

INEQUALITIES IN ACCESS TO JOB-RELATED LEARNING AMONG WORKERS IN ITALY: EVIDENCE FROM ADULT EDUCATION SURVEY (AES)

Paolo Emilio Cardone

Equitable access to adult learning for all is a goal for European education, training and employment policies. In particular, all workers should be able to acquire, update and develop their skills over their lifetime. How is it possible to improve access to learning for older workers? This report provides a statistical picture of older workers participation in job-related training in Italy, investigating its variability and relevant inequalities. The analysis is carried out using Italian AES, provided by Eurostat. It analyses adults' learning activities and distinguishes formal, non-formal and informal learning. Using logistic regression model it is possible to estimate the learning-age gap between those aged 50 years and the general population more accurately. One principal finding of such an analysis is that people under 50 have a probability of participating in training 22% higher when compared to those aged 50 and more (OR=1.22). Secondly, women are less likely to take part in training than men. Overall the data confirm the existence of strong inequalities in access to job-related learning among workers: this requires policy attention, to increase the focus on job-related training as part of active labour market policies, to prevent skills' obsolescence.

1. Introduction

Demographic ageing is an irreversible process. The direct effect of population ageing is the increasing share of elderly people, who are in retirement age, compared to the decreasing share of young people.

Furthermore, the European Commission 2012 Ageing Report suggests that population ageing has been also affecting the age structure of population working age. Due also to the pension reform, this is extremely important in the overall context of labour force in the EU (particularly in Italy). On the labour market, the proportion of jobs that require medium and high-level qualifications is expected to increase. However, there is still an extremely high number of those of working age in Europe who have either low or no qualifications.

The nature of jobs is changing, necessitating changes in the skills that are required of workers and adapting lifelong learning systems to the needs of an

ageing workforce. The recent crisis has also highlighted the importance of education and training at all stages of life, in particular for older adults to avoid unemployment, vindicating the messages that “it is never too late to learn” (European Commission 2006) and learning must be for all. This requires older people to maintain and update the skills they have, particularly in relation to new technologies. Continuous learning and development of an ageing workforce are important for employers’ survival in competitive markets, as well as for maintaining older people’s employability.

Equitable access to adult learning for all is a goal for European education, training and employment policies promoted by Cedefop¹. In particular, all workers should be able to acquire, update and develop their skills over their lifetime (Cedefop 2015). Also OECD², through the LEED³ program, considers them as a key factor for increasing the productivity of older workers because it relies on using their strengths in terms of skills and competences and developing their skills (OECD 2015). Continuing training in general can temper any tendency to become less flexible as well as increase the capacity to deal with technological change.

However, despite the increasing need for learning later in life, participation and access to learning decrease with age. How is it possible to improve access to learning for older workers? This report provides a statistical picture of older workers participation in job-related training in Italy, investigating its variability and relevant inequalities due to key factors such as the influence of individual characteristics, jobs and workplaces.

2. Classification of Learning Activities (CLA)

Regular participation in learning activities does not include taking part in formal training only, but also learning in non-formal and informal learning settings. In particular, informal learning plays a greater role for older employees than formal learning because it facilitates the transfer of knowledge and know-how between generations (Cedefop 2012), allows practical skills to be gained quickly and ensures the inclusion, particularly for older workers, within the circles of relationships.

First of all, the organizing concept of the CLA (Classification of Learning Activities) is based on 3 broad categories: Formal Education (F), Non-Formal Education (NF) and Informal Learning (INF). The classification is intended to

¹ European Centre for the Development of Vocational Training, based in Thessaloniki (Greece). For more details: <http://www.cedefop.europa.eu>

² Organisation for Economic Co-operation and Development, based in Paris (France). For more details: <http://www.oecd.org>

³ Local Economic and Employment Development. For more details: <http://www.oecd.org/cfe/leed>

cover all types of learning opportunities and education/learning pathways. It is intended to be universal in nature, applicable in countries irrespective of their level of development or systems of education and learning. It is designed to serve as an instrument for compiling and presenting comparable statistics and indicators on learning activities both within individual countries and across countries. It covers all intentional and organised learning activities for all age groups. The CLA is to be applied to statistical surveys to collect quantitative information on different aspects of participation of individuals in learning and it has been designed to cover and serve the scope of the European Union Adult Education Survey (AES). However, other EU household surveys (e.g. LFS⁴, TUS⁵) as well as specific enterprise surveys (e.g. CVTS⁶) may use it if it is adequate for their needs (Eurostat 2006).

