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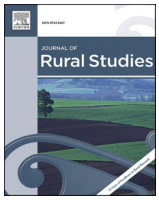

Facilitating generational renewal in rural areas by responding to young farmers' voices: Echoes from the Greek territory

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ABSTRACT

The proper functioning and future of rural areas and communities are strictly tied to young people's willingness to be engaged in the farming profession, as farming is an important recourse for vocational rehabilitation of the rural population. The agricultural sector acts as a financial injection to the rural economy and society. In this context, one of the most well devised agricultural policies is young farmers' schemes, aiming at generational renewal in EU rural areas. Since young farmers are the people who directly receive the induced effects of these policies, policy makers have to listen carefully to what "message" young farmers can convey. Nevertheless, after almost four decades of implementing young farmers' schemes, there is still limited information regarding their attitudes, beliefs and perceptions towards the form of the related policy schemes. Using this as a starting point, the present study attempts to identify young farmers' attitudes and beliefs towards the current young farmers' scheme of the Rural Development Program (RDP) with overarching scope to identify the needs of young farmers better and thus inform policy makers about the appropriate policy that should be put forward. Results indicate that the current young farmers' scheme acts as a helpful instrument for a considerable percentage of young farmers. Nevertheless, further streamlining is required to provide incentives, especially to new entrants, to be engaged in the farming profession. Effective policy interventions that will be in line with the actual needs of young farmers could contribute to the direction of the enhancement of the vitality and resilience of the rural systems, and also act towards the prevention of the abandonment process, providing vibrance in rural areas and benefits for the whole economy and society, as well as the ecosystems.

1. Introduction

The issue of an aging rural society has become a highly prevalent social problem (Fichtner, 2018; Hofstede et al., 2022; Ren et al., 2023). It is impossible to ensure the future sustainability of agriculture and rural areas without a relentless renewal of generations in farming. Statistical figures warn about the fragility of EU rural communities due to the waves of exodus of young people, the abandonment observed in rural areas and the persistence of an aged rural population. Along the same line, the European Commission has identified a "distressing

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shortage of new farmers" (Zagata and Sutherland, 2015), based on an assessment of statistical facts and figures indicating that young farmers'[1] population in the EU27 is declining and older farmers are not passing on their farms to the new generation at a sufficient rate. The age structure of farmers is even more sobering for Greece, since it is ranked in the lowest position (along with Spain, Portugal and Cyprus) among the EU-27 statistical figures regarding the ratio of young farmers, with an age up to 40 years old, to old farmers, with an age 65 years old and above (European Commission, 2023). These patterns of interaction between employment and demography are reflected in the dynamics of rural communities. Thus, policy makers design specific instruments towards the generational renewal considered necessary to offer new life to agricultural systems (Licciardo et al., 2022).

Although a considerable number of EU policies has been developed in the direction to reverse these trends, the age renewal problem remains a crucial issue in European agriculture (Mazorra, 2000; Ingram and Kirwan, 2011; Bertoni and Cavicchioli, 2016; Duesberg et al., 2017; Morais et al., 2017; Nipers and Pilvere, 2020; Borda et al., 2023). Starting from an acute awareness of the existence of a "mature" rural population and with the aim of promoting and guaranteeing the presence of young people in rural areas, several policies have been introduced over the last four decades. Among many policies aiming at generational renewal of rural areas, the young farmers' schemes of the Common Agricultural Policy are considered the main tool for promoting the entry and staying of young people in agriculture (Carbone and Subioli, 2008; European Commission, 2019; May et al., 2019; Nordin and Lovén, 2020; Pechrová and Šimpach, 2020; Bojnec and Fertő, 2022; Staboulis et al., 2022). Successful (or not) implementation of young farmers' schemes reflects to a great extent the EU Common Agricultural Policy's effectiveness in supporting generational change in rural areas. Thus, identifying the factors and their effectiveness that make policy interventions towards young farmers schemes more contributive could further facilitate the design of relevant policies.

Admittedly, there is rich literature dealing with the impacts of young farmers schemes on the economic performance of farms or on various environmental targets (Bournaris et al., 2014; Leonard et al., 2017; Pelucha et al., 2017; Dudek and Karwat-Woźniak, 2018; Loizou et al., 2019; Gkatsikos et al., 2022; Lillemets et al., 2022). While these studies offer valuable insights on these issues, no attention is given in the relevant literature to what farmers have to say. Listening to young farmers is a crucial factor, as their voices can contribute to more effective rural policy. Although their voices rely to a great extent on intuition, their judgments can still be used as a useful tool for streamlining the relevant policies.

In this context, the overarching aim of the present study is to investigate young farmers' attitudes and beliefs towards the current relevant scheme of the RDP 2014–2020 (taking the Greek case as a showcase) with the ultimate goal of better identifying the needs of young farmers, and thus, informing policy makers about the appropriate policy that should be devised aiming at building vital and sustainable rural communities. In addition, the study makes an effort to assess whether the above-mentioned attitudes and beliefs are differentiated according to young farmers' socioeconomic profile and their agricultural holdings' features, indicating the direction of improving the relevant young farmers' schemes. Finally, an essential part of this research is to record the young farmers' voices and try to interpret them in terms of policy recommendations.

