

# Understanding farmers' intentions to adopt organic farming in Albania

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## Abstract

*Organic agriculture in Europe is expanding, yet is still in the early stages in less developed areas of Europe. Understanding the factors of converting to organic agriculture is a key component for both policy design and attaining effective support for the organic sector from the government, donors, or the private sector. Therefore, the study attempts to explore the determinant factors of farmers' intentions to engage in organic farming based on primary data collected through a farm survey in Albania. Results show that subjective norms, perceived behavior control, favorable attitudes toward organic farming conversion, as well as awareness about risk from conventional farming are positively associated with the probability of converting to organic farming. Farmers' perceptions of EU policy opportunities and attitudes towards environment protection are negatively associated with farmers' tendency to convert. The study findings call for the use of financial and non-financial policy instruments for supporting conversion to organic farming and the need for increased information on opportunities and costs expected from the integration into the EU single market.*

**Keywords:** *Organic farming, Conversion, Farmers' behavior, Exploratory factor analysis, Albania.*

## 1. Introduction

Recently, organic agriculture has been developing worldwide. This is a positive development in Europe (see Willer *et al.*, 2018) which, beyond the advantages of environmental protection and improved human health, has also been spurred by consumer awareness and concerns regarding food safety and quality (Rana and Paul, 2017) and concerns emerging from the use of conventional methods (Biao *et al.*, 2003). In developing countries, organic agriculture provides a promising approach to reducing poverty and resource degradation (Wollni and Andersson, 2014; Qiao *et al.*, 2018).

The adoption of organic agricultural techniques is seen as an important aspect of moving farmers towards a more sustainable agriculture, while creating added value in the sector (Seufert *et al.*, 2019). Therefore, understanding the factors that lead farmers to adopt organic agriculture is a key component for policy design necessary for the sector's development. Examining farmer's decisions regarding production methods helps in obtaining effective support for the organic sector by the government, donors, or the private sector. Considering these key elements of research in exploring the potential of organic agriculture, the paper's objective is to provide a scientific understanding

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Table 1 - Key data of organic sector in selected SEE countries (2017).

<i>Indicator</i>	<i>Albania</i>	<i>Serbia</i>	<i>Macedonia</i>	<i>Montenegro</i>	<i>BiH</i>
Organic agricultural area (ha)	549	13,423	2,900	2,797	659
Organic share of total agricultural land (%)	0.08	0.39	2.9	1.09	0.03
Organic forest/wild collection (ha)	380,612	n.a.	500,000	143,451	n.a.
Organic land in conversion (ha)	66	5,895	1,226	1,035	n.a.
Total No. of organic operators	150	434	650	308	n.a.
No. producers	131	333	650	308	n.a.
No. processors	98	123	119	3	n.a.
No. exporters	54	48	7	n.a.	n.a.
No. importers	n.a.	50	6	n.a.	n.a.

*Note: An operator can belong to more than one category.*

*Source: Cakraj (2019)*

of the factors influencing farmers' decision to adopt organic farming.

In Albania, but also in other South-Eastern Europe (SEE) countries, the organic sector is still in the early stages of development and can be considered a small niche market. In terms of cultivated area, only around 550 ha of land was certified as organic in Albania during 2017, which is significantly lower when compared to other countries in the region (Table 1). However, while the cultivated land occupies a significantly smaller area, the organic sector in Albania is dominated by forest and wild collection areas with a total of 380,612 ha (Table 1).

Official data regarding land in conversion indicate a potential growth of the sector in the near future. The total number of organic operators was 150 in 2017 where majority of them were producers (Table 1). Moreover, medicinal and aromatic organic plants (organic MAPs) make up the majority share of organic production and exports of Albania (Bernet and Kazazi, 2012). In 2017, wild MAPs accounted for 72% of the total production, while other organic products such as strawberries, herbs and fresh vegetables continue to be produced in modest quantities (Cakraj, 2019). Most of the output is export driven (mainly with European and regional destination countries), while there is very limited domestic demand for organic products despite an explicit preference of consumers for organic products (Imami *et al.*, 2017; Skreli *et al.*, 2017).

Given the need to strengthen the organic sector, the Albanian government supports farmers through subsidies under organic farming schemes and acknowledges organic farming as a diversification activity and promising sector which can withstand competitive pressure from external markets. However, the number of organic operators during the recent decade, while increasing, continues to be limited. The failure of integrating farmers into organic agriculture might be due to limitations in terms of knowledge, input and transition costs, concerns regarding plant protection, or market expectations (Curtis and Quarnstrom, 2019; Mzoughi, 2011; Nelson *et al.*, 2015).

Utilizing empirical evidence drawn from a structured survey with organic and nonorganic farmers in Albania, this paper contributes to the existing gap in the literature on the uptake of organic farming in a post-socialist country which is also under the process of integration toward European Union (EU). In order to contribute to the literature, in addition to the frequently sourced factors from the Theory of Planned Behavior (TPB) (see Yanakitkul and Aungvaravong, 2019) the authors also make use of perception-related factors (e.g., EU agriculture policy opportunities). A few studies, such as Zagata *et al.* (2020), have attempted to provide an overview of the organic agriculture trends in a post-socialist country, and found that organic agriculture is an outcome of policy measures rather than social will. Moreover, similar to

Crisostomo *et al.* (2012), organic farming policy is predominantly driven by EU policies, as it happens even in European Member countries. Albania, being a candidate country, risk to behave similarly to Member countries (Crisostomo *et al.*, 2012), where compliance with EU agriculture policies is a guiding principle for the sector, while national debate emerges generally scarce. To the best of the authors' knowledge, there is no study analyzing factors influencing organic farming adoption by Albanian farmers. Different from the findings of Zagata *et al.* (2020), the Albanian organic sector is driven primarily by foreign market demand rather than policies or social patterns. While the former is important to shift the farmers' perceptions on returns from investments, the latter is important for helping farmers to overcome certification barriers and take the first step toward organic agriculture.