Learning activities is defined as “*the individual acquisition or modification of information, knowledge, understanding, attitudes, values, skills, competencies or behaviours through experience, practice, study or instruction. It is a deliberate activity in which an individual participates with the intention to learn*” (UNESCO-UIS 2012, 80).

Lifelong Learning (LLL) is defined as encompassing “*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*”⁷ (European Commission 2002).

CLA provides relevant criteria for the classification of all learning activities: formal, non-formal education and informal learning. In doing so it remains coherent with ISCED 97. It is possible to classify all learning activities into these 3 categories using some general concepts and definitions.

Formal Education as “*education provided in the system of schools, colleges, universities and other formal educational institutions that normally constitutes a continuous “ladder” of full-time education for children and young people, generally beginning at age of five to seven and continuing up to 20 or 25 years old*”. Formal education refers to institutionalised learning activities that lead to a learning achievement that can be positioned in the National Framework of Qualifications (NFQ).

Non Formal Education is defined as “*any organised and sustained educational activities that do not correspond exactly to the above definition of formal education. Non-formal education may therefore take place both within and outside*

⁴ Labour Force Survey.

⁵ Time Use Survey.

⁶ Continuing Vocational Training Survey.

⁷ The European Employment strategy definition of Lifelong Learning reads: “*all purposeful learning activities, whether formal or informal, undertaken on an ongoing basis with the aim of improving knowledge, skills and competences.*”.

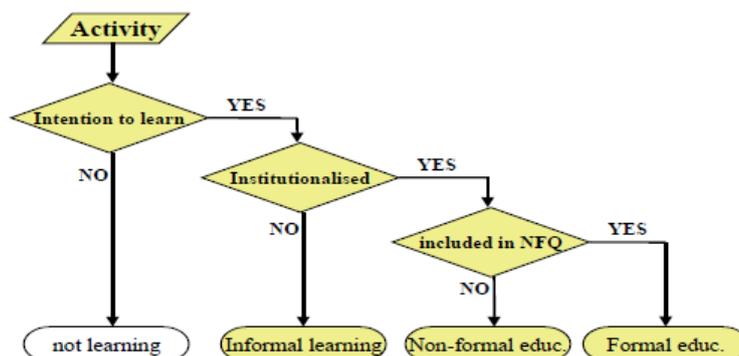
educational institutions, and cater to persons of all ages. Non formal education programmes do not necessarily follow the “ladder” system, and may have a differing duration”. Non-formal education refers to institutionalised learning activities, which are not part of the NFQ.

Informal Learning is defined as “...intentional, but it is less organised and less structuredand may include for example learning events (activities) that occur in the family, in the work place, and in the daily life of every person, on a self-directed, family-directed or socially directed basis”. Informal learning activities are not institutionalised. There is one fundamental criterion that distinguishes Informal Learning from Education (formal and non-formal): this is whether the learning activity is institutionalised or not. Institutionalised learning activities occur when there is “an organisation providing structured arrangements (which must include a student-teacher-relationship), especially designed for education and learning” (Eurostat 2006, 13-14).

The National Framework of Qualification (NFQ) is defined as “the single, nationally and internationally accepted entity⁸, through which all learning achievements may be measured and related to each other in a coherent way and which define the relationship between all education and training awards” (Eurostat 2006, 15).