The remainder of the study is structured as follows: The following section gives a brief introduction to the current young farmers' scheme for the 2014–2020 Rural Development Program. Section three displays the applied methodology, including its sampling frame and the utilized data. Section four presents the results, including the critical themes that emerged from our analysis. Lastly, the concluding remarks are presented, simultaneously indicating potential policy implications.

2. The current young farmers' scheme in Greece in a glance

From the early 80's, the European Parliament had realized the need for a financial support system for individuals willing to initiate agricultural activities since the sector was struggling to attract new professionals, particularly youth (European Parliament and Council of the European Union, 2021). In this context, a series of regulations have been adopted in the subsequent years, intending to enhance the renewal of the rural population (Fennell, 1999; Redigor, 2012; Davis et al., 2013; Zagata et al., 2017; May et al., 2019; Balezentis et al., 2020; Chatzitheodoridis and Kontogeorgos, 2020). Sub-measure 6.1 "Start-Up Aid for Young Farmers" of the 2014–2020 Rural Development Program is the main policy instrument trying to support young people entering agriculture (MRDF, 2021). Participation in Sub-measure 6.1 for young farmers is optional. The criteria[2] for young farmers to be eligible for the Sub-measure 6.1 (referring to the second call of the 2016–2021 period) according to the Greek Ministry of Rural Development and Food (MRDF) (2021) are presented in the following figure (Fig. 1).

The level of total premium per beneficiary ranges from 17,000 to 22,000 euros, and it is differentiated according to the type of activity and the type of area of farmers' residence. More specifically, the minimum subsidy of 17,000 euros could be increased to 19,500 euros in the case of exclusive livestock production or in the case where the permanent residence of the beneficiary is in a mountainous or less-favored area or is located on an underpopulated island. In the circumstances that a beneficiary meets these criteria in combination, s/he is granted the maximum level of 22,000 euros (Fig. 2). The support is paid in two installments. The payment of the last installment is subject to the correct implementation of the business plan.

According to official documents of the Ministry of Rural Development and Food (MRDF), there are 13,905 beneficiaries of Sub-measure 6.1 in Greece. Using non-public data[3] derived from the applications for inclusion in Sub-Measure 6.1, the average socioeconomic profile of beneficiaries has been synthesized. Based on these data, the average beneficiary is a man who has graduated from high school, has an agricultural holding at his disposal of approximately 5.2 ha, whose

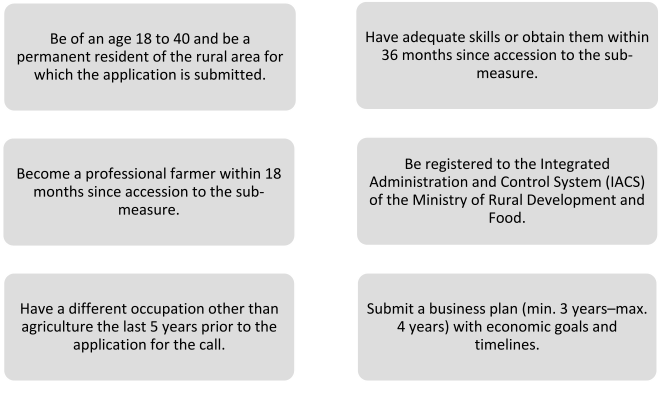

Fig. 1. Entry eligibility conditions. Source: MRDF official documents.

[1] According to the EC's definition, a young farmer is a farmer up to 40 years old. At this point, it is also important to distinguish new entrants from young farmers. A new entrant is a farmer who is setting up for the first time in an agricultural holding.

[2] The eligibility criteria and the level of support vary among European countries.

[3] Non-public data provided in an anonymized way by the Head of the Investment Unit in Agricultural Holdings of the Special Management Service of the 2014–2020 Rural Development Program.

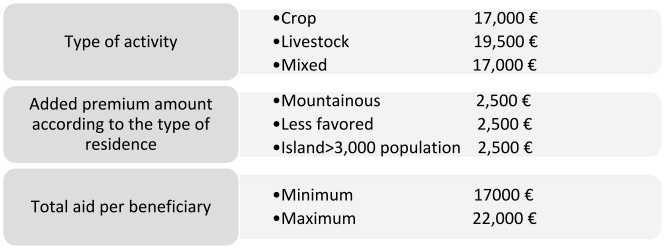

Fig. 2. Level of total available premium amount to young farmers. Source: MRDF official documents.

production is mainly crop or mixed-oriented and has received an average premium of 19,250 euros.

3. Methods

3.1. Survey design

To shed light on young farmers' attitudes, beliefs and perceptions towards the form and the implementation procedures and requirements of Sub-measure 6.1 "Start-Up Aid for Young Farmers", this study employed a combined approach regarding the research design, incorporating primary data (both qualitative and quantitative) as well as secondary data. First, considering the pivotal importance of a representative sample, access was requested to the non-public data provided by the beneficiaries of Sub-measure 6.1 on their applications through the Greek Ministry of Rural Development and Food. These data allowed us to form a comprehensive picture of the real population of beneficiaries. Secondly, in-depth interviews were conducted with executives of the managing authority of the "Rural Development Program 2014–2020" and also with trainers of young farmers' seminars and young farmers' unions. In the present study, the afore-mentioned entities were defined as stakeholders. The third approach used was a questionnaire survey aiming to identify the attitudes and perceptions of the young farmers directly.

