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Attitude of Macedonian farmers towards EU accession

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ABSTRACT

Macedonia has been a candidate-country for EU membership since 2005. The EU integrative process, without doubt, will have an impact on the Macedonian economy and particularly on the agricultural sector. So far, the farmers' attitude and intentions with regard to the EU integration and accession have not been thoroughly investigated. Respectively, the objective of the paper is to provide understanding of the Macedonian farmers' attitude and behavioural intentions in the context of EU accession and the potential policy and market changes. Furthermore, another issue is to establish whether there are significant discrepancies among farmers and their attitude towards EU accession. The results revealed that the farmer community in the country is quite heterogeneous in terms of farm and farmers' profiles and farm management practices. The cluster analysis suggests that there are four clusters according to which the variables explaining the attitudes were significantly different, provisionally labelled as "optimist ", "moderate", "restrained" and "sceptic".

Key words: cluster analysis, EU accession, farmers' attitude

INTRODUCTION

Many sectoral and regional models attempt to anticipate the future development of the agricultural markets, taking profit or gross income as a driving force for the farmer behaviour, although many authors see farmers as utility maximizers rather than profit maximizing businessmen (Edwards-Jones et al, 1998). In addition, omission of behavioural and technical constraints is being recognized as "principal causes of error" in many of them (Norton and Scheifer in Edwards-Jones et al, 1998). All these are additional reasons for many studies focused on farmer's behaviour and factors that determined it.

Farmer behaviour is a function of complex socio-economic variables, ranging from psychological to financial variables (Dos Santos et al, 2010). In the past, several theories were developed trying to explain how all these diverse factors influence and model human behaviour. The expectancy-value theory of attitude, theory of reasoned action and theory of planned behaviour are the most referred to (Barnes et al, 2008).

In Macedonia, farmers' attitude and intentions with regard to the EU integration and accession were not of prime research focus. Eurobarometer 74 (2010) covered the general views of Macedonians on EU membership. About two thirds (59%) of the population felt that EU membership would be a good thing, expecting benefits from the membership; 12% had quite the opposite opinion, whereas 26% felt that it would be neither a good nor a bad thing. The general support for EU accession was at quite a high level (90%).

EU accession is a much investigated and discussed topic. The discussion is usually about what the Macedonian institutions should complete in order to adapt to the European legislation and market. Most of the time, farmers, as a core element of the agricultural sector, are analysed in terms of what they should do to survive in the new environ-

ment. There are not many researches about their knowledge, their expectation of EU and the impact of accession. Are they aware of the real needs and obligations? Are they ready to put in energy, time and money in order to gain the benefit from the EU accession they are being told?

This paper aims to fill the identified gap in literature; in this respect, the objective of the paper is to provide understanding of the Macedonian farmers' attitude and behavioural intentions in the context of the EU accession and the potential policy and market changes. Furthermore, another issue is to observe whether there are significant discrepancies among farmers and their attitudes towards EU accession.

Concept and theory behind

It is assumed that farmers' behavior is affected by the characteristics of the farmer, the farm and the operating environment. According to Theory of Planned Behaviour (TPB) (Ajzen, 1991), the individual intention to perform a given behaviour determines the performance itself. On the other side, the individual intention is influenced by the direction and intensity of the attitude towards the behaviour, the subjective norm and the degree of the perceived behavioural control. The term attitude implies the degree of favourable or unfavourable perception of certain issue. The subjective norm is actually the social pressure of performing some action, while the perceived behavioural control is the knowledge and previous experience that might limit/restrict or push/emphasize a specific behaviour. In other words, the concepts of knowledge, expectation and attitude affect planned behavior (planned adjustment), where motivation is an intermediate variable. Since, the TBP theory treats these attitudes as given, the question is what affects farmers' attitudes and perception. Given that the farmer, beside profit maximization, has farm survival as a goal, how can policy makers and farmer advisors influence such a perception in order to influence the planned adjustment so the farm can survive. How to make farmers to pay attention to certain issues; what information to provide; how to assist farmers to process this information?

