Conference Proceedings „Innovative development of agricultural business and rural areas“, 28 – 29.09.2023, Sofia
DOI: https://doi.org/10.37075/idara.2023.09

THE ROLE OF AGRICULTURAL SUBSIDIES IN SHAPING YOUNG FARMERS' DECISION-MAKING IN THE GREEK AGRICULTURAL SECTOR

MANDANAS, ZISIS C.[1]
PETROPOULOS, DIMITRIOS P.[2]

Abstract
The Greek agricultural sector is grappling with a dynamic environment characterized by evolving policies, global market forces, and reduced protectionism. To effectively navigate these challenges, a paradigm shift toward a new development philosophy is imperative. This philosophy seeks to address structural issues, enhance technical and economic aspects, and strategically orient production towards crops that capitalize on the Mediterranean region's comparative advantages. This study explores Greek farmers' attitudes, expectations, and satisfaction levels in this evolving landscape, with a particular emphasis on assessing the impact of the Young Farmers 2021 program and demographic factors.
Utilizing a questionnaire of 18 closed-ended questions, data were collected from 144 respondents, comprising 76 participants in the Young Farmers 2021 program and 68 non-participants. The survey encompassed inquiries into demographic and social variables and delved into the assessment of attitudes, expectations, and satisfaction levels. The collected data underwent rigorous analysis involving Non-Linear Principal Component Analysis and categorical regression. The examination yielded two discernible factor axes: „Challenges and Diminished Satisfaction“ and „Favorable Perceptions and Optimistic Prospects.“ Remarkably, Young Farmers 2021 program participants exhibited fewer hurdles, higher contentment, and a more sanguine outlook compared to non-participants. These disparities were statistically significant, underscoring the program's substantial influence. Furthermore, demographic attributes emerged as pivotal determinants. A higher level of educational attainment was correlated with diminished difficulties, augmented satisfaction, and more favorable perceptions and expectations. This underscores the pivotal role of educational initiatives in equipping farmers with the necessary acumen and skills to effectively surmount obstacles and cultivate optimism within the agricultural sector.
In summary, this study underscores the noteworthy impact of the Young Farmers 2021 program on Greek farmers' attitudes, expectations, and contentment levels. Program involvement was associated with reduced challenges, heightened satisfaction, and a more positive outlook regarding the future of agriculture. Additionally, educational attainment surfaced as a pivotal factor in molding farmers' experiences and outlooks. These insights offer valuable guidance to policymakers and agricultural organizations, facilitating the development of targeted interventions and policies aimed at encouraging program participation and delivering educational resources.
Keywords: agricultural subsidies, decision-making, financial considerations, policymaking.
***JEL**: Q12; Q14; O2*

[1] PhD (c), School of Agriculture and Food Science, University of Peloponnese, Greece, e-mail: zisismandanas@gmail.com
[2] Associate Professor, PhD. School of Agriculture and Food Science, University of Peloponnese, Greece, e-mail: d.petropoulos@uop.gr

Introduction

The new situation brought by the continuous revisions of CAP, the globalization of markets and the limitation of protectionism in the agricultural sector, brought the need for the Greek agriculture sector to adapt to the new order imperative (Markopoulos, 2019). This adaptation is now commonly accepted as requiring the implementation of a different development philosophy, which will aim at alleviating the existing structural problems, at addressing the technical and economic issues of the production branches and above all, at the gradual change of the production direction with crops that utilize the comparative advantages of the Mediterranean environment. Especially for Greece, the basic structural characteristics of the agricultural sector, such as the small lot and the soil morphology, make the application of the production system of agriculture problematic in many cases. Thus, it becomes clear from the facts, that Greek agriculture, in order to cope with these new challenges, should turn to the search for financial resources for the production of high-quality agricultural products (Kalogiannidis et al, 2023). Besides, the climatic conditions of the country, the topography of the land, the rich agricultural tradition and the proximity to the markets of Central Europe, are factors that differentiate the character of Greek agriculture from the northern countries of the EU, and advocate in this direction.