3.2. Sampling technique and data collection

The sample synthesis is described in the following lines: 81% of the sample includes young farmers who are beneficiaries of Sub-Measure 6.1, selected over the total population of 13,905 beneficiaries in Greece. The rest of the sample (19%) originates from the population of non-beneficiaries.[4] This strategy (difference in proportion) is justified on the basis that the young farmers who are beneficiaries of Sub-measure 6.1 are the primary recipients of the relevant policy effects, and consequently, their opinions matter more than the non-beneficiaries' opinions. Furthermore, the sample of beneficiaries was related to the size of the actual population of beneficiaries among the 13 Greek regions according to the NUTS II classification. Non-beneficiaries are allocated in the sample following the allocation of beneficiaries since there are no detailed data available for the spatial allocation of their population (Fig. 3).

In-depth interviews with stakeholders were performed between September and December of 2021, which aimed at the collection of qualitative data. Seven types of stakeholders were included in the qualitative survey. Four of them were policy makers at central and local level, one was young farmers' union, and two of them were trainers of young farmers mandatory training programs. The interviews were carried out through a semi-structured questionnaire that included questions relevant to the previous experiences of the stakeholders from the implementation of young farmers' schemes, as well as questions for which the interviewee had to note down opinions and estimations for the main profile of the Greek young farmer, the problems they encounter, as well as the estimated perspectives for their future. Results such as the detailed description of the procedures related to the implementation of the young farmers' policy measures were derived through these interviews. Moreover, the recognition of possible problems linked to the "satisfaction" of the young farmers arose from this process. Particularly, policy makers highlighted the significant number of bureaucratic requirements for the application of the measure (e.g., application procedures and monitoring); the young farmers' union stressed the need for an increase in the level of premium granted from the measure since it was characterized as insufficient to effectively cover installation costs; they also expressed their demand for an increased budget for the measure; and training stakeholders emphasized the importance of coupling young farmers' participation in the measure with training programs that will enhance their willingness to continue farming after the four-year time commitments of the measure. The curation of these results was based on the quality approach proposed by Milburn (1995).

3.3. Data analysis

The results of the qualitative survey were utilized to format the questionnaire employed in the subsequent quantitative survey. The largest part of the questionnaire was made up of structured questions with preconceived answers to guarantee that all questions were asked in a fixed manner and to make it possible to analyze the data in a statistically sound way. The questionnaire was distributed to beneficiaries and non-beneficiaries of the measure, and it was divided into three sections: 1) socioeconomic data, 2) questions on technical and accounting aspects of agricultural holdings, and 3) questions about young farmers' attitudes, beliefs and perceptions. The required time for the completion of the questionnaire was approximately 10 min. The final questionnaire was pre-tested on a limited sample of respondents (20 respondents), who consented to fill it and appraised its comprehensibility, the clarity of the questions, and the usefulness of the instructions (Ritter and Sue, 2007).

The quantitative survey was held from 1st January to 30th May of 2022. Questionnaires were distributed to 445 farmers, of which 433 were evaluated as reliable.[5] 352 of the respondents were farmers who were beneficiaries of Sub-measure 6.1, whereas 81 of them were non-beneficiaries. It should be emphasized that the total number of respondents had the acceptable age to be eligible for Sub-measure 6.1, as described in the relative section (2).

The collected data were statistically analyzed applying a descriptive analysis, a cluster analysis and a series of Chi-square tests. To classify young farmers according to their attitudes and perceptions toward young farmers' schemes, a cluster analysis was conducted to provide similar segments based on internal homogeneity and intragroup heterogeneity (Hair et al., 1998). Since this study is focused on young farmers' classification rather than on building a predictive model, the method of cluster analysis was considered the most appropriate to assign respondents to different homogenous segments and to ascertain potential differences in their attitudes, beliefs and perceptions.

Following the study of Raptou et al. (2022), hierarchical and non-hierarchical clustering techniques were adopted to specify the optimum number of clusters. Firstly, Ward's method (hierarchical) was used as the agglomeration method to define the optimal number of clusters. In Ward's method, cases are combined to ensure the lowest increase of the variance in the cluster, and hence its highest

[4] Non-beneficiaries were farmers who were not interested or farmers who were interested in participating in Sub-measure 6.1 but somehow did not participate.

[5] 12 questionnaires were excluded from the analysis due to missing or inconsistent answers.