In this paper we explored various factors influencing organic farming adoption, namely: perceived behavior control factors, subjective norms, information awareness, risk perception, attitudes towards protecting the environment, and perceived EU policy opportunities. The results have strong implications for the design of a proper policy environment for promoting organic agriculture. The rest of the paper is structured as follows: the next section describes the theoretical and conceptual framework applied as along with the main hypotheses, section 3 outlines the methodology, section 4 describes the results and, finally, section 5 provides some concluding remarks and discussions.

## 2. Theoretical and Conceptual Framework

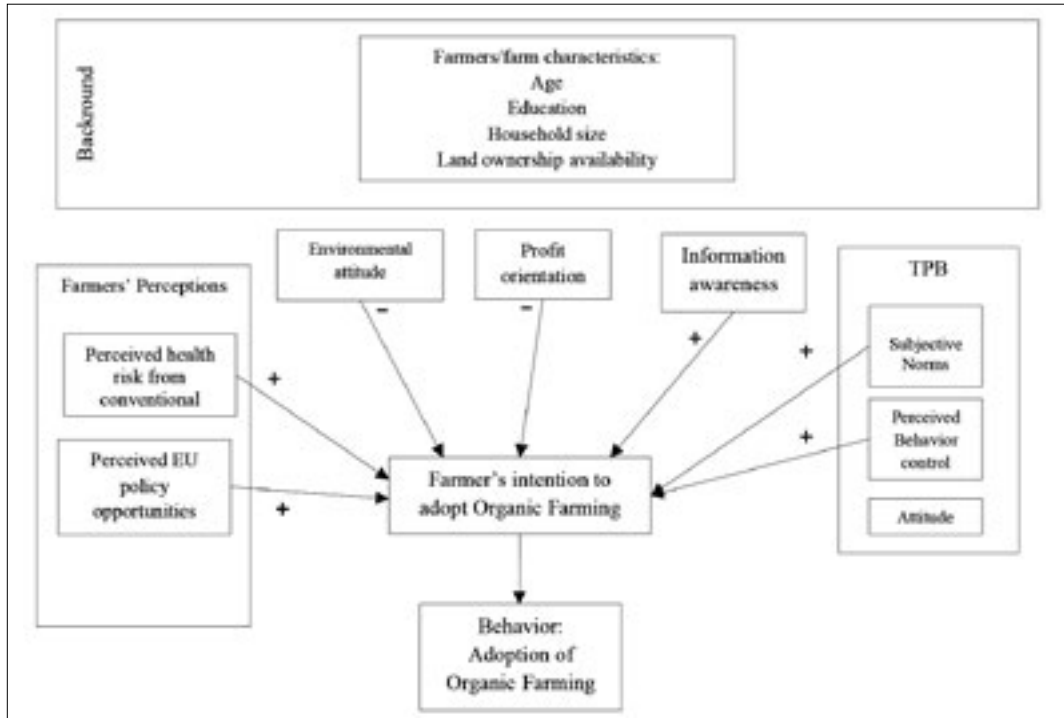
Over the last few decades, the behavior of farmers has been explored through various theoretical and conceptual bases (i.e. Theory of Planned Behavior (TPB), Prospect Theory, Value-Belief-Norm Theory, Protection Motivation Theory, and Psychological Distance Theory). Specifically, for exploring and explaining farmers' behavior regarding the adoption of organic farming, different researchers have applied the TPB (see Hattam, 2006; Läpple and Kelley, 2013). Therefore, the conceptual framework of this paper will be based primarily on the main concepts used by Fishbein and Ajzen (1975). Despite the TPB

framework, the paper will also employ a variety of background indicators – such as farmers' perceptions, social and demographic characteristics, etc. (see Figure 1). This approach seems to include all possible determinants of performing a particular behavior, as the motivational factors alone (i.e. TPB concepts) may apply to some behaviors while the performance of some other behaviors is determined to some extent by factors such as the required opportunities and resources (see Ajzen, 1988). Thus, as long as the farmer has the required opportunities and resources, and intends to convert to organic farming, he or she should succeed in doing so.

Under the TPB, the core determinants of farmers intentions to adopt organic farming are subjective norms, perceived behavioral control, and attitude towards the behavior (see Hall and Rhoades, 2010; Hattam, 2006; Läpple and Kelley, 2013; Mzoughi, 2011; Yanakittkul and Aungvaravong, 2019). The concept of *subjective norms* is used to indicate the perceived social pressure to convert or not to convert to organic farming, and *perceived behavioral control* is used to indicate farmers' perceptions of their ability to adopt organic farming. On the other hand, the concept of *attitudes* refers to the extent of favoring the conversion to organic. Accordingly, the more favorable the attitude and subjective norms towards organic farming conversion and the greater the perceived behavioral control, the stronger the intention to convert to organic farming.

According to Ajzen and Fishbein (2005: 53) “*When people believe that others would expect them to perform the behavior or are themselves performing the behavior, the subjective norm will exert pressure to engage in the behavior*”. Therefore, a farmer's intention to convert to organic farming will be positively influenced if other neighbor farmers will convert as well, and if information and news releases from media is favorable to organic farming conversion (see Table A.1 in the Appendix A). Furthermore, perceived behavioral control is measured through control statements that relate to farmers' self-confidence in regard to carrying out organic farming, certifying, and controlling productivity, as well as being informed about the differences from conventional farming (see Table A.1 in the Appendix A). Thus, one can argue that

Figure 1 - Conceptual framework of the study.