In synthesis, the process to allocate education and learning according to the broad categories is presented in the decision making flowchart shown in Figure 1:

Figure 1 – Allocation of learning activities according to the 3 broad categories



Source: Eurostat (2006). Classification of learning activities: manual

⁸ The entity can take the form of an organization/body, or regulatory document. It stipulates the qualifications and the bodies that provide or deliver the qualification (awarding bodies) that are part of the National Framework of Qualifications.

3. Data and methods: Adult Education Survey (AES)

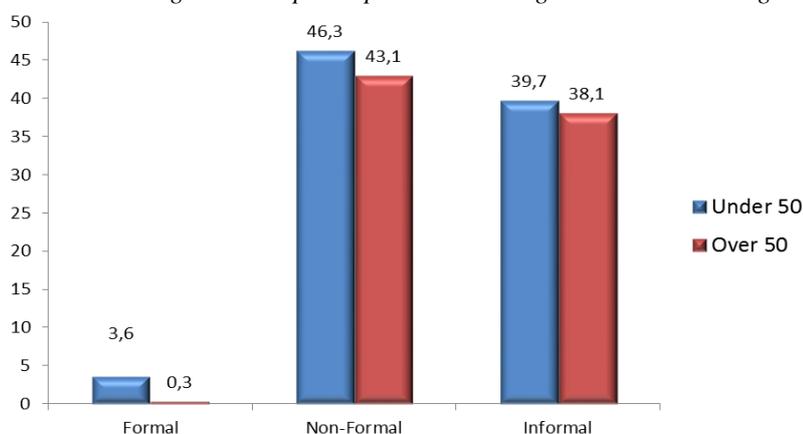
In order to achieve this goal, the analysis is carried out using microdata from the second and latest wave of Italian Adult Education Survey⁹ (AES-2011), provided by ISTAT¹⁰. The survey analyses the learning activities of adults and distinguishes between formal, non-formal and informal learning, which takes place inside or outside the workplace. It investigates adult participation in training in depth in 2011 and includes a sample of 11.500 individuals, 6.000 of them are workers (if weighted they become 22 million, exactly the workers' amount in Italy).

Descriptive analysis does not evidence a gender gap (about under 50, participation is exactly the same value of 64%) but it indicates an age gap for both gender: 4,4% for men (under 50 = 64,0 vs over 50 = 59,6%) and 2,3% for women.

As shown in figure 2, there are strong inequalities between under and over 50 workers for all broad categories: formal, non-formal and informal.

The citizenship plays also an important role because the disadvantage, for both age groups, is more pronounced for european workers rather than italians: in particular, italian older workers' participation is double if compared to that of europeans (61,1 vs 30,0%).

Figure 2 – Learning activities participation according to the 3 broad categories (% values)



Source: own elaboration on AES data.

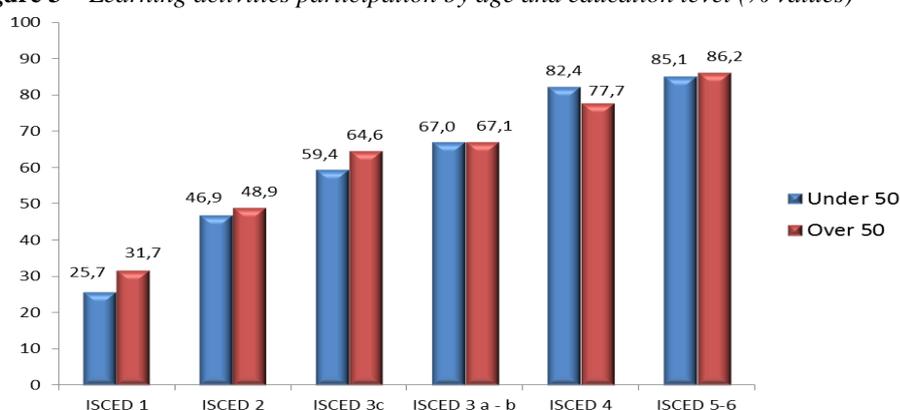
Regarding the education, there are not significant differences between under and over 50 (figure 3), but it is important to evidence how both participation rates in continuous vocational training are positively correlated to educational level,