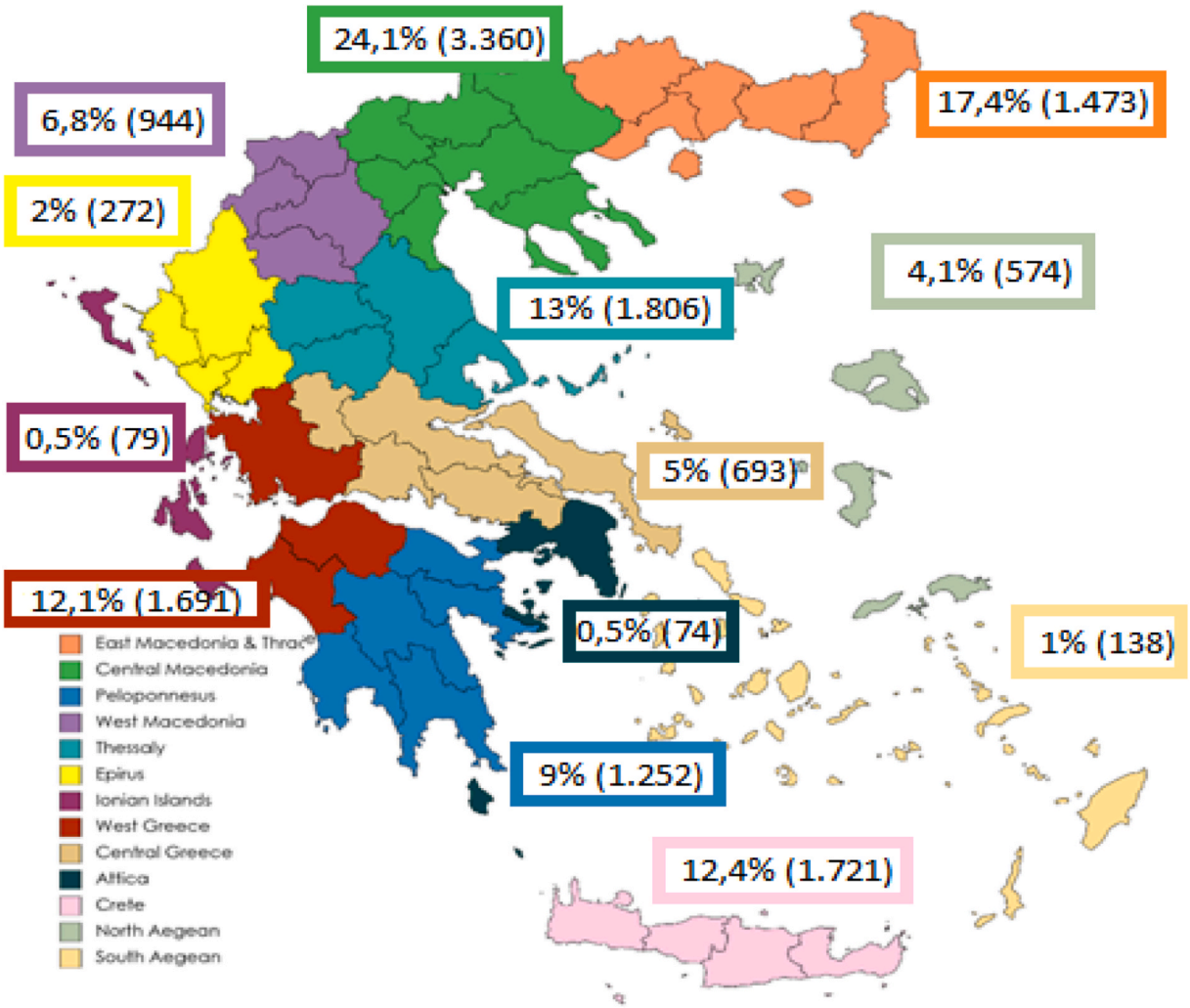

Fig. 3. Spatial allocation of beneficiaries' population among the 13 Greek regions (NUTS II) during the 2014–2020 RDP. Source: Authors' own work based on MRDF official documents.

homogeneity (Ward, 1963; Maciejewski et al., 2019). Secondly, the validity of hierarchical clustering was enhanced by the K-means algorithm (non-hierarchical), which set *a priori* the number of clusters resulting from Ward's hierarchical clustering method (Likas et al., 2003; Blei and Lafferty, 2009).

Lastly, a Chi-square procedure was applied, and a series of statistical tests of independence were performed to examine possible relationships among young farmers' features, agricultural holdings' features, and the cluster solution groups. An overview of the methodological framework is summarized in the following figure (Fig. 4).

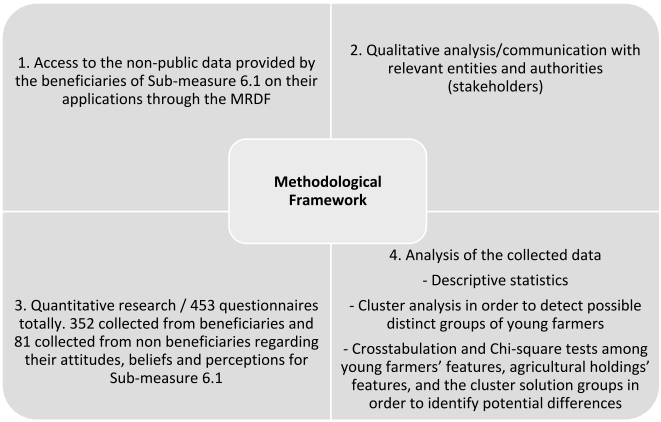

Fig. 4. Overview of the methodological framework. Source: Own research.