Source: Authors' elaborations based on Ajzen and Fishbein (2005).

having high self-confidence and knowledge in carrying out organic farming is positively associated with farmers' intentions to convert.

Ajzen and Fishbein (2005) suggest that attitudes towards a particular behavior will affect behavioral beliefs and consequently the intention of carrying out that particular behavior. A number of empirical studies have used farmers' environmental attitudes as factors associated with the adoption of organic farming (namely Burton *et al.*, 2003; Canavari *et al.*, 2008; De Cock, 2005; Genius *et al.*, 2006; Haris *et al.*, 2018; Laple, 2010; Laple and Van Rensburg, 2011; Mzoughi, 2011; Rezvanfar *et al.*, 2011). Consequently, environmental attitudes of farmers are operationalized with a set of reversed items (i.e., negative environmental attitudes, see Table A.1 in the Appendix A). Specifically, the more favorable (or unfavorable) the attitude towards environmental values of organic farming practices, the stronger (the weaker) the intention to convert.

Other factors are important too. Sarker *et al.* (2009) argue that farmers are assumed to hold spe-

cific perceptions regarding certain effects of changing pattern of production and these perceptions can be potential determinants of the adoption decision. Namely, if the farmer perceives that organic farming leads to an improved supply of healthy foods and reduces the impact of agrochemicals on the environment, it is more likely that he converts to organic farming (*ibid*). Thus, this study assumes that farmer perceptions regarding EU policy opportunities (such as technologies, new market opportunities, decreased costs, etc.) and perceived risks from conventional farming will positively affect farmers' intentions to engage in organic farming (see Table A.1 in the Appendix A).

The indicator "perceptions regarding EU policy opportunities" is an innovative control factor added to the literature of EFA regarding organic farming adoption. The question is not used for assessing farmers' preferences (being hostile to pro-EU integration), but to explore their perception of opportunities (or costs) created from the integration into the single market. Depending on the level of information and type of ex-

periences with the EU market, farmers may be prone to perceiving the benefits, such as price markups. Therefore, we expect a positive relationship with the organic adoption decision. It might also be that the additional rules restricting export to the EU, for instance those related to safety and quality, lower farmers' perceptions of policy opportunities and create a negative association with the decision to convert to organic. However, considering that farmers are not direct exporters, we expect that they see opportunities rather than threats from the EU market. Also, it may be that the relationship is not significant since their ongoing experience with the market (the majority of these farmers are suppliers of organic MAPs for export-oriented value chain) is providing such opportunities currently.

The literature of adoption models suggests that farmers make decisions in order to maximize their expected profits (see Rogers, 1995; Parra López and Calatrava Requena, 2005). For instance, Reimer *et al.* (2012) shows that farmers, concerned most with profitability, were less likely to adopt organic farming. Having said that, it can be argued that the higher the farmers' orientation towards profit, the lower the likelihood to adopt organic farming; since converting would require a high amount of certification costs, information, time, and possibly present problems with production yields.

The adoption of organic farming systems is an information-intensive process; therefore, a factor related to information awareness would complement the study's conceptual framework (see for example from Mediterranean countries: Cukur, 2015; Läpple, 2010; Läpple and Van Rensburg, 2011). By information awareness the study implies the ability to capture, analyze, evaluate, and use information by receiving the highest level of benefit from it. One can argue that the higher the level of information awareness (i.e., information about legislation, rules, requirements, and standards of organic farming - both national and international) the more likely is that farmers will intend to convert to organic.

Lastly, the model also controls for socio-economic factors similar to other Mediterranean countries studies such as age (Genius *et al.*, 2006;

Isin *et al.*, 2007), education (see for instance Genius *et al.*, 2006; Isin *et al.*, 2007; Cukur, 2015), household size (see for instance Läpple and Van Rensburg, 2011), and land ownership availability (see for instance Alexopoulos *et al.*, 2010; Genius *et al.*, 2006; Liu *et al.*, 2019).

Based on the discussion made so far, the hypotheses that emerge are:

*H1 - The more favorable the attitude and subjective norms towards organic farming conversion and the greater the perceived behavioral control, the higher the farmers' likelihood to convert to organic farming.*

*H2 - Farmers' perceptions of risks from conventional farming and perception towards EU policy opportunities are positively associated with farmers' tendency to adopt organic farming.*

*H3 - Conversion to organic farming is positively affected by farmers' information awareness.*

*H4 - Environmental (non-preferable) attitudes and profit orientation are negatively associated with farmers' likelihood of adopting organic farming.*

The complete conceptual framework applied with hypotheses directions are presented in Figure 1.

### 3. Material and methods

#### Questionnaire design

A structured farm questionnaire was designed to collect the primary data from conventional and organic farmers in different regions of Albania. The design of the questionnaire was based on the literature review as well as on the organization of three focus groups held with members of Albanian Organic Agriculture Association (AAOA) and other affiliated farmers in April and May 2019, in Malesi e Madhe (Shkoder), Lushnje and Durres, which represent also the main areas where activities of organic agriculture are carried out. The objective of the focus groups was to identify main challenges of the organic agriculture in Albania as well as to prioritize the main factors influencing the farmers' choice to convert. A SWOT analysis was carried with each focus group. The meetings helped the researchers to select the main factors and introduce in the **questionnaire through the use of separate con-**

structs. In order to guide the discussions a list of factors was presented and discussed with the members in the final phase of the focus group.

The farm questionnaire was designed in four sections. The first section included questions relating to social and demographic characteristics of farmers. The second section included questions on the profile of the farm such as size and main activities. Meanwhile, the third part of the questionnaire included questions that generally relate to information on sustainable agricultural policies and practices and expectations for Albania's potential EU membership. The final section of the questionnaire consisted of questions on incomes that respondents benefit from agricultural activities in general and organic farming.

