

## Competitiveness between figures and metaphors; are farmers' apple producers enough competitive?

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### Abstract

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There is a growing concern over competitiveness everywhere, especially among farmers'. The research focuses on the competitiveness or ability to compete of small farmers' apple-producers in the Dibra region, in Albania. Its purpose is to assess the level of competitiveness of farmers' and to identify major factors that determine this level. Primary data obtained through direct observation of farmers' and statistical methods such as groupings, descriptive statistics, graphs, and statistical methods such as non-parametric correlation were used to conduct the research. To analyze the competitiveness, we use the data on the difficulties and problems that farmers' face while selling their produce. The study reveals a very low ability to compete, and major reasons for this are unfair competition and the functioning of the market, high costs of production and marketing, lack of state support, especially for the use of quality inputs and price subsidies, very limited resources to obtain loans for capital investment and working capital, but to some extent also because of the reduced negotiating power due to lack of information and lack of collective action. Finally, some political implications along the lines of results provided by the study have been outlined, in order to enhance the farmers' ability to compete.

*Keywords:* competitiveness; cost; competition; marketing; state support; agriculture

### Introduction

**Topic.** The horticulture in Albania occupies an important and growing place in agricultural production. One of the important agricultural crops is apples, whose production volume varies approximately between 70 000–80 000 tons/year. Dibra region in north-eastern of Albania ranks second in the country (MARD, 2014) for apple production. Dibra has more than 500 000 apple trees planted in more than 460 ha that include Golden, Starking and Granny Smith varieties (Freshplaza, 2018). Based on the appropriate climatic-soil characteristics the development of horticulture in the area has been traditionally prominent. Apple growing has been

of great relevance compared to other cultivars and is among main important fruits for farmers' in Albania (Spornberger et al., 2014).

The increase of apple production has come from the increase of planted areas, but also from the increase of the productivity (FAOSTAT, 2018). The growth of the latter has been influenced by the use of cultivars and new technologies and the increased use of chemical fertilizers, stimulants and various additives. Moreover, the increasing effects of concentration and the specialization of farmers' and agricultural service providers, has led to improved technical assistance and methods followed, since tillage and up to post-harvest and treatment and storage of the product. There is a positive

relation between productivity in agriculture and complementarity effects across farm outputs with tendency of scales economy and overall specialization (Kim et al., 2012).

However, the increase in apple production emphasizes the growing need for functional–markets–sales, which often have not been able to absorb the entire supply, leading to unrealized incomes and increasing financial losses of farmers'. The reasons for these developments affect a range of complex issues because of their multiplicity and interdependence. They can be related with the farmer or the farm structure, but also with functioning of markets, pursued economic–agricultural and trade policies, especially with the business climate and the environment in the agricultural sector. The changing structure of agriculture in developed countries has been linked to technology, economy and wide market forces and governmental policies (Huffman et al., 2000).

**Thesis.** In the conditions of a complex situation of growth of domestic production, which corresponds to a large number of farmers' engaged in sales in an unintegrated and uncertain market, farmers' in the Dibra region tend to realize about 10,000–12,000 tons of apples/year and the spectrum of local farmers' difficulties in the sales realization process can be considerable. These sales difficulties can also be understood as a weak competitive ability or deteriorating of farmers' apple–producers. According to Latruffe (2010) with the competitiveness can understand the ability of farms to sell products that meet demand in terms of price, the quality and the quantity and at the same time provide timely benefits.

Difficulties in sales or poor farm competitiveness represent a problem that is associated not only with the financial aspect of the farm activity and multifaceted impacts. The most evident consequence of the low ability to compete is the deteriorating standard of living of thousands of small farmers' households and schooling opportunities for their children, as well a restricted capacity to invest in new farm technology and know–how, storage and post–harvest technology as well as paying for better advisory services, etc. On the other hand, these developments have damaged functioning of this market segment, causing losses of a large number of urban consumers and as Lanfranchi points out, without neglecting the economic consumer variables the process of purchase implies a series of aspects linked to the individual's culture and identity (Lanfranchi et al., 2016). Consumers are accustomed to looking for 'the apple of Dibra' in the market, they are accustomed to buy traditionally this regional 'differentiated–product'<sup>1</sup> and in this context 'urban consumers

make up an important electorate' (Röling et al., 2007).

**Research problem.** Although in general economic wisdom has defined a wide range of factors that can play a role in the competitiveness of farms in the Albanian context, especially in the regional context, the concrete factors that may have a role, as well as their relative or comparative importance has remained unknown. This is a knowledge gap that needs to be filled, and it constitutes the research problem. Effective policy implications and measures could be developed to enhance small apple farmers' ability to compete inspired by new knowledge obtained through the study.

