Chapter 7
Lifelong learning policy and regional development: evidence from an EU case study

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Abstract

Learning throughout life can be found in many cultures, ancient civilizations, and religions in Asia and the EU. Many countries and communities regard lifelong learning as essential to their education goals, human resource improvement and development frameworks. At the European level, one of the most important tools that operate in this area is the European Social Fund. It explicitly supports lifelong learning, through measures and interventions that foster the economic, employment and social objectives of the EU and the Member States. This study seeks to measure, with a case study, the impact of lifelong learning on regional development. Lifelong learning is defined as all purposeful learning activities, undertaken throughout life, on an ongoing basis, with the aim of improving knowledge, skills, and competence within a personal, civic, social and/or employment-related context.
Beyond the benefits, lifelong learning represents an advantage for the regional economy. Our research demonstrates its positive effects on a wider scale both in terms of its direct impact on domestic demand and on the performance of the local economies. A higher skilled workforce attracts more investment, contributing to improving the well-being of the local population. A survey and an econometric model are used to analyse the case study. The results can be extended to other areas with similar demographic and economic characteristics, including Asian ones.

Keywords: Education, Lifelong learning, Regional economic development, regional policy, regional labor market

JEL Code: H75, R58, R23, I26

1. Introduction

The shaping of the concept of lifelong learning started in the mid-1960s when the boom in technology triggered the need for continuing education: professional skills required regular improvement as technology was upgraded and new industries emerged (Faure, 1972). Later, lifelong education became

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common in the 1970s (OECD, 2001) when it was prompted by UNESCO (UNESCO, 2009; Tuijnman and Bostrom, 2002) as part of its "Education for all" campaign. However, all this remained at policy document level at the time (Borg and Mayo, 2005), and only in the early 1990s was lifelong learning translated into action with various programs (Pepin, 2007). In the last decades, many instruments have been promoted worldwide especially by public institutions to finance and support lifelong learning policies. This coincided with increased globalization, involving the mobility of both labor and capital across different boundaries (Borg and Mayo, 2005).

Lifelong learning can be found in many cultures, ancient civilizations and religions in Asia (Medel-Añonuevo, 2001, p. 1) and many countries and communities regard lifelong learning for all as essential to their education goals, human resource improvement and development frameworks (Hans, 2001). In the face of more volatile economic times and with a general increase in educational attainment, demand for public participation in educational provisions also increases in most Asian countries.

In Japan, the origins of lifelong learning can be traced back to 1989 when the National Council on Education Reform was set up. In 1990, the Law Concerning the Development of Implementation Systems and Other Measures for the Promotion of Lifelong Learning (known as the Lifelong Learning Promotion Law) was adopted and a specific Lifelong Learning Bureau was created within the Ministry of Education, Culture, Sports, Science and Technology (MEXT). The 2008 Education Act added the principle of lifelong learning and placed emphasis on the enrichment of lifelong learning capacities in local communities (Yang and Yozuzu, 2015). The impact of globalisation on the Chinese economy has been sharply felt since China opened up in 1978, and since it became a member of the WTO. To further boost its economy, China is strongly stimulating structural change to be led by high and new technology industries (including information technology - IT - industries), and the service industry is being developed in all areas (Wo, 2007). In the Republic of Korea, the 1980 legislation (revised in 1997) stipulated that the State is responsible for promoting lifelong education. The Lifelong Education Act states that all citizens are guaranteed equal opportunities for lifelong education; lifelong education is based on learners' free participation and voluntary learning; lifelong education must not be exploited as a propaganda tool (political or personal); and anyone who has completed a lifelong education course will be accorded commensurate social recognition in the form of corresponding qualifications (Yang and Yozuzu, 2015).

In the case of the European Union, education has been considered, on the one hand, as an instrument to bring nations closer and to pool their infrastructural resources, with the intention of making societies and economies more competitive (Murphy, 1997). On the other hand, it has also been designated a tool to empower citizens to actively handle the consequences of globalization, demographic and market

modifications, digital technology and environmental problems (CEC, 2001; Cedefop and Eurydice, 2010, Osborne and Borkowska, 2017). One of the most important European tools operating in this area of interest is the European Social Fund (hereafter ESF[2]) which explicitly supports lifelong learning, through measures and interventions that foster the economic, employment and social objectives of the EU and the Member States.

The EFS *modus operandi* consists of designing seven-year programs, during which it participates in financing the activities according to a partnership established between the Member State (and/or regions) and the European Commission (2016a).

Given this framework, lifelong learning policies assumed practical importance especially with the increased application of new technologies in business and the changes in the labor markets. If businesses own quality human capital and have an opportunity to employ it efficiently, then they become more successful in both technology application and revenue (Korshunov and Gaponova, 2017). The modifications in the labor market that followed the economic crisis in 2008 (Choudry et al., 2012; Verick and Sher 2009) gradually highlighted the value of knowledge as an asset in the modern economy (Sahlberg, 2006), and in a context dominated by dynamism and uncertainty, the supply of professional skills was one of the factors contributing to labor productivity growth (Bassanini et al., 2007; Gimpelson et al., 2017).

Following these premises, the measurement of the effectiveness of lifelong learning policies is a fundamental tool to evaluate and to improve the planning of future policies. To an extent, we can identify the dominant European paradigm of lifelong learning as a response to the economic rise of Asian economies. The chapter is structured as follows: in section 2 the case study is introduced; methodologies are presented in section 3; the main results achieved are reported and discussed in section 4. Some closing remarks are outlined in the conclusions section.