### Data collection

Interviews were conducted in June and July 2019. Interviewers were trained to conduct interviews with farmers.

The area of the survey was selected based on the highest concentration of members of AOAA, namely Tirana, Durres, Malesia e Madhe (Shkoder), Lushnje and Vlora. The survey considered as a population the members of the Albanian Association of Organic Agriculture which have been in the past subject of capacity building activities in the sphere of organic agriculture. Currently, there are no more than 131 farms certified in Albania and

a similar number in the process of certification. Considering these farms as well as the number of the members of the AAOA, the overall population is less than 1000 farms. The sample selection was made using a purposive sample, where those farmers who had previously part of trainings and capacity building events with AAOA and attempted to follow organic farming procedures were first asked, and following a *snowball* approach, other farmers were also identified. The representatives of the AAOA supported the surveying activity by contacting the members and carrying the interviews, under to supervision of the group of researchers. A list of members was used by There were no restrictions on the farming activities, therefore the sample includes a variety of farmers belonging to sectors such as olives, vineyards, orchards, vegetables, MAPs, honey, etc.

Data collected through the questionnaire were subject to controlling and revisions. The surveys were validated by tracing back 10% of the farms through phone calls. Data were entered into excel spreadsheets and processed through SPSS and R.

### Sample characteristics

In total, 127 Albanian producers were included in the sample (farmers who are undergoing a certification process, certified (organic), and conventional). Table 2 below shows a summary

Table 2 - Socio-demographic characteristics of the sample.

Age	No.	Percent	Education level	No.	Percent
<30	3	2%	Primary education	26	20%
31-40	9	7%	Agricultural secondary education	43	34%
41-50	21	17%	Other secondary education	40	31%
51-60	44	35%	University	18	14%
61<	50	40%	Total	127	100%
Total	127	100%			
Gender	No.	Percent	Employment	No.	Percent
Male	122	96%	Employed in the public sector	13	10%
Female	5	4%	Employed in the private sector	9	7%
Total	127	100%	Self-employed in non-agricultural sector	3	2%
			Self-employed in the agricultural sector	71	56%
			Other	31	24%
			Total	127	100%

Source: Authors' elaboration based on survey results.

Table 3 - Definitions of variables included in the model, their operationalization, and hypotheses.

<i>Independent Variable</i>	<i>Operationalization</i>	<i>Hypothesis direction</i>
Subjective norms	EFA based on 5-point scale items*	+
Perceived behavior control	EFA based on 5-point scale items*	+
Environmental (opposing) attitudes	EFA based on 5-point scale items*	-
Perceived EU policy opportunities	EFA based on 5-point scale items*	+
Perceived risk from conventional farming	EFA based on 5-point scale items*	+
Profit orientation	EFA based on 5-point scale items*	-
Information awareness	EFA based on 5-point scale items**	+
Age	Age in years (number)	Control variable
Land ownership availability	Area in hectares	Control variable
Household size	The size of the farm household (number)	Control variable
Education level	Education level (categories)	Control variable
Primary education	Dummy variable 1=Primary education and 0=other	Control variable
Agricultural Secondary Education	Dummy variable 1=Agricultural Secondary and 0=other	Control variable
Other Secondary Education	Dummy Variable 1=Other Sec. and 0=other	Control variable

Note: \*5-point scale items: Level of agreement/disagreement (1-totally disagree... to 5-totally agree) with selected statements; \*\*5-point scale items: 1-Not at all... to 5-very much.

of the socio-demographic profile of the surveyed farmers. Only 4% of the sample are women, while 1/3 of them have completed secondary education in the field of agriculture, 56% of them are (self) employed in the agriculture sector (agricultural activities being the main source of household incomes). A comparison with the main characteristics of farmers in the Census of Agriculture Holdings in Albania show that there is no evident sample bias. The figures are similar with the Census of 2012 which show that 88% of the farmers have a primary or secondary education, and that only 6% of farm heads are women (MARD, 2013). The number of farmers with University Education is slightly higher, probably due to challenging characteristics in terms of knowledge required by operators in the organic sector. Moreover, the average age of farms head in the Census is 45 years, which considering the time difference and the intergeneration transfer, represent a similar trend<sup>1</sup>.

## Data analyses

In order to explore the determinants of the decision for farmers to adopt organic farming, the study makes use of compositions of variables which are constructed through Exploratory Factor Analysis (EFA) (see Table A.1 in the Appendix A). The main variables added are perceived behavior control, perceived EU policy opportunities, information awareness, environmental attitude, farmers perception of health risk from conventional farming, profit orientation and subjective norms influence. In order to develop measures for these variables, all the items representing them are entered in the EFA. As it is shown in Table 3, the EFA revealed 7 factors by using principal component applied to the items of the variables presented above. These 7 factors explain the structure of the data set accounting for 76.891% of the total variation. KMO test of sampling adequacy

<sup>1</sup> The Census of Agriculture Holdings in Albania carried in 2012 represented similar figures. The next Census of Agriculture Holdings in Albania will take place in 2023. Therefore, no comparisons can be made with more recent surveys of Censuses.

cy (0.756) and the Barlett's test of sphericity ( $\chi^2=2258.271$ ;  $df=300$ ;  $sig<0.001$ ) confirm the appropriateness of the factor analysis (refer to Field, 2009).

While it is possible to extract as many factors as there are items, it was decided to extract only those factors that fulfilled the Kaiser's criterion for factor retention were extracted. Kaiser (1960) recommended retaining all factors with eigenvalues greater than one, and as a result, all factor loadings mark values more than Stevens (2012) recommended value of 0.40, providing evidence of constructs convergent validity.