4. Results and discussion

4.1. Results of the descriptive statistics

The demographic profile of farmers engaged in the present study is described below. Most of the participants are men (76.2%), singles (47.6%), who have a mean age of 32 years. Concerning the educational level of the respondents, it is worth noting that most of them (43.4%) have graduated high school, followed by those who have received a technical education (23.2%). A percentage of 61% stated that their annual income is less than 18,000 € and half of them (49.9%) stated that their income comes exclusively from agricultural activities. Regarding their previous occupation, they were mainly unemployed (29.4%) or farmers (28.9%). The great majority of them (89.4%) are residents of rural areas. Lastly, considering that an attempt was made for each area to be represented equally in the research sample, the sample distribution among the 13 regions according to the NUTS II classification of Greek territory follows the allocation of the actual population of beneficiaries as described in the section of methodology. Moreover, the average beneficiaries' profile was considered in the sample selection process (see

Section 2).

Regarding the features of the agricultural holdings, the average size of the total (owned and rented) cultivated land of the participants is 14.9 ha, and most of the respondents stated that they acquired the owned land mainly from their parents (72.3%). A noteworthy point concerning participants' agricultural holdings is the fact that 77.1% of farmers stated that their farm existed before their participation (or willingness to participate) in Sub-measure 6.1. A similar percentage of participants stated that a considerable amount of machinery equipment, such as agricultural tractors, accessories for agricultural tractors and farmer's trucks pre-existed in their agricultural holdings before their participation in Sub-measure 6.1.

Descriptive statistics indicate a neutral role of the CAP incentives to attract youth to work in agriculture, according to farmers' beliefs (Fig. 5). However, a considerable share of participants (44.9% cumulatively) state that Sub-measure 6.1 stands as a motive for youth to be involved in agriculture (Fig. 5). This contrast could be partially attributed to the fact that although the economic incentives to encourage participation in young farmers' schemes are useful, they are considered insufficient to achieve their overall aim, meaning the restructuring of the agricultural sector and the modernization of the rural population.

The next figure (Fig. 6) depicts respondents' answers about the main reasons that motivated them to be involved in agriculture. It should be noted that in this question, the respondents had the option of multiple answers. The most important reason is the existence of a family's agricultural holding. This is mainly due to the family's continuation in the farmer's profession, which is deemed one of the most important reasons for the involvement of young people in the agricultural sector (Fischer and Burton, 2014; Chiswell, 2016; Simões and Brito do Rio, 2020; Coopmans et al., 2021). The second important reason is the willingness to become a professional farmer, and the third one is Sub-measure 6.1. This last reason, though ranked third (percentage 30.5% or 132 of 433 participants), indicates that the measure fulfills its goal to some extent.

Regarding the major drawbacks of Sub-measure 6.1 "Start-Up Aid for Young Farmers", most of the respondents consider that the size of the payment provided offers an ineffective incentive to attract young people into the sector (Fig. 7). In this question, the respondents also had the option of multiple answers. In principle, it is considered rather difficult, especially for new entrants, to acquire agricultural holdings that would be economically viable (Schneider and Niederle, 2010), ensuring a satisfactory income (Redigor, 2012). According to Redman (2015), the premium for young farmers within the recent CAP reforms provides limited financial support and has little long-term consequences. In the same line, Sutherland et al. (2015) indicate that the financial aid given

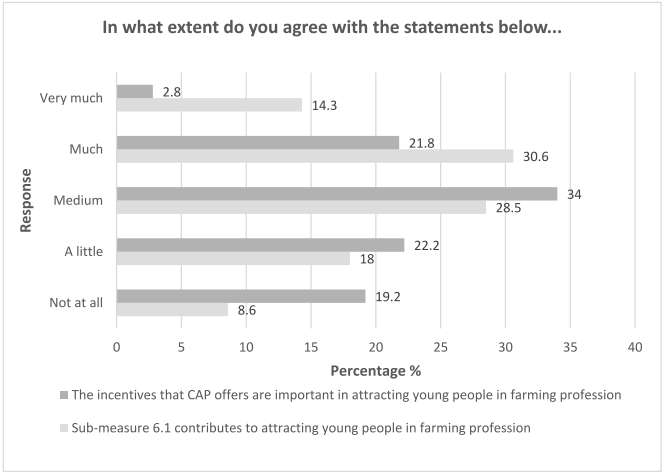

Fig. 5. Young farmers' beliefs about CAP incentives and the ability of Sub-measure 6.1 to attract young people in farmer's profession. Source: Calculations based on the quantitative survey.

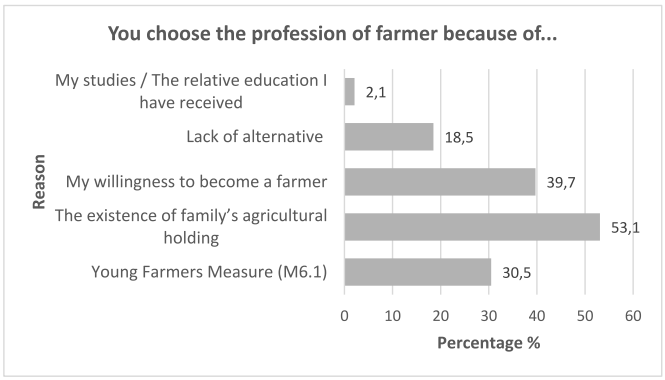

Fig. 6. Reasons for participants to be involved in the farming profession. Source: Calculations based on the quantitative survey.