Unfortunately, in recent decades in Greece, as in many other sectors of the economy, the short-term management of problems, as opposed to long-term structural and development policies, has prevailed in the agricultural sector as well. Thus, the lack of a generalized systematic effort was evident, as a result of the lack of fruitful reflection and constructive dialogue, among the creative forces of the country to approach the perspective of Greek agriculture. Nowadays, it is becoming increasingly clear that in order to implement a new development model, it is necessary to draw up a national strategy with a multidimensional view (technical, economic, social and environmental), as well as the definition of guidelines that will help all the agencies involved. In any case, the content of rural development cannot be shaped one-dimensionally but must be adapted to the data of the time, redefining strategies, policies, practices, new roles and synergies in the Greek countryside. In this context, the effectiveness of the staff structures of the central administration, as well as the active role of the regional and local administrations in the planning and implementation of integrated interventions, appropriately adapted to the particularities and comparative advantages of each region (Chatzitheodoridis et al, 2012). Also, a special effort must be made to strengthen financial resources, but also the education and training of the rural population in the context of lifelong learning.

In particular today, in conditions of unprecedented economic uncertainty, in the new competitive environment that is taking shape in the primary sector, farmers will in some cases be called upon to adapt their holdings to other activities such as for example processing and agritourism, which makes the provision of financial aid

necessary. A positive and interesting development in recent times is the fact that several young people with a wide range of knowledge and abilities now choose to be actively involved in the agricultural sector, looking for professional opportunities. This element can be an important factor for the quality upgrade of rural human resources.

In this context, the Young Farmers 2021 subsidy program was developed, which aimed at the essential demographic renewal of the country's rural population and agricultural potential, the treatment of the phenomenon of fictitious young farmers, who are currently facing their entry into the agricultural sector and the increasing the efficiency of the agricultural sector by providing new incentives, such as the granting of sufficient support both to meet the costs of the first establishment in the agriculture sector and investment allocation. Aim of the present paper is the investigation of farmers' attitudes, expectations, and satisfaction levels related to the agricultural sector, specifically focusing on the influence of the Young Farmers 2021 program and demographic/social characteristics.

Methodology

The empirical research was carried out using a closed-ended questionnaire, as this specific type of research tool provides the possibility of collecting data from a relatively large number of people on the same subjects and therefore the comparability, the possibility of quantification and statistical analysis of the collected data, make it questionnaire the main tool of quantitative research in the social sciences (Nardi, 2018).

The questionnaire was divided into 2 thematic axes, including a total of 23 questions. The first thematic axis, with 5 questions, includes information about demographic, social and individual information of the respondents, such as whether they participated or not in the Young Farmers 2021 program, their age, their educational level, if they exercise other non-agricultural employment and if they participated in agricultural training and education process. In the second thematic axis, which includes 18 questions investigating attitudes, expectations and degree of satisfaction, respondents state either their degree of agreement, or the degree of importance regarding specific statements. In particular, the interviewed farmers state either their degree of agreement on a five-point Likert scale (1: not at all, 2: a little, 3: moderate, 4: a lot, 5: very much) and (1: much worse, 2: worse, 3: the same, 4: better, 5: much better), or assign a degree of importance on a five-point scale as well (1: not at all important, 2: a little important, 3: moderately important, 4: important, 5: very important).

Data collection was carried out using the method of personal interviews. In total, 144 questionnaires were collected, 76 from farmers who did join the and 68 from farmers who did not join the Young Farmers 2021 program. In order to reduce the number of original variables and bring out the structure of farmers attitudes in fewer

complex variables (factors-components), Non-Linear Principal Component Analysis with optimal scaling was used as a factor extraction method (Meulman et al, 2004). This specific analysis method was chosen because it can include qualitative-categorical variables, measured on a nominal and/or ordinal scale. More specifically, Non-Linear Principal Components Analysis was applied, with the aim of investigating the relationship between the structural system of farmers' attitudes, opinions and expectations and their financial support through the Young Farmers Program 2021. For a better description of the characteristics depicted in each question, they are renamed on corresponding items, as follows:

