

The young side of agriculture: A focus on the Liguria case

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1. Introduction, data and summary statistics

Agriculture is a sector of fundamental importance to the Italian economy, but it has faced significant challenges in recent decades, especially due to an aging farming population and the agricultural production fabric. What has been observed is a paradigm shift: from the cultivation of fields and the raising of livestock to a multiplicity of related activities that over time have shaped the concept of *multifunctionality*. One might hypothesize that young farmers are more adept at actively participating in this transformation compared to others. Not only do they bear fewer established routines, but they also possess the ability to leverage new ICT technologies and fulfil their desire for greater autonomy in the inputs and outputs market (Milone and Ventura, 2019).

However, while it is true that data about youth agricultural entrepreneurship is encouraging, a closer look at the picture shows that not all Italian regions are experiencing the same trend in generational turnover. To understand properly the generational renewal in the agricultural sector, it is insightful to observe data from the Istat 7th agriculture census. In 2020, the proportion of farm leaders aged up to 40 years old decreased to 9.3 per cent from 11.5 per cent with respect to 2010. This decline indicates a minimal influx of young individuals into the agriculture sector. According to Fargione et al. (2022), new agricultural establishments supported by the CAP (Common Agricultural Policy) funds would have been approximately 20 thousand during the last seven-year programming period (2014-2020). This translates to an average of 3 thousand young people per year. In comparison, France, a country with fewer farms than Italy (less than 30 per cent), boasts around 9 thousand young farmers.

The left panel of Figure 1 illustrates the percentage of agricultural young entrepreneurs in Italy. It is possible to observe that Valle d'Aosta, Sardinia, and Sicily are regions with a higher percentage of young agricultural entrepreneurs compared to the total number of enterprises, accounting for about 30, 21.5 and 21 per cent, respectively. Lazio and Abruzzo follow closely, both with almost 27 per cent of young agricultural entrepreneurs.

A plausible reason of this trend would lie in the inadequacy of regulatory instruments designed to facilitate generational turnover and the associated funds. Indeed, to obtain public support for starting a farming business, young people mainly draw on resources from the CAP, while a more marginal role is played by instruments fielded by the Institute of Agricultural and Food Market Services (ISMEA). More specifically, at the European level, the two main measures which interest young agricultural entrepreneurship are the measure 112 (for the programming period 2007-2013) and the sub measure 6.1 (for the programming period 2014-2020). The former is also known as the *first establishment* and consists of a one-time premium for farmers up to 40 years of age who are setting up for the first time in an agricultural enterprise as head of the farm, possess adequate professional qualifications and skills and apply for it through participation in the appropriate calls (Piras, 2018). While the latter is a reinforcement of the first establishment measure. The institution responsible for assisting young agricultural enterprises in Italy is ISMEA.

The right panel of Figure 1 shows the percentage of young farmers who access to dedicated funds: it is evident how the percentage dramatically falls with respect to the percentage of young entrepreneurs, confirming the difficulties in accessing these funds. For instance, Valle d'Aosta stands out with 5.02% of young entrepreneurs who access to dedicated funds, followed by Piedmont with 3.8% and Veneto with 2.17%.

This paper seeks to investigate the influence of two factors on business performance: the presence of young managers and the access to funding (from both European and national sources) specifically aimed at promoting young agricultural entrepreneurship. In this analysis, we take into account Liguria, a sea region located in the north-east of Italy. It is an interesting region, both morphologically and in terms of population. If in fact Liguria has the oldest inhabitants in Italy, the Figure 1 shows that the percentage of young farmers is much higher than in other regions.

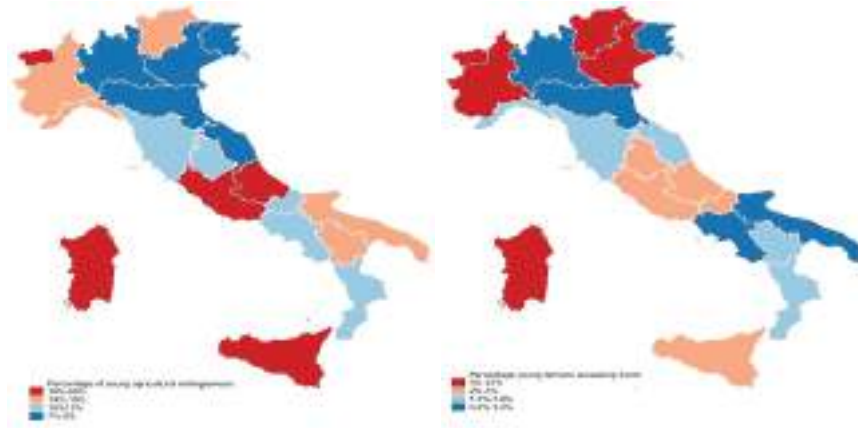


Figure 1: The distribution by regions of Young Entrepreneurs and Young Policies Accesses

We exploit the Farm Accountancy Data Network (FADN)¹. FADN was introduced in 1965 on an initiative of the European Commission and serves as the authoritative repository of microeconomic data, owing to its adherence to harmonized accounting standards. The responsibility of collecting and organizing the FADN on an annual basis for Italy belongs with the Council for Research in Agriculture and Agricultural Economics (CREA).

