*Mean*	*Standard deviation*
LLL	0.0440	0.2050	0.1864	0.3894
Age	45.3375	10.7377	44.4307	10.9450
Female	0.5097	0.4999	0.5104	0.5000
Married	0.7454	0.4356	0.6225	0.4848
Foreign	0.0727	0.2597	0.1349	0.3416
ISCED3	0.1386	0.3455	0.4893	0.5000
ISCED4	0.0050	0.0707	0.0010	0.0263
ISCED5	0.1311	0.3375	0.3276	0.4693
ISCED6	0.0027	0.0519	0.0113	0.1056
Employee	0.5649	0.4958	0.6418	0.0417
Selfwith	0.0403	0.1966	0.0223	0.3850
Selfwout	0.0928	0.2901	0.0865	0.2461
Ufw	0.0044	0.0663	0.0017	0.2495
Domestic	0.0790	0.2697	0.0648	0.4635
Retired	0.0875	0.2824	0.0411	0.5000
Disabled	0.0125	0.1109	0.0667	0.4046
PT	0.0475	0.2126	0.1810	0.3850
Temp	0.1046	0.3061	0.0272	0.1627
Micro/Small	0.3359	0.4723	0.3125	0.0435
Public	0.0468	0.2112	0.2062	0.4046
ISCO1	0.0459	0.2093	0.1289	0.3348
ISCO2	0.0683	0.2523	0.1135	0.3172
ISCO3	0.0700	0.2551	0.1150	0.3190
ISCO4	0.0654	0.2473	0.3365	0.1103
ISC05	0.1133	0.3170	0.0793	0.2703
ISCO6	0.0497	0.2173	0.0662	0.2486
ISCO7	0.1288	0.3350	0.0407	0.1977
ISCO8	0.0548	0.2276	0.0537	0.2255

Notes:

1. The *ISCED* education variables are the OECD's 1997 International Standard Classification of Education measures (OECD, 1999).