**Purpose.** The purpose of this research is to evaluate the level of competitiveness, as well as to identify factors (in their current conditions) that are affecting farms in the case of apple–producing farmers' in north–eastern Albania in the Dibra region.

#### **Research questions**

- Questions intended to receive a response through this research are:
- Are farmers' apple–producers enough competitive?
- What is the degree of market competitiveness of farmers if expressed on a numerical scale?
- What are some of the factors that can affect the current level of competitiveness?
- What are the factors that currently play a crucial role in terms of competitiveness?

#### **Hypothesis**

The following hypotheses are to be verified:

- H<sub>1</sub>. Farmers' competitiveness or their ability to compete is negatively affected by unfair competition, problems with production and marketing costs, lack of finance including credit, lack of state support to farmers', lack of training, poor market access, the pressure of traders on farmers', and poor functioning of the wholesale market.
- H<sub>2</sub>: Farmers' competitiveness or their ability to compete is positively affected by appropriate assistance for production and marketing standards, and adequateness of the market of information.
- H<sub>3</sub>. Age affects negatively the ability to compete, with older farmers' facing more problems with sales, or being less competitive.
- H<sub>4</sub>. Education affects positively the ability to compete, farmers with higher education being more competitive.

For the realization of the study a mixed descriptive–exploratory approach was used.

<sup>1</sup> By Sharp et al. (2010), "differentiated product" is a product with incremental value in the market which is determined by its specific attributes that distinguish it from other products.

### *Review of literature*

There is a wide discussion in literature and authors argue that competitiveness however does not have a definition in economic theory (Sharples, 1990a; Ahearn et al., 1990; Banse et al., 1999). While Krugman sees as a 'dangerous obsession', he ironizes a little when it says that "influential people have used the word 'competitiveness' to mean that countries compete just like companies, professional economists know very well that this is a poor metaphor", visualizing further the importance of location forces to competitiveness of new EU members (Krugman, 1994; Krugman, 1996; Krugman et al., 1990). Anyhow, it can be defined "as the ability to face competition and to be successful when facing competition" (Latruffe, 2010). Basic economics hold that the producer with the lowest cost of production will be the most successful competitor and he is said to have the best underlying 'competitive advantage' (Vollrath, 1989). Reinert noted a contradiction between 'competitiveness' and neo-classical theory including Krugman, emphasizing that the relative or absolute productivity levels will not necessarily lead to competitiveness and some very efficient producer's or some nations are desperately poor – being efficient in products which do not provide competitiveness in the income-raising meaning of the word (Reinert, 1994). Coppola by evidenced that the farm competitiveness over the last decade has become a topic of increasing relevance in the EU agricultural and rural policies, highlights that competitiveness affected by a broad spectrum of issues such as endogenous characteristics and exogenous factors (Borisov et al., 2014; Coppola et al., 2018; Popova, 2019). Analyses of competitiveness may differ with respect to the level of investigation (Frohberg et al., 1997). The charge of inadequate and unfair competition deserves a careful investigation, even if it is eventually found to be unsubstantiated (James Jr, 2013).

Economists generally agree that agriculture is an increasing-cost industry and increase in trade conflicts have generated interest in issues of competitiveness (Sharples, 1990b). Freebairn, identifying the importance of costs for sales markets and exports sets out that competitiveness in agriculture based in three aspects, which include dimensions of labor costs, the productivity of labor, and industrial harmony, which also interacting with each other (Freebairn, 1987). The process of increasing competitiveness of the sector requires a permanent effort in looking for new possibilities of improving the production efficiency and this relates to cost reduction (Matošková et al., 2009). Among several factors, competitiveness in agriculture over time may be maintained, through changes in production costs and sales (Brinkman, 1987). In an analysis of the competitive performance of the EU countries, Banterle finds that competitiveness char-

acterized by negative dynamics, even though have high sales at the export markets (Banterle et al., 2007).