We identify the farm in the context of the resource-based theory, as a collection of financial, physical, human, organizational, technological, and intangible resources (Mahoney, 1995). But, since farming is characterized with the use of a bundle of resources to produce a bundle of products, a crutial 'farm resource' is the know-how to manage them. In addition, Mahoney (1995) defines 'managing' as a discovery procedure in which mental models of managers [farmers] using heterogenous firm specific resources.

According to the Farm Management Theory, farmer performs a series of functions out of which planning, implementation and control seems to be mentioned most frequently. By planning it is meant identifying the goals, the available resources and the future actions; implementation involves organizing the resources and coordination of activities; while the control means evaluation of achivements (Kay et al, 2008) One of the farm management functions is the decision making given the available information, knowledge and resources. A study of the models of Swedish farmers decision making regarding the EU membership as strategic decision has revealed that the creativity of farmers' option generation is influenced by the farmers' ability and motivation; availability of processed information (quality prior the quantity), the problem magnitude and the degree of quantitative judgements (Ohlmer, 1998).

MATERIAL AND METHODS

The data collection was carried out by face to face interviews of 489 farmers in the Republic of Macedonia in the period March-April 2012. The eligibility pre-condition for this survey was that the farmer operates commercially, selling most of the products produced on the farm, and that the farming is a full-time occupation generating majority of his/her income. The questionnaire was structured in several sections: farmers' expectations, source of information, knowledge available, financial support received in the pre-accession period, goals and objectives, farm and family incomes, farm management, farm structure and general farmer information. Most of the answers were closed with answers given on a four-point Likert scale, although for some questions the answers were classified using altered scales and values. The questionnaire included some semi-opened questions in order to obtain a full picture of the farming environment, where the farmer was asked to give some additional information.

The analysis was divided in three parts: cluster analysis, descriptive statistics, and homogeneity test. Grouping farmers, according to some relevant characteristics, is a pre-requisite for extrapolation and modelling their behaviour from a sample to the whole population (Dos Santos et al, 2010). This is a motive for performing cluster analysis. The study uses hierarchical cluster analysis, using Ward's method with squared Euclidean distance and within-case standardization. The cluster analysis was run on 484 cases, where attitudinal statements were cluster variates. Prior to the cluster analysis, a factor analysis was made at the attitudinal statements used as cluster variate. The factor analysis was made by using SPSS 17, by the method of principal component analysis with Varimax rotation, factors presenting an eigenvalue greater than 1, and factor loadings greater or equal to 0.5.

Descriptive statistics was performed at total sample to give a general picture on farmers' attitude toward accession to the EU and by cluster, providing a basis for typology of farmers (farmers' profile) with similar attitudes. Finally, the homogeneity between groups for a given variable was tested, with non-parametric tests. To analyse the difference between the clusters, as independent groups, the Kruskal-Wallis H test was used. Mann-Whitney test was used to follow up the Kruskal-Wallis test findings, and verify which variables determine the difference between clusters.

A Bonferroni correction (0.05/6 combinations) was applied and so all effects were reported at a 0.008 level of significance. Friedman's ANOVA was used on variables with several distinct forms, to compare it among separate clusters. The equation to estimate the effect size (r) from a z-score produced by SPSS 17, and the number of total observations (N) was calculated as follows (from Rosenthal, 1991 in Field, 2009): $r = z/\sqrt{N}$. The effect size was interpreted as follows: 0.1 small effect, 0.3 medium effect and 0.5 large effect (Cohen, 1992 in Field 2009). Where applicable, ANOVA was used to test the homogeneity between groups for a given variable.

RESULTS AND DISCUSSION

Sample description

The sample is predominantly composed of male farmers aged between 40-60 years, with a lower level of education. The most frequent choice for improving their knowledge is the vocational education with greater interest in agricultural technology rather than economic topics, with radio and television and personal contacts as a main source of information. Profit and tradition are the main reasons for farming among farmers, and most of them have more than 5 years until handing the farm over the next generation.