1. Satisfaction with agricultural income
2. Image of agricultural sector in the country today
3. Image of agricultural sector in the village today
4. Future of the agricultural sector in the country
5. Future of the agricultural sector in the village
6. Agreement with adoption of the agricultural profession by the child of the family
7. Problems due to lack of infrastructure
8. Problems due to insufficient marketing networks
9. Problems due to insufficient education
10. Problems due to insufficient training of farmers
11. Problems due to low selling prices of the products
12. Problems due to high taxation
13. Satisfaction with government agencies
14. Belief in the economic viability of agriculture
15. The special characteristics of the country as a favorable factor for agriculture
16. Causing environmental problems from the practice of agriculture
17. Expectation of farming in the same way in the future
18. Interest of domestic consumers in agricultural products

The results of the analysis showed that two factor axes-dimensions emerge (Table 1), whose values of Cronbach's internal consistency-reliability coefficient (Alpha) were above the acceptable limit of 0.60. Based on the estimated eigenvalues of each factor axis, the percentage of the total volatility explained by the first and second factor axis is 19.7% and 16.4% respectively. The total explained variance, from the two factor axes, is 36.1%, a percentage that is considered satisfactory (Naik, 2017), if it is taken into account that the information of the data table used in the statistical processing is analyzed in 72 (5 ratings × 18 questions = 90, 90 – 18 = 72) mathematical dimensions-axes.

Table 2 shows the loadings of the items in the two factor axes. The loadings that receive an absolute value greater than 0.20 are considered significant and essentially compose the formed factor axes (Peres-Neto, 2003). The first factorial axis expresses the farmers' problems which arise from various parameters of agricultural production as well as their low degree of satisfaction with the agricultural sector

(Problems and low degree of satisfaction), while the second factor axis includes positive perceptions of farmers as well as their expectations for the future of the agricultural sector (Positive perceptions and expectations).

Table 1. Reliability and variance explained by factor axes

Factor Axes	***Cronbach's Alpha***	***Eigenvalues***	***% of total variance explained***
1st	0.76	3.542	19.7%
2nd	0.70	2.959	16.4%

Source: own calculation

Table 2. Factor loadings

Items	***1st factor loadings***	***2nd factor loadings***
Satisfaction with agricultural income	**–0.484**	–0.002
Image of agricultural sector in the country today	–0.066	**0.603**
Image of agricultural sector in the village today	**–0.414**	**0.577**
Future of the agricultural sector in the country	**0.380**	**0.679**
Future of the agricultural sector in the village	0.120	**0.598**
Agreement with adoption of the agricultural profession by the child of the family	–0.168	**0.203**
Problems due to lack of infrastructure	**0.605**	–0.192
Problems due to insufficient marketing networks	**0.591**	–0.185
Problems due to insufficient education	**0.841**	–0.093
Problems due to insufficient training of farmers	**0.816**	–0.139
Problems due to low selling prices of the products	**0.333**	–0.160
Problems due to high taxation	0.015	**–0.428**
Satisfaction with government agencies	**–0.268**	0.168
Belief in the economic viability of agriculture	**–0.204**	–0.008
The special characteristics of the country as a favorable factor for agriculture	0.037	**0.594**
Causing environmental problems from the practice of agriculture	–0.116	**–0.468**
Expectation of farming in the same way in the future	**–0.652**	–0.199
Interest of domestic consumers in agricultural products	**0.438**	**0.675**

Source: own calculation

Regarding the results of the descriptive statistics of the mean scores of farmers in each factor, it is observed that the farmers who participated in the Young Farmers 2021 program, present a lower level of problems and low degree of satisfaction, compared to those who did not participate. On the contrary they show a higher degree of positive perceptions and expectations. At the same time, based on the results

of the corresponding Mann-Whitney tests these differences are considered statistically significant ($p < 0.001$ in each case).

