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INTERNAL FACTORS AFFECTING THE ABSORPTION OF THE EUROPEAN UNION STRUCTURAL FUNDS IN POLISH AGRICULTURE

Summary: The EU funds are an important factor supporting the modernization of the Polish economy, including agriculture. A necessary pre-condition for the improvement of the competitiveness of Polish farms was to increase their efficiency through investments in new means of production and modernisation of their assets. However, the implementation of EU structural funds is based on the precise rules of allocation, in terms of both subjective and objective as well as documentation and control system. The biggest problem for farmers was documentation connected with the preparation of the application, i.e. the large number of required documents and their complicated character.

Keywords: European Union structural funds, agriculture, investment.

1. Introduction

The period before Poland's accession to the European Union and Poland's membership in the EU was connected with the possibility of using support offered by structural funds. A considerable portion of these resources was also allocated to Polish agriculture and rural areas [Kowalski 2007], which facilitated the preparation of farms to the competition on the Single European Market. A necessary pre-condition for the improvement of competitiveness for Polish farms was to increase their efficiency through investments in new means of production and modernisation of their assets [Czekaj 2008]. This was the premise for the allocation of a portion of resources for investment purposes within the following programmes: SAPARD, Sectoral Operational Programme "Restructuring and Modernisation of the Food Sector and Rural Development 2004-2006" (SOP) and Rural Development Programme for 2007-2013 (RDP). However, when constructing such programmes, it was necessary to ensure a complete utilisation of allocated funds. This was required, for example, by the level of assumed criteria and procedures for the implementation of the policy as well as preparation of beneficiaries to apply for funds. It may be stated that this last element was crucial for the achievement of the objectives of implemented programmes, while appropriate preparation of farmers determined the decision on the accession to the programme [Ohlmer, Kent, Berndt 1998].

The task, faced by public organisations, was to prepare programmes in the best possible manner and develop methods of their implementation so that the adopted procedures could guarantee a complete utilisation of resources allocated to Poland [Wiatrak 2006]. It results from the conducted analyses [Rowiński 2005] that strict procedures for programme implementation offer safeguards against misuse of funds, but at the same time they may increase transaction costs [Rørstad,Vatn, Kvakkestad 2007] and reduce the number of beneficiaries [Petrick 2004]. For the realisation of present programmes and the development of future ones, it is important to conduct respective studies [Chaplina, Davidova, Gorton 2004], whose primary aim is to indicate basic problems and barriers faced by farmers when applying for means from EU funds.

2. Materials and methods

The material for analyses comprised results of surveys[1] conducted in 2010. The subjects for analyses were selected purposefully as they concerned farms located throughout Poland, while the primary criterion of the selection was to participate in the programmes financing investments from agricultural EU funds, i.e.:
– Measure 2. "Investments in agricultural holdings" within the framework of SAPARD Programme.
– Measure 1.1. "Investments in agricultural holdings" within the framework of SOP 2004-06.
– Measure 121. "Modernisation of agricultural holdings" within the framework of RDP 2007-13.

Basing on FADN data, those farms that received subsidies to investments of over PLN 60 000 were selected for analyses. The questionnaire was addressed to 774 farms, 475 managers of which responded to the questions in the questionnaire concerning the reasons for and difficulties in the use of EU funds. Since some of the farms were conducting more than one investment project financed by the EU programmes and they evaluated each programme individually, the total number of analysed questionnaires was 737.

The farmers – the beneficiaries of the funds – evaluated problems encountered when applying for co-financing, based on a point scale with scores from 1 to 6, where 1 denoted the lowest score (a slight problem), whereas 6 denoted the highest score (very serious problem). Factor analysis was applied in the classification of scores for the problems indicated. This method was used to detect a structure in the relationships between variables, that is, to classify variables. When selecting the number of clusters – new factors (principal components) – three approaches were used jointly,

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[1] The study was financed from funds allocated to science in 2008-2011 as a research project of the Ministry of Science and Higher Education entitled "Functioning, effectiveness and results of selected CAP instruments in Poland".

i.e. the Kaiser criterion (retaining only factors with eigenvalues greater than 1), the scree test, and the measure of how much variance each successive new factor extracts. Finally, for the analysed question in the questionnaires, the determination of three new factors was assumed. Basing on the extraction of principal components, which amounts to a variance maximizing (varimax) rotation of the original variable space, the rotation was applied to maximize the variance (variability) of the "new" variable (factor), while minimizing the variance around the new variable [*Electronic Statistics*... 2011]. Prior to the factor analysis, the validity of the application of this method was verified. For this purpose, Bartlett's test of sphericity and the Kaiser-Meyer-Olkin measure of sampling adequacy were used. The calculations were performed using the SPSS package, confirming the validity of the application of the factor analysis. The value of Bartlett's test of sphericity made it possible to refute the hypothesis that the matrix of correlation is a unit matrix; and the high KMO coefficient (0.87) provided a justification for the application of factor analysis. In the interpretation of results the skewness factor was applied, characterising the degree of the asymmetry of distribution around its mean [*Electronic Statistics*... 2011].