Next, logistic regression is employed to explore the relationships between the developed latent variables and farmers' decisions to engage in organic farming (the model also controls for socio-economic factors such as age, education, household size, and land ownership availability). This model was selected considering the dichotomous nature of the dependent variable (dummy), which is composed of farmers that are in process of certifying and certified as organic (1) versus conventional producers (0). Table 3 presents the operationalization of model variables and hypotheses.

#### 4. Results

The results obtained from the logistic regression model are presented in Table 3. Results reveal that perceived behavioral control, information awareness, subjective norms (H1), and perceived risk from conventional farming (H2) positively affect the likelihood of converting to organic farming. On the other hand, perceived opportunities from EU policies (H2) and non-preferable attitudes towards environmental values of organic farming (H4) were negatively associated with the likelihood of converting to organic farming. Surprisingly, the variable of profit orientation was insignificant.

As the level of information awareness (on legislation/standards of organic production) increases, the likelihood of converting increases as well. Similar results (i.e. positive association with adoption of organic farming) are observed for the variables of perceived risk from conventional farming and subjective norms.

Furthermore, among control variables, farmers and farm characteristics are not significantly related to the likelihood of adopting organic farming, with the exception of land ownership availability and vocational education in agriculture. Thus, those

Table 4 - Regression analyses dependent variable: organic farming adoption/conversion.

	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>Sig.</i>	<i>Exp(B)</i>	<i>H</i>
<i>Age</i>	0.014	0.027	0.253	0.615	1.014	
<i>Household size</i>	-0.320	0.279	1.316	0.251	0.726	
<i>Land ownership availability</i>	0.037	0.017	4.575	0.032*	1.038	
<i>Perceived behavioral control</i>	0.691	0.257	7.238	0.007*	1.995	√ H1
<i>Perceived EU policy opportunities</i>	-0.643	0.267	5.815	0.016*	0.526	× H2
<i>Information awareness</i>	1.013	0.305	11.046	0.001*	2.753	√ H3
<i>Environmental (opposing) attitude</i>	-1.089	0.306	12.709	0.000*	0.336	√ H4
<i>Perceived risk from conv. farming</i>	0.729	0.274	7.096	0.008*	2.073	√ H2
<i>Profit orientation</i>	-0.061	0.242	0.063	0.802	0.941	× H4
<i>Subjective norms</i>	0.755	0.283	7.111	0.008*	2.129	√ H1
<i>Education level</i>			5.732	0.125		
<i>Primary education</i>	1.443	1.035	1.944	0.163	4.234	
<i>Agricultural Secondary Education</i>	2.131	0.970	4.822	0.028*	8.422	
<i>Other Secondary Education</i>	1.100	0.951	1.337	0.248	3.003	
<i>Constant</i>	-2.562	1.957	1.715	0.190	0.077	

Note:  $p<0.05 = 0.528$  (Nagelkerke), 0.389 (Cox & Snell)



farms having a household head with secondary education in agricultural sciences and with higher availability of land ownership, the likelihood of the farmer to convert to organic agriculture rises.

## 5. Concluding remarks and discussion

During the last decade, the organic agriculture sector has experienced rapid growth due to market-related factors, resource availability, and consumer preferences. For the case of Albania, similar to other developing countries, the organic sector is export-driven and mainly based on primary production. Under these conditions, the most important market in terms of value created is the production and export of wild MAPs. Thus, there is a need to identify and assess the role of various factors influencing the decision to adopt organic farming in Albania, considering its post-socialist transformation and challenges ahead in the context of the integration into EU market.

The results show that the probability of adopting organic farming is positively associated with farmers perceived behavioral control. Similar results were also obtained from other studies (see for instance Hattam, 2006; Läßle and Kelley, 2013; Sharifuddin *et al.*, 2018; Yanakitkul and Aungvaravong, 2020). Perceived behavior control is based on the self-confidence and know-how of the farmer, as well as on the supportiveness of the surrounding environment. Additionally, subjective norms appear to be also positively associated with the probability of converting to organic farming. Similarly, this finding has also been proven by other studies such as Hall and Rhoades (2010), Hattam (2006), Läßle and Kelley (2013), Sharifuddin *et al.* (2018), Yanakitkul and Aungvaravong (2020). Subjective norms are derived from information collected by media advertising and fellow farmers in the village. The influence by the community (i.e., neighbor farmers) or the media are important sources of relevant information and experience sharing for farmers to adopt organic farming. Same as recent studies of Sharifuddin *et al.* (2018) and Yanakitkul and Aungvaravong (2020), results show that farmers' family, community, group norms and influential people affect farmers decision to convert to organic farming.

Information awareness positively affects farmers' engagement in organic farming. Farmers that are informed about organic farming tend to engage more in this type of activity. This is similar to the findings of Genius *et al.* (2006), Hattam (2006) and Cukur (2015). Access to information sources might expand their knowledge on market indices and production technology as the number of agricultural information sources used is a significant factor for adoption of organic practices.

Interestingly, farmers that perceive risk from conventional farming are more likely to adopt organic farming. In addition, farmers who are more prone to attitudes of protecting the environment express a higher probability of adopting organic farming. Consequently, the higher the level of environmental concern the higher the probability to enter into the organic sector. This indicates that Albanian farmers perceive that organic farming is better for the environment. Similarly, studies such as Läßle (2010), Reimer *et al.* (2012) and Haris *et al.* (2018) found a positive association with regard to environmental attitude and organic farming conversion.