Only a smaller number of farms are registered by the Law on Agricultural Activity or the Company Law. The remaining are registered in MAFWE or in the Pension and Disability Insurance Fund of Macedonia for using the existing benefits only. One third of the farms have a membership in some agricultural association, while the membership in some cooperative is not worth mentioning.

Farms are predominantly family-businesses and a main family income generator. Most of the farms operate with their own mechanization, funds and labour. Received financial support is mostly used as working capital for purchasing inputs or investment in equipment. The general evaluation of the subsidy program is positive, but only a smaller number of farmers is ready to prepare the application on their own.

Attitudes and expectations

The survey showed that majority of farmers (64%) are positive regarding the EU accession, 29% are neutral and only 7% are strongly against (Figure 1). Considering their expectations from the accession, 40% strongly agree and another 38% expect more benefit than difficulties from the accession, while 19% are negative and 4% strongly opposed (Figure 2). Compared with the Eurobarometer 74, the general support (90%) and views of the accession (69% expecting benefits from the membership), the support is lower, but it must be taken into account that the farmers are specific group. One third of the farmers (28%) expect that it will happen in the next 5 years, another third (28%) expect it in the next 5-10 years, while the rest (44%) have more pessimistic expectations or have no opinion at all.

The attitudinal statements were subjected to a factor analysis, thus grouping them into five factor components: market, finances, technology, standards and regulation, and investments (summarised in Table 1). The first factor is the perception of the market in terms of estimation of the potential input and output prices, marketing opportunities, and

competitiveness without financial support. The second factor is finances described by the opportunities for additional employment and income, credit access and the necessity of financial support in order farmers to stay and be competitive on the European market. The third factor is the technology, focused on the ease to access to information, access to additional trainings and applying new technology.

The fourth factor is covering the European standards and regulation. It includes the quality of the products, the need for application of the EU standards, and the perceived level of changes in the agricultural policy.

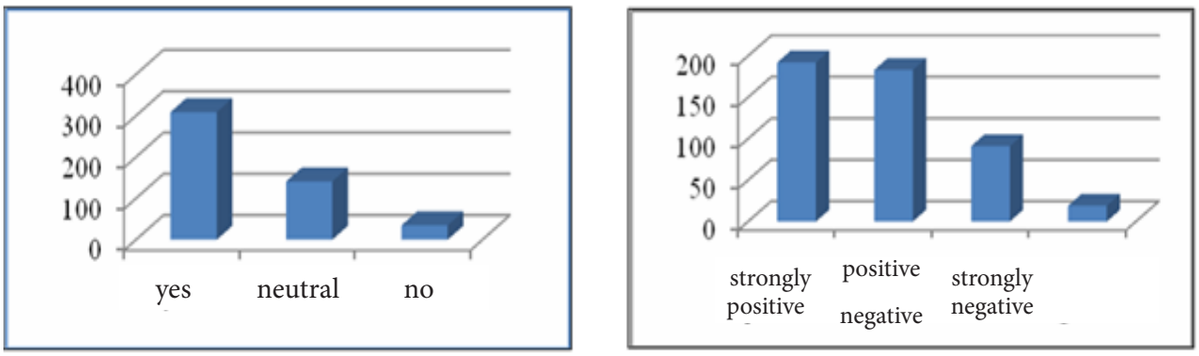

Figure 1. Farmers' willingness for EU accession and Farmers' assessment of EU accession

The fifth factor is focused on investments, i.e. to the assessment of the impact of IPARD funds in adjustment process towards the EU accession, the readiness to participate financially in order to use the existing IPARD funds and to invest in reaching the EU standards. The factor analysis excluded the two questions regarding the ease to hire labour and perception of the competition as suitable for cluster variate.