In clustering of factors, cluster analysis was also applied, using the *k*-means clustering algorithm. The *k*-means method produces exactly *k* different clusters of greatest possible distinction. In order to determine the number of clusters calculations, the clustering algorithm was combined with the use of Ward's method to evaluate the distances between clusters. In the analyzed case, the number of three clusters was determined.

3. Results of the analyses

The realisation of objectives of the Common Agricultural Policy of the European Union in the first years of its operation resulted in a situation when in the EEC countries, as early as in 1960s, structural funds were perceived as important instruments in the policy to support restructuring and modernising the agricultural and food sectors. The need for structural transformations was also seen in Poland. The prospect of an accession to the EU required undertaking additional actions not only to reduce differences in the standard of development, but mainly to meet the requirements imposed by the Single European Market. The SAPARD programme was an instrument in structural transformations in Polish agriculture prior to our accession to the EU, while in the first years following accession it was SOP 2004-2006 and RDP 2007-2013. In all those programmes, in order to improve competitiveness and ensure permanent and sustainable development of the agricultural sector, resources were found to support investments on farms. The considerable fragmentation of farms in Poland, their limited specialisation, low marketable value of their agricultural production were constraints to the accumulation of financial means to be potentially used as sources of new investments. Thus, investments were supported using a considerable portion of resources within the framework of individual programmes, as within SAPARD

it was 20% of a total budget, in SOP it was 34%, while in RDP 2007-2013 it was 11%. Despite the fact that in the latter programme (RDP 2007-2013) the share of outlays on modernisation of farms was lower, the amount allocated to that action was three times higher than in the previous years [Rowiński 2009]. Starting from the SAPARD programme, it was assumed that financial support for investment activities would contribute to an improvement in the technical equipment of farms and quality of produce, adaptation to the requirements of the EU regulations, and improved economic efficiency and competitiveness of the agri-food sector, while at the same time maintaining the environmental standards of production [Rowiński 2005; RDP 2007].

The EU aid programmes constituted a support instrument of a horizontal nature, i.e. aid was granted for the entire country in a uniform manner. The aid in the form of co-financing was granted as reimbursement of a part of incurred qualified costs, which were settled only after the completion of the investment in part or as a whole. During the realisation of the programme, an applicant could receive aid (within the framework of SAPARD it was max. PLN 170 000 [Rowiński 2005], while in SOP 2004-2006 and RDP 2007-2013 it was up to PLN 300 000, which amounted to the reimbursement of 50% costs of the project) for the purchase, construction, or renovation of buildings for agricultural production; purchase of machinery, equipment, or tool; purchase of the foundation stock, or establishment of orchards or long-term plantations. In the investigated group, the mean value of investment was approx. PLN 300 000. Thus, it was the value on average by 50% lower than that which would make it possible to obtain the maximum amount for reimbursement of incurred costs. This shows that farmers were cautious when using the available resources from EU funds. This conclusion is particularly justified since it was farms with the highest reimbursement for the conducted investments, i.e. over PLN 60 000, that were selected for the analyses. This attitude was similar to the behaviour observed throughout the country since, within the SPO programme, applications were filed for the mean value of PLN 107 000, while in RDP it was PLN 142 000 [PROWieści 2011].

When evaluating the factors affecting the absorption of the European Union structural funds, respondents were asked a question on the degree of factors causing problems when applying for EU funds for investment support (mentioned in Tables 1 and 2). The application of factor analysis made it possible to reduce 17 causes to three newly established (see Table 1). The first factor was a lack of one's own knowledge on EU funds in the period of implementation of actions co-financing investments. It needs to be stressed that, on the scale of 1 to 6 points, farmers on average gave the score of 2.4 points. Thus, despite the fact that the lack of knowledge was important (it explained as much as 32% of the total variation in factors hindering the application for funds), it did not have a decisive negative effect on the use of funds (the skewness factor was 0.6, which means that notes: "slight problem" and "small problem" predominated). It turns out that the biggest difficulty for farmers was connected with the documentation connected with the preparation

Table 1. The results of factor analysis – factors causing problems when applying for EU funds for investment support