2. The case study

Our case study is a European Region (Veneto Region) situated in the Northeast of Italy, with a population of approximately 4.9 million people (about 8% of the total Italian population) and a surface area of about 18,400 km² (about 6% of the overall Italian territory). Though its economy is based on small and medium enterprises (SMEs) spread throughout the territory, the region also hosts internationally recognised

[2] Regulation (EU) No 1304/2013 of the European Parliament and of the Council of 17 December 2013 on the European Social Fund and repealing Council Regulation (EC) No 1081/2006.

clusters, such as the eyewear industry and precision mechanics (Unioncamere Veneto, 2016). SMEs with high work intensity tend to be concentrated in the plain and coexist with a myriad of small farms.

In contrast to the trends in previous decades, Italy's population growth has been slowing since the 2000s, a phenomenon reflected in the Veneto region (a decrease of 0.41%, or 20,067 individuals, from 2015 to 2017). Since 2015, the number of permanent residents in Veneto has reduced for the first time in 60 years. The population breakdown of the evolution by age confirms the progressive change in the structure of the population, which is increasingly concentrated in the highest age groups. For countries with ageing populations and therefore depleted working-age populations, the assertion that everyone has the opportunity to develop and contribute to sustainable development to the fullest extent possible is decidedly critical.

The region has been affected by the 2008 economic crisis that destabilized both the Italian productive system and the job market. In Italy, the economic recovery arrived some trimesters later than in other European countries, and it was mainly supported by internal demand. The recovery trend has also been registered in the jobs market: the employment rate in the first semester of 2017 reached the pre-crisis level of 2008 (ISTAT, 2017a,b).

The productivity of the industrial sector started to slowly increase in 2014, especially in the machinery sector (ISTAT, 2017a). Moreover, the employment rate recovered (+2.1% in the same year), particularly under the push of a greater number of fixed-term contracts (ISTAT, 2017a).

In this context, the productivity of Veneto companies, which is mainly supported by SMEs and by a significant flow of exports, had to face market structural modifications due to globalization, technological progress, and modernization, requiring higher and more specialized skills (Banca d'Italia, 2018). Consequently, investments in human resources have become more necessary than in the past. Moreover, a higher-skilled workforce attracts more investments, producing positive effects on a local scale (Governo Italiano, 2016).

The policies adopted by Veneto policy makers are focused on helping concretely the enterprises in the realization of learning activities to improve and upgrade the skills of their workforce, thereby providing an answer to their training needs.

3. Methodology

The utilised methods are a macro (econometric model) and a micro (survey) approach.

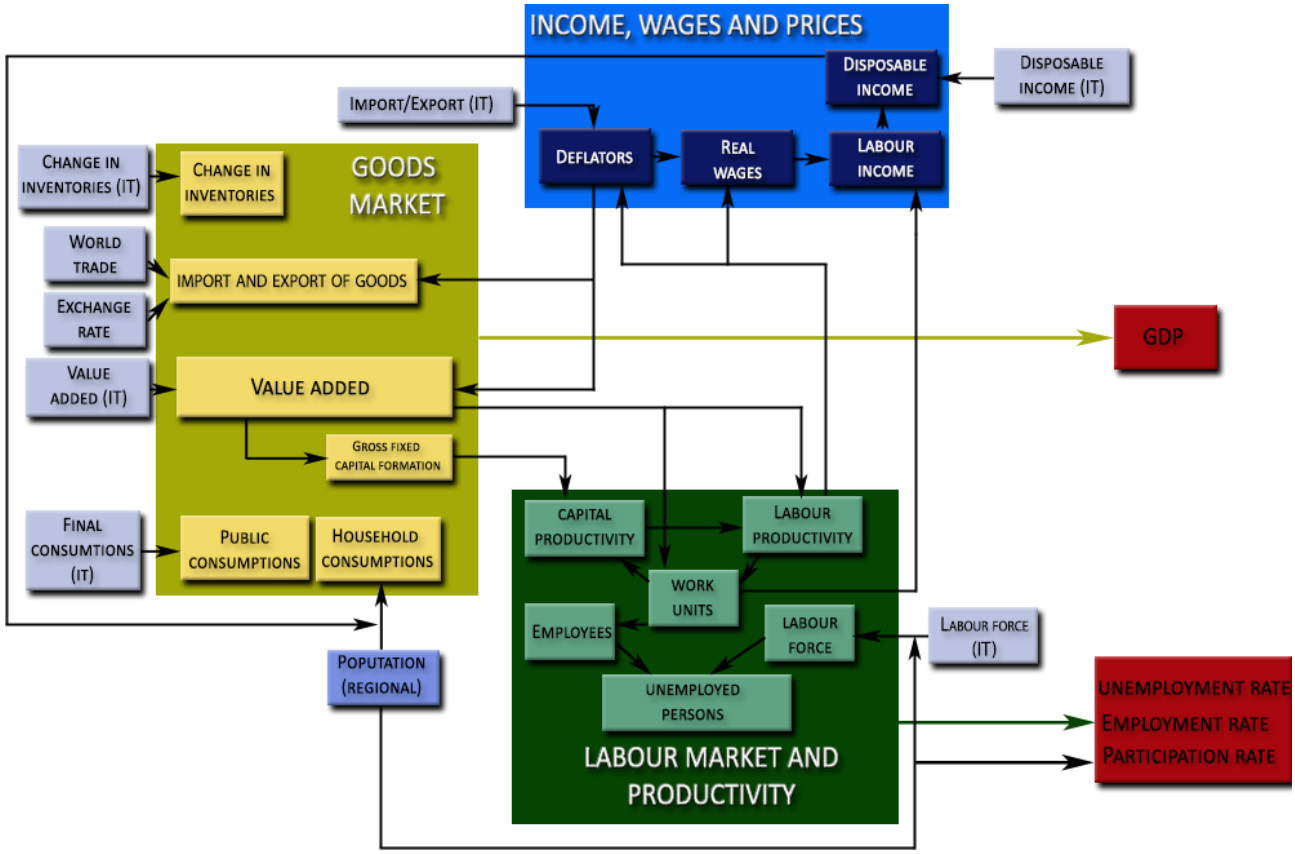
The *macroeconomic approach* aims to evaluate the effects of the policy with the use of an econometric model. Since the answers to a high number of empirical questions, especially in economics, depend on the causal effects of programs or policies, in the last two decades much research has been done on the econometric and statistical analysis of the effects of economic policy programs (Imbens et al., 2009).
The central point studied in the recent literature (Rubin, 2006; Heckman & Vytlacil, 2006; Morgan and Winship, 2007; Angrist and Pischke, 2008) relates to the evaluation of the effects arising from the exposure of a population to a policy program on certain outcomes. In economics, the population - set of units - is a group of economic agents, such as individuals, households, markets, firms, counties, states or countries, whereas the policy program can be job search assistance programs, educational programs, etc. (Imbens et al., 2009).
A critical feature involved in the evaluation of a program is that generally each unit can be exposed to one or more different levels of the program: an individual may or may not enroll in a training program, receive a voucher, or be subject to a particular regulation, etc. (Imbens et al., 2009).
Following this *modus operandi*, the econometric model used in this research aims to compare the value of the main macroeconomic-variables (employment, unemployment, added value, households' disposable income) under two different scenarios: the benchmark scenario where all the lifelong training policies have been adopted and the alternative scenario, which does not involve any such policies.
Among the quantitative methods used in the literature for economic impact evaluation, a dynamic simulation model was selected allowing us to evaluate the impact in the medium and in the long-run. The comparison has been generated using a model called GREM-VE (GRETA Regional Economic Model Veneto). It is a structural model focused on the regional labor market, which consists of a high number of behavioral dynamic equations and identities describing the whole regional economic system.