Farmers' expectations on market development are higher output prices (although not so much lower input prices) and bigger market as market opportunities (Table 1). The assessment of their market competitiveness under current state of existence, without additional financial support is low. It is expected from 11.6% which are certain and 19.7% who believe in it. As expected, most of them declared that they can survive in the new competitive environment only with the financial support from the state (80.4%). In addition, they are more positive regarding their access to loans, or additional employment and incomes.

There is a strong support (43.4% totally agree and 39.4% tend to agree) on the statement for easier access to new production technology, information (42.7% totally agree and 35.8% tend to agree) and trainings obtaining this technology (38.7% totally agree and 43.5% tend to agree).

Farmers are fully aware that there will be changes in agricultural policy (71.4% totally agree and 25.1% tend to agree). What is even more important is that they recognize the necessity of achieving EU standards (72.0% totally agree and 23.6% tend to agree) and the need for improvement of their products (72.0% totally agree and 21.0% tend to agree). Still, not all of them are ready to invest in order to attain the EU quality standards (21.7% totally agree and 36.0% tend to agree, while 12.2% totally disagree and 30% tend to disagree).

IPARD as a pre-accession instrument is present since 2007 with five public calls prior the survey. Contrary to the previous results of their full awareness of changes in regulation and market standards, only half of them are identifying the opportunity it offers in order to improve their market position (20.2% totally agree and 40.0% tend to agree, while 10.2% totally disagree and 29.6% tend to disagree), or are ready to participate financially to obtain this fund (16.2% totally agree and 27.2% tend to agree, while 21.4% totally disagree and 35.3% tend to disagree).

Table 1. Distribution of the responses on the attitudinal statement (%)

	Expectations / attitudinal statements	Totally agree	Tend to agree	Tend to disagree	Totally disagree
Factor 1	MARKET				
Exp. 02	The cost of raw materials (inputs) will reduce	16.1	25.5	39.5	18.8
Exp. 03	The price of the products (outputs) will increase	31.3	40.6	18.8	9.3
Exp. 12	I will have more opportunities to market my products	30.8	29.8	30.4	9.1
Exp. 14	I can survive and be competitive on the European market as I am now	11.6	19.7	45.2	23.4
Factor 2	FINANCES				
Exp. 04	I can easily get access to credits	32.0	32.4	26.8	8.9
Exp. 05	I can easily realize additional revenue	29.8	33.3	26.3	10.6
Exp. 15	I can survive and be competitive on the European market only with financial aid.	40.3	40.1	15.8	3.7
Exp. 20	I can easily find external employment and income	25.2	36.6	19.5	18.7
Factor 3	TECHNOLOGY				
Exp. 07	I can easily access quality information	43.4	39.4	14.5	2.7
Exp. 09	I can easily apply new technologies	42.7	35.8	18.4	3.1
Exp. 10	I can easily access additional training	38.7	43.5	14.8	3.1
Factor 4	REGULATION				
Exp. 08	There will be changes in agricultural policy	71.4	25.1	2.9	0.6
Exp. 16	I have to apply EU standards, in order to be competitive	72.0	23.6	2.9	1.4
Exp. 11	My products need to be improved	72.0	21.0	5.2	1.9
Factor 5	INVESTMENTS				
Exp. 18	Instrument such as IPARD will help me prepare for EU	20.2	40.0	29.6	10.2
Exp. 19	I am prepared to participate financially to use the support from IPARD funds	16.2	27.2	35.3	21.4
Exp. 17	I am prepared to invest to attain EU quality standards	21.7	36.0	30.0	12.2

Cluster analysis

The cluster analysis produced four clusters between which the variables explaining attitudes were significantly different in the mean ranks. The Kruskal-Wallis test revealed heterogeneity between clusters concerning the direct questions regarding farmers' willingness assessment and expected time of EU accession (Table 2), and for most of the variables describing the farmers' attitude. Non-significant were their expectations regarding survival and competitiveness on the European market under current state ($H(3)=6.44$, $p=0.092$) and about their expectations about the ease of finding external employment and income ($H(3)=1.614$, $p=0.658$).