Item	Factor 1	Factor 2	Factor 3	Mean	Median	Skewness
	Factor loadings					
Large number of required documents	0.032	**0.885**	0.106	**4.9**	**5**	**−1.19**
Complicated documentation	0.087	**0.895**	0.138	**4.8**	**5**	**−1.04**
Too short a period for collecting documentation	0.171	0.470	0.380	3.9	4	−0.29
Poor access to information	0.632	0.149	0.228	2.6	2	0.53
A lack of one's own resources for pre-financing of investment	0.409	0.312	0.146	3.6	4	−0.21
Too low an amount of offered financial aid	0.245	0.089	0.399	2.9	3	0.33
A lack of access to advisory services	0.669	−0.145	0.100	1.5	1	2.29
A lack of one's own knowledge on funds during their operation	**0.780**	0.092	0.047	**2.4**	**2**	**0.62**
Fear of not receiving reimbursement of investment	0.371	0.113	0.488	3.3	3	0.09
A lack of experience in using external financial aid (credits, loans)	0.596	0.089	0.245	2.4	2	0.82
Difficulty with estimating long-term benefits related with the realisation of investment	0.592	0.132	0.390	2.5	2	0.77
Difficult criteria for granting aid	0.397	0.325	0.517	3.2	3	0.21
A lack of aid on the part of ARMA	0.262	0.163	0.674	2.9	3	0.48
Bad experiences with earlier co-operation with ARMA	0.138	−0.048	0.673	2.2	2	0.99
A lack of uniformity in required forms of documents	−0.019	0.306	0.688	3.6	4	−0.17
Problems in co-operation with other institutions (ZUS, KRUS, Tax Office, etc.)	0.159	0.079	0.565	2.3	2	0.93
Fear of delays on the part of ARMA	0.138	0.147	**0.718**	**3.6**	**4**	**−0.11**
Eigenvalues	5.47	1.73	1.27	x	x	x
Percentage of explained variance	32.2	10.2	7.5			

The point scale of 1 to 6 was adopted, with 1 denoting the lowest score (a slight problem) and 6 denoting the highest score (a very serious) problem.

Source: author's own study based on survey results (n = 737).

of an application. Two elements connected with the above, i.e. a large number of required documents and their complexity comprised jointly the second factor. The mean score was almost 5, which means that documentation was the biggest

problem when applying for EU funds for investments. The results of factor analysis were confirmed in cluster analysis (see Table 2). Also in this case, the matter of the amount and complexity of documentation forms a separate cluster of elements with the biggest negative effect. Very high skewness factors indicate that in the analysed population documents were considered the biggest difficulty by most farmers.

Table 2. The results of cluster analysis of factors causing problems when applying for EU funds for investment support

	Specification	Mean	Skewness
Group I	Large number of required documents	4.8	−1.1
	Complicated documentation		
Group II	Poor access to information	2.4	0.8
	Too low an amount of offered financial aid		
	A lack of access to advisory services		
	A lack of one's own knowledge on funds during their operation		
	A lack of experience in using external financial aid (credits, loans)		
	Difficulty with estimating long-term benefits related with the realisation of investment		
	A lack of aid on the part of ARMA		
	Bad experiences with earlier co-operation with ARMA		
	Problems in co-operation with other institutions		
Group III	Too short a period for collecting documentation	3.5	−0.1
	A lack of one's own resources for pre-financing of investment		
	Fear of not receiving reimbursement of investment		
	Difficult criteria for granting aid		
	A lack of uniformity in required forms of documents		
	Fear of delays on the part of ARMA		

The point scale of 1 to 6 was adopted, with 1 denoting the lowest score (a slight problem) and 6 denoting the highest score (a very serious problem).

Source: author's own study based on survey results (n = 737).

The last factor isolated in factor analysis (see Table 1) comprises the concern for delays on the part of the Agency for Restructuring and Modernisation of Agriculture. In the course of successive application procedures, there were cases when the implementing institution had a backlog of documents causing delays resulting from the high number of filed applications and the related amount of time required for their adequate verification and making respective administrative decisions. For beneficiaries it is particularly important when an investment was financed by a credit. Then each delay in obtaining a reimbursement of a part of incurred costs generated

additional costs connected with the extended period of credit repayment. Such a risk was evaluated by beneficiaries as a major difficulty.

In cluster analysis (see Table 2), this element is supplemented with aspects connected with documentation (a lack of uniform forms and a short time for their collection), a lack of one's own resources for prefinancing of an investment, criteria for granting aid being difficult to meet and fear of making errors excluding the possibility of reimbursement. These factors caused problems for farmers. The least troublesome elements were included in group 2 (see Table 2). In common courts, the lack of aid and advisory for farmers is frequently mentioned. The studies showed that beneficiaries interested in resources from EU funds for investments receive respective support from the agency as well as companies and institutions responsible for the transfer of the information about granting aid. For most respondents, the offered amount within the framework of investment programmes was sufficient and it was not a problem when developing investment plans including co-financing from EU funds.

4. Conclusions

The primary objective of investment support instruments in the agricultural policy of the European Union is to accelerate the process of restructuring and modernising farms. Reaching assumed effects requires an adequate preparation of programmes in order to guarantee their application solely by subjects meeting specific criteria. This is connected with a risk of such administrative and formal infrastructure, which may become a barrier for their complete and adequate utilisation. The implementation of previously run programmes makes it possible to state that:

1. The biggest problem for farmers was a documentation connected with the preparation of an application. Two related elements –the large number of required documents and their complicated character – were a problem when applying for EU funds.

2. There is no justification for commonly presented opinions that EU funds for agriculture are connected with too low an amount of investment support, statements on barriers resulting from the need of pre-financing, or being persuaded by opinions of other farmers in the decision-making process. The form and amount of reimbursement of a portion of incurred costs was adequate for farmers and the opinions of other farmers did not play any major role. Also a common opinion on the lack of aid on the part of ARMA was not confirmed.