The equations in the model can be divided into three blocks:

1. Goods Market;
2. Income, Wages and Prices;
3. Labor Market and Productivity.

Given that the analysis refers to a region, the variables influencing the economic system are international, national and regional. The interrelationships among the three blocks of equations describing the regional and the international and national influences are synthesized in Figure 7.1.

Figure 7.1. The interrelationships among the economic variables in the GREM model



Source GREM - GRETA Regional Econometric Model", Technical document, May 2011

In this research the GREM-VE model has been used, assuming that the benchmark scenario represents the status-quo: all the lifelong training policies have been adopted. The alternative scenario, in which the policies have not been implemented, is obtained by analysing each financed lifelong learning intervention, and identifying and measuring their demand- and supply-side direct effects (Volo et al., 2019). The demand direct effects are all the variations generated by a policy in terms of demand, employment and capital needed for the realization of the project[3]. These direct demand effects can then generate multiplicative phenomena implying an increase in activity even in the sectors that supply goods and services to the sector directly involved, leading on the one hand to an increase in the number of employees and wages and consequently of income available and consumption (for example of clothing, food, etc.). On the other hand, the positive and negative variations concerning all subjects directly or indirectly involved in the interventions are included in the class of supply-side effects. The analysis of these effects is certainly complicated and requires often ad hoc surveys or hypotheses regarding the actual benefit obtained from the policy, for example in terms of labor productivity. These effects, once estimated and/or

3 Considering, for example, the increase in demand for services in the educational sector determined by a new training program.

measured, are subtracted from the relative variable causing negative shocks that, through the GREM-VE model relationships, are propagated in the economic system.

The differences – or the percentage change – between the values estimated by the model for a significant macroeconomic-variable (typically GDP, value added, disposable income, unemployment rate) under the alternative scenario and the value observed or forecasted under the benchmark scenario represent the economic impact of a policy (Volo et al., 2019).

In the 2014-2016 period, the benchmark scenario is represented by the ISTAT[4] regional data, whereas for the "unobserved period", 2017-2023, by the estimates (2017-2018) and forecasts obtained from the GREM-VE. The model is estimated on the basis of the EUROSTAT[5], IMF[6], and OECD[7] international databases and on ISTAT national and regional data, available on 30th October 2018. For the period 2017-2023, regional estimates and forecasts are obtained making the hypotheses on the international and national scenario; in particular, those formulated by the IMF (2018) have been assumed.

The direct effects of the European Social Fund's lifelong learning program used to introduce a shock into the GREM-VE model and obtain the paths of the macroeconomic-variables in the alternative scenario, have been measured and/or estimated using the data available on the 31 December 2017.

The microeconomic approach is based on a questionnaire, sent to beneficiaries in September 2018. The use of a survey in descriptive or explanatory research and its features are discussed in many research methods texts (Saunders et al., 2009; Bell, 2005; Oppenheim, 2000; Fink, 2003b); moreover, the literature also includes specific indications and tailored design methods about how they should be constructed to identify and describe the variability in different phenomena (Gill and Johnson, 2002). Surveys are one of the most widely used data collection techniques since each respondent is asked to respond to the same questions. They provide an effective way of collecting responses from a large sample prior to a quantitative analysis (Saunders et al., 2009). In order to collect this information, an *ad hoc* questionnaire has been drawn up. The data gathered include suggestions to understand how beneficiaries perceived and evaluated the concrete benefits derived from the learning activities.