Trzeciak–Duval seeing this issue from a financial point of view, emphasizes that a competitive environment in the agricultural sector, needs credit for its development and the farmers' in transition economies facing especially difficulties in obtaining access to credit (Trzeciak–Duval, 2003). Blancard finds that, almost all farms seem to suffer from credit constraints for financing their investments and this is influential on farm performance in the long run (Blancard et al., 2006). In his interdisciplinary core work on new institutional economics, by developing effective modes for governing of agrarian sustainability, Bachev argues and find links between the farm performance and a wide spectrum of factors of institutional nature such as personal, dimensional, natural, etc. with influence on sustainability in agriculture and governance choice in transition economies (Bachev, 2006; Bachev, 2007; Bachev, 2012). Given that farm competitiveness is often undefined and is studied through traditional indicators of technical efficiency, productivity, profitability etc., important aspects of farm competitiveness such as the governance efficiency, the institutional environment or the 'rules of game' and potential of incentives for adaptation are commonly ignored in the analyses (Bachev, 2010). In transition economies farm competitiveness among others is determined by characteristics such as farm organization and the governance's role (Curtiss, 2000). Colyer sees competitiveness developments in the light of the government interventions due to increasing environmental implications, which has been proven to have an impact on the competitiveness of the agricultural sector anywhere in the world (Colyer, 2004).

Lioutas finds that training programs and education could improve both, productivity and labor condition for farmers' smallholders (Lioutas et al., 2010; Nikolov et al., 2014). Professional training of farmers' as a government intervention affects competitiveness of family farms and these effects can be measured, proving that the farmers' that participated in this training achieved higher productivity and thus increased their farms' competitiveness (Vitunskienė, 2018). Agricultural standards evolved over the course of many years and were in essence codified publicly by regular accepted use, but the last decade has seen dramatic changes and these developments are related with new requirements to export requirements for size, color, safety, consistency, volume, packaging, labels, etc., which affects the need for investments, changes in the level of production, etc. (Giovannucci, 2008). Restrictions, standards and subsidies of the most powerful countries for their products, poor organization of producers, weak communication structure, transport and infrastructure, limited trade information, are some of the reasons for poor

market access (OECD, 2007). While the agricultural products may be objectively identical between EU countries and farmer producers, the processes through which they were produced may vary greatly and this is related with standards of farm practice and processes, since they commonly translate into on-farm constraints (Brouwer et al., 2000). Specific sectors of agricultural production in Romania are less competitive due to international standards and with the accession of country to the European Union the competition between these products will be much stronger (Chelmu, 2012).

The importance of information and access to such information on the part of small-scale producers and the poor has long been recognized (Marter, 2005). It is commonly accepted that raising competitiveness could be reached not only through huge investments, but also through creation and distribution of knowledge and networking and information among stakeholders which are of extreme importance for agricultural sector (Terziev et al., 2015). Zimmer, finds that the main reasons of farmers' to not cultivate an agricultural crop is related with the lack of information of farmers' and extension services, which followed by problems and poor economic conditions (Zimmer et al., 2015). The lack of information, or situations of asymmetric information, is rather the norm in most developing countries and it is surprising that there are so few empirical studies based on data from developing countries assessing the effects of improvements in information (Svensson et al., 2008). At the international level changes in the competitiveness of nations are related with farmers' and their access in the international markets (Anderson, 1995). One of the main questions is how to improve farmers' competitiveness, by addressing their market access capability to improve the overall performance of the farm (Biénabe et al., 2005).

An important issue is the lack of power and negotiating capacity of smallest-scale farmers' in their relationship with other agents and negotiating skills, power and political representation are also critical for small-scale farmers' and unorganized (Biénabe et al., 2005). The negotiation process between participants in agricultural activities is related with different knowledge, values or economic status (Petrescu-Mag et al., 2018). Wilcox finds positive relation between farmers' negotiation power efficacy and the information about market, suggesting that the negotiating capacity of farmers' is enhanced when the prevailing prices are 'known' (Wilcox Jr. et al., 2006). Most studies on competitiveness often make the mistake by only considering the output side of the agribusiness system ('from farm to table') and thereby ignoring the possible impact the input sector could have on

the competitiveness (Kirsten, 1999). Due to the increased competition on the enlarged Single European Market, rationalization of input costs to increase farm efficiency might be one of the farm strategies (Bojnec et al., 2007). Gill discussing the issue of the competitiveness of agriculture, evidenced importance of prospects related with market in terms of prices and their stability/instability and the movements of domestic of agricultural and non-agricultural prices within the country (Gill et al., 1996). To be competitive a farm needs to use the best practice with respect to technology, its internal organization and connections to market actions (Sarris et al., 1999). Traditional studies on competitiveness have been challenged by non-standard approaches, since that they are based mainly on comparative costs and market participation which are distorted by subsidies especially for agricultural products, and for this reason traditional approaches show inconsistent results (Zylbersztajn et al., 2003).