[1] Nevertheless, the precise meaning of the LLL concept remains a topic of debate (e.g. Boshier, 2012; Dunkin, 2012).
[2] Further definition will be found below, while Annex II of CEC (2001) provides enhanced detail on the different forms of learning activity.
[3] The previous target, set by EC (2003) was for 12.5% participation, to be achieved by 2010.
[4] The enforced choice might be regarded as representing a mid-term review, being half-way between the adoption of the pursuit of LLL for all as an official EU policy at the Feira European Council (EC, 2000) and the target date for the achievement of the current Europe 2020 ambitions set out in CEC (2010).
[5] Eurostat (2006) provides further detail on other international organisations having an interest in education and training statistics.
[6] The LFS LLL variable (COURATT) is derived from four Survey questions: (1) whether respondents have received any job related training (ED4WK, only asked of those employed), whether respondents have received any training related to a job that they may hold in the future (FUTUR4, only asked of those unemployed), (3) whether respondents have taken part in any other leisure or education classes (LEISCL) or (4) any taught courses or forms of tuition (TAUT4). All respondents are asked questions 3 and 4.
[7] For further details on the conceptual issues surrounding LLL, see Eurostat (2006).
[8] These are Denmark, the Netherlands, Finland, Sweden, Slovenia and the UK.
[9] In fact, work casting doubt on one aspect or another of this wisdom is reasonably plentiful and with a wide geographic spread: see, for example, Amuedo-Dorantes (2000: 314) on Spain; Green (2008) on Britain; Reinowski and Sauermann (2008) on Germany; Wallette (2005) on Sweden; Department of Labour (2009) and McLaren and Dupuis (2006) on New Zealand. Appeal to the logic of basic human capital theory (Becker, 1964) can be made to argue that those on fixed-term contracts will receive less firm specific training than those in regular employment. However, it is problematic to equate the latter with training that is funded by the employer, with Autor (2001), for example, finding that temporary help agencies provide free general training to their staff in order to facilitate both self-selection and screening functions. In the final analysis, it is important to bear in mind that temporary employment relationships take a variety of forms (e.g. Green, 2008; Kalleberg *et al*., 2000; Córdova, 1986) and that neither the tasks undertaken nor those employed in them are homogeneous (e.g. Marler *et al*., 2002).
[10] For women the age range is restricted to 25-62 as certain questions required for the construction of the exogenous variables are not asked of females aged 63 and over, with initial education being a notable example. Individuals in full-time education have also been excluded from the analysis.
[11] This wider age grouping is evidently more in keeping with the ambition that LLL should be a 'cradle to the grave' undertaking (CEC, 2000:7).
[12] Whatever sample restrictions might be imposed, sight should not be lost of the fact that roughly 80% of the Portuguese and UK populations between the ages of 25 and 64 are active on the labour market at any point in time.
[13] In this regard it should be noted that the expected duration of active life in the labour market for a 15 year old across the 27 Member States ranges from 40.1 years in Sweden to 29.3 years in Hungary. For males, these figures are 41.8 (Netherlands) and 31.2 (Hungary), while for females they are 38.5 (Sweden) and 21.5 (Malta). In Portugal and the UK, the respective figures are (36.8, 38.5, 35.0) and (37.9, 40.7, 34.8). All figures relate to the year 2010 and have been extracted from the Eurostat Statistical Database. Thus, while labour market participation is paramount, the LLL target age range also incorporates many inactive individuals, both female and male.
[14] While an under-researched group, CEC (2007:6) and OECD (2003) find them to be a group receiving little LLL.
[15] The figure quoted is from the Eurostat Statistical Database. The corresponding figures for Portugal and the UK are 19.2% and 13.7%, respectively.
[16] Readers unfamiliar with the probit model should consult Greene (2012).
[17] Lynch (2002) provides a useful introduction to the literature casting doubt on any automatic tendency for technical change to be associated with lower training rates for older workers.

[18] Jenkins and Mostafa (2012) came up with the even stronger conclusion that, amongst those aged over fifty, women were more likely than men to participate in all forms of learning.
[19] Amongst others, the studies of Jenkins *et al.*, (*op. cit.*) and Beblavý *et al.* (2013) found higher participation of the better educated in LLL. Of course, as Oosterbeek (1998) pointed out, this positive association is potentially being driven by an omitted ability measure and by self-selection problems in the analyses undertaken to test it.
[20] The LFS definition of disabled is a self-reported measure covering the long-term sick and disabled.
[21] Temporary workers include both direct hires and temporary agency workers. Part-time workers are those employed for less than 35 hours.
[22] The Portuguese LFS does not record directly whether individuals are employed in the private or public sector. In this case, therefore, employment in public administration, defence, education, human health and social work activities was used as a proxy for public sector employment.
[23] The base group for the education controls is those individuals who have, at best, lower secondary education ($ISCED0 + ISCED1 + ISCED2$). This combination was selected on the grounds that very few individuals in the UK are educated to only $ISCED0$ level and the country does not use $ISCED1$ in its education classification.
[24] This is due to the fact that the workplace size bands used in the two countries' LFSs differ.
[25] Subject to the exceptions noted above, the same model is estimated for both study countries.
[26] The reported results are based on the inclusion of individual respondents only on the first occasion that they were captured by the 2010 Survey. That is, the double counting inherent in the LFS longitudinal design has been eliminated.
[27] This programme viewed RPL as a lever to LLL (Carneiro, 2011).
[28] Under the JSA programme in the UK, claimants have tailor-made requirements that may, or may not, contain a compulsory training component. In the sample used here, almost two-thirds of claimants had undergone training.
[29] In 2010, Eurostat data indicate that agriculture, forestry and fishing accounted for 7% of Portuguese employment, compared to 1.1% in the UK and 4.7% in the EU27 as a whole.