The structure of the survey used for the case study's research presents three different parts according to the three types of data variables that could be collected through questionnaires (Dillman, 2007):

Part I – General Information. The variables are classified as *attributes* (Dillman, 2007). They are used mainly to check that, by investigating a sample, the data collected are representative of the total population

[4] http://dati.istat.it/.
[5] https://ec.europa.eu/eurostat/data/database.
[6] https://www.imf.org/en/Data.
[7] https://stats.oecd.org/.

(Saunders et al., 2009). Attributes include characteristics such as age, gender, location, education, occupation, etc.

Part II – Activities. The *behavioral variables* set out in the second part contain data on what people (or their organizations) did in the past, do now or will do in the future (Dillman, 2007). In the case study, behavioral variables refer to the activities carried out during the lifelong practical learning courses.

Part III – Results. The *opinion variables* collected in this last part record how respondents feel about something or what they think or believe is true or false (Dillman, 2007).

Regarding the type of chosen questions, the survey includes a combination of open and closed questions, as typically happens (Saunders et al., 2009). Closed questions, or forced-choice questions (De Vaus, 2002), provide a fixed number of alternative answers from which the respondent has to choose. This type of question is usually both easier to answer, as it does not require writing, and easier to compare since they have been predetermined (Saunders et al., 2009). One of the main benefits of the survey techniques lies in the easy interpretation of the responses; without this benefit, the overall advantage provided by this technique would be marginal (Foddy, 1994). Open questions allow respondents to give answers in their own way (Fink, 2003a) and are useful to collect final possible recommendations.

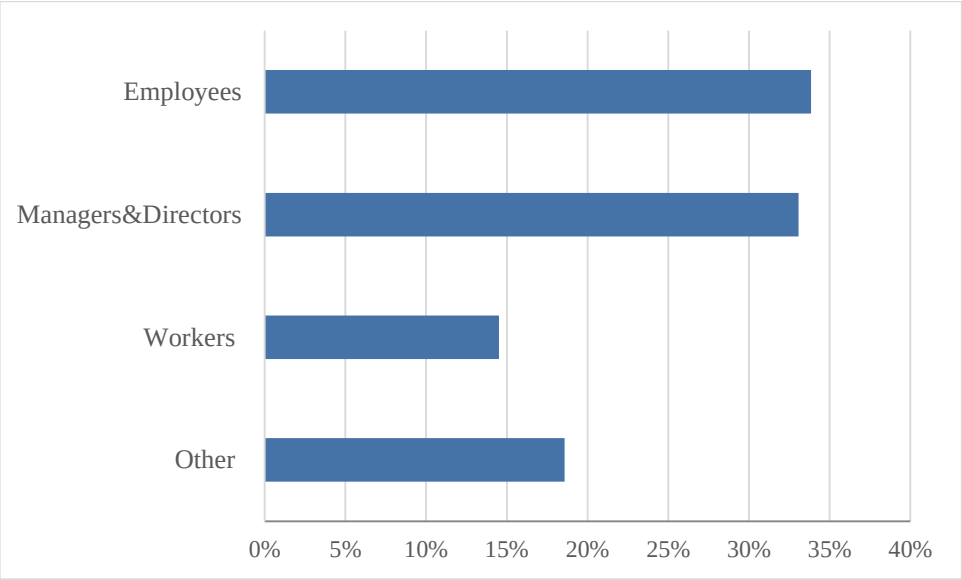
The survey has been carefully structured to reduce as much as possible comprehension errors. Having considered the timing and sample size of the case study, the survey has been forewarded to the respondents in a computer-assisted web interview format (CAWI). Adopting this web-based approach observes *netiquette*, which means that respondents can remain anonymous and, of equal importance, are unable to modify the questionnaire (Witmer et al., 1999). Internet-mediated surveys are, usually, conducted via email or via website (Hewson et al., 2003). The email method has been used in this case study, since the authors have been provided by the Veneto Region with access to the email addresses database of those who attended the lifelong learning activities. Moreover, the questionnaires have been accompanied by an informal (not institutional) covering letter[8], which explains the purpose of the survey.

Before using the surveys, it was successfully pilot tested. The total number of respondents in our survey represents 35.65% of the total beneficiaries. The provinces where the higher percentages of responses have been registered are Padua, Vicenza, and Venice, and 57% of the enterprises are micro-level businesses (with less than 10 employees); these data are consistent with the whole beneficiary population and with the structure of the Veneto-based companies. The main aspects of interest investigated through the survey are: the professional profiles of the participants, the learning methodologies used during the learning activities, the effectiveness of the activities and the resulting improved functions within the

[8] Research by Dillman (2007) and others has shown that the messages contained in a self-administered questionnaire covering letter will affect the response rate.