Surprisingly, perceived EU policy opportunities are negatively associated with the probability to adopt organic farming. It seems that they are more aware of the strict rules associated with access to this market compared to conventional farming. Moreover, by not being higher up in the export chain, farmers have perceived threats (strict rules on safety which increase their costs and losses) rather than benefits (the positive difference of price margins experienced in the EU market compared to the rest). This is supported by the fact that no significant relationship between adopting organic farming and being a profit-oriented farmer has been found. The lack of distinction within the domestic market puts conventional farmers in a vulnerable position when embracing organic farming and joining an expanding single market with more rules and opportunities, such as the EU single market. Results might also be influenced by the type of information and awareness provided in the past regarding EU policies.

These results are evidence for a needed intervention to improve information / awareness

on EU opportunities. An information campaign in regard to EU legislation and market information would benefit policy makers and the sector operators.

There is no significant relationship between adopting organic farming and being a profit-oriented farmer. This is different from the findings of Curtis and Quarnstrom (2019) and Läßle (2010), but similar with Reimer *et al.* (2012). There are two major reasons which support this finding. First, in the foreign market (mainly in the Medicinal and Aromatic Plants which compose more than 95% of the land covered with organic farming) the exporters do not benefit from high margins in the market rather than from more secure market space. Considering that the highest share of producers is related to MAPs production, the farmers find no clear profit pattern in the current market. In the MAPs sector there is no market mark-up, but rather market consistency. Second, the internal market does not provide clear indication to the consumers about the organic attributes due to weak marketing and weak consumers signals. Moreover, lack of quality standards in the market make the organic farm products not clearly distinguished in terms of price. Thus, there are no positive market margins available for farmers in the market for organic products. This is similar to the findings of Zagata *et al.* (2020), which find that in post-socialist countries organic agriculture is not driven by activities of a social (organic) nature due to the fragile existence of the institutional environment (i.e. civil society, policy, and consumers).

Farmer and farm characteristics, except for land availability and secondary education in agricultural sciences, are not significantly related with the probability of adopting organic farming. As expected, the probability of being engaged in organic farming is closely linked with the farm head having pursued agricultural vocational school. Lastly, farms owning more land (or being wealthier) have a higher probability of adopting organic farming, same as other study cases from Mediterranean countries such as Greece (Genius *et al.*, 2006; Alexopoulos *et al.*, 2010) or other developed countries such as USA (Liu *et al.*, 2019). Since the majority of organic farming is based on MAPs, the

share of owned land increases the security of planting perennial crops and to fulfilling contracts in the future which is of high concern in Albania (Zhlhima *et al.*, 2010). This finding is actually not in line with other studies, which perceive limited land availability as a supporting factor for conventional farming. The result is acceptable since structural limitations and high fragmentation is a widespread phenomenon in Albania (Ciaian *et al.*, 2018) make land availability a supporting factor for organic, which is not of concern in EU countries.

In conclusion, the study results are helpful evidence for the need to address current market failures in supporting the increased adoption of organic farming and for establishing an effective agricultural policy for supporting the conversion from conventional agriculture. The results implore an increase of information and awareness vis-a-vis the provision of a more intensive and CAP-oriented policy for promoting organic agriculture. As in the case of Crisostomo *et al.* (2012), organic farming policy in Albania is expected to be predominantly driven by EU policies, therefore compliance with EU agriculture policies should be a guiding principle for the operators, especially those oriented toward exports. A larger focus should be given to overall consumers' knowledge in order to increase knowhow and raise an overall level of civic participation in the national debate. In order to widen organic practices, policymakers might attempt certification in groups, considering the influence of factors related to information and subjective norms. The group approach also makes the diffusion of information and awareness easier. Capacity building activities such as coaching and training should be guided by a precautionary process of identifying farmers and groups of farmers with similar approaches to land resources. Here, the spatial neighborhood effect takes an important role, which supports the findings of Wollni and Andersson (2014).

In overall, access to services, information sources, governmental support policies and continuing trainings are among the key drivers for promoting the sustainable adoption of organic farming. Similar to Papadopoulos *et al.* (2018), attitudes to organic farming are as-

sociated with economic reasons, but to a lesser extent when compared to conventional farming. Therefore, budgetary support policies should act as a guiding signal rather than filling the costs disadvantages compared to conventional farming. Therefore, premium criteria in national support schemes and IPARD programme measures should be introduced in order to incentivize farmers' orientation toward organic farming and enable the sector orientation toward the European Green Deal principles.