Table 1: Summary statistics

	Mean	SD	Min	Max	N
Gender	0.343	0.475	0.000	1.000	5969
Young	0.143	0.350	0.000	1.000	5969
YoungPol	0.008	0.0884	0.000	1.000	5969
ROE	0.005	0.003	-0.002	0.031	5969
Size	1.317	1.835	-0.3489	18.129	5969

The sample of the Italian FADN, comprises 11,000 annual farms and is designed to accurately reflect the diverse range of production types, sizes, and geographical locations (such as region and altitude) found across the entire national territory. It is stratified based on three main variables: location, economic size, and farm production. Specifically, the sample includes 21 NUTS2 regions, 6 economic size classes, and 19 farm types. The validation of data is conducted by the National Institute of Statistics (ISTAT). The system enables a nationwide coverage of 93 % of the

¹ Data Availability Statement: Restrictions apply to the availability of these data. The data were obtained from the Council for Agricultural Research and Economics (CREA) and are accessible at the URL <https://bancadatarica.crea.gov.it/Account/Login.aspx> with the permission of CREA. Acknowledgments: We gratefully acknowledge the support of CREA for making the RICA data available to the research team (<https://www.crea.gov.it/accordi-nazionali>).

utilised agricultural area (UAA) and 98% of the value of standard production. The database for the Liguria region counts 1037 farms and covers the period from 2008 to 2020. Among these farms, 228 companies are led by young entrepreneurs². The total number of observations for Liguria is 5969 during the period under scrutiny. All the variables contained in the analysis are taken from FADN.

2. Empirical model

Two econometric specifications are used: one (Equation 1) to analyse the role of young farmers and the other (Equation 2) to investigate the effectiveness of youth agricultural policies (in this case, a sub-sample of young farmers, who are the only possible beneficiaries of these specific funds, is considered).

The dependent variable is the economic performance measured by ROE (Return on Equity). The main independent variable for Equation 1 is a dummy variable called *Young* which assumes value 1 if the farm is run by an under 40 years old individual, and 0 otherwise. For Equation 2, the main independent variable is *YoungPol* which is a dummy variable that assumes value 1 if the farm has benefited from funds dedicated to young entrepreneurs, and 0 otherwise. Then, several control variables are taken into consideration in the two analyses. Firstly, we introduce some individual variables that describe entrepreneurs' characteristics. *Gender* is a dummy variable that assumes value 1 if the farm's tenant is a female and 0 if he is a male. *Education* is a categorical variable and describes the conductor's educational attainment which ranges from *primary school* license to *university degree*. *Legal form* is a categorical variable which represents the different legal forms of each farm. They can be *sole proprietorship*, *simple partnership*, *cooperative*, *limited partnership (società in accomandita semplice, s.a.s.)*, *general partnership (società in nome collettivo, s.n.c.)*, or *other type*. *Management* represents the type of company management: *direct with only family members*, *direct with a prevalence of non-family members*, *direct with a prevalence of family members*, or *with salaried employees*. Furthermore, the categorical variable *ProfCond* details the conductor's professional condition and it can be in *looking for a job*, *employed outside the farm*, *part-time employee in the farm*, *full-time employee in the farm*, *retired from work*, or *others*. Another insightful variable is *Settlement*, a categorical variable that describes the entrepreneur's mode of establishment: *rent*, *free loan*, *purchase*, *donation*, or *others*.

Then, controls related to the farm enter the model. *Organic* is a dummy variable that assumes value 1 if the farm's production is organic and 0 otherwise. The variable *Size* describes the farm's dimension: it is the ratio between UL (*total labour units* including inter-farm labour exchange) and the total surface. Finally, the variable *Altimetric zone* is a categorical variable which defines where the farm is located. It can assume three different levels: *Plain*, *Hill* and *Mountain*.

$$\log Y_{i,t} = \beta_0 + \beta_1 \log Young_{i,t} + \beta_3 \log X_{i,t} + \beta_4 \log Z_{i,t} + d_{i,j} + \epsilon_{i,t} \quad (1)$$

$$\log Y_{i,t} = \beta_0 + \beta_1 \log YoungPol_{i,t} + \beta_3 \log X_{i,t} + \beta_4 \log Z_{i,t} + \epsilon_{i,t} \quad (2)$$

$Y_{i,t}$ is the ROE dependent variable. $Young_{i,t}$ and $YoungPol_{i,t}$ are the main independent variables of interest. $X_{i,t}$ are the socio-demographic controls and $Z_{i,t}$ are the farm-specific controls. The baseline profile is a young female farmer (in Equation 2, she accesses policies for young farmers), who has her business in a mountainous area, producing biologics. Her farm is run directly by only family members and is a sole proprietorship that she obtained by inheritance. As far as qualification is concerned, she has a middle school degree and is employed full-time in the farm. The data set is panel data, and the period from 2008 to 2020 is taken into account. Farm fixed effects are also

² According to the literature, a young entrepreneur is typically defined as an individual whose age is below 40 years.

considered for Equation 1.