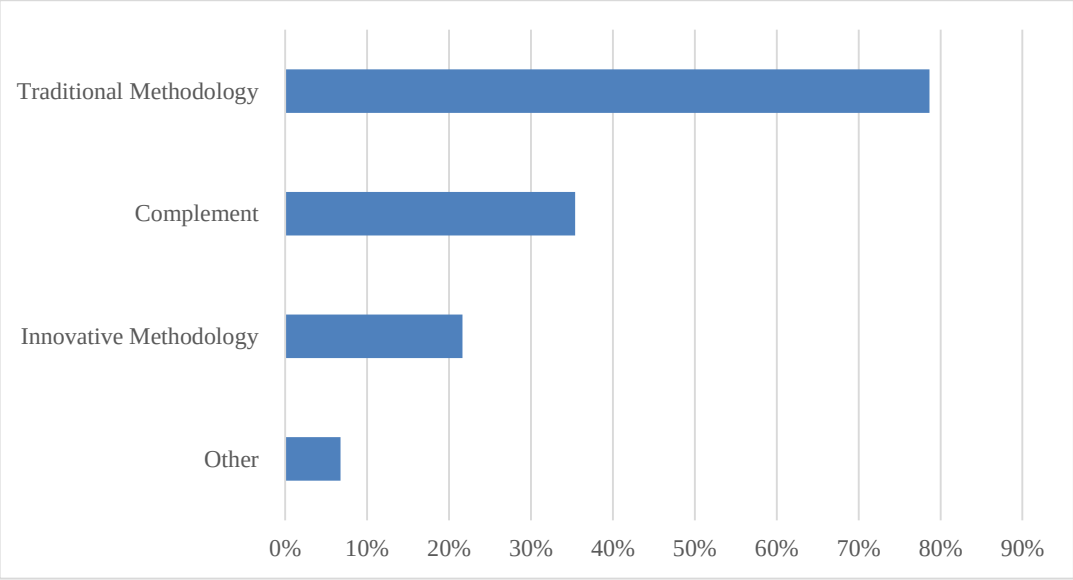
enterprises. Employees and Managers&Directors are the categories that most enjoyed the benefits of learning activities (Figure 7.2), followed by workers. Regarding the learning methodology, the respondents were asked to indicate one or more methodologies used during the activities. It turns out that the traditional ones – frontal classes, lectures – have been used in almost 80% of the cases, whereas more innovative learning methods – bootcamps, indoor and outdoor activities, theatres, games play – represent barely 21% of the activities (Figure 7.3).

Figure 7.1 - Professional profiles



Source: Authors' elaborations based on collected data

Figure 7.2 - Learning Methodology



Source: Authors' elaborations based on collected data

A question about the effectiveness of lifelong learning activities has been added at the end of the survey aimed at evaluating the extent to which the learning activities have been perceived as useful in relation to the needs of the enterprises.

4. Results

The lifelong learning activities financed by the ESF programme, from 2015 to the end of 2017, amounts to about €102 million, of which €25mn was devoted to lifelong learning projects.

In the application of the econometric model, the largest direct effects as inputs relate to the total work units, i.e. full-time equivalent employment (Table 7.1). Column A represents the number of total work units, in thousands, observed or forecasted under the benchmark scenario (when all the lifelong training policies have been adopted), while column B refers to the same variable but when supposing that the EFS lifelong learning policies are not applied. The last column represents on the one hand the difference between B and A, and on the other hand the percentage changes with respect to the benchmark scenario ($\frac{B-A}{A} \cdot 100$).

Table 7.1 - Veneto - Total work units in the two different scenarios (thousands) and percentage changes

Year	Application of EFS lifelong learning policies (Benchmark scenario)	No EFS lifelong learning policies applied (Alternative scenario)	Direct effects	
	(A)	(B)	C = B - A	Var. %
2015	2 040.5	2 040.5	0.00	0.000
2016	2 070.2	2 070.0	-0.21	-0.010
2017	2 095.9	2 095.4	-0.48	-0.023
2018	2 110.9	2 109.5	-1.42	-0.067
2019	2 123.7	2 121.5	-2.11	-0.099
2020	2 137.7	2 135.6	-2.11	-0.099
2021	2 152.5	2 150.4	-2.11	-0.098
2022	2 168.5	2 166.3	-2.11	-0.097
2023	2 185.1	2 183.0	-2.11	-0.097

Source: Authors' elaborations based on ISTAT and Veneto Region datasets.

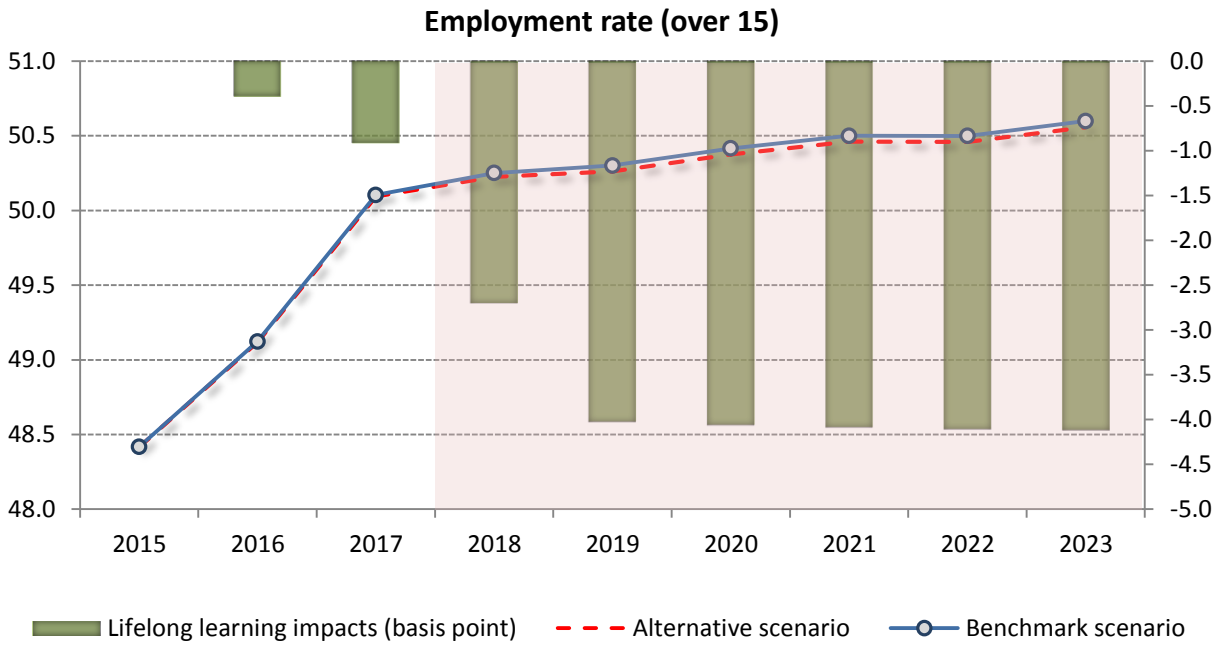
These results highlight the role of lifelong learning in terms of the percentage of workers directly involved in the learning activities compared to the total regional workers.