Contrary to popular perceptions, farming is not exclusively the domain of elderly farmers', but rather occurs at various stages in the life course in ways which often make such activity 'invisible' to farm surveys and agricultural development policy (Woodson, 1994). It is believed that as a farmer ages and gains experience he or she becomes more productive with improved managerial ability, but the productivity may fall later in life (Tauer, 1994). Farmer's age is positively and very significantly related to earnings, because age's importance captures a number of processes, and it goes together with farming, marketing of products and sales and management skills all improve with experience (Galt, 2015). There is a positive corresponds between age of farmers', the productivity, and their participation in the factor markets and sales (Gebreselassie, 2003). There is a highly and positively interaction between farmer's ability to produce and sell more in a market with education levels, and especially farmers' who have secondary education combined with other forms of education, are more likely to sell more in the market (Sebbata et al., 2014). At the imperfect market conditions and socioeconomic and institutional constraints, farmers' households' educational level it is positively related to production efficiency (Wang et al., 1996). Examination on the research on the economic benefits of education is limited on data from urban sector, although because of the agricultural sector's massive size, the intensity of use of trained manpower and rural development requires a huge expansion of education at all levels (Lockheed et al., 1980). Hamilton argues a broader role of the farmers 'education in access to credit and the agriculture, to the marketing commodities, buying and selling and factors of production (Hamilton, 1990).

## Material and Methods

### Data

We use primary data, obtained by a special survey with 220 accidentally selected farmers of Dibra region. Major variables for which data were collected are shown in Table 1 (Table 1 below).

The competitiveness of the farmers' is proxied with the degree of sales difficulties or sales problems, where serious sales problems mean lower ability to compete, while farmers' negotiation power is proxied by the degree of pressure that trad-

ers exert on farmers to sell at lower prices. Table 2 shows the structure of the sample by gender, age, and level of education. Males are dominant, with 62% of the sample, while farmers with 8-year or secondary education make up almost 90% of the sample. In terms of age, dominant are farmers above 34 years old. About 15% of farmers are above 64 years old.

### Method

In terms of methodology we use the grouping of individuals according to one or several characteristics (variables), statistical reports of the structure as well as descriptive sta-

**Table 1. Variables, their measurement scale and operationalization**

	Variables	Mea- surement scale	Acronym	Categories/Values
1	Gender	Nominal	Gender	0 = Female, 1 = Male
2	Age	Ratio	Age	Years
3	Education	Nominal	Education	0 = Primary, 1 = Secondary, 2 = Superior
4	Sales are a problem	Ordinal	Sale	1 = Absolutely disagree 2 = Disagree, 3 = Agree, 4 = Absolutely agree  Or: 0 = Disagree (Absolutely disagree or Disagree) 1 = Agree (Agree or Absolutely agree)
5	Production and marketing costs are a problem	Ordinal	Costs	
6	Competition is a problem	Ordinal	Competition	
7	Lack of financing is a problem	Ordinal	Finance	
8	Lack of trainings is a problem	Ordinal	Training	
9	State Support is problem	Ordinal	StateSup.	
10	Production public assistance for standards is appropriate	Ordinal	ProdAssist.	
11	Marketing public assistance is appropriate	Ordinal	MarketAssist.	
12	Marketing information is appropriate	Ordinal	Information	
13	Market access has improved	Ordinal	MarketAccess	
14	There is no pressure from traders	Ordinal	Pressure	
15	Wholesale market is functioning	Ordinal	Wholesale	

Source: Data estimated by authors

**Table 2. The structure of the sample by gender, age and education**

Gender/Age	Education					Total
	Primary	8-year school	Secondary	College	University	
Females	7	60	11	5	1	84
Under 24		3	1	1		5
25-34		4	2	1	1	8
35-49	1	18	5	3		27
50-64	2	25	3			30
Above 64	4	10				14
Males	7	74	51	5		137
Under 24		1	1			2
25-34		7	3			10
35-49	2	17	11	2		32
50-64	2	31	24	1		58
Above 64	3	18	12	2		35
Total	14	134	62	10	1	221

Source: Data estimated by authors

tistics (means, medians, standard deviation) graphical presentation, non-parametric correlation (rank correlation and coefficient of association).

**Rank correlation**

Since in our case almost all variables are expressed in the ordinal scale, then the degree of association between them can be measured by rank correlation. One such indicator is the Sperman’s correlation coefficient  $r_s$ . If  $X$  and  $Y$  are the two ordinary variables the Sperman’s coefficient is calculated by the formula:

$$r_s = 1 - \frac{6 \sum d^2}{n(n^2 - 1)}$$

Here  $d$  is the difference between the ranks of individuals according to  $Y$  and  $X$ , while  $n$  is the volume of choice.