The results are shown in Table 2. The first and second columns relate to the first specification with the entire data set and consist of a simple OLS and an OLS with farm fixed effect, respectively. Instead, the last column refers to the sub-sample of young farmers. Looking at the first specification, for both models with and without fixed effects, it is clear that the presence of young people leading the enterprise has a significant and positive effect. Farm size likewise has a positive impact on the economic result, as does location in a hilly rather than a mountainous area. Furthermore, compared to a totally family-run business, having salaried employees seems to have a positive effect. Regarding settlement, it is observed that free lending has a better impact on the economic result than succession. Finally, educational qualifications do not seem to be particularly significant (the sign often varies when considering fixed effects) as does occupational status. Focusing on the last column and the second specification of the model (sample reduced to 855 observations), the noteworthy finding is that agricultural policies targeting young individuals do not exhibit a significant effect on economic performance. The size and management with salaried employees remain significant and positively impacting.

The results are similar to those of the OLS without fixed effects for the total sample. In addition, female gender and having a university degree seem to have a positive impact even if not significant. Finally, the Hausman test has also been conducted: the fixed effects model is consistent.

3. Conclusions

The aim of this study is twofold: firstly, it explores how the presence of a managerial system led by young farmers contributes to tangible benefits in terms of economic outcomes. Secondly, it examines the effectiveness and suitability of the agricultural policy structure designed for young individuals. The findings, concerning Italy and particularly young farmers in Liguria, reveal that young entrepreneurs actively and effectively contribute to the agricultural sector. However, the current policies seem inadequate. As a potential area for future investigation, it would be essential to explore whether the lack of effectiveness stems from insufficient funding allocated to young farmers or issues related to their access to such funds.

References

- European Parliamentary Research Service (2016). *Precision Agriculture and the Future of Farming in Europe*. Scientific Foresight Unit (STOA), Brussels.
- Fargione, R., Modesto, L., Riccio, C. (2023). *Rapporto: I giovani in agricoltura. Resistere, crescere e innovare*. r/02, Divulga (<https://www.divulgastudi.it/wp-content/uploads/2023/03/Rapporto-giovani-2.pdf>).
- Istituto di Servizi per il Mercato Agricolo Alimentare. (2012). *La competitività dell'agroalimentare italiano: Check up 2012*. ISMEA, Roma.
- McMichael, P. (2007). Feeding the world: Agriculture, development and ecology. *Socialist Register*, **43**:170–194.
- Milone, P., Ventura, F. (2019). New generation farmers: Rediscovering the peasantry. *Journal of Rural studies*, **65**, pp. 43–52.
- Zagata, L., Sutherland, L. (2015). Deconstructing the 'young farmer problem in Europe': Towards a research agenda. *Journal of Rural Studies*, **38**, pp. 39–51.

Table 2: Regression Output

	Complete data set		Young Subsample OLS
	OLS	Fixed Effect	
	(1)	(2)	(3)
Young	0.001*** (0.0001)	0.001*** (0.0001)	
PolGior			-0.0005 (0.0004)
Sex F	-0.0001 (0.0001)	0.0001 (0.0002)	0.0002 (0.0002)
Altimetric zone: Hilly	0.0001* (0.0001)	0.001*** (0.0001)	0.0002 (0.0002)
Management: Others	0.0002 (0.0004)	0.001 (0.001)	-0.001 (0.001)
Management: Direct with prevalence of non-family members	-0.0001 (0.0001)	-0.0004 (0.0004)	-0.002*** (0.0004)
Management: Direct with a prevalence of family members	-0.0001 (0.0001)	-0.001*** (0.0001)	0.0001 (0.0002)
Management: With salaried employees	0.002* (0.001)	0.002* (0.001)	0.005** (0.002)
Settlement: Purchase	-0.0002* (0.0001)	0.0004 (0.0004)	-0.00002 (0.0004)
Settlement: Rent	0.002*** (0.0001)	-0.001 (0.0004)	0.002*** (0.0003)
Settlement: Others	0.001*** (0.0001)	0.001*** (0.0003)	0.001** (0.0004)
Settlement: Free loan	0.002*** (0.0001)	0.001** (0.0005)	0.005*** (0.0005)
Settlement: Donation	0.0002* (0.0001)	0.001 (0.0004)	-0.0001 (0.0003)
Organic	-0.0002 (0.0002)	-0.0001 (0.0004)	-0.001** (0.0004)
Size	0.0002*** (0.00002)	0.0002*** (0.00003)	0.0002*** (0.0001)
Degree: High school	0.0002* (0.0001)	-0.0001 (0.0003)	-0.00004 (0.0003)
Degree: Professional qualification	0.0001 (0.0001)	-0.0001 (0.0004)	-0.001* (0.0004)