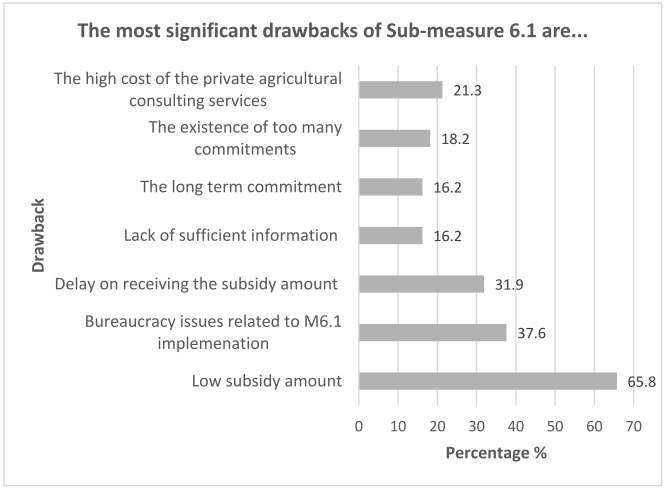

Fig. 7. Major drawbacks of Sub-measure 6.1 according to young farmers' perceptions. Source: Calculations based on the quantitative survey.

to young farmers is ineffective on account of the high start-up costs, the low profitability, and the low return on equity. It is also accepted that young farmers are among the most vulnerable target groups within the agricultural business sector, and additional support measures are required (Emmerling and Pude, 2017; Balezentis et al., 2020).

Bureaucracy related to the implementation of Sub-measure 6.1 also constitutes a serious problem, as indicated by the results. According to Petcovic and Williamson (2015), young farmers confront a wide spectrum of issues related to the bureaucratic approach to the concept of the farmer and the procedures required for their participation in the program. Time delays in receiving the subsidy amount comprise an additional drawback for the decision to participate in the relative measure. An interesting finding is that a small proportion of participants feel that the four-year time commitment serves as a significant drawback of the measure. It is a plausible finding, considering that the great majority of young farmers (86.9%) declared their intention to continue farming after the finalization of the commitments of the measure.

4.2. Results of cluster analysis

Cluster analysis was conducted to identify possible young farmers' segments of the total sample on the basis of their attitudes, beliefs and perceptions towards Sub-measure 6.1. The cluster analysis procedure yielded the identification of two farmers' segments. The first cluster was labeled as "favorably disposed" and included 41.59% of the respondents. The second cluster was labeled as "unfavorably disposed"

and it represents the most significant proportion (58.41%) of the total sample. It is worth mentioning that discriminant analysis also verified the classification achieved through the cluster analysis procedure, indicating that the exactness of the classification was 97.2%.

By adopting a five-point Likert scale, the perceptions of the young farmers were coded in such a way that 1 means "not at all" and 5 means "very much". T-tests for the equality of means indicated considerable statistically significant differences between the two clusters (Table 1).

As indicated in Table 1, the first cluster had the highest mean scores for the variables "Do you consider that Sub-measure 6.1 contributes to attracting young people in the farming profession?" (3.842 vs 2.352, *t*-test = −6.321, $p < 0.01$) and "Do you consider that the incentives that agricultural policy offers are important in attracting young people in the farming profession?" (3.290 vs 2.492, *t*-test = −7.646, $p < 0.01$), compared to Cluster 2. On the contrary, the second cluster had the highest mean scores for the variables "Generally, did you find it hard to fulfill the overall requirements of Sub-measure 6.1?" (2.182 vs 3.239, *t*-test = −3.904, $p < 0.01$), "Did you find it hard to fulfill the requirement of the increase of the agricultural holding's standard output (10%)?" (2.696 vs 3.348, *t*-test = −8.224, $p < 0.01$) and "Did you find it hard to fulfill the requirement of the completion of the mandatory training program" (2.997 vs 3.956, *t*-test = −4.987, $p < 0.01$).

Additionally, a number of behavioral questions were included in the questionnaire aimed at the evaluation of Sub-measure 6.1 by young farmers. Following the previous strategy, by adopting a five-point Likert scale, the beliefs of the young farmers were coded in such a way that 1 means strong disagreement and 5 means strong agreement. Also in this case, t-tests for the equality of means indicated statistically significant differences between the two clusters regarding beliefs and perceptions towards Sub-measure 6.1 (Table 2).

More specifically, as can be perceived from Table 2, the first cluster's (favorably disposed) average mean score is nearly 4 (3.778), which means agreement, indicating a positive assessment of the role of Sub-measure 6.1 to provide economic and non-economic motivational goals. Regarding the second cluster (unfavorably disposed), farmers' beliefs indicate a halfhearted assessment of the role of Sub-measure 6.1 in this direction, as the average mean score is lower than 3 (2.768), which means disagreement. Moreover, regarding the total sample, Sub-measure 6.1 seems to provide partially some economic and non-economic motivational goals, as the average mean score is hardly higher than 3 (3.156).