Another formula for calculating the Sperman’s coefficient is:

$$r_s = \frac{S_{ab}}{S_a S_b}$$

where  $a$  and  $b$  are the ranks of  $X$  and  $Y$  respectively.  $S_a$  and  $S_b$  are the standard deviation of the ranks for  $X$  and  $Y$  respectively, while  $S_{ab}$  is the covariance between the ranks  $a$  and  $b$ .

With the condition that  $n > 30$ , the Sperman’s coefficient is tested by the normal  $Z$  test, initially calculating the actual value based on the data:

$$Z_f = r_s \sqrt{n - 1}$$

Then we calculate the probability  $P$ :

$$P = 2P(Z > Z_f)$$

If  $P > \alpha$ , where  $\alpha$  is the significance level (usually 0.05), then the hypothesis on the lack of correlation between the two variables has no basis to be rejected.

**Coefficient of association**

The other two coefficients that can be used to measure the degree of association between ordinary variables in the case of  $2 \times 2$  tables or groupings (between two ordinary variables with two categories 0 and 1 each) are the association coefficient  $K_a$  or the contingency coefficient  $K_k$ . Let be the  $2 \times 2$  table for two variables (no problems for sales and market information are appropriate) as follows (Table 3):

Coefficient of association  $K_a$  in this case can be calculated by the formula:

$$K_a = \frac{ad - bc}{ad + bc}$$

**Table 3. Example of a 2x2 grouping with ordinal variables**

No problems for sales	Market information is appropriate		Amount
	0 = Agree	1 = Disagree	
0 = Agree	a	b	a+b
1 = Disagree	c	d	c+d
Amount	a+c	b+d	n

Source: Data estimated by authors

Here  $a, b, c$  and  $d$  are the absolute densities (number) of individuals (cases) for each combination of the categories of the two variables. The contingency coefficient  $K_k$  can be calculated with the formula:

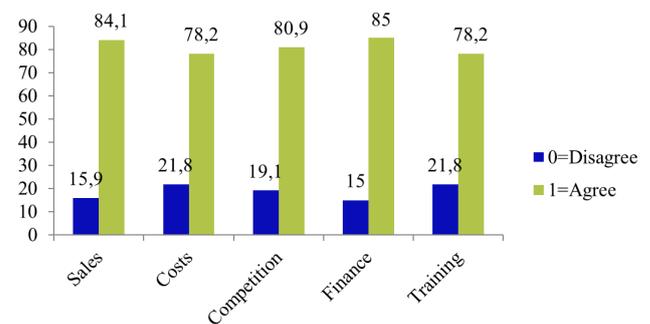
$$K_k = \frac{ad - bc}{\sqrt{(a + c)(b + d)(a + b)(c + d)}}$$

For more methodological details see Osmani (2015), Keller (2018), Boslaugh (2013) and Elisseva et al. (2004). Microsoft Excel and GRETL programs were used to perform groupings, calculations and graphs.

**Results and Discussion**

The following Table 4 shows the main descriptive statistics for some of the variables with interest. The most important problems that farmers of farmers’ have assessed are the lack of state support, followed by lack of training and lack of finances. Sales problems are rated at 2.96, which means that sales problems are quite high, otherwise competitiveness is rated at 1.04, which is quite low (calculation:  $4 - 2.96 = 1.04$ ). The sales median shows that half of the farmers’ estimate over 3 difficulties in sales. Standard deviation (SD) indicates that farmers are more homogeneous in their responses to sales problems, cost-related problems, and competition-related problems than to responses for other variables.

The following Figure 1 shows the grouping of farmers’ according to their agreement with some major difficulties



**Fig. 1. Farmers’ assessment of the first group of problems**

Source: Data estimated by authors

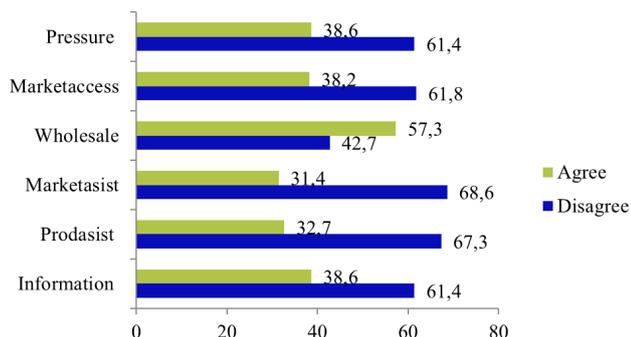
**Table 4. Summary statistics**

Variable	Mean	Median	SD	Min	Max	Variable	Mean	Median	SD	Min
Sale	2.96	3.00	0.704	1.00	4.00	Information	2.43	2.00	0.871	1.00
Costs	2.91	3.00	0.700	1.00	4.00	ProdAssist.	2.32	2.00	0.906	1.00
Competition	3.00	3.00	0.731	1.00	4.00	MarketAssist	2.12	2.00	0.878	1.00
StateSup	3.35	4.00	0.776	1.00	4.00	Wholesale	2.55	3.00	0.760	1.00
Finance	3.15	3.00	0.878	1.00	4.00	MarketAcces	2.35	2.00	0.747	1.00
Training	3.33	4.00	0.823	1.00	4.00					