The ordering of clusters by their expectations from the EU accession are as follows: the first cluster has predominantly positive expectations and it includes the 36.2% from the sample; the second and third clusters are composed of 45.8% and 13.3% of total number of surveyed farmers and the forth cluster is least positive and representing 4.8% of the sample.

On the subject of farmers' assessment of EU accession, as well as the expected time of the accession, the first clusters are also predominantly positive and expecting to happen sooner, while the fourth cluster is most critical and is less certain that accession will happen in the near future (Table 3). As re-

Table 2. Kruskal-Wallis H test on farmers expectations from EU accession by clusters

Direct questions	Cluster	N	Mean Rank	H	df	p
Willingness for EU accession	1	166	202.10	20.27	3	0.000
	2	210	238.22			
	3	61	270.68			
	4	22	249.25			
Assessment of EU accession	1	166	197.86	19.99	3	0.000
	2	210	241.01			
	3	61	264.20			
	4	22	272.59			
Expected time of EU accession	1	166	208.42	9.02	3	0.029
	2	210	236.57			
	3	61	252.61			
	4	22	267.43			

gards farmers' willingness for EU accession, the first cluster is predominantly positive, the second cluster and the forth clusters are moderate, while the third cluster is the least willing.

The Kruskal-Wallis test shows a variation in the significance of different expectations for different clusters. Thus, the first cluster is mostly differentiated from the others by farmers' expectations regarding the market, financial perspective of farming as well as technology, while the third and the fourth clusters are determined by their attitudes on expected regulations and required standards. The Mann-Whitney test showed that the expectations regarding the market, finances and technology differentiate the first cluster from the others; the expectations on investments differentiate the first cluster from the second and third. On the other side, the expectations on standards and regulation differentiate third and the forth clusters from the others. The effect size in most of the cases showed to be small to medium, except for the medium to large effect occurring regarding the expectations on regulation in the third and the fourth cluster.

Cluster profiles

Most significant differences between clusters show the variables explaining farm legal structure and education, farm management activities including investments by type, personal and farm objectives, farmers' sources of information and knowledge on CAP and IPARD. All these differences in line with the differences in attitudinal statements determine the cluster profile. The four produced clusters according to the farmers' attitude and expectations from the EU accession can be defined as "optimist", "moderate", "restrained" and "sceptic". The clusters differ not only in their attitudes towards EU accession, but also in their personal and farm management characteristics.

Cluster 1 "Optimist": The first cluster seems to be dominantly pro-EU oriented, having positive expectations from EU and expecting sooner accession. Farmers in this cluster are with practical agricultural education, moderately informed, and are being often members of farmer association. With their practical agricultural education they are using farm planning and management tools. They are highly motivated for farming since most of the family income comes from farming. The reasons behind farming are profit but also keeping on the tradition. Beside profit as a goal trying to achieve on the farm, there is also the goal to expand the farm. They have some knowledge about CAP and are willing to learn more.

Cluster 2 "Moderate": The farmers in the second cluster are generally supporters the EU accession, and are expecting that EU accession in the

Table 3. Frequency distribution of answers by clusters (%)

Question	Answer	Cluster 1	Cluster 2	Cluster 3	Cluster4
Willingness for EU accession	Yes	76.5	61.4	45.9	54.5
	Neutral	19.3	29.5	45.9	40.9
	No	4.2	9.0	8.2	4.5
Assessment of EU accession	Good	49.4	37.6	27.9	18.2
	More good than bad	38.6	35.2	39.3	54.5
	More bad than good	10.8	21.0	29.5	27.3
	Bad	1.2	6.2	3.3	0.0
Expected time of EU accession	Next 5 years	33.1	25.7	21.3	31.8
	Next 5-10 years	29.5	27.6	29.5	9.1
	More than 10 years	20.5	21.4	16.4	9.1
	Do not know	16.9	25.2	32.8	50.0

medium-run (5-10 years). They expect that EU will bring mostly positive things. These farmers are with the highest average educational level (in agriculture and farming) from all clusters and well informed since they use frequent and different sources of information. Regarding their knowledge about CAP, they have some knowledge and are willing to learn more. Many of them are members of farmer's association. Their higher level of education brings more frequent use of farm planning and management tools. Profit is the main reason behind farming, and regarding risk they appear to be the most diverse.