In particular, if the lifelong learning activities had not been implemented (alternative scenario), the estimated negative variation of the total work units would have been in a range between -0.01% in 2016 to a minimum of -0.1% from 2019 on. Indeed, the lifelong policies contributed and can contribute to improve the total numbers of work units in the regional territory.

Looking at work productivity, it is worth mentioning that the possible rise in productivity originated from the increased *know-how* of human capital, thanks to lifelong learning policies, could bring important multiplicative effects in coming years that will contribute to developing the economy.

To measure the effects of the policies on work productivity (calculated as the ratio of the value added to the total work units) first of all, it is necessary to isolate the number of beneficiaries (workers, unemployed people, students) that took part in the courses each year. This percentage, with respect to the total workers, allows us to calculate the increase in productivity (as the value added per employee) determined by the lifelong learning activities. The productivity's variation is calculated as the difference between the alternative and the benchmark scenario; however, some hypothesis about the improved work performance of beneficiaries is required. According to the literature (Treyz e Treyz, 2002) it has been assumed that the productivity of 20% of beneficiaries increases by 5% as a result of the learning activities. Given this hypothesis and that the training policies financed by the ESF, until the end of 2017, involved about 10,500 workers, the direct estimated effects, as ratios of the whole regional productivity, are positive even if small (Figure 7.4).

Figure 7.4 - Employment rate (over 15) in the two different scenarios (% - left scale) and the impact in respect to the benchmark scenario (basis point – right scale)



Source: Authors' elaborations based on ISTAT and Veneto Region datasets.

The GREM-VE model allows measuring the impact on some specific indicators of economic development, namely: employment, disposable income, and value added. With regard to the two latter indicators, negligible impacts were observed as expected, given the amount of financial resources handled by the projects for lifelong learning projects. However, observing the impacts on the employment rate, it could grow from 1 to 4 basis points in the period 2017–2023 (Table 7.2) and according to our elaboration, not listed in this chapter, the expected improvements in the employment rate will mainly concern women and vulnerable age groups.

Table 7.2 - Employment rate (over 15) in the two different scenarios and the impact in respect to the benchmark scenario (in basis point)

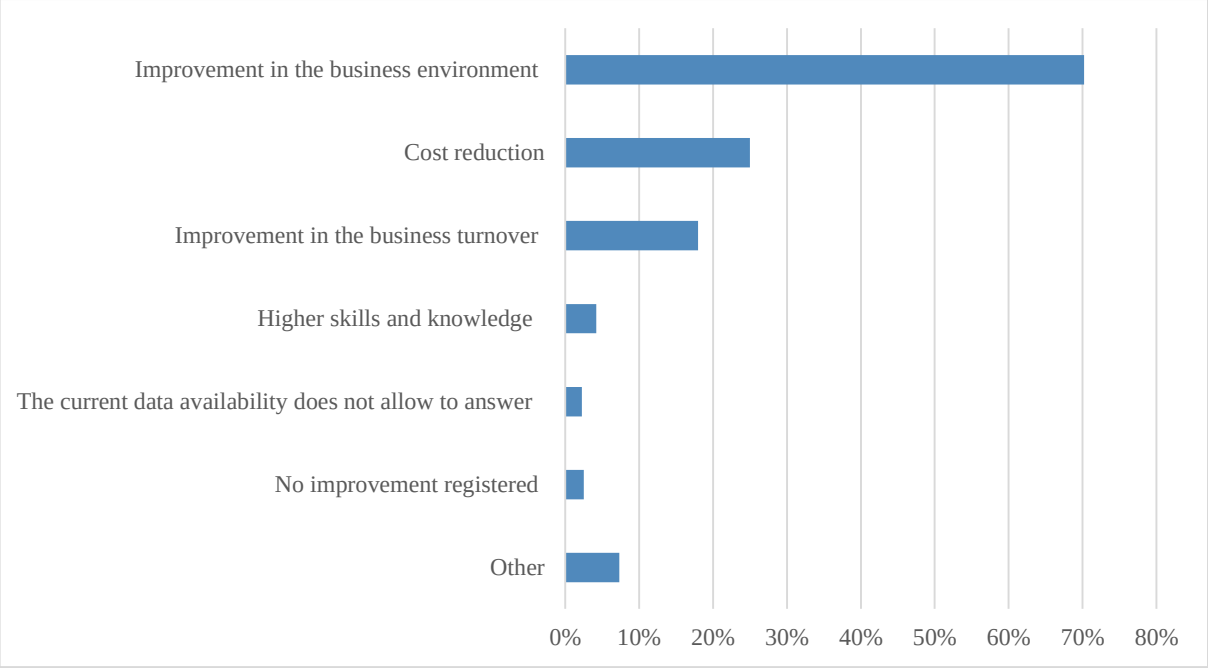
Year	Application of EFS lifelong learning policies (Benchmark scenario) (A)	No EFS lifelong learning policies applied (Alternative scenario) (B)	Economic impacts (B - A)×100
2015	48.42	48.42	0.00
2016	49.12	49.12	-0.40
2017	50.10	50.09	-0.92
2018	50.25	50.22	-2.70
2019	50.30	50.26	-4.02
2020	50.42	50.38	-4.06
2021	50.50	50.46	-4.08
2022	50.50	50.46	-4.10
2023	50.60	50.56	-4.11

Source: Authors' elaborations based on the ISTAT and Veneto Region datasets.