## References

- Ajzen I., 1988. *Attitudes, personality, and behavior*. Chicago: Dorsey.
- Ajzen I., Fishbein M., 2005. The Influence of Attitudes on Behavior. In: Albarracín D., Johnson B.T., Zanna M.P. (eds.), *The handbook of attitudes*. New York: Lawrence Erlbaum Associates Publishers, pp. 173-221.
- Alexopoulos G., Koutsouris A., Tzouramani I., 2010. Should I stay or should I go? Factors affecting farmers' decision to convert to organic farming as well as to abandon it. In: Darnhofer I., Grötzer M. (eds.), *Building sustainable rural futures: The added value of systems approaches in times of change and uncertainty. 9<sup>th</sup> European IFSA Symposium, Vienna, Austria*. Vienna: BOKU - University of Natural Resources and Applied Life Sciences, pp. 1083-1093.
- Ashari, Sharifuddin J., Mohammed Z., Terano R., 2018. Paddy farmer's perception and factors influencing attitude and intention on adoption of organic rice farming. *International Food Research Journal*, 25(S2): S135-S145.
- Bernet T., Kazazi I.S., 2012. *Organic agriculture in Albania - Sector Study 2011*. Tirana: Swiss Coordination Office in Albania (SCO-A), Research Institute of Organic Agriculture (FiBL) and Ministry of Agriculture, Food and Consumer Production of Albania (MoAFCP).
- Biao X., Xiaorong W., Zhuhong D., Yaping Y., 2003. Critical impact assessment of organic agriculture. *Journal of Agricultural and environmental Ethics*, 16(3): 297-311.
- Burton M., Rigby D., Young T., 2003. Modelling the adoption of organic horticultural technology in the UK using duration analysis. *Australian Journal of Agricultural and Resource Economics*, 47(1): 29-54.
- Cakraj R., 2019. Albania – Country Profile. In: Madžarić S., Al Bitar L., Bteich M.R., Pugliese P. (eds.), *Mediterranean Organic Agriculture Network. Report 2019*. Bari: CIHEAM, pp. 8-13.
- Canavari M., Cantore N., Lombardi P., 2008. *Factors explaining farmers' behaviours and intentions about agricultural methods of production. Organic vs. conventional comparison*. 16<sup>th</sup> IFOAM Organic World Congress, Modena, Italy, June 16-20.
- Ciaian P., Rajcaniova M., Guri F., Zhllima E., Shahu E., 2018. The impact of crop rotation and land fragmentation on farm productivity in Albania. *Studies in Agricultural Economics*, 120(3): 116-125.
- Crisostomo C., Bteich M.R., Moschitz H., Pugliese P., 2012. Organic farming policy in Portugal: analysis of the policy network. *New Medit*, 11(4S): 27-30.
- Cukur T., 2015. Conventional Dairy Farmers Converting to Organic Dairy Production in Turkey. *Polish Journal of Environmental Studies*, 24(4): 1543-1551.
- Curtis K., Quarnstrom D., 2019. Untangling the Economic and Social Impediments to Producer Adoption of Organic Wheat. *Journal of Food Distribution Research*, 50(1): 105-113.
- de Cock L., 2005. *Determinants of Organic Farming Conversion*. Paper presented at the International Congress of the European Association of Agricultural Economists, Copenhagen, Denmark, August 23-27.
- Field A., 2009. *Discovering Statistics Using SPSS (and sex and drugs and rock 'n' roll)*, 3<sup>rd</sup> ed. London: Sage.
- Fishbein M., Ajzen I., 1975. *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.
- Genius M., Christos P.J., Vangelis T., 2006. Information acquisition and adoption of organic farming practices: Evidence from farm operations in Crete, Greece. *Journal of Agricultural and Resource Economics*, 31(1): 93-113.
- Hall K., Rhoades E., 2010. Influence of subjective norms and communication preferences on grain farmers' attitudes toward organic and non-organic farming. *Journal of Applied Communications*, 94(3-4): 51-65.
- Hattam C., 2006. *Adopting organic agriculture: An investigation using the Theory of Planned Behaviour*. Poster presented at the Annual Meeting of the International Association of Agricultural Economists, Queensland, Australia, August 12-18.
- Imami D., Skreli E., Zhllima E., Chan C., 2017. Consumer attitudes towards organic food in the Western Balkans-the case of Albania. *Economia agro-alimentare*, 19(2): 243-257.
- Isin F., Cukur T., Armagan G., 2007. Factors affecting the adoption of the organic dried fig agriculture sys-