4.3. Results of cross-tabulation and chi-square tests

To provide a comprehensive picture of young farmers' segments, cross-tabulation and Pearson's chi-square statistics were also estimated to define differences among young farmers' features, agricultural holdings' features, and cluster solution groups (Table 3).

The likelihood of being in either category (favorably or unfavorably disposed) was found to be related to the administrative region (NUTS II) where the farm is located, and the type of activity. Furthermore, farmers whose agricultural holdings did not pre-exist before participation (or desirability to participate) are more likely to belong to the "unfavorably disposed" group, and consequently, on the outcome of policy, the aforementioned fact should be taken into consideration by policy makers in the future formulations of the relevant schemes. An interesting point also, derived from the cross-tabulation process, is that a new entrant is more likely to belong to cluster 2 the "unfavorably disposed" (higher percentages of unemployed in the variable of "previous occupation", lower percentages of pre-existing agricultural holdings, and lower percentages in the variable "agricultural holding created by the succession of parental agricultural holding").

5. Conclusions and policy implications

5.1. Conclusions

The present paper attempts to investigate Greek young farmers' attitudes and perceptions towards Sub-measure 6.1 "Start-Up Aid for Young Farmers", since young farmers constitute the most valuable asset for any further development, innovation, and revival of rural areas (European Parliament, 2023). In detail, it aims to identify their needs, inform policymaking about the effectiveness of the current young farmers' scheme, and indicate directions for improved future policies, aiming at building vital and sustainable rural communities. The voice of rural youth should remain central to any dialogue and policy process, as this allows policy makers at the EU and local level to propose more effective and well-targeted policy interventions to attract new entrants into the sector and to keep those already involved in the profession. Moreover, this voice should eventually be heard loudly, echoing, at the same time, the diversity of farming systems at the national level.

Moreover, the present study's findings, utilizing Greece as a case study, offer a commencement for academic contribution to the relevant scientific literature and accumulated research findings. Particularly, the conducted analysis confirms the importance of family succession of agricultural holdings as a crucial factor for generational renewal, accumulating an up-to-date viewpoint of the topic in the existing literature (Leonard et al., 2017; Sroka et al., 2019; Zagata and Sutherland, 2015). Further, the research findings contribute to the emphasis on land access as a key challenge for the implementation of the measure, expanding relevant recent studies (e.g., Valliant and Freedgood, 2020; Grubbström and Joosse, 2021) and the survey of young farmers perceptions (e.g., Cristea et al., 2019).

Table 1
Cluster analysis results concerning young farmers' attitudes and perceptions.

	Total sample		Cluster 1 (41.59%)		Cluster 2 (58.41%)		*t*-test for equality of means	
	Mean	Std. D	Mean	Std. D	Mean	Std. D	*t*-test	P-value
Do you consider that Sub-measure 6.1 contributes to attracting young people in the farming profession?	3.238	1.1611	3.842	0.8531	2.352	0.7210	−6.321	0.000
Do you consider that the incentives that agricultural policy offers are important in attracting young people in the farming profession?	2.669	1.1022	3.290	0.9987	2.492	0.8546	−7.646	0.000
Generally, did you find it hard to fulfill the overall requirements of Sub-measure 6.1?	2.608	0.9837	2.182	0.6784	3.239	0.9066	−3.904	0.001
Did you find it hard to fulfill the requirement of the increase of the agricultural holding's standard output (10%)?	3.018	1.0076	2.696	0.6522	3.348	0.8736	−8.224	0.003
Did you find it hard to fulfill the requirement of the completion of the mandatory training programme?	3.635	0.9138	2.997	0.8122	3.956	1.3475	−4.987	0.000
Did you find it hard to fulfill the requirement of the four year-term commitment to remain in the farming profession?	3.005	1.1517	2.445	0.7091	3.257	1.0012	−1.811	0.069

Source: Calculations based on the quantitative survey.

Table 2
Cluster analysis results concerning young farmers' beliefs towards Sub-measure 6.1.

	Total sample		Cluster 1		Cluster 2		*t*-test for equality of means	
	Mean	Std. D	Mean	Std. D	Mean	Std. D	*t*-test	P-value
It would make me feel more secure in my role	3.232	1.1058	4.012	1.211	2.894	0.973	−4.568	0.001
It would decrease the experienced stress level	2.935	1.1988	3.652	1.011	2.549	0.786	−8.876	0.002
It would influence my decision to engage in the farming profession	3.089	1.1832	3.524	1.112	2.247	0.6782	−5.657	0.005
It would affect my decision to change the productive type of activity	2.700	1.0321	3.257	0.879	2.478	0.6783	−3.567	0.001
It would counterbalance the risk and uncertainty in the farming sector	2.906	1.1372	3.501	0.895	2.652	0.711	−5.678	0.000
It would be sufficient to keep me in farming	3.338	1.1822	3.984	1.003	2.998	0.983	−7.576	0.001
It would help me to adopt sustainable farming practices for my agricultural holding	3.154	1.0787	3.458	0.894	2.895	0.912	−3.116	0.005
It would let me improve the productivity of my farm	3.504	1.0978	4.367	1.272	3.009	0.987	−2.897	0.000
It would enhance my motivation to succeed in the farming industry	3.444	1.1258	4.321	1.324	3.111	0.987	−7.367	0.003
It would allow me to increase the size of my agricultural holding	3.256	1.1852	3.689	0.872	2.843	0.622	−5.098	0.000
Average mean score	3.156	–	3.778	–	2.768	–	–	–

Source: Calculations based on the quantitative survey.