Considering the numbers of directly involved beneficiaries and the dimension of investment, these results seem to be acceptable.

According to the survey, the effectiveness of the courses has been recorded in the case of 95% of beneficiaries and some 45% of them described the activities as being very effective. This data highlights the enthusiasm with which these policies have been welcomed by beneficiaries, mainly those in need of upgarding their skills. A disaggregated analysis on the registered improvements in order to better picture the way in which lifelong learning courses concretely affected business performance is reported in Figure 7.5.

Figure 7.5 –Improvements due to lifelong learning activities



Source: Authors' elaborations based on collected data.

The survey's answers also show that the Marketing and Communication function registered the higher benefit from the upgrade of workers' skills, followed by Production&Quality and Sales.

5. Conclusions

The results of our elaborations confirm the positive contribution of lifelong learning policies on the economy. According to both the macro- and microeconomic approaches there is evidence of an increase in productivity. Moreover, through the disaggregated analysis of the employment level, the econometric model shows that an increase in the work participation rate is expected, especially for women, despite the

fact that the majority of the participants in the lifelong learning activities are men. Analysing the results of the disaggregated analysis by age groups within the occupation level shows that a lifelong learning policy is generally effective in every age group. However, the most positive effects on the work participation rate have been registered in the older age group (55- Over 65 years old) for both genders and in the young (15-24 years old) women category. The beneficiaries' enterprises express, through the survey, their satisfaction in respect of the activities carried out within the policies program, particularly after the manifestation of concrete positive impacts on both the skills of their employees and on their business performance.

The results of life-long learning policies in the case study could represent a starting point for expanding the awareness of the effectiveness of these policies, - which, in practice, are promoted by public bodies - , to other countries outside the EU, and in particular to Asian countries. There are many longstanding debates concerning the role and purpose of adult and lifelong learning with the challenges posed by socio-economic and demographic changes. For a long time, in Asian countries, lifelong learning needs have changed the functions of governing bodies, such as education, and their relationship with labor-related ministries in Japan, Singapore, and Hong Kong. In Korea, the Ministry of Education was transformed into the Ministry of Education and Human Resource Development to cope with these new demands. These countries have strong similarities (in terms of demographic trends and economic structure) with the Veneto region analysed in our case study. Job-related career orientation of adult learning has become even more dominant in most Asian countries (Han, 2001). In the EU, as well as in many Asian countries, the most vulnerable groups are generally identified as being young people (15-24) and people over 55 years; both groups have been poorly served by adult education markets during a time of high unemployment caused by the economic crisis. Gender continues to be a major factor of discrimination in relation to labor market opportunities (Osborne and Borkowska, 2017).

In conclusion, the dynamic and variable situation at the world level, can be tackled by regional economies equipping themselves with adequate instruments, and lifelong learning policies have demonstrated that they are a useful tool, to be supported in a mood of collaboration, exchange of information and labor force, to develop the most effective policies.

References

Angrist, J., & Pischke, J.S. (2008). Mostly Harmless Econometrics: An Empiricists' Companion. Princeton: Princeton University Press, NJ.

Banca d'Italia (2018). Economie Regionali Economia del Veneto 5, Venezia, 5-26. [https://www.bancaditalia.it/pubblicazioni/economie-regionali/2018/2018-0005/1805-veneto.pdf]

Bassanini, A., Booth, A., Brunello, G., De Paola, M., & Leuven, E. (2007). Workplace Training in Europe: Education and Training in Europe (eds Brunello G., Garibaldi P., Wasmer E.). Oxford: Oxford University, 143–178.

Borg, C., & Mayo, P. (2005). The EU Memorandum on Lifelong Learning, Old Wine in New Bottles?. *Globalization, Societies and Education*, 3(2): 203-225.

CEC (2001). Making a European Area of Lifelong Learning a reality. Communication from the Commission. Brussels: European Commission.

Cedefop, & Eurydice (2001). National Actions to Implement Lifelong Learning in Europe. Brussels: Eurydice.

Dillman, D.A. (2007). Mail and Internet Surveys: The Tailored Design Method (2nd edn). Hoboken, NJ: Wiley.

European Commission (2016). European Social Fund: How the EFS Works. [http://ec.europa.eu/esf/main.jsp?catId=525&langId=en].

Faure, E. (1972). Learning to Be: The World of Education Today and Tomorrow. Paris: UNESCO. http://unesdoc.unesco.org/images/0000/000018/001801e.pdf.

Fink, A. (2003a). How to Ask Survey Questions. (2nd edn). Thousand Oaks, CA: Sage.

Fink, A. (2003b). The Survey Handbook. (2nd edn). Thousand Oaks, CA: Sage.

Foddy, W. (1994). Constructing Questions for Interviews and Questionnaires. Cambridge: Cambridge University Press.

Gill, J., & Johnson, P. (2002). Research Methods for Managers (3rd edn). London: Paul Chapman.

Gimpelson, V., Kapelyushnikova, R., & Roshchin, S. (2017). Russian Labor Market: Trends, Institutions and Structural Changes. *Educational Studies Moscow*, № 4: 36-59.