Source: Data estimated by authors

that they assess as such. It is noted that in all cases, almost 80% or over 80% of farmers' are unique in their attitude about the main problematic. For example, over 84% of them think that sales are characterized by serious problems and difficulties. 85% of farmers' think that the main difficulty related to sales problems are financial difficulties, about 81% problems with competition, etc.

The following Figure 2 shows the grouping of farmers' by their agreement with some other difficulties or shortcomings.



**Fig. 2. Farmers' assessment of the second group of problems**

Source: Data estimated by authors

As the data show, serious problems or shortcomings are also their related to the support of the farmers' for the production standards and the support for the marketing of the product, not forgetting the deficiencies related to the trade information, the access to the markets the pressures that traders put on farmers' to buy, mainly related to prices and quality but not only, etc.

The following Table 5 shows how the main problems vary according to the main activity of the farm. We note that the problem is generally more serious in the case of horticulture and apples than in the case of vegetables. It seems that in the case of fruits and apples in particular, problems in sales, as well as lack of training are somewhat more problematic than in the case of vegetables. The lack of finances seems to be equally serious for both horticulture and vegetable.

Table 6 shows age-disaggregates estimates for the major problems that apple farmers are facing. It is quite obvious

**Table 6. Assessment for problems of farmers' according to age**

Age	Sale	Costs	Competition	Finance	Training
30 years	2.75	2.92	2.88	2.46	3.25
42 years	2.79	2.76	2.84	3.25	3.46
55 years	3.14	2.93	3.08	3.21	3.29
65 years	2.98	3.11	3.18	3.27	3.32
Total	2.96	2.91	3.00	3.15	3.34

Source: Data estimated by authors

**Table 5. Average ratings of problems according to some activities**

	Sale	Costs	Competition	Finance	Training
Is apple main contribution?					
0 = No	2.65	2.73	3.04	2.85	2.92
1 = Yes	3.00	2.94	3.00	3.20	3.40
Is fruit main contribution?					
0 = No	2.66	2.79	2.94	2.85	2.91
1 = Yes	3.04	2.95	3.02	3.24	3.46
Is vegetable main contribution?					
0 = No	2.97	2.91	3.09	3.09	3.39
1 = Yes	2.94	2.91	2.81	3.29	3.22
Total	2.96	2.91	3.00	3.15	3.34

Source: Data estimated by authors

**Table 7. Association between sales and other variables**

Variables	Sale		0 = Disagree	1 = Agree	Total	Coeff. of Association
Costs	0	(Disagree)	15	33	48	0.551
	1	(Agree)	20	152	172	
Competition	0	(Disagree)	15	27	42	0.629
	1	(Agree)	20	158	178	
Finance	0	(Disagree)	17	31	48	0.649
	1	(Agree)	18	154	172	
Training	0	(Disagree)	10	24	34	0.46
	1	(Agree)	25	161	186	
Market Assist	0	(Disagree)	29	122	151	0.428
	1	(Agree)	6	63	69	
Prod Assist	0	(Disagree)	24	124	148	0.035
	1	(Agree)	11	61	72	
Information	0	(Disagree)	30	105	135	0.641
	1	(Agree)	5	80	85	
Market Access	0	(Disagree)	18	118	136	-0.249
	1	(Agree)	17	67	84	
State Sup	0	(Disagree)	18	15	33	0.846
	1	(Agree)	17	170	187	
Wholesale	0	(Disagree)	21	73	94	0.394
	1	(Agree)	14	112	126	
Pressure	0	(Disagree)	20	115	135	-0.104
	1	(Agree)	15	70	85	
Total	35	185	220			

Source: Data estimated by authors

that older farmers are facing more sales problems than do younger ones. Production and marketing costs, competition, and lack of finance are also serious problems (Table 6).

The following Table 7 unveils the degree of association between the sales variable and each of the other variables of interest. The calculation of the association coefficient is made possible after the 2x2 grouping of individuals (two rows, two columns, or with 2 categories for each variable) as follows (Table 7).

The association coefficients show a strong association between the competitiveness of farms and problems with cost, state support, problems with competition, lack of finance, training, etc.