Table 3
Clusters' profile.

	Cluster 1 n = 188	Cluster 2 n = 265	Pearson χ^2	P-value
Gender	Men (75%)	Men (80%)	1.804	0.647
Age	30-35 (42%)	30-35 (37%)	4.908	0.332
Type of residence:	Village (72%)	Village (64%)	2.741	0.212
Educational level	High school (49%)	High school (40%)	3.942	0.183
Annual income	10,000–18,000€ (44%)	Under 10,000 (51%)	3.387	0.115
Percentage of annual income from agricultural activities	100% (54%)	100% (47%)	4.549	0.176
Previous occupation	Farmers (45%)	Unemployed (31%)	5.403	0.191
Participation or not in Sub-measure 6.1	Beneficiaries (84%)	Beneficiaries (73%)	4.901	0.211
Size of agricultural holding	10–15 ha (63%)	5–10 ha (60%)	3.945	0.146
Administrative region (NUTS II) of the agricultural holding	Central Macedonia (29%)	Central Macedonia (15%)	10.152	0.002
Type of activity	Crop Production (62%)	Crop Production (75%)	11.277	0.004
Existence of agricultural holding before participation (or desirability to participate)	Yes (91%)	Yes (67%)	17.279	0.000
How the farmer's agricultural holding was created	Succession of parental agricultural holding (80%)	Succession of parental agricultural holding (62%)	5.908	0.173

Source: Calculations based on the quantitative survey.

5.2. Policy implications

The findings of the current study also offer a commencement for the articulation of key policy insights on the application of the young farmers support measures. The policy implications derived from the present empirical effort could be summarized as follows: Firstly, although Sub-measure 6.1 acts as a helpful instrument at the farm level for a considerable percentage of young farmers to remain in the farming profession, it does not prove to be sufficient to create by itself actual inflows of new entrants in the sector. According to the results, high percentages of participants stated that their agricultural holdings pre-existed (obtained mainly by parental succession) before their participation in the relevant measure or that they were previously occupied as farmers. In contrast, a relatively low percentage declared that their entry into farming was due to this particular policy. Therefore, Sub-measure 6.1 seems to succeed in keeping farmers in the farming profession but is hardly effective in bringing inflows of new entrants to the sector.

Secondly, research identifies some features of the farms as factors that could form farmers' attitudes and perceptions towards young farmers' schemes. For instance, results indicated the administrative region (NUTS II) where the farm is located as a statistically significant factor that could affect young farmers' attitudes and beliefs towards Sub-measure 6.1. Hence, the future formulations of the measure should take into consideration possible "obstacles or facilitators" that could be generated as a result of the different spatial and geographical allocation of agricultural holdings, such as ease of access to land (landforms, rents), variation in biophysical factors (soil fertility, availability of water, climate, diseases, etc.), or the existence of supporting infrastructure.

Lastly, policy makers should devise corrective points in the measure when addressing totally newcomers in farming, since according to the results, a new entrant is more likely to belong to the "unfavorably disposed" segment. Young farmers' supports seem to act as 'farm successor supports' and are primarily accessible by successors who take over the farm before the age of 40. Unambiguously, subsidizing succession processes is beneficial for the sector in terms of encouraging innovation and investment in farms, but these subsidies should not be conflated with supports that help new entrants enter the farming profession. Therein lies the problem.

5.3. Limitations and a route for future studies

In closing, it should be acknowledged that the present study has a certain limitation that can be addressed in future empirical efforts. The application of Sub-measure 6.1 "Start-Up Aid for Young Farmers", as part of the Greek RDP 2014–2020 was extended up to the year 2022. Based on this extension, the Greek Ministry of Rural Development and Food initiated a third call for participation in Sub-measure 6.1 late in 2021. This third call restated some of the measure's requirements and the level of support. The conduction of the study coincides with the finalization of the second call. Hence, it reflects the young farmers' attitudes, beliefs and perceptions when it comes to the initial two calls of the measure. Consequently, the results of the analysis are subject to the conditions of these two calls, and a future survey, including the modifications of the third call, may result in different findings.

CRediT authorship contribution statement

Konstadinos Mattas: Supervision, Project administration, Funding acquisition. **Christos Staboulis:** Writing – original draft, Methodology, Conceptualization. **Efthimia Tsakiridou:** Writing – review & editing, Methodology, Formal analysis. **Dimitrios Natos:** Visualization. **Apostolos Polymeros:** Data curation. **Piotr Baranowski:** Writing – review & editing. **Waldemar Bojar:** Writing – review & editing. **Obdulia Parra**

Rivero: Writing – review & editing. **Álvaro Ojeda Roldán:** Writing – review & editing. **Lisa Baldi:** Writing – review & editing. **Filippo Arfini:** Writing – review & editing.

Declaration of competing interest

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Data availability

Data will be made available on request.

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