Governo Italiano (2016). Ministero del Lavoro e delle Politiche Sociali: XVII Rapporto sulla Formazione continua Annualità 2015-2016. Roma. [https://inapp.org/sites/default/files/Rapporto%20Formazione%20Continua.pdf]

GREM – GRETA (2001). Regional Econometric Model. Technical document.

Han, S. (2001). Creating Systems for Lifelong Learning in Asia. *Asia Pacific Educ. Rev.* 2: 85-95. https://doi.org/10.1007/BF03026293.

Heckman, J., Lalonde, R., & Smith, J. (2000). The Economics and Econometrics of Active Labor Markets Programs. In Ashenfelter A. & Card D. eds. Handbook of Labor Economics, vol. 3. New York: Elsevier Science.

Heckman, J., & Vytlacil, E. (2006). Structural Equations, Treatment Effects, and Econometric Policy Evaluation. *Econometrica*, 73(3): 669-738.

Hewson, C., Yule, P., Laurent, D., & Vogel, C. (2003). Internet Research Methods: A Practical Guide for the Social and Behavioral Sciences. New technologies for social research. London: Sage.

Imbens G., & Wooldridge J. (2009). Recent Developments in the Econometrics of Program Evaluation. *Journal of Economic Literature*, 47(1): 5-86.

ISTAT (2017a). Il mercato del lavoro, verso una lettura integrata. Roma. [https://www.istat.it/it/files/2017/12/Rapporto-Mercato-Lavoro-2017.pdf].

ISTAT (2017b). Rapporto sulla competitività dei sistemi produttivi. Roma. [https://www.istat.it/storage/settori-produttivi/2017/Rapporto-competitivita-2017.pdf].

Korshunov, I., & Gaponova, O. (2017). Lifelong Learning in the Context of Economic Development and Government Effectiveness. Educational Studies Moscow, No 4: 36-59.

Medel-Añonuevo, C., Toshio, O., & Werner, M. (2001). Revisiting lifelong learning for the 21st century. UNESCO Institute for Lifelong Learning (Hamburg). https://unesdoc.unesco.org/ark:/48223/pf0000127667

Morgan, S., & Winship, C. (2007). Counterfactuals and Causal Inference. Cambridge: Cambridge University Press.

Murphy, M. (1997). Capital, Class and Adult Education: the International Political Economy of Lifelong Learning in the European Union. In: Armstrong P., Miller N. & Zukas M. (Eds) Crossing Borders. Breaking Boundaries. Research in the Education of Adults, Proceedings of the Twenty-Seventh Annual SCUTREA Conference. London: Birkbeck College.

OECD (2001). Education Policy Analysis. Chapter 1 "Lifelong Learning for all policy directions" OECD. ISSN: 19991517

Oppenheim, A.N. (2000). Questionnaire Design, Interviewing and Attitude Measurement (new edn). London: Continuum International.

Osborne, M., & Borkowska, K. (2017). A European lens upon adult and lifelong learning in Asia. *Asia Pacific Educ. Rev.*, 18:269–280. DOI 10.1007/s12564-017-9479-4

Pepin, L. (2007). The History of EU Cooperation in the Field of Education and Training: How Lifelong Learning Became a Strategic Objective. *European Journal of Education*, 42(1): 121–132.

Rubin, D. (2006). Matched Sampling for Causal Effects. Cambridge: Cambridge University Press.

Sahlberg, P. (2006). Education Reform for Raising Economic Competitiveness. *Jurnal of Educational Change*, 7: 259. [https://doi.org/10.1007/s10833-005-4884-6]

Saunders, M., Lewis, P., & Tohrnhill, A. (2009). Research Methods for Business Students 5th Edition. Pearson Education Limited Edinburgh Gate.

Treyz, F., & Treyz, G. (2002). Assessing the Regional Economic Effects of European Union Investment. Final Report to the European Commission, Regional Economic Models Inc (REMI), Amhrest, and Istituto Regionale per la Programmazione Economica della Toscana (IRPET), Florence.

Tuijnman, A., & Boström, A. K. (2002). Changing Notions of Lifelong Education and Lifelong Learning. *International Review of Education*, 48: 93–110.

UNESCO Institute for Lifelong Learning, (2009). Global Report on Adult Learning and Education. [http://uil.unesco.org/fileadmin/keydocuments/ AdultEducation/en/GRALE_en.pdf.]

Yang, J., & Yozuru, R. (2015). Building a learning society in Japan, the Republic of Korea and Singapore. UIL Publication Series on Lifelong Learning Policies and Strategies: No. 2, UNESDO, https://unesdoc.unesco.org/ark:/48223/pf0000232547

Verick, S. (2009). Who is Hit Hardest During a Financial Crisis? The Vulnerability of Young Men and Women to Unemployment in an Economic Downturn. IZA Discussion Paper No. 4359. [https://ssrn.com/abstract=1455521]

Volo, F., Drigo, A., Zolin, M.B., & Sartore, D. (2019). European Social Funds lifelong learning and regional development: a case study. Working paper. Department of Economics, Ca' Foscari University of Venice, 1-17.

Witmer, D. F., Colman, R. W., & Katzman, S. L. (1999). From paper and pen to screen and keyboard: Towards a methodology for survey research on the Internet. in: Jones S. (ed.) Doing Internet Research. Thousand Oaks, CA: Sage, 145–62.

Wo, L. (2007). Lifelong Learning in Asia: Eclectic Concepts, Rhetorical Ideals, and Missing Values. Implications for Values Education. In: Aspin D.N., Chapman J.D. (eds) Values Education and Lifelong Learningifelong Learning Book Series, vol 10. Springer, Dordrecht.