Table 3. Mean scores an MU-tests based on whether the farmers participated in the Young Farmers 2021 program

	Problems and low degree of satisfaction	***Positive perceptions and expectations***
No participation in the Young Farmers 2021 program	4.33 (SD = 0.84)	3.09 (SD = 0.77)
Participation in the Young Farmers 2021 program	3.18 (SD = 1.10)	3.75 (SD = 0.96)
Z (p)	–7.108 (<0.001)	–4.776 (<0.001)

Source: own calculation

Subsequently, the simultaneous connection of each of the two factor axes that constitute the structural system of farmers' attitudes, with receiving financial support through the Young Farmers Program 2021 and their specific demographic and social characteristics is examined. For this purpose, the method of categorical regression with optimal scaling was used, which can simultaneously include quantitative and qualitative variables (Dunn-Rankin et al, 2014). In the categorical regression model, each of the factor axes was entered as a dependent variable and the rest (demographic and social characteristics) as independent. Through the Categorical Regression Analysis, the results of Table 4 are obtained.

Table 4. Categorical regressions results

Dependent variable	***Problems and low degree of satisfaction***				***Positive perceptions and expectations***			
	Beta	**DF**	**F**	**p**	**Beta**	**DF**	**F**	**p**
Participation or not in the Young Farmers 2021 (0: No, 1: Yes)	–0.254	1	5.973	0.016	0.452	1	18.351	<0.001
Age (0:≤40, 1:>40)	–0.059	1	0.405	0.526	0.116	1	1.536	0.218
Educational level (0: Primary, 1: Secondary, 2: Higher	–0.229	2	5.046	0.003	–0.216	2	4.430	0.005
Exercise of other non-agricultural employment (0: No, 1: Yes)	0.048	1	0.247	0.620	0.149	1	2.413	0.123
Participation in agricultural training and education process (0: No, 1: Yes)	0.002	1	0.000	0.986	0.079	1	0.723	0.397

R^2 = 0,160, F = 3,174 (P = 0,004)
Source: own calculation

As observed, the factors that statistically significantly affect the first factorial axis are the participation or not in the Young Farmers 2021 program (b = –0,254, p = 0.016) suggesting that participating in the Young Farmers 2021 program is associated with a decrease in problems and a low degree of satisfaction and the educational level of the respondents (b = –0,229, p = 0.003), showing that a higher educational level is associated with a decrease in problems and a low degree of satisfaction. Furthermore, the coefficient of determination is equal to 0.160 which demonstrates that the variability of the dependent variable is explained by the variability of the independent variables by 16.0% (Dodge, 2008).
Moreover, by setting as a dependent variable of the model the scores obtained based on the second factorial axis, it is observed that the variable Young Farmers 2021 program as well as the variable of the educational level of the participants, also become statistically significant with $p < 0.001$ and $p = 0.005$ respectively, signaling that participating in the Young Farmers 2021 program and lower educational level, is associated with advanced positive perceptions and expectations. At the same time, the value of the R^2 coefficient (equal to 0.138), reveals explanatory power of the dependent variable from the independent variables at a rate of 13.8%.

Conclusions

The present study sheds light on the significant impact of the Young Farmers 2021 program and demographic/social characteristics on farmers' attitudes, expectations, and satisfaction levels within the agricultural sector. The results indicate that participation in the Young Farmers 2021 program and higher educational attainment are associated with reduced challenges, increased satisfaction, and positive perceptions and expectations among farmers.
Farmers who were part of the Young Farmers 2021 program reported fewer difficulties and a lower degree of dissatisfaction compared to non-participants. This suggests that the program plays a crucial role in addressing challenges and improving overall satisfaction among farmers. Moreover, program participants demonstrated a more optimistic outlook regarding the future of the agricultural sector and held positive perceptions. These findings highlight the effectiveness of the program in shaping farmers' attitudes and instilling confidence in the sector's potential.
Additionally, the study highlights the significance of considering demographic and social characteristics in understanding farmers' experiences. Educational level emerged as a noteworthy factor, with higher education correlating with fewer problems, greater satisfaction, and positive perceptions. This underscores the importance of educational initiatives and support systems that empower farmers with the necessary knowledge and skills to effectively overcome challenges. The findings have important implications for policymakers and agricultural organizations. Understanding the positive influence of the Young Farmers 2021 program and the role of education can inform the development of targeted interventions and policies.

By promoting program participation and providing educational resources, policymakers and organizations can better support farmers, enhance their experiences, and foster a positive perception of the agricultural sector. Ultimately, these efforts contribute to the sustainability and growth of the agricultural industry as a whole.

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