⁹ For more details: <http://ec.europa.eu/eurostat/web/microdata/adult-education-survey>

¹⁰ Italian National Statistical Institute.

using the International Standard Classification of Education¹¹ (ISCED), which is a statistical framework for organizing information on education maintained by UNESCO, the United Nations Educational, Scientific and Cultural Organization. Reflecting the disadvantage of low-educated workers, the main result is the wide difference between workers' rates with tertiary education (85,1 and 86,2%) and those with only primary level (25,7 and 31,7%)¹².

Figure 3 – Learning activities participation by age and education level (% values)



Source: own elaboration on AES data.

¹¹ The International Standard Classification of Education (ISCED) provides a comprehensive framework for organising education programmes and qualification by applying uniform and internationally agreed definitions to facilitate comparisons of education systems across countries. ISCED is a widely-used a global reference classification for education systems that is maintained and periodically revised by the UIS (UNESCO Institute for Statistics) in consultation with Member States and other international and regional organizations. For more details: <http://uis.unesco.org>

¹² ISCED 1: Primary level of education. Programmes normally designed to give students a sound basic education in reading, writing and mathematics.

ISCED 2: Lower secondary level of education. It generally continues the basic programmes of the primary level, although teaching is typically more subject-focused, often employing more specialised teachers who conduct classes in their field of specialisation.

ISCED 3C: Upper secondary level of education. These programmes lead directly to labour market.

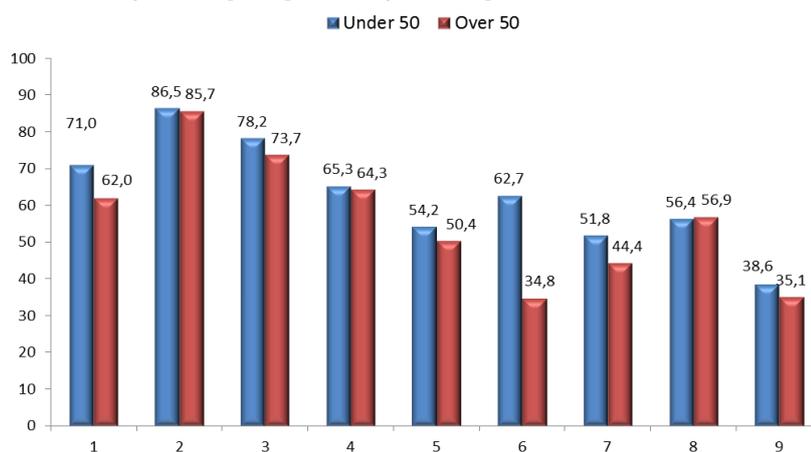
ISCED 3A-B: Upper secondary level of education. The final stage of secondary education in most countries. Instruction is often more organised along subject-matter lines than at ISCED level 2 and teachers typically need to have a higher level, or more subject-specific, qualification that at ISCED 2.

ISCED 4: Post-secondary, non-tertiary education. These programmes straddle the boundary between upper secondary and post-secondary education from an international point of view, even though they might clearly be considered as upper secondary or post-secondary programmes in a national context.

ISCED 5-6: First and second stage of tertiary education. Programmes with an educational content more advanced than those offered at levels 3 and 4. Furthermore, level 6 is reserved for tertiary programmes that lead to the award of an advanced research qualification. The programmes are devoted to advanced study and original research.

The disadvantage of low-educated workers is also confirmed for those low-skilled and it is accentuated for older workers (figure 4). Indeed, older workers' participation rates are lower than younger workers' rates, for each professional category. Furthermore, those who are employed in elementary occupations have halved rates compared to high-skilled colleagues¹³.