Cluster 3 "Restrained": The farmers in the third clusters are indifferent towards EU accession; EU accession is assessed as neither good nor bad, and farmers are not convinced that the accession is going to be soon. They have a lower level of (agricultural) education, and are being moderate users of farm planning and management tools, although their family income mainly comes from farming and are occasional users of advisory services. Their reasons behind farming are keeping on the tradition as well as profit. And beside profit as a farm objective, they are also trying to cover the operating costs. They do not have much knowledge about CAP and are least willing to learn more. They are rarely members of farmer association. Regarding risk these farmers are quite cautious.

Cluster 4 "Sceptic": Least positive about the EU accession, highly skeptical about the timing of the accession and being not sure about the prospects of EU accession are the farmers from the fourth cluster. The "scepticisms" are with the lowest level of (agricultural) education, with rare and infrequent uses of information sources, thus, having not much knowledge about CAP. They are moderate users of farm planning and management tools, with the main reason for farming is getting employment. Still, the main goal for farming is profit. Not many of the farmers in this cluster are members of farmer association, and regarding risk they are risk cautious to risk averse.

CONCLUSIONS

The bottom-up approach, through direct observation of the farmers' opinion in Macedonia, was applied in order to understand the general level of knowledge and attitudes concerning governmental actions, more specifically the agricultural policy and measures. This research showed that the majority of Macedonian farmers are positive regarding the EU accession, although not much defined regarding the expected time of EU accession. Most of the farmers expect to survive in the new competitive environment only with the financial support from the state. There is a strong belief for easier access to new production technology, information and trainings obtaining

this technology. Farmers are fully aware of the forthcoming changes in agricultural policy and the necessity of achieving EU standards, but not all of them are identifying the opportunities to improve their market position.

Four distinctive groups of farmers were suggested by the cluster analysis according to the farmers' attitude and expectations from the EU accession. These clusters enlighten the similarities within one cluster and the differences among the four clusters. This provisional grouping could be used to direct the further agricultural development or to develop an approach so farmers can better understand and apply the requested actions in terms of EU integration. Furthermore, it could be used by the governmental bodies and institutions to examine their approach to inform farmers and motivate them for a certain expected behaviour.

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Stavovi makedonskih poljoprivrednika prema pristupu EU

SAŽETAK

Makedonija je država kandidat za ulazak u EU od 2005. Integracijski proces će nedvojbeno imati utjecaj na makedonsku ekonomiju, posebice na području poljoprivrede. Do sada nisu vršena značajnija istraživanja u vezi stavova i namjera poljoprivrednika u odnosu na integracije i pristup EU. U tom smislu, svrha ovoga rada jest pružiti uvid u stavove makedonskih poljoprivrednika i njihovih reakcija u kontekstu pristupa EU te potencijalne politike i promjena na tržištu. Nadalje, predmet istraživanja bilo je i utvrđivanje postoje li razlike između poljoprivrednika i njihovih stavova prema pristupanju EU. Rezultati su pokazali da su poljoprivrednici u zemlji poprilično heterogeni u smislu farme, profila poljoprivrednika i prakse vođenja farmi. Klaster analizom utvrđene su četiri grupe čije varijable reprezentiraju značajno različite stavove, provizorno označene kao „optimistični", „umjereni", „suzdržani" i „skeptični".

Ključne riječi: klaster analiza, pristup EU, stav poljoprivrednika