The following Table 8 shows the ranking correlation coefficient (Sperman's coefficient) between problems in sales with variables or other problems identified by farmers'.

Thus, the main or primary factors that seem to have an impact on competitiveness (sales problems) are production and marketing costs, competition, the lack of state support, and the lack of finance. Older farmers seem to face more problems, while education, in general, seems to be neutral. However, if we disaggregate the education in three levels

(0=Primary, 1=Secondary, 2=Superior), we found a significant negative relationship between the secondary level of education only and the ability to compete, i.e., these farmers tend to be less competitive.

Age and education generally result in factors with a positive effect but not significant on sales problems, although as a trend older farmers' and those with more education tend to have more problems. However, a significant difference in effect results between secondary education and its other two categories taken together, where farmers' with secondary education seem to have more difficulty with sales than those with primary or higher education. Gender also is not significant.

Farmers' competitiveness is a key issue influencing the sale of farm products, namely the income and standard of living of farming families, and more. This study builds on the need to assess the competitiveness of apple farmers' and identifying some factors of economic, demographic, and institutional character that affect it, currently unknown or not systematically estimated.

Filling this knowledge gap could serve as a good basis for orienting/indicating effective policies and measures to

**Table 8. Spearman's coefficient of correlation between sales and the other variables**(Base hypothesis  $H_0$ : No correlation)

Variable	Spearman R	Prob.	$H_0$	Variable	Spearman R	Prob.	Variable
Age	0.146	0.030	Refuted	Prod Assis	0.247	0.000	Refuted
Education	0.098	0.146	Not refuted	Market Assist	0.298	0.000	Refuted
Costs	0.515	0.000	Refuted	Market Access	0.015	0.826	Not refuted
Competition	0.281	0.000	Refuted	Wholesale	0.498	0.414	Not refuted
StateSup	0.292	0.000	Refuted	Pressure	0.040	0.551	Not refuted
Finance	0.236	0.000	Refuted	DEdu-1	0.149	0.027	Refuted
Training	0.083	0.219	Not refuted	DEdu-2	-0.037	0.586	Not refuted
Information	0.396	0.000	Refuted	Gender	0.088	0.192	Not refuted

Source: Data estimated by authors

increase the competitiveness of farmers' and increase their standard of living, increasing their role in the apple value chain, and bringing price and quality benefits to consumers. The results build on the data collected through a special random survey of farmers' in the studied region (Dibra). The results indicate that the level of competitiveness of apple farmers' in the study area is quite low (1.04) on a scale ranging from 1 to 4.

In a line with the hypotheses, the study demonstrated a negative correlation between the ability to compete on one side, and unfair competition, problems with production and marketing costs, lack of finance including credit, and lack of state support to farmers' and this as we have put forward is supported by an extensive literature. The institutional framework, including the approach to credits, unfair competition, and states support deserves attention. This industry during 30 years (approximately) of the country's transition towards EU membership had to take advantage of the effects of concentration and specialization and dynamics. Infact, the above insufficiency creates social effects for the region and especially for the departure of people abroad, social cohesion, etc.

Regarding the age, data results indicates that older farmers are facing more problems with sales, thus being less competitive, this result also being in line with the research hypothesis. The literature evidences both positive effects and negative effects of the age on the farmers' ability to compete. Rosenberg (2017), taking under review census (COA, 1982–2012), expresses concern about the increase in the number of zero-sales farmers' finding age-related links, where the zero-sales farm rises dramatically with the rice of farmers' age. This is related on the one hand to old age on the average of farmers' who deals with this activity and also with the effects of abandonment of the region by young people. Moreover, the latter testifies to the loss of general working skills in agriculture, as these skills are related to inheritance the overestimated role of social capital, etc.

Contrary to the hypothesized associations, between the ability to compete on one side, appropriate assistance for farm production/marketing standards, and adequateness of market information, on the other side, is verified a negative association. However, we have pointed out the literature highlights cases where higher international standards affect negatively the ability of the local farmers' to compete (Chelmu, 2012). The education in general does not influence the ability to compete, but farmers with secondary education seem to be less competitive. There is not verified a significant and positive association between farmers' ability to compete on one side, improved market access, appropriate functioning of the wholesale market, and no pressure exerted on farmers' by the traders as a proxy variable for farmers' power of negotiation, and training.