Figure 4 – Learning activities participation by age and occupation (% values)



1-Managers; 2-Professionals; 3-Technicians and associate professionals; 4-Clerical support workers; 5-Services and sales workers; 6-Skilled agricultural, forestry and fishery workers; 7-Craft and related; 8-Plant and machine operators and assemblers; 9-Elementary occupations

Source: own elaboration on AES data

Finally, both participation rates in continuous vocational training are also positively correlated to the size company¹⁴ and younger workers' rates are always higher than older workers' (fig. 5).

¹³ ISTAT considers groups 1-2-3 as high-skilled; medium-skilled groups 4-5-6-7; finally, low-skilled groups 8-9.

¹⁴ Micro (from 1 to 10 employees); Small (from 11 to 49 employees); Medium (from 50 to 249 employees); Large (250 employees and more).

Table 1 – Logistic regression models (dependent variable: participation at least one training activity)

Variables		Beta	ODDS	Sign.
• Gender				
Male (ref.)	Female	-0,10	0,91	0,17
• Citizen				
Italian (ref.)	EU	-0,58	0,56	0,02
	Extra EU	-0,56	0,57	0,00
• Size firm				
Micro (1-10) (ref.)	Small (11 - 49)	0,19	1,21	0,02
	Medium (50 - 249)	0,48	1,62	0,00
	Large (250 +)	0,59	1,81	0,00
• Job ISCO				
Elementary occupations (ref.)	Managers	1,24	3,44	0,00
	Professionals	2,24	9,44	0,00
	Technicians and associate professionals	1,53	4,61	0,00
	Clerical support workers	0,96	2,61	0,00
	Services and sales workers	0,66	1,94	0,00
	Skilled agricultural, forestry and fishery workers	0,84	2,32	0,00
	Craft and related trades workers	0,34	1,40	0,02
	Plant and machine operators and assemblers	0,55	1,74	0,00
• Age				
Over 50 (ref.)	Under 50	0,20	1,22	0,01
	Intercept	-0,65	0,52	0,000

Source: own elaboration on AES data.

Table 1 shows coefficients (*Beta*) and odds ratios of logistic model. This means that the coefficients in logistic regression are in terms of the log odds and it can be expressed in odds by getting rid of the natural log. This is done by taking the exponential for both sides of the equation, because there is a direct relationship between the coefficients produced by logit and the odds ratios produced by logistic: a logit is defined as the natural log (base e) of the odds (Liu 2016, 97).

This fitted model says that, holding covariates at a fixed value, the odds of participating at least one training activity for under 50 workers over the odds of participating at least one training activity for over 50 workers (reference category) is $\exp(0,20) = 1,22$. In terms of percent change, we can say that the odds for youngsters are 22% higher than the odds for older workers. In other words, the hazard to participate at least one training activity (formal, non-formal or informal) is higher for younger workers rather than older.

Regarding citizenship, there is a strong disadvantage for both European and extra-European workers because the hazard of them is lower of 40% than the odds for Italians (both OR are less than 1). The size enterprise play an important role: with reference micro enterprises (1-10 employees), odds of small with 11-49 empl. (OR=1,21), medium with 50-249 empl. (OR=1,62) and large with 250 and more

empl. (OR=1,81) are higher. It means the odds increase as the size increases: small, medium and large firms have 21%, 62% and 81% hazard higher than micro firms (1-10 empl.) to participate at least one training activity respectively.

Furthermore, as shown in descriptive analysis, those who are employed in elementary occupations are disadvantaged with all those high and medium-skilled.

Table 2 – Logistic regression models (dependent variable: only participation in informal learning activity)