- tem in Turkey. *Journal of Applied Sciences*, 7(5): 748-754.
- Kaiser H.F., 1960. The application of electronic computers to factor analysis. *Educational and Psychological Measurement*, 20: 141-151.
- Läpple D., 2010. Adoption and abandonment of organic farming: an empirical investigation of the Irish drystock sector. *Journal of Agricultural Economics*, 61(3): 697-714.
- Läpple D., Kelley H., 2013. Understanding the uptake of organic farming: Accounting for heterogeneities among Irish farmers. *Ecological Economics*, 88(C): 11-19.
- Läpple D., Van Rensburg T., 2011. Adoption of organic farming: Are there differences between early and late adoption? *Ecological economics*, 70(7): 1406-1414.
- Liu X., Pattanaik N., Nelson M., Ibrahim M., 2019. The Choice to Go Organic: Evidence from Small US Farms. *Agricultural Sciences*, 10(12): 1566-1580.
- MARD, 2013. *Strategy for Agriculture and Rural Development (ISARD) 2014-2020*. Ministry of Agriculture and Rural Development Albania. <https://anrd.al/wp-content/uploads/2016/04/Strategjia-Nder-Sektoriale-ZhB.pdf>.
- Mohamed Haris N.B., Garrod G., Gkartzios M., Proctor A., 2018. *The Decision to Adopt Organic Practices in Malaysia; a Mix-method Approach*. Paper presented at the Agricultural Economics Society 92<sup>nd</sup> Annual Conference, Warwick University, Coventry, UK, April 16-18.
- Mzoughi N., 2011. Farmers adoption of integrated crop protection and organic farming: Do moral and social concerns matter? *Ecological Economics*, 70(8): 1536-1545.
- Nelson M.C., Styles E.K., Pattanaik N., Liu X., Brown J., 2015. *Georgia Farmers' Perceptions of Production Barrier in Organic Vegetable and Fruit Agriculture*. Paper presented at the Southern Agricultural Economics Association Annual Meeting, Atlanta, Georgia, January 31 - February 3.
- Papadopoulos S., Zafeiriou E., Karelakis C., Koutroumanidis T., 2018. Organics or not? Prospects for uptaking organic farming. *New Medit*, 17(1): 13-22.
- Parra López C., Calatrava Requena J., 2005. Factors related to the adoption of organic farming in Spanish olive orchards. *Spanish Journal of Agricultural Research*, 3(1): 5-16.
- Qiao Y., Martin F., Cook S., He X., Halberg N., Scott S., Pan X., 2018. Certified organic agriculture as an alternative livelihood strategy for small-scale farmers in China: A case study in Wanzai County, Jiangxi Province. *Ecological Economics*, 145: 301-307.
- Rana J., Paul J., 2017. Consumer behavior and purchase intention for organic food: A review and research agenda. *Journal of Retailing and Consumer Services*, 38: 157-165.
- Reimer A.P., Thompson A.W., Prokopy L.S., 2012. The multi-dimensional nature of environmental attitudes among farmers in Indiana: implications for conservation adoption. *Agriculture and Human Values*, 29(1): 29-40.
- Rezvanfar A., Eraktan G., Olhan E., 2011. Determine of factors associated with the adoption of organic agriculture among small farmers in Iran. *African Journal of Agricultural Research*, 6(13): 2950-2956.
- Rogers E.M., 1995. Lessons for guidelines from the diffusion of innovations. *Joint Commission Journal on Quality and Patient Safety*, 21(7): 324-328.
- Sarker M.A., Itohara Y., Hoque M., 2009. Determinants of adoption decisions: The case of organic farming (OF) in Bangladesh. *Extension Farming Systems Journal*, 5(2): 39-46.
- Seufert V., Mehrabi Z., Gabriel D., Benton T.G., 2019. Current and Potential Contributions of Organic Agriculture to Diversification of the Food Production System. In: Lemaire G., De Faccio Carvalho P.C., Kronberg S., Recous S. (eds.), *Agroecosystem Diversity. Reconciling Contemporary Agriculture and Environmental Quality*. London: Academic Press, pp. 435-452.
- Skreli E., Imami D., Chan C., Canavari M., Zhllima E., Pire E., 2017. Assessing consumer preferences and willingness to pay for organic tomatoes in Albania: A conjoint choice experiment study. *Spanish Journal of Agricultural Research*, 15(3): e0114.
- Stevens J., 2012. *Applied multivariate statistics for the social sciences*. New York: Routledge.
- Willer H., Lernoud J., Kemper L., 2018. The World of Organic Agriculture 2018: Summary. In: Willer H., Lernoud J. (eds.), *The World of Organic Agriculture. Statistics and Emerging Trends 2018*. Frick: Research Institute of Organic Agriculture FiBL; Bonn: IFOAM-Organics International, pp. 22-31.
- Wollni M., Andersson C., 2014. Spatial patterns of organic agriculture adoption: Evidence from Honduras. *Ecological Economics*, 97: 120-128.
- Xhoxhi O., Keco R., Imami D., Skreli E., Musabelliu B., 2019. The role of intermediaries' power on contracting decision between farmers and intermediaries. *New Medit*, 18(3): 3-16.
- Yanakittkul P., Aungvaravong C., 2019. Proposed conceptual framework for studying the organic

- farmer behaviors. *Kasetsart Journal of Social Sciences*, 40(2): 491-498.
- Yanakittkul P., Aungvaravong C., 2020. A model of farmers intentions towards organic farming: A case study on rice farming in Thailand. *Heliyon*, 6(1): e03039.
- Zagata L., Hrabák J., Lošťák M., 2020. Post-socialist transition as a driving force of the sustainable agriculture: A case study from the Czech Republic. *Agroecology and Sustainable Food Systems*, 44(2): 238-257.
- Zhllima E., Viaggi D., Müller D., 2010. Property rights to land and its perception in rural part of central Albania. *New Medit*, 9(3): 56-64.

## Appendix A

Table A.1. Exploratory Factor Analysis.

Rotated Component Matrix	Component							
	$\alpha$	F1	F2	F3	F4	F5	F6	F7
F1. Perceived behavior control	0.903							
Farmers have the self-confidence to carry out OF*.		0.879						
Farmers have self-confidence towards certifying as organic.		0.851						
Farmers know the difference between organic and conventional farming.		0.811						
Farmers know the processes and techniques of OF.		0.767						
Farmers have the self-confidence to control productivity under organic farming.		0.744						
Farmers family members support him to be certified as organic.		0.634						
F2. Perceived EU policy opportunities	0.905							
More information opportunities regarding OF.			0.895					
More opportunities towards technologies.			0.845					
New market opportunities for organic products.			0.835					
Decreased prices of agrochemicals.			0.763					
Clear differences between organic and conventional products.			0.701					
F3. Information awareness	0.865							
Level of information about OF legislation in Albania.				0.878				
Level of information about OF regulations and standards in EU.				0.868				
Level of information about OF policies in EU.				0.792				

<i>Rotated Component Matrix</i>	<i>Component</i>							
	<i><math>\alpha</math></i>	<i>F1</i>	<i>F2</i>	<i>F3</i>	<i>F4</i>	<i>F5</i>	<i>F6</i>	<i>F7</i>
Level of information about OF policies in Albania.				0.735				
F4. Environmental (opposing) attitude	0.790							
The use of chemicals in agriculture makes sense as long as it leads to an increase in profits					0.853			
Maximizing profits is more important than protecting the environment.					0.821			
Chemical fertilizers have no harmful effects, they promote high-quality production.					0.705			
F5. Farmers perception of health risk from conventional farming	0.760							
There is a risk of being exposed to chemicals used in the processes of conventional farming.						0.847		
There is a risk of family members being exposed to chemicals from the consumption of conventional products.						0.744		
There is a risk of higher costs from conventional farming as a result of chemicals used.						0.633		
F6. Profit orientation	0.836							
In order to increase profits, it is important to try new approaches (i.e. techniques of production).							0.885	
It is very important that we secure highest possible profit from agriculture/farming.							0.843	
F7. Subjective norms influence	0.615							
Introduction and news releases from media (TV, radio, or newspapers) lead to OF.								0.858
Other farmers (neighbors) will convert to OF.								0.621

*Note: \*OF means Organic Farming; Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.*