It should be discussed carefully positive signs and significant association with competitiveness in the case of three variables: market information, product standard assistance and marketing assistance. Formally, based on these coefficients, we can state that those who estimate that market information, production standards assistance, and marketing assistance are all okay tend to think that sales are a problem! This is not in line with logic or expectations and can only be explained if we accept that these factors are secondary or tertiary regarding the effects on competitiveness. Otherwise, as an example, although commercial information for farmers' may be complete, if they have problems with costs or finances, problems with sales will be inevitable. If we refer more specifically to the market information, Table 7 shows that there are 80 farmers' who have a problem with the market and who at the same time report that the market information is in order; or there are 30 farmers' who have no problem with the market but at the same time report unacceptable state of market information. So the positive sign of the three specific associations mentioned above does not mean that there will be no sales

problems when market information, help with production standards and help with marketing are well valued by the majority of farmers', or does not mean that these problems do not exist when there are no problems in sales, because it is the main or primary factors that lead to changes in competitiveness.

Based on the above results, discussion and the arguments presented, this study contributes to the increase of knowledge about the competitiveness of the small apple farmers' in Albania and some of the most important factors that determine it. Some limitations could however be outlined.

## Conclusion

The ability to compete is a crucial issue which impacts immensely on-farm sales. With higher ability to compete farmers' will have better access to markets, hence more opportunities to sell their products and realize higher income, and improve farmers' 'households' standard of living, prospects for their children, and their role in and efficiency of the apple value chain.

The study analyzes the situation and the most influential factors for competitiveness, illustrating with a case study of farmers' apple-producers in the region of Dibra, northeastern Albania, using statistical methods based on primary data collected by a special survey. The analysis of data related to the problems and difficulties of sales revealed that the competitiveness of apple farmers' is quite low. As a result, farmers' sell at very low prices and part of the product fails to sell. The most serious reasons for this low competitiveness that the study revealed are unfair competition in the market mainly from imported products, significant production, and sales costs, lack of financial support (such as input subsidies) from the state, and very limited access to credit. The study did not identify as statistically significant the market access, trade information, pressures on farmers' and training, but as the data show a significant percentage of farmers' is claiming that training is a problem, that information is not adequate, or that part of farmers' are under pressure from traders to sell at low prices.

**Policy implications.** The study uncovers good guidelines to help farmers understand their opportunities to increase their competitiveness and other relevant interested. Reducing unfair competition would be perhaps the major path towards better farm ability to compete. Measures to do this could include a wide range of subsidies including collective action practices and farmers' groups to reduce costs, information providing to farmers' about prices and quality standards of the imported apple and a new state legal framework including traceability according to EU standards for agri-

food products to make sure they are safe and healthy for consumers it is with importance on the demand side.

Providing subsidies for quality inputs to reduce production/marketing costs and enhance productivity may effect on the quality and level of prices of their products and also the reputation and general capabilities negotiations of the farmers'. Subsidies and credits on the other hand may improve post-harvest operations and storage, with effects on the quality standards as well as better overtime schedule of sales operations, which would promote higher farmer's negotiation power.

In the same direction providing of advice and support for Good Agricultural Practices (GAP) would be effective as literature highlights (Brouwer et al., 2000) etc., standards of farm practice and processes have a crucial role to play, so farmers' should be supported and encouraged to use these practices. These practices are one of the best product quality enhancers with a direct impact on the competitiveness of farmers'. Access to new tech-knowledge remains crucial for the progress of the sector and this is supported by an extensive literature. Summarizing, an important trinomial is that farmer decisions that involve success and/or potential failure are related to the quality of extension services, policy-making capacities, and supervision.

The much-needed promotion of forms of collective action it cannot remain an issue that is discussed only in seminars, we need to see the theories, findings from scientific research tested and applied in practice. The farm organizations can contribute to the definition and the implementation of new pathways of change in rural areas, providing several benefits for individual with specific needs and local community (Lanfranchi et al., 2015). In Albania there is a lot of potential to benefits from farmers' in this regard and this study is just one of the many cases that suggests. Collective action among farmers' themselves and among other actors in the value chain would will reinforce the sustainability of the economic system and also make possible quality advisory services, quality and lower prices for inputs as well as standardization of on-farm cultivation practices and methods. Thus, well-structured measures, including subsidies and targeted advice to promote collective action, would also work for higher farmers' ability to compete.

**Way forward.** Good Agricultural Practices (GAP), price stability in the domestic and international markets, productivity, and the effectiveness role of farm extension services are important drivers or enhancers of the farmers' ability to compete. The access to new knowledge and new technologies is a prerequisite for raising competitiveness and improving business environment (Arabska et al., 2014) and it goes hand in hand with the premises for the revitalization of

the sector. Thus, further research on these issues in the light of new developmental dynamics would be a necessity and highly recommended action to outline additional guidelines in promoting farmers' ability to compete.

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