Variables		Beta	ODDS	Sign.
• Gender				
Male (ref.)	Female	-1,55	0,86	0,02
• Citizen				
Italian (ref.)	EU	-0,24	0,79	0,37
	Extra EU	-0,76	0,47	0,00
• Size firm				
Micro (1-10) (ref.)	Small (11 - 49)	-0,06	0,94	0,45
	Medium (50 - 249)	0,18	1,19	0,04
	Large (250 +)	0,16	1,18	0,11
• Job ISCO				
Elementary occupations (ref.)	Managers	1,05	2,86	0,00
	Professionals	1,66	5,24	0,00
	Technicians and associate professionals	1,11	3,04	0,00
	Clerical support workers	0,85	2,34	0,00
	Services and sales workers	0,69	1,99	0,00
	Skilled agricultural, forestry and fishery workers	0,91	2,48	0,00
	Craft and related trades workers	0,39	1,48	0,01
	Plant and machine operators and assemblers	0,43	1,54	0,01
• Age				
Over 50 (ref.)	Under 50	0,11	1,12	0,11
	Intercept	-1,35	0,26	0,00

Source: own elaboration on AES data.

To deepen the role of informal learning, it was fitted a second logistic regression model and it has used “Informal” as the dependent variable (Training = 1 if the worker has only participated in informal learning activity) using the same covariates of the previous model (table 2).

Findings are definitely interesting: first of all the age gap is lower because the odds of participating only in informal training activity for under 50 workers over the odds of participating in informal training activity for over 50 workers (reference category) is $\exp(0,11) = 1,12$ (in the previous model was 1,22). Secondly, there is a gender gap (OR=0,86) because the female disadvantage is 14% (p value of first model gender variable was not significant because $p > 0,05$) probably due to a lesser availability of free time that women workers have compared to fellow men.

4. Conclusions

Access to learning activities is essential when working life is extended. However, despite the increasing need for learning later in life, participation and access to learning decrease with age. Valuing experience is a key factor for ensuring inter-generational knowledge transfer and identifying tasks where older workers are productive.

There is a strong correlation between learning participation and the employment status of individuals, and education level too. Furthermore, access to learning increases with size company because among the Italian SMEs lifelong learning strategies are quite rare.

One principal finding of such an analysis is that people under 50 have a probability 22% higher (OR=1,22) of participating in training when compared to those aged 50 and more (table 1). Secondly, women are less likely to take part in informal training than men¹⁵.

In addition to the age gap, overall the data confirm the existence of strong inequalities in access to job-related learning among workers that emerged from a Inapp survey¹⁶: foreign individuals, in micro and small enterprises and in occupations with lower skills, participate in job-related learning to a much lower extent (Cardone 2017). It would be better to reduce the age gap by increasing participation and access rates, rather than increasing the volume of training offered (“non learners”). In addition, the second logistic model shows how informal learning is crucial: a validation of non-formal and informal learning (VNFIL) can play an important role in future (European Commission 2016). Well-functioning labour markets rely on a match between the skills and formal qualifications of the workers and those that the jobs require and employers look for, but there is often a significant shortage of information on actual skill needs and skill supply in different occupations (European Commission 2010).

This requires policy attention, to increase the focus on job-related training as part of active labour market policies, to prevent skills’ obsolescence. In addition, it

¹⁵ Preliminary findings were presented at the Conference of the Italian Statistical Society “*SIS 2017 - Statistics and Data Science: new challenges, new generations*” held in Florence (29/06/2017) and during 61st World Statistics Congress of the International Statistical Institute (WSC 2017, 21/07/2017).

For more details: <http://meetings3.sis-statistica.org/index.php/sis2017/sis2017> & <http://isi2017.org>

¹⁶ The aim of the quantitative research “*Indagine campionaria presso gli attori del sistema produttivo sulla gestione della forza di lavoro matura*” was to study the relationship among the enterprises development strategies and the solutions adopted for the maintenance, the professional promotion and the possible reintegration of ageing workers, according to the recent pension reforms too.

For more details: <http://www.isfol.it/Istituto/chi-siamo/dipartimento-mercato-del-lavoro-e-politiche-sociali/struttura-lavoro-e-professioni/invecchiamento-della-forza-lavoro>.

is important develop a “learning culture”. It is a key factor for increasing the productivity of older workers increasing e.g. the capacity to deal with technological change (“it is never too late to learn”).

However, it will be crucial to increase the level of continuous vocational training for all workers in future.

This is (or should be